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THE

GARDENERS' MAGAZINE

FOR AMATEUR CULTIVATORS, AND EXHIBITORS OF PLANTS, FLOWERS, AND FRUITS:

FOR GENTLEMEN'S GARDENERS, FLORISTS, NURSERYMEN, AND SEEDSMEN:

FOR NATURALISTS, BOTANISTS, BEEKEEPERS, AND LOVERS OF THE COUNTRY.

CONDUCTED BY SHIRLEY HIBBERD, F.R.H.S.

"There are no ancient gentlemen but gardeners. . . They hold up Adam's profession."
Hamlet, v. 1.

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THE

GARDENERS' MAGAZINE.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
5	S	Duke of York died, 1827.	8 8	5 44	4 4	3 27	7 32	1 25	1 45	10 50	11 10	36·4
6	M	Epiphany. ○ Full Moon, 5h. 37m. Morn.	8 7	6 10	4 6	4 21	8 23	2 6	2 23	11 31	11 48	36·4
7	Tu	Bishop of Ely died, 1864.	8 7	6 36	4 7	5 18	9 4	2 39	2 57	—	0 4	36·3
8	W	Cambridge Lent Term begins.	8 6	7 1	4 8	6 23	9 38	3 14	3 32	0 22	0 39	36·3
9	Th	Fire Insurance due.	8 6	7 26	4 9	7 30	10 5	3 48	4 5	0 57	1 13	36·3
10	F	Serjeant Parry died, 1880.	8 5	7 51	4 10	8 38	10 26	4 22	4 39	1 30	1 47	36·4
11	S	Hilary Law Sittings begin.	8 5	8 14	4 12	9 47	10 46	4 56	5 13	2 4	2 21	36·4

Orchids in Flower.		Day of Yr.
		1890
Angræcum Kotschyi	East India.	5
Barkeria Vanneri	Mexico.	6
Burlingtonia candida	Demerara.	7
Calanthe Sedeni	Gar. hyb.	8
Cymbidium giganteum	Nepaul.	9
Dendrobium Ainsworthi	Gar. hyb.	10
Lælia anceps	Brazil.	11

NATIONAL CHRYSANTHEMUM SOCIETY.

MID-WINTER EXHIBITION, ROYAL AQUARIUM, WESTMINSTER, WEDNESDAY and THURSDAY, JANUARY 8 and 9, 1890.

Chrysanthemums, Primulas, Cyclamen, &c. Miscellaneous exhibits specially invited. Schedules free.

Frampton Park Nurseries, Hackney. WILLIAM HOLMES, Hon. Sec.

Exhibitions and Meetings for the Ensuing Week.

MONDAY, JAN. 6.—NATIONAL CHRYSANTHEMUM SOCIETY.—Meeting of General Committee, 7 p.m.

WEDNESDAY, JAN. 8, AND THURSDAY, JAN. 9.—NATIONAL CHRYSANTHEMUM SOCIETY.—Midwinter Exhibition. Conference and Meeting of Floral Committee, first day.

Auction Sales for the Ensuing Week.

MONDAY, JAN. 6.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs, Tuberoses, and Lilies.

WEDNESDAY, JAN. 8.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Greenhouse Plants, &c.

WEDNESDAY, JAN. 8, AND SATURDAY, JAN. 11.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, &c. (weather permitting).

THURSDAY, JAN. 9.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Lilium auratum and other importations from Japan.

THURSDAY, JAN. 9.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Nursery Stock from Sample.

FRIDAY, JAN. 10.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

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TITLE AND INDEX TO VOLUME XXXII.

THE HORTICULTURE OF THE FUTURE, whatever its character, will of necessity be to a great extent a continuation of the Horticulture of the Past, with such modifications as nature, fashion, and many other influences may determine, not the least amongst which will be the relative prosperity of the people that practise or encourage it. Great changes require time for their accomplishment, and ideas are more commonly mere growths and not absolute inventions. No one knows what the opening year may have in store for our gardens and gardeners; but short of floods, earthquakes, and other great calamities, the past will be repeated in great measure, and many things that will appear new will prove on examination to be old friends with new faces. It is well we should, at such a moment as the present, feel that the earth is solid beneath our feet, for we could do nothing with a proper expectation of success were we uncertain as to the circumstances that actually surround us, or as to the reality of the life we endeavour to improve and embellish by means of horticultural and other agencies. Our wants will be repeated, our means of gratifying them will be renewed, the days may be dark but the sun will shine again, and depression will follow gaiety and yield to gaiety again, as the tide that runs up prepares for the tide that runs down, and the story of the ages is systematically repeated.

It is consequently impossible to look forward without first looking backward, and amongst many things the past suggests as tending to development in the future, perhaps the most conspicuous in the way of gardening are the two great classes of hardy flowers and hardy fruits. These have obtained much attention of late, and appear destined to obtain more and more attention, and in a more rational way than heretofore, for we seem to be on the verge of understanding them, at least in part, if not altogether. The lists of both have within recent years been greatly augmented, the flowers more especially; and collectors have multiplied, and a healthy spirit of appreciation prevails, not only amongst the experts who know much, but with the general public, who may be said to know but little about them. It is a good sign that we see in our botanic gardens, and in places like the R.H.S. Garden at Chiswick, where prevailing public tastes are represented, increased attention paid to hardy flowers; and many fine plants that have languished in neglect now find favour, and prove how well they deserve it. This part of the subject is curiously illustrated by the herbaceous pæonies, large collections of which, within recent years, were destroyed, because, as the owners of them said, "nobody cared about them"; whereas, had they been kept, they would have justified themselves at last by the demands of the market, for there is now somewhat of a scarcity of these very plants, and the varieties command prices that not long since would have been deemed extravagant. The same might be said of the bearded irises, the narcissi, the lilies, the pyrethrums, and many more such flowers. The chrysanthemum, that now obtains so much attention, owes much of its popularity to the fact that it is a hardy plant, although, as an outdoor flower, it is certainly not a great success in this country. Still, it is hardy enough for the conveniences of thousands who cultivate it with enthusiasm, and who certainly would not do so were it in the fullest sense of the term a greenhouse plant. Mere hardiness, however, appears not sufficient to keep any flower in a front place in public favour, for the pansy, potentilla, anemone, ranunculus, and a few other things that might be named have allowed the waves to go over them, and none can say that there is at present any prospect of their reappearance as general favourites, although their claims are many and their deficiencies few. Why should the carnation go forward and, the pink backward? why should the pyrethrum advance and the pansy retire? why should the hollyhock and the phlox linger in a kind of borderland where they have neither smiles nor frowns to advertise them of their place in the public estimation? It would be hard to answer such questions because some of the great favourites are exacting in their requirements, and some of the neglected things want nothing to enable them to make a glorious display, and yet may be "cultivated" to ensure results far greater than some other subjects with which they might be compared. The splendour of the named phloxes illustrates this part of the subject, for they are amongst the most beautiful of autumnal flowers when left to manage their own affairs in any sunny border, but when propagated annually and assisted with the arts that are so well understood as aids to high development they take rank with the most splendid florists' flowers known to us.

But we are thinking of the future, and it appears fair to conjecture that as hardy flowers of many kinds—may we not say of all kinds?—are certainly advancing in popularity, certain good old friends that have for some time been in the cold shade of neglect may be destined

to promotion, and it would be a worthy subject for the consideration of the lovers of such things by what means they might be restored to the sunshine of public favour. The pink, perhaps, deserves first consideration. A movement was made in its favour in connection with the Pelargonium Society some years since, but the state of affairs in R.H.S. was such that the project was abandoned as hopeless in that connection. But the R.H.S. is in a different position now, and has made a speculation in dianthus that needs but to be expanded to make a place of honour for the pink, which may be said to have but a small local life as a proper florists' flower. It cannot be done *instanter*; it must be prepared for, the men who are capable of making the thing must be secured, as well as the flower, and one result of a generous recognition of the pink should be an augmentation of the strength of the society that effected the initiation. Growers of pinks appear too well content with the obscurity to which their favourite has subsided, and they, not less than their flower, would doubtless be benefited by a more public appearance, and a larger area for demonstrations. Carnations are in the way of prosperity, and the border varieties that have been planted at Chiswick should make delightful work for the admirers of the flower in the coming summer, while the general public will have opportunities of participating in the conference that will be held at Chiswick.

Fruit culture should obtain further expansions in the year that is before us. There has been much done in the increase of orchard and garden plantings; the home product of fruit has been greatly enlarged, and is still expanding, while happily the common sense treatment of fruit trees is the more freely recognised than ever, and as mischievous repressions go out of use, it is seen that the crops are correspondingly augmented. And the necessary work of substituting useful for useless varieties proceeds at a pace that is gratifying, while the forms of trees that are best suited to the several kinds are better understood by those who make them, and whose work so directly influences the future of fruit culture. The Fruiterers' Company is in the happy position of all persons and corporations that stand forward to do something, for it can have "advice gratis" to any extent from people who do, and people who do not understand the subject; while, strange to say, it has ideas of its own as to what it may do, whatever may be thought or said as to what it "ought" to do. The expenditure of a small sum on a prize essay adapted for cottagers was a bright idea, for the orchardists may be left to take care of themselves, so far as to any special effort on a moderate scale for promoting a taste for fruit amongst the masses of the people. That the result was the admirable book by Mr. John Wright may be counted a fortunate circumstance, for prizes do not necessarily bring forth productions worthy of them, and in this case a public benefit is the result of what we will term a spirited policy. It should be amongst the agreeable events of the year that is opening that Mr. Wright's book should be universally read and extensively acted on, while in other ways fruit culture should make progress, for it should be observed the markets are but poorly supplied, even at this present season, when everybody is eating who can afford to eat, and fruits as food are better appreciated than ever. If we could find some means of sweeping away the lichen-covered, decrepit, cankered, and unproductive old orchards of Devon and Somerset, we might be accomplishing as much in aid of fruit culture as by planting new orchards. These pictures of neglect and decay operate injuriously, and tend to discourage wholesome speculation. The less enlightened class of agriculturists, who might often be advantaged by the cultivation of hardy fruits that demand little more than soil below and sunshine above them, are persuaded, as they behold these frightful examples, that fruit trees spell ruin for the farmer, for it does not readily occur to their dull minds that even in so simple a matter as growing a few tons of plums or apples a little spirit and common sense are necessary. We are not in the mood to advise the Fruiterers' Company, because the common atmosphere appears "peasoupy" with the advices that are current, but we feel bound to say that the agricultural mind, in the concrete, is in a state of darkness on the subject, and there will be no progress of a kind worthy to be called "national" until the darkness is invaded by light of a wholesome nature.

The year 1890 appears likely to be a less busy one than that just closed; but there is provided for the horticulturists reasonable excuses for activity. The list of exhibitions in the *Garden Oracle* will show that organizers have not been asleep, and the principal societies have put forth programmes that promise a reasonable amount of excitement and usefulness. The *Kew Bulletin* should be mentioned as a new institution that has passed probation, and must have recognition as an important agency for the diffusion of knowledge on many matters of importance to horticulturists, and more especially on that department in which they are necessarily interested that may be here described as Economic Botany. The *Bulletin* is, in fact, a skimming of the cream of the official correspondence of the Royal Gardens, and touches on a number of points attractive to practitioners of gardening, but the *uses* of plants may be taken as the general theme, and it is one that Kew has special facilities for illustrating. Societies that endeavour to keep pace with scientific inquiry, and the literature of the garden, will find the *Kew Bulletin* a most proper thing for inclusion in their list of literary desiderata. We might say as much or more for the *Journal* of the Royal Horticultural Society, which is now a great budget of information, for the most part original, and reflective of the ideas, and fashions, and practices that prevail in gardens. There has been nothing like it in the way of representation of the Society's proceedings since the quarto "Transactions" were discontinued, and we are old-fashioned enough to say that we should not lament were the grand old quartos, with their beautiful coloured plates, brought into existence once more.

While coloured plates are thus brought to mind, we shall express regrets that are shared by many, that the plates in the "Botanical Magazine" have seriously declined in artistic value; and there is not at this time, and for a long time past has not been any periodical representation of florists flowers. Mr. Harman Payne has lamented the comparative scarcity of coloured figures of chrysanthemums, a fact accounted for by the complete cessation of publications in which florists' flowers were specially favoured at the very time when the popular autumn flower acquired a position to justify the publication of coloured plates of prominent varieties. The "Floral Magazine" and the "Florist" have gone the way of monthlies, leaving nothing to take their place. The "Garden," we may say should supply the defect, but the plates in that paper, though admirably worked up as examples of printing in colour, are apt to run into the region of serious burlesque when the choice of the editor falls upon a florists' flower. Nothing appears to delight him so much as the representation of a fine subject in a state of imperfection. A twisted petal, a windmill form, and a false arrangement, or general blurring of colours, are characters introduced in connection with florists' flowers that would not be recognized by florists with such defects. This is matter for lamentation, but it is consistent with the policy of our contemporary, which has ever been to favour weediness as one of the essentials of beauty. It is a grave mistake and betrays narrowness of view, for those who best understand and most earnestly admire technical perfection in florists' flowers are as ready in appreciating the beauties of those that remain uninfluenced by human agency. A florists' flower is a real flower conventionalized. Once perceive the truth and you must subscribe to it both as to the whole and to all the parts. A conventional decoration must be orderly, systematic, severe in line, and present a distinct harmony of colours whether lively, rich, sombre, or neutral. A field for fancy and for bold originality will often be opened to the daring hand, but the primary laws that govern conventions in art must be obeyed, or the result will be a solecism or a monstrosity. Not unseldom do we see in the paper referred to admirably executed plates in which florists' flowers are so flagrantly abused that we could wish the editor would avoid them altogether, and thus be consistent with his avowed dislike of the entire throng.

The fashions have changed, and are changing. If coming events cast their shadows before we shall certainly behold artistic expansions of the several methods of presenting flowers at exhibitions. There is room for improvement, and we must express our satisfaction that means have been devised for accomplishing one reform we have urged as of the first importance—the abolition of the staring white card stuck in the midst of a lot of beautiful flowers. Very soon, we should hope, the ruling authorities will take measures to ensure fair play for the remedies for this staring evil. When that much is happily accomplished in the interest of good taste, we will hope that many friends in the provinces will seriously ask themselves the question whether the plant or the pot should be placed "on the line," for the average height of the human frame is sufficiently well known to enable any one who arranges for the staging of plants to ensure that they shall be seen to the best advantage by the visitors to an exhibition.

RICHMOND HORTICULTURAL SOCIETY will hold a spring show March 18 and a summer show June 25.

RUGBY CHRYSANTHEMUM SOCIETY will hold its annual exhibition November 12 and 13.

TUNBRIDGE WELLS CHRYSANTHEMUM SOCIETY'S exhibition will be held November 12 and 13.

"THE BIG GOOSEBERRY" was the title of an excellent paper on prize gooseberries read by Mr. John Pope at the December meeting of the Birmingham Gardeners' Association.

EXPORTS OF APPLES FROM AMERICA from the beginning of the season of 1889 till the end of November last amounted to 371,608 barrels, as compared with 784,500 barrels in the corresponding period of 1888.

MESSRS. KRELAGE AND SONS, of Haarlem, had their premises broken open a short time since, when the thieves carried off about five hundred medals that have been awarded to the firm by various societies.

PITCAIRN ISLAND HAS NO BUTTERFLIES.—Mr. J. J. Walker, who has travelled much, informed the Entomological Society that the only place outside the Arctic circle which he had visited in which butterflies were entirely absent was this romantic island.

THE PICTURE SEASON opens on Monday next with the exhibition of old masters at the Royal Academy, and the exhibition of pictures illustrative of the Tudor period (Henry VII. to Elizabeth), at the New Gallery, on Monday next. There are collections of pictures on view at the Institute in Piccadilly and the galleries of Messrs. McLean and Tooth in the Haymarket.

GARDEN SCHOLARSHIPS IN THE MISSOURI BOTANIC GARDEN are described in a pamphlet bearing the signature of William Trelease, Director of Missouri Botanical Gardens, St. Louis, Mo., U.S.A. Six scholarships for garden pupils will be available on and after April 1, 1890, to be awarded by the director on the results of competitive examination.

A CONFERENCE OF CHRYSANTHEMUM GROWERS will be held at the Royal Aquarium, Westminster, on Wednesday next, in conjunction with the midwinter exhibition of the National Chrysanthemum Society. The conference will be held in the course of the afternoon, and the subjects for discussion include, "Are Chrysanthemums Wanted at Midwinter?" by Mr. J. Kipling, of Knebworth.

MRS. SURR, wife of Mr. Joseph Surr, late of Stamford Hill, near London, now of San Diego, has lately assisted at a horticultural convention in that city of the "far west." Mrs. Surr at one of the meetings described a district north of San Diego, where lands admirably adapted for profitable cultivation may now be secured for a few dollars per acre that in the near future are certain to command high money values. When resident at Stamford Hill, Mrs. Surr was an active worker in aid of progress in horticulture.

THE AMATEUR'S GREENHOUSE which Messrs. Foster and Pearson, of Beeston, Notts, are offering, realises a long cherished idea of our own, and many others doubtless, who have sighed for plant houses with moveable roofs, for the accommodation of such subjects as heaths, roses, fruit trees, and the like, full exposure of which at certain times would be of the greatest benefit. Moveable roofs, indeed, we have had of our own contriving, but we seem now to hear of them for the first time as a "trade article." We shall be interested in observing the working of the new construction.

CELEBRATION OF THE CENTENARY OF THE CHRYSANTHEMUM, 1890, is reported to be well forward in the programme of the National Chrysanthemum Society. It would be a grand step towards the success of the celebration were the society capable of commanding more suitable premises for its exhibitions and meetings than the Royal Aquarium. The R.H.S. is in no worse case with the Drill Hall, at Westminster, than the N.C.S. in its home near by. If horticulturists could pull together, a remedy for the grievance might be found, but that happy consummation does not appear to be near at hand just now.

PEASANT PROPRIETORS in the vicinity of Nice are reported to the Foreign Office by Mr. J. C. Harris, the British Consul, as prospering and progressing, the small farms of the Oise, from Pontoise to its junction with the Seine, being highly productive and commanding good markets. The subjects cultivated are such as are not generally looked for on small properties, at least in this country, comprising asparagus, kidney beans, tomatos, early vegetables and fruits, and other products that command high prices, and can be brought to perfection on small tracts of land. The peasant proprietors in the region number fully 67 per cent. of the total proprietors in a commune, and as the Alpine region is approached this proportion increases until around the higher mountains the whole of the land is owned by the peasants.

A SHARP FROST following upon the heels of Christmas has strikingly illustrated our remark to the effect that the "time for cold weather" had arrived. It is seasonable now, and should be endured with patience, but will have to be endured where there is none of that virtue. The lowest register we have seen near London occurred on Monday, thermometer 15 Fahr. At the time of penning this note there are no signs of change, but we are looking for a break, and for a sharper frost to follow. Fortunately nobody knows what is in store for us beyond the next forty hours or so, and for that brief space of time, what we are apt to regard as "knowledge" is mere expectation, founded on data that are quite capable of misleading us. The first move of the barometer downwards will probably be accompanied with a backing of the wind with mild, moist weather.

MESSRS. T. FLETCHER AND CO., patentees and manufacturers of gas-heating appliances, have forwarded a copy of their handy date-reminder, which may be called the letter-writer's friend. It occupies but a few inches of space on the wall, and requires a leaf to be removed daily, to inform us always of the day of the month and week, and, if need be, of the year also. As touching the last point, the force of habit is amusingly illustrated by the way many people have of dating their letters during the first month or so of the year with the figure of the year gone by, and thus with many the date will continue for some time to be 1889, for they will be slow to learn to write 1890. In itself this is but a trivial matter, but it must sometimes be of serious import when letters are required for legal and official purposes, and the year of a transaction is a matter of vital importance.

THE RIGHT OF PROPERTY IN TREES on the land of another is the subject of a paper by Mr. Hyde Clarke in the last issue of the *Journal of the Anthropological Institute*. The inquiry is founded on the existence of a curious custom in Asia Minor.

MR. J. T. D. LLEWELYN, OF PENLLERGARE, has a place in the list of persons on whom the Queen has conferred honours according to old-established rule on New Year's Day. This true friend of floriculture is included in the short list of new baronetcies conferred, and we congratulate him, in confidence that his attachment to floriculture cannot be diminished by titular honours of any kind.

ELECTION TO COUNCIL OF THE ROYAL HORTICULTURAL SOCIETY is a matter for the Fellows as provided by the bye-laws adopted in the year 1888, and first acted on at the annual meeting in 1889. It can no longer be said that the Council is self-elected: the requirements of the charter must be kept in view as a matter of course, but the method of procedure is such that under the regulations now prevailing the Fellows may, if they will, exercise free choice in filling up the vacancies that the charter decrees shall annually take place for the perpetual renewal of the managing body. The necessary forms are of the most simple nature, and the essence of the business is that persons it is proposed to place on the Council shall be formally nominated one month in advance.

FIRE FILLS A LARGE PLACE in the news of the past week. The loss of twenty-six lives of boys in the partial destruction of the Forest Gate District School gives tragic interest to the terrible fire that occurred there on New Year's Day. All except one of these were suffocated by smoke. We shall, perhaps, see in the full history how this dreadful calamity might have been averted, or at least have been kept within control sufficiently to allow of the escape of all who were endangered, but we seem never to learn the full range of possible precautions against such disasters. The fire at the Castle of Laeken will move the sympathies of many of our horticulturists, for the King of the Belgians was singularly free and generous in his invitations to representatives of British horticulture, and the splendours of the edifice and beauties of the grounds were matters of familiar knowledge to many.

A LESSON ON PRUNING is conveyed in unmistakeable terms in the admirable paper on "Plums," given in our issue for December 28. Here it is:—"The abundant crops produced by the plum and the energy required to produce the hard shells protecting the seed affect the vitality of the tree, if crops of fruit are frequently produced. It is not necessary to plant at any great distance; my own plantations are, as a rule, nine feet row from row, and are dwarf standards. The tree is impatient of pruning, and when fruit is produced in quantity it is hardly necessary to prune at all. I, however, suppress the gross shoots, which are occasionally produced apparently in sheer wantonness. These are dangerous, as they disturb the balance of the tree. All pruning should be done in summer or early autumn. In the severe winter of 1870, having nothing for some of my men to do, I set them to prune some of the lower branches of my trees, with the most disastrous results. Nearly every wound resulted in canker. It is a lesson which I have never forgotten."

FLOWERS WERE PROFUSELY EMPLOYED in connexion with the funeral of Mr. Robert Browning at Westminster Abbey on Tuesday last. The coffin was of Venetian design, and was embedded in flowers. On the top of the coffin were some exquisite wreaths, one of white immortelles, one of violets and lilies of the valley, and a massive cross of violets. An important feature of the service was the performance, as an anthem, from the setting of Dr. Bridge, of the following from the pen of Mrs. Browning:—

What would we give to our beloved?
The hero's heart to be unmoved,
The poet's star-tuned harp to sweep,
The patriot's voice to teach and rouse,
The monarch's crown to light the brows?—
"He giveth His beloved sleep."

O earth, so full of dreary noises!
O men, with wailing in your voices!
O delvèd gold, the wailers heap!
O strife, O curse, that o'er it fall!
God strikes a silence through you all,
And "giveth His beloved sleep."

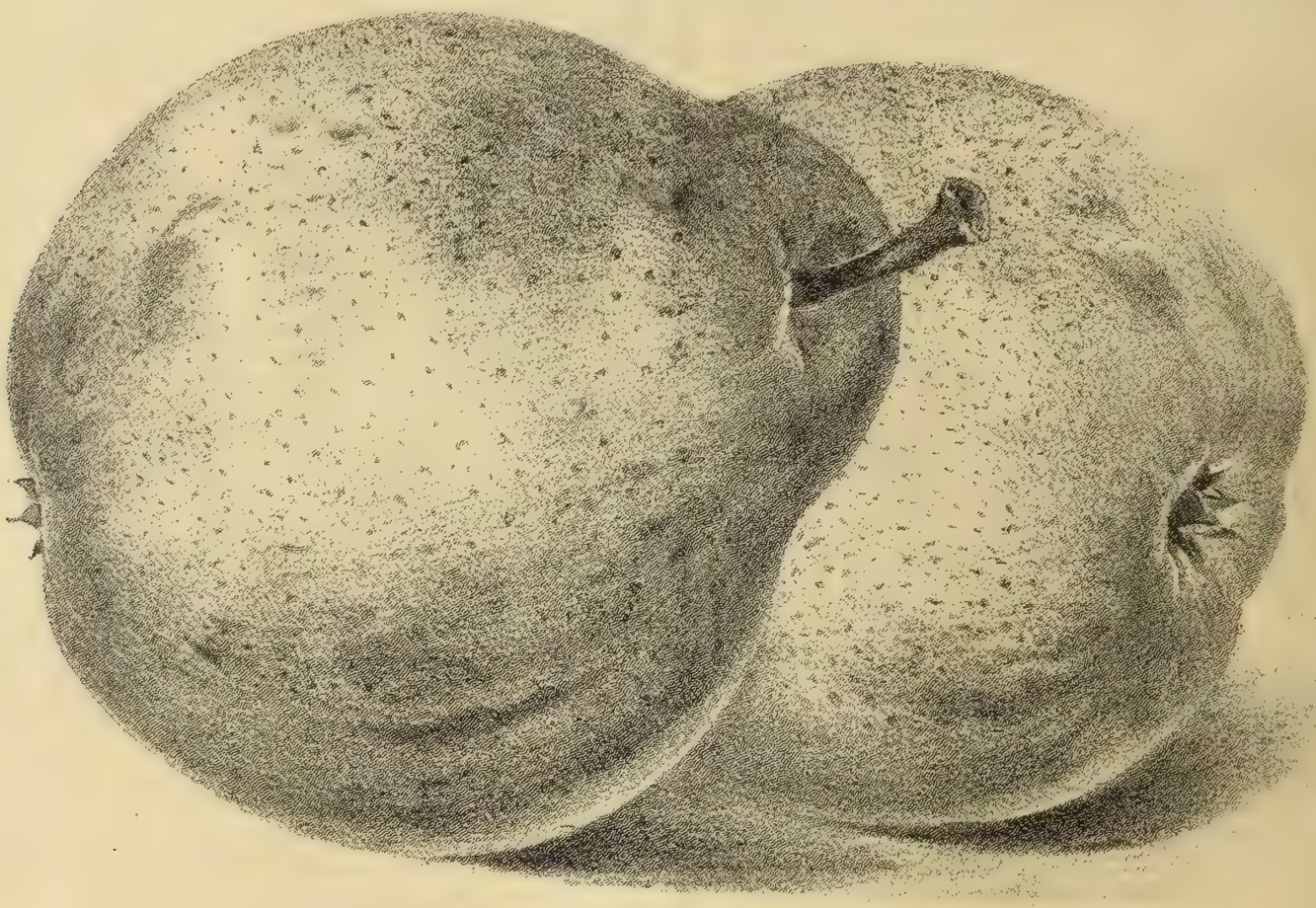
His dews drop mutely on the hill,
His cloud above it saileth still,
Though on its slopes men sow and reap:
More softly than the dew is shed,
Or cloud is floated overhead,
"He giveth His beloved sleep."

DO LATE-KEEPING APPLES FLOWER LATE?—We ask the question because some of our friends aver that they do, and we are inclined to doubt the truth of the declaration. Other friends say—and indeed so many that the statement is on its way to a place in the wisdom of the world—that late-flowering apples are the surest croppers. We are more than "inclined" to doubt that, because, as the result of observation, we have arrived at the conclusion that a fair proportion of the surest bearers flower early. Our excellent friend, Mr. Badger, in the *Midland Counties Herald*, started a formal inquiry into this matter a year ago, and we are curious to learn something of results. It may be that there are no results. Mr. Badger—inadvisedly, as we think—avowed his belief, in the first instance, in the prevalent doctrine of the direct relation of late-flowering to sure cropping, and a promoter of inquiries should always begin by concealing his own opinions in order to give the fullest freedom to such as might be disposed to give information, but may be timid—as many worthy people are—as to the spirit in which their communications may be received. It is a question of public importance, where is Mr. Badger now with his inquiry?

DESSERT PEAR BEURRE D'AMANLIS.

If the popularity of a fruit may be judged by the frequency of its appearing on our table to be named, this variety is well known and in general favour. It is certainly one of the best of autumn pears, and one more liable to variation in form and colour than pears generally. There is a variety with variegated leaves and fruit that occasionally makes an agreeable appearance on the table, but it is not greatly prized, and there is not much to be said in its favour as a decorative subject. However, it is proper to record that *Beurre d'Amanlis Panachee* agrees with the type in all particulars, save that the leaves and fruit are striped with yellow, the latter being occasionally prettily marked and worthy at least of momentary admiration.

There may be two varieties of Beurre d'Amanlis if continental records be followed; but as they are quite distinct, and the variety that is best entitled to the name is alone cultivated in this country, the question of their relationship is not of vital importance. Van Mons raised a pear that he named Wilhelmine, and this has sometimes been labelled with the name that is now before us. But Van Mons' variety is smaller, rounder, and ripens later than the pear before us, and there never was any fair excuse for their association—in fact, the supposed synonymiety may be reduced to a case of incorrect labelling.



DESSERT PEAR, *Beurré d'Amanlis*. From samples selected at the Apple and Pear Conference.

Beurre d'Amanlis is believed to be of French origin, and is reported by M. Prévost to have originated in Brittany, and to have been distributed so early as 1805. That it is an old pear may be inferred from its extensive cultivation, for even good things require time to become known and appreciated. As a garden fruit it is so productive, and in use for so brief a space of time, that it should never be largely planted unless for some special reason. As a market garden fruit it has considerable importance, and has acquired some fame as at once manageable and profitable.

The fruit is large, obovate or obtuse pyriform, rarely symmetrical. The skin when ripe is yellowish green with a reddish cheek, but never highly coloured. The eye is open with conspicuous segments as shown in the figure, and the stalk is slender, hard, and inserted in a narrow cavity.

The tree succeeds on either pear or quince stock, and is adapted for almost every variety of soil or situation in which pears of any kind may be grown with success. As a diffuse pyramid on the quince it is one of the most useful, being hardy, and a regular and abundant cropper. Its season is September to the end of October, and as it comes into competition with a number of first-rate varieties it is not prudent to plant it largely in any private garden.

Our figures are from samples selected at the Apple and Pear Conference, and admirably represent the proper typical characters.

A CONVERSION OF FRUIT TREES.

In the G. M. for August 11, 1888, appeared an article from the experienced pen of Mr. J. C. Clarke entitled "Pyramid Fruit Trees Run Wild," in which an account is given of certain fruit trees in the garden of Mr. Godding, of Taunton. The like of these trees may no doubt be found in many places, but for all that, they have a peculiar interest as examples of the triumph of common-sense in fruit culture, and as lessons on the advantage of allowing Nature to have something to do with the business of fruit production. Mr. Clarke has taken up the subject twice lately, and his paper published December 21, 1889, may be read with advantage by many who hold to the notion that the pruning of fruit trees is absolutely necessary to persuade them to produce fruit.

It happens that I have known Mr. Godding's trees, more or less, for about five-and-twenty years, and consequently can give some account of the stages they have passed through in attaining to their present state in which they combine a certain degree of ugliness with a most astonishing fertility. The ugliness is not the cause of the fertility but is the result solely of the sudden change of treatment to which the trees were subjected which converted them from barren beauties to the useful things they are. But it would be better perhaps to speak of them as "picturesque," but the reader may take choice of suitable adjectives with the aid of the figure that accompanies this note, or by seeing the trees themselves, for they adorn a nursery from which the thriving town of Taunton derives much of its garden furniture from year to year.

The trees now standing, and that are described in detail by Mr. Clarke at page 811 of the G. M. for 1889, are a portion only of a collection that adorned the Taunton garden of my much valued friend, Mr. J. B. Saunders. They were reported on in G. M. of June 1, 1867, and the report will show that the pinching system that was then in high favour, having been for many years persuasively advocated by the late Mr. Thomas Rivers, was not in high favour with the writer of the report, who takes occasion to remark that certain pear trees at Stoke Newington were fruitful in years when pear trees were severally unfruitful, and this without the aid of pinching and with a very moderate winter pruning.

The greater part of the pears planted by Mr. Saunders in his garden known as "The Laurels" were on the margins of the intersecting walks, where they had a dignified appearance and always gave promise of abundance of fruit, though often failing to fulfil the promise as is

the habit of pear trees. The greater part of them were handsome pyramids on the pear stock, worked low down and leafy to the ground line. They were allowed a certain freedom for a few years, and not proving fruitful—doubtless because needing time—they were subjected to systematic pinching. This did not have the result intended. They made more wood, became injuriously dense; in fact, acquired that close "full furnished" condition that pleases so many, and doubtless would please all, were it but justified by fruit production corresponding to the density of the wood, and the "bristling," as Mr. Rivers used to say, of the shoots with fruit spurs. The pinched trees usually flower freely, and thus annually renew their promise; but much more than that they appear incapable of accomplishing. At all events this was the case at Taunton. The years rolled, the trees increased in size, and many were as rich in leafage as gigantic camellias that had never lost a shoot, as we see camellias occasionally where they have been planted out from early times, and have never been starved in pots or tubs. They were not absolutely barren, but it is safe to say that they made no fair return for the ground they covered, and there was always hanging over them not less than to certain horticultural advisers, the question what is to be done to ensure a reasonable degree of fruitfulness?

Not a few of our readers will readily shape many possible answers. A considerable number of advisers would propose root pruning to check vigour; others would suggest manuring in order to promote vigour. And yet again there would not be wanting advisers who would say: "You only pinch them twice in the summer, you must pinch them three times, and give a final pruning to shorten any shoots that interfere with the contour before the end of July."

Mr. Saunders held an important office in the railway and telegraph service, and when the Government took over the telegraph service he retired on the laurels he had cultivated in his office, and quitted the other "laurels" he had cultivated for the adornment of his domestic life. The beautiful garden, of which the ground plan was published June 1, 1867, was in various ways cut up, and part of it became a nursery, under Mr. Godding, who had been for some time head gardener to Mr. Saunders. Now the gardener had a free hand; no longer having to fashion handsome pyramids and symmetrical bushes densely furnished and "bristling" with fruitless fruit spurs, he turned his



STANDARD FRUIT TREES, FORMED FROM PYRAMIDS IN THE NURSERY OF MR. GODDING, TAUNTON.

attention to the profitable management of as many of these trees as he could allow to remain consistently with the requirements of the general plant nursery it was his intention to form on the ground. It was his business now to effect the conversion of those trees from fops of the promenade to useful producers for the market.

The numbers, the varieties, and the dimensions of the trees are given in detail in Mr. Clarke's report, published December 21, 1889. It only remains to say how the conversion was effected. It was like the ancient way of converting nations to Mahommedanism or Christianity, or any other faith by what is called the "edge of the sword." In this case a common saw did much of the work. It is a vile instrument, that should never be seen in the fruit garden except upon extraordinary occasions. For cutting a gate post a saw answers admirably, but a man who touches a fruit tree with a saw should be able to give a good reason for the proceeding, or should be at once sawed into two parts sheer through the middle "as an encouragement to the others." Mr. Godding had excuse enough, for the trees were unprofitable occupants of the ground, and he had no such interest in the telegraph system that he could afford to pinch them, and prune them, and mulch them, and occasionally syringe them to make the leaves shine, and at the end of the season profess content with a few pecks of fruit.

The trees were converted into standards by the rude process of cutting off the lower boughs and so making clean stems of six to eight feet, having leave to go as much higher as they please, but not to "sprout a shady boon" in the way of head cover for the traffic of the place. When the stems were thus cleared, a little thinning of the heads was done to let in light and air to ensure complete maturity for the top growth, for it is only on well-matured wood that fruit is ever produced. Soft wood will produce flowers, and at that the pleasing business stops.

One result of the severe surgery that was practised is that the trees are not now models of symmetry. Their stems are marked by large scars, where big boughs have been taken from them, but from the time of the operation, when they presented a somewhat sorry appearance, they have greatly improved by the formation of new wood well placed, and this is produced in a quite moderate degree, and is shorter and harder than in the pinching days, for then if a shoot escaped it ran out and became a fishing rod, but now the free growth that was fatal to production is rendered impossible by the simple fact that the trees produce so much fruit that they scarcely make a leaf more than they require. They still occupy the borders next the walks, the shade they make is cast upon the walks; the quarters are cropped close up to their stems, apparently without any detriment to the fruit crop, and very much of the crop may be gathered from the walks without putting a foot amongst the plants in the borders. The picture represents the trees as seen by the writer of this in the autumn of 1888. It has been reserved until now to allow of further observations, and the story may be completed by the statement that in a long run of years those trees have produced crops annually, not in the way of a "sprinkling" of fruit, but prodigious quantities that weigh the boughs down, so that as the fruit ripens they may be described as "weeping" trees, and it is necessary in many instances to provide them with artificial support. The one secret of the matter is that from the time they were converted they have been left alone, practically neither knife nor saw has touched them. That a trifle of dead wood may now and then be cut out needs not to be explained or defended; that is not pruning: it is but a part of the business of keeping trees reasonably clean and in proper order for their useful work.

It is not uncommon for amateurs of fruit culture to describe their pinched trees as reasonably fruitful and altogether satisfactory. It would be a pity to spoil the pleasure of one who finds delight in pinching fruit trees, and is satisfied with results. But the truth must be told that many amateurs who have practised in the fruit garden for many years are still in ignorance as to what is meant by a crop of fruit. As a rule, a Crop of Fruit is only to be seen on land that is devoted to market gardening. In old-fashioned gardens we see crops of fruit on trees that have their own way, "gaily to burgeon and broadly to grow," but in the garden where model pyramids and bushes are kept in perfect order by pinching and pruning a crop in the proper sense of the word, is never produced, and therefore is unknown. To many who ask, Shall I root prune? Shall I dig in manure? Shall I pinch more frequently? The best answer might be, Do nothing, and Nature will take up your case, and all will be right.

The report published 1867 will show that G. M. was then questioning the pinching process. There were some good collections of hardy fruits in the experimental gardens at Stoke Newington at that time under various systems of treatment, and the stocks were on trial as well as the varieties. One little lot of 400 trees that had been brought to perfection for a start in life as models was sold to Mr. Brigden, of London Bridge, who wanted them for a customer in Surrey, and report says that they were emancipated from the pruning system and proved a fruitful lot of trees. In 1869 a selection was made of a number of perfect pyramids for the gardens that were then being formed at Hermitage, and these were favoured with a sheltered garden, where the conditions appeared complete for their well doing. But another step was taken, the description of which demands a paragraph.

A piece of grass paddock of about an acre was laid out as a fruit garden of a special kind. It was exposed to all the winds, and especially the east wind as it careers in spring across the marshes of the Lea and comes into the Hermitage district, like needles and pins. The soil was a heavy damp clay, but the planting was prepared for by storing a lot of turfy top spit, making a capital root-hold for the trees. Mr. T. S. Ware was at that time clearing out some fruit quarters, and was persuaded to reserve for this particular plantation a certain number of the best kind of apples, pears, and plums, the trees to be the ugliest, that customers had rejected, such as we may generally find a few of when the quarters are finally cleared out and the ground is to be trenched up for another purpose. The trees were on various stocks, no rule being observed in that respect, and they were mostly pyramids and bushes, but of several kinds standards only were obtained. They were well planted and securely staked, and that is about all that was done for them.

They made a good growth in their new quarters, and year by year improved in proportions, so that the ugly trees were in the way to become handsome. But "handsome is that handsome does," and with greater speed than a persistent pruner might be willing to believe, these trees became fruitful, and more and more fruitful, and surprisingly fruitful, and the east wind over the melancholy marshes appeared to have little power to diminish their fruitfulness. From these trees were selected the examples employed to illustrate the lecture delivered at the Society of Arts on "The Cultivation of Hardy Fruits," the text of which will be found in the GARDENERS' MAGAZINE for February 12, 1876.

It will be remembered that the proposals then made were much discussed, not always in the best taste, and in some instances with acerbity aided by misrepresentation. A few abusive persons made themselves too ridiculous to damage any but themselves, and those who treated the matter reasonably as one that might have two sides were soon found to be favourable to a reconsideration of the whole subject of the pruning and general management of fruit trees. A quiet, but general and most extensive revolution has followed upon the Society of Arts lecture, and the produce of hardy fruits has been immensely increased through the general acceptance of the idea that nature can manage at least some part of the business with better effect for us than any of the arts of man. Very many plantations that were profitless and vexatious have become profitable and a source of pleasure as the result of complete abandonment, or considerable modification of the practice of pruning. Many who denounced the revolutionary proposals were amongst the earliest to adopt them, and, in a few instances, were in haste to claim them as their own, on the old principle of running with the hare at the start and with the hounds at the finish. But bygones may be bygones; human nature must be taken for what it is; and possibly the mean, the false, the pretentious, and the pedantic have their uses in the world, and they certainly teach us lessons that tend to good behaviour.

While penning these observations, many illustrations of the need that existed for reform in the practices of the fruit garden have passed across the field. The beautiful collections of "perfect" pyramid trees we have seen that were brought into form and so maintained by the practice of pinching, should have read to their patient owners the lessons we have taken from them, that this artistic treatment of leaf-growth is fatal to fruit production. A series of checks during summer growth tend to weaken, not to strengthen; every check above ground is immediately followed by a check of root action, and at the very time the trees should accumulate material for the production of fruit their energies are wasted in the successive renewals of leaf growth, which in the first instance is always a tax on the resources of the tree, for leaves do not feed or pay for the capital they borrow to begin life upon until they have made some progress towards maturity. The practice requires the trees to recover from a succession of shocks, and by the time it has accomplished this the season is gone, and the roots are still active when they ought to be at rest, and beneficial maturation of the growth is impossible. With long rod pruning the case is different. This may or may not be desirable, but it allows the leaves to do their work, for the knife does not suppress growth in progress; it does but remove a portion considered superfluous of that which has been completed, and the injury to the tree is reduced to the least possible. The question may still be a proper one if any kind of pruning is required or desirable, but as between summer pinching and autumn and winter pruning, there is so wide a difference that the two questions demand at some points separate consideration. One thing is certain as respects the proposals made in 1876; that many persons acted on them at once, and the results are such, that they at least, will be in no haste to allow their trees to see the knife again.

S. H.

LEAF CULTURE IN FERTILIZING MOSS.

WE have now the pleasure of sending you leaves of chrysanthemums rooted in our fertilizing moss. These leaves, as you will observe, are taken without a bud, and they have already formed a callus and emitted roots. They were put in on November 15, and are now getting well away with roots. No doubt the development of suckers will be slow, and time will be lost, in comparison with the quicker method of taking leaves with a dormant bud to commence with. The system, however, has much to commend it where rapid multiplication of stock is an object. The leaves sent are from a batch of 27, all taken from one shoot! There is no doubt the moss has a great deal to do with this quick and certain development of roots. It is so much more retentive of moisture, and remains at a more even condition than earth alone, or earth and sand, &c. There is consequently much less watering required; and the leaves we send you have not had water applied to them, except a slight dewing overhead, since they were put in. We are following up your suggestion with dormant rose buds, and have a prospect of success. R. BEALE AND CO.

[Sample sent consists of a small pot with three leaves, which are well rooted from the base of the stalk, all being in perfect health. There is at present no sign of the formation of a bud.—ED.]

Garden and Villa Farm.

PLANTS IN FLOWER.

ORCHIDS IN BLOOM, include Angræcum eburneum, A. eburneum virens. Barkeria elegans, Brassavola Digbyana, Burlingtonia candida, B. venusta, Arpophyllum spicatum, Calanthe vestita rubro oculata, C. vestita luteo oculata Cattleya Trianæ, Cœlogyne cristata, C. speciosa, Cymbidium giganteum C. Mastersi, Cypripedium Sedeni, C. insigne Maulei, Dendrobium Ainsworthi, D. superbiens, Limatodes rosea, L. rosea superba.

CONSERVATORY AND GREENHOUSE.

AZALEAS should have close attention as we have little else available for keeping the conservatory gay. Those coming into bloom must be kept at a regular temperature, and have plenty of water. Beware of pushing them on too rapidly, and place none in the forcing pit until they have been first gently stimulated by the warmth of an intermediate house. Plants in flower will require a night temperature of 50 deg., to rise to 60 deg. and 65 deg. by day. Those for late blooming should have a temperature not lower than 40 deg. by night, and as much ventilation as the weather permits.

CLIMBERS may now have special attention to reduce their dimensions. Lay in wood for next summer's bloom, and clear the walls and trellises.

GREENHOUSE to be kept as airy as possible without giving a chill to any delicate subjects. Clean glass is a great help now to the well-doing of the plants. Hard-wooded plants must never be subjected to sudden extremes of temperature ; soft-wooded plants bear heat much better, but a great heat is never required, and is always injurious. Do not allow any plants to become dust dry at the root ; even during frosty weather give water when required, and maintain a genial temperature of 50 deg. to 60 deg. by day, and 40 deg. by night.

ERICAS to be kept cool and airy, and fire-heat used only when necessary to keep out frost.

FUCHSIAS for early bloom and exhibition will now require a little extra attention. Shake them out of their pots and repot in turfy loam, leafmould, and peat, in as small pots as possible, but their roots are not to be hacked about in order to get them into very small pots. When potted, put them in a moist heat of 65 deg., and give them a shift as soon as they have filled their pots with roots.

PELARGONIUMS.—Shift specimens into their blooming pots, give a slight rise in the temperature, and keep near the glass.

CAMELLIAS require careful management at this season of the year, and a little pains now bestowed in disbudding large or small plants that are heavily set with buds, will meet with an ample return. The water supply must be well looked after, more particularly when the fires are burning briskly to keep out frost.

ORCHID HOUSES AND STOVE.

ORCHID HOUSES require at this season of the year the frequent attention of those in charge, to ensure the temperatures and atmospheric conditions being favourable to the health of the occupants. The flowers of all the kinds quickly become spotted and unsightly when sprinkled with water or exposed to drip at any season of the year, but especially during the winter. Therefore, plants in bloom should be placed where they will not be exposed to drip, and in watering proper care must be exercised to prevent their being splashed.

STOVE will now be gay with poinsettias, euphorbias, bouvardias, and other things, provided steps were taken in the course of the spring and summer to secure a good stock. Hard-wooded plants at rest must not be allowed to become dry at the roots, but they must receive no more moisture than is necessary for maintaining them in health. They should also occupy a light position in the house. For early decorations a few achimenes, tuberous-rooted begonias, caladiums, and gloxinias should be potted, but it is yet too early for potting the main stock. A moderate amount of moisture and a brisk bottom-heat are the most conducive to their starting quickly into growth.

FORCING AND ORCHARD HOUSES.

ORCHARD HOUSE should be kept shut during frosty weather. During bright weather open the ventilators. The object of the cultivator should be to keep the trees safe and still. Mild sunny weather will start them prematurely into growth if the house is not well ventilated.

MELONS AND CUCUMBERS in the forcing pit to be kept carefully trained about nine inches from the glass, to be regularly stopped, and at a temperature of 70 deg. by day and 60 deg by night. Sow now for plants to bed out in frames and pits, and for succession in the early forcing house.

PEACHES in houses started some time since require much care ; the air of the house to be rather drier as the trees come into bloom ; and to prevent red spider a little vapour to be caused by sprinkling the paths every evening. The pollen is usually active during the midday hours, and it is then that a dry air is most important, and as much ventilation should be admitted as the state of the weather will allow.

STRAWBERRIES in the forcing house will swell their fruit to a larger size if assisted with liquid manure of a moderate degree of strength about twice a week. If plunged in a bed of warm leaves they will require very little watering at present.

FLOWER GARDEN AND PLEASURE GROUNDS.

BEDDING PLANTS must now be thought of, quantities of the several kinds determined, and hotbeds made up for starting old plants may be put into a steady heat at once to furnish young shoots for propagating. But unless the stock plants are comparatively limited in number they should not be started until the beginning of next month, as the young plants will then have the advantage of a greater amount of daylight and consequently commence to make their growth under more favourable conditions.

CHRISTMAS ROSES are now obtaining much attention, and deservedly so, and they are so valuable for flowering at this season of the year that it is to be hoped they will become even more popular. The earliest variety, Helleborus niger maximus commences to bloom in October and the other varieties maintain a succession of flowers. They require a deep, moist, loamy soil, and a somewhat shaded position, but do not thrive in deep shade. The plants should never be disturbed except for a special reason ; for old clumps that have stood for years untouched flower more freely than those that have been only one or two seasons planted. H. niger angustifolius, H. niger caucasicus, and H. niger major are also desirable being free in blooming and producing flowers of large size.

ROSES to bloom early should be pruned now, but the general collection must not be pruned for a couple of months at least.

FRUIT GARDEN AND ORCHARD.

CURRANT AND GOOSEBERRY BUSHES should be pruned at once, and fresh plantations made where necessary. Thin out all the old and decayed branches, leaving young healthy shoots in their places. Cut away the young growths that cross each other, and keep the centre of the trees open to admit light and air. Gooseberry trees to be gathered from early should have but little pruning.

FRUIT TREES on walls not yet pruned should have attention without further delay, and the work of pruning, dressing, and nailing be pushed on as rapidly as the weather, and consideration for other matters will permit. Save any scions wanted for grafting by heeling them in at the foot of the tree they are taken from. They will take all the better for being cut some time before grafting. Fruit quarters that have been neglected hitherto must be dressed, cleaned, trained, and put in order at once.

RASPBERRIES.—Where required, fresh plantations of this useful fruit can be made now. The ground should be either very deeply dug or trenched—trenching is the best—and a moderate dressing of manure should be applied ; heavy dressings of manure are not required, for that tends to promote a gross growth with but little fruit. Do not disturb the soil of a thriving plantation of raspberries, but top dress with good manure, and during the summer keep down weeds with the hoe.

KITCHEN GARDEN AND FRAME GROUND.

CAULIFLOWERS frequently die off now unless kept dry ; a little peat-dust will be useful to sprinkle amongst them where they are suffering from damp. Dry sand and wood ashes may be used for the same object. If the plants are crowded, they will only kill each other ; so thin at once if necessary. Give plenty of air in mild weather.

DRAINING is in some cases necessary in the kitchen garden, and it may therefore be useful to state that this is a good time to make and repair drains. Drains four feet deep and twenty feet apart will serve almost anywhere to carry off excess of rainfall quickly ; and the best drain-tiles are those made tunnel-fashion—that is, a half pipe and flat sole. The drains should be cut by a man skilled in earth work, to make sure of a hard bottom and a regular fall to the outlet. When the pipes are laid, place six inches of hard rubbish, such as brick-bats. broken crocks, tiles, chalk, &c., over them, and fill in.

SOW in heat tomatos, capsicums, and egg plants for early crops.

VILLA FARM.

SOME of the most important work at the present moment on the villa farm is the preparation of manure to be turned into money by the aid of sunshine further on. But it must be remembered that home-made manures are for the most part bulky, and entail a lot of cartage to carry them out ; therefore in a place where horse labour is costly it will be well to consider in good time the question of home-made *versus* purchased manures. As a rule the home-made stuff costs nothing at first hand, and that is a great point in its favour. Not unseldom it can be sold at a good profit for gardening purposes, but whatever its ultimate destiny this may be said with safety, that waste of manurial matters should never be allowed.

THE occupants of the poultry yard will require careful attention at this season of the year, more particularly when they cannot have the run of the villa farm. It may perhaps be well to remind poultry keepers that in keeping birds in enclosed yards it is needful to provide a rather roomy house, and a yard as spacious as circumstances will admit, for it is most difficult to maintain them in a really satisfactory condition for any length of time if they have not sufficient room for roosting at night, or enough space for exercise during the day. It is not the less necessary to select a light and open situation for the yard, and it should, if practicable, face the south, and the house should have a water-tight roof and a dry floor. The floor of the yard must also be quite dry, and a few heaps of ashes or coarse sand placed here and there for the birds to scratch and dust in. Hens that are laying should have special attention in the matter of feeding ; and during frosty weather, when the ground is frozen hard, and there is but little food to be obtained in the "runs," care must be taken that the whole stock has a sufficiency of suitable food. When kept on short supplies now the birds rapidly fall off in condition, and as they do not very quickly recover it is important that the food be sufficient.

FRUIT-GROWING.

THE following facts may show to your readers that it is not all the English fruit-grower's fault that so much fruit is imported into this country. I have lately found a delicious eating apple imported from Denmark. It is crisp, juicy, sugary, easily masticated, and a real enjoyment to eat. It being a stranger to me, I sent a specimen to a friend who is one of the largest fruit-growers in Kent, suggesting that he should get grafts and grow so delicious and marketable an apple. In reply he says :—"I think you will find the apple you sent me is Gravenstein, a Russian apple. I had several trees of it, and most orchards in B——— had some. They ripened rather earlier here than they do apparently in Denmark, and if left to fall from the tree they are perfection. But, as a market fruit, apples considerably finer than the specimen you sent me made about 3s. per bushel, and expenses 1s. 6d. to come off that left no margin, so they have gone out of cultivation. We must grow what will pay, and the Goff—a very inferior apple—will pay treble this."

Now the Denmark Gravensteins which I have bought cost at the rate of 10s. 8d. per bushel. Who can solve such a riddle? English consumers will not buy English-grown Gravensteins but at a price that will not pay to grow, but when the Danes send us the same apple, not so fine in quality, they buy it at three-and-a-half times the price they would pay their own countrymen for growing it !

Like anomalies have occurred in my own experience. I have sent the most delicious pears to the English markets—Louis Bonne, Marechal de la Cour, Beurre d'Amanlis, Winter Nelis—most carefully packed, and have had back the most miserable prices, say 1d. to 1½d. per pound. For two seasons that I have been unable to grow fruit I have not once been able to find a pear in the shops equal to any one of these, and for inferior French or Jersey-grown fruit I have been asked 4d. to 6d. a pound. It is certainly not all the English grower's fault that the best of English-grown fruit is not put more abundantly on the English market.—*Times*, December 27. T. W.

"ANY DOCTOR WILL TELL YOU" there is no better Cough Medicine than KEATING'S LOZENGES. One gives relief; if you suffer from cough try them but once; they *will* cure, and they *will not* injure your health; they contain only the purest and simplest drugs, skilfully combined. Sold everywhere in 13½d. tins.—[ADVT.]

Notes of Observation.

BORONIA MEGASTIGMA.

THERE are several of the Boronias that are very attractive greenhouse plants, and I regret to say they are too little known, as they are not difficult to manage, for indeed, they give far less trouble than many of the soft and tender subjects, which so many pride themselves on managing so well. But if they would only turn their attention to some of the many beautiful, but now neglected hard-wooded greenhouse plants, they need not fear but they will get their reward, for there are a good many people (who are not gardeners) that would welcome these for a change. The plant now before us is not an old one, but comparativly new, nor is it particularly striking in appearance. The colour of the flowers is, however, singular, being nearly black. They are also exceedingly fragrant, a single plant being sufficient when in flower to scent a whole house. This last character is, I think, sufficient to insure for it a welcome in every garden where sweet smelling flowers are in demand, and I should like to know where they are not? R. H. B.

ODONTOGLOSSUM CORDATUM.

I have this cool-house orchid now in flower. It is only a small plant, but it has one spike with six flowers upon it. There is not, of course, anything unusual in having this plant in bloom now, nor do I wish to claim that I have accomplished a feat. As the same time, looking at the treatment the plant has had, and its healthy and satisfactory condition, I am more than ever persuaded that there are many good orchids that a gentleman amateur might grow without providing a high temperature, and at the same time afford an agreeable pastime to manage them. The plant referred to was kept all last winter in a house where the temperature during the night was as low as 40 deg. very often, and sometimes during cold nights it was three or four degrees lower. But 40 deg. was the figure I aimed at for the temperature. During the summer the plant, with others of the same family, occupied a position on a bench in the same house, in which more than a hundredweight of tomatos were cut during the season. I mention this to show the kind of treatment the plant has had. As it has kept healthy and has flowered honourably, it is not difficult to understand that if it were grown with others under more favourable conditions it would do still better than it has with me. I do not advise anyone to follow my example in growing cool orchids in what I may call a rough and ready fashion. My object has been to test the capacity of a few of the members of the orchid family. So far as I have gone their powers of endurance of a little rough treatment is greater than I expected to find them. It is very clear to me that with a judicious selection of sorts many people would ensure a good deal of pleasure out of them without incurring more than a trifling expense in fuel over and above what an ordinary greenhouse costs. Besides this my experience shows that it is not necessary to devote a house specially to them. So many people think it necessary to do so that it deters them from making a beginning. J. C. CLARKE.

ASPARAGUS SCANDENS DEFLEXUS.

This is, without doubt, the most elegant of all the varieties of asparagus grown for the beauty of their light and pleasing appearance. The variety here referred to is not so strong a grower as the others. It is altogether more compact in its appearance. This being so, there is a degree of density in the bearing of a young plant that is wanting in plants of the same age of the others. We have so few plants that possess so much elegance as this one that I have much pleasure in directing the attention of such of your readers who may not know it to its value as a plant suitable for the dining-table, or for placing in vases where a choice subject is required. It is also a valuable plant to furnish sprays for ladies' use, the small side branches having a very light and feathery appearance. So far, I have only grown it in a stove temperature, therefore I cannot say if it will do as well with less warmth. J. M.

WHITE AGAPANTHUS.

Although this plant is not new, it is somewhat of a rarity, which is much to be regretted, as it is a capital companion plant to the old blue-flowered variety. The white variety is an exact counterpart of the other except in the colour of its flowers. The only place in which I have seen any quantity of the one under notice was in Messrs. Veitch's nursery at Exeter. Seeing that it blooms about the same time as the old one and thrives under the same conditions, it is very desirable that both should be grown together. I do not know a more easy plant to manage than the agapanthus. The plants generally flower under the most indifferent management, which is proof that if they had generous treatment they would do still better. As we often find them they are half-starved for the want of root room. Not unfrequently we see them pushing themselves upwards out of the pot, and sometimes they burst the pot in two or more parts as if they were determined to manage for themselves. To grow them well they require attention before things come to such a pass. When the plants are large and vigorous they should be repotted every year as soon as they go out of flower. They require either a larger pot, or else to have the roots considerably reduced so as to allow room in the pot for some fresh soil. If the plants are attended to at the season I suggest there will be plenty of time for them to recover from any disturbance of the roots, which will enable them to flower well the following year. During the winter these plants only want sufficient water to keep the soil moist, but as soon as they have filled the pots full of roots they require liberal supplies. From the time the flower spikes begin to rise until they go out of bloom they can hardly have too much root moisture. When in that condition manure water supplied regularly will be beneficial in increasing the strength of the plant, as well as the number of individual blossoms. I do not know any plant that flowers so regularly and so well as the agapanthus; but that is no reason why it should be so roughly treated, as is sometimes the case. Its easy management and noble bearing when in flower should ensure for it other more generous treatment, for there is certainly no half-hardy plant that better repays for the trouble. R. H. B.

ABELIA RUPESTRIS.

Referring to the note on this plant by "J. C. C.," p.770, Vol. XXXII., we have one here which has stood out at the foot of a south wall without any additional protection beside the wall for the last six years. Although it flowers freely every year I cannot say that it had made good progress, but that may be owing to the position it occupies being rather largely overshadowed with other plants, and perhaps the soil is not of the best kind for this plant. It is indeed a pretty subject, and after "J. C. C.'s" note I think it will be well to remove some of the present soil from the roots as it is rather inclined to being chalky and replace this with peat. E. M.

DESSERT APPLE CORNISH GILLIFLOWER.

This sort of apple is not well suited to grow in the form of a pyramid or bush tree unless its character is well understood. For the most part, it bears its fruit on or near the points of the previous season's growth. Therefore, to shorten back the young wood, as is generally done, on pyramid or bush trees is wrong; in fact, it is murder to prune it. All the last season's growth should be left their whole length, and then a full crop of fruit may be expected. This is not the only sort of apple that requires to be dealt with in the same way. Ecklinville is another that bears better crops when the young growth is left its whole length. No doubt there are other sorts that behave in the same way; at any rate, this note may be useful to some readers who may have pruned all sorts alike, yet have not noticed its effect on the varieties I have mentioned. It is the custom for people who prune without knowledge to be unable to account for their trees not bearing. Anyway the Cornish gilliflower should only be grown as a standard tree on stems three or four feet high, and instead of shortening back the branches they should be thinned out where they are too thick. J. C. C.

FREESIAS.

These are behaving better this year than last, every bulb, both large and small, has grown. All those large enough to flower promise to do so in a satisfactory manner. Last season not more than half of the finest roots grew, the others remaining dormant. My stock was not the only instance of such strange behaviour, and what is equally as noteworthy is the fact that in those cases where so many failed to grow last year all the bulbs have started well this. I cannot answer for the treatment given in the cases referred to. In my own the management while the bulbs were resting was altered. The summer preceding the last the pots containing the roots stood about in the greenhouse anywhere wherever there was room. But during the past summer I placed all the pots and pans which contained the bulbs on a shelf fully exposed to the sun, where they remained in the dry soil until early in September, when they were taken out and repotted. I am disposed to think that it was the baking the roots had that made the difference, perfect ripening causes them to start into growth the better for the treatment. J. C. C.

MEALY BUG ON VINES.

IN answer to "M.B." (p.824, Vol. XXXII), I beg to say that my experience of the use of paraffin for the destruction of mealy bug on vines does not warrant me in recommending it to your correspondent. Having given paraffin a thorough test about seven years ago, I found it entirely failed, that is for practical purposes, for to be effectual it was extremely dangerous. For further particulars I would refer your correspondent to an article on page 822 of the issue of the GARDENERS MAGAZINE for December 21, 1888, as perhaps it is hardly necessary to repeat what was then stated. The safest and simplest method of dealing with this pest, with which I am acquainted, and my experience does not call for me to look further, is immediately after washing the vines with tepid soapy water, to dress them with a mixture of gas-tar and clay, covering buds and every part of the vine, and taking especial care to work the mixture well into any holes and hollow places about the spurs with a painter's brush or sash tool.

The mixture should be prepared in the following manner: Take a spadeful of clay and partially dry it; then pass it through a very fine sieve, so as to pulverize it as much as possible. Then measure off ten potsful of the clay into a suitable vessel. For this purpose a glazed earthen pan answers well. To the ten measures of clay add one of the same size of gas-tar, and thoroughly stir together, adding a little boiling water at a time until the mixture is about the consistency of paint. It will then be ready for use.

It is of very little use in dealing with mealy-bug to simply dress the vines. The glass, woodwork, stages, rafters, and wires should be thoroughly cleaned, and for this work a little paraffin added to strong soapy water or Gishurst Compound may be used with advantage. A stiff brush should be employed for the purpose. After this the vines may be taken in hand, simply washing with soapy water or water with a little Gishurst in it, rinsing off all dirt by means of the syringe, and before the vines become dry add the mixture, as it covers so much better when applied to a damp surface. After the first coat has become dry, if the vines are looked over it may easily be seen where the mixture has not covered, and these places should be touched over.

The surface of the borders, if inside, should be next attended to, removing the loose soil and wheeling it away, and supplying its place with some new compost. Care should also be taken that the plants, if any, before setting back in the house are thoroughly clean. Moreover floors should be cleaned and walls whitewashed.

Clarendon Park. C. WARDEN.

Exhibitions and Meetings.

THE GARDENER'S ORPHAN FUND.

THE usual monthly meeting of the committee took place at the Caledonian Hotel, Adelphi, W.C., on the 27th., Mr. George Deal in the chair. The minutes of the last meeting having been read the Hon. Sec. Mr. A. F. Barron, produced a communication from Mr. W. Richards, in reply to a letter of condolence signed by the members of the committee, in which Mr. Richards returned his grateful thanks for the expressions of good will and sympathy conveyed to him.

Among the sums of money announced were the following : from Mr. G. W. Cummins, the Grange Gardens, Wallington, on the occasion of throwing open the chrysanthemums to public view, collecting box, £1 19s. : Croydon Chrysanthemum Society, box, £1 1s. ; Isle of Thanet Chrysanthemum Society, per Mr. Miller, secretary, 13s. 2d. ; Mr. Chapman, gardener to H. W. Robinson Esq. Romford, public admitted to see chrysanthemums, box, 13s. ; Mitcham Chrysanthemum Society, per Mr. C. Gibson, Morden Park Gardens, 9s. ; Sevenoaks Gardeners' Mutual Improvement Society, per Mr. Staring, donation £1 ; Mr. Deverill, Seedsman, Banbury, box in the office, £3. ; Mr. R. Scott, Bradfield, York, public admission to see chrysanthemums, £4 0s. 2d. ; The Young Gardeners, Stanmore, fees paid at Botany class conducted by Mr. J. Odell, gratuitously, £3 ; Ancient Society of York Florists, floral service in one of the churches, and sale of flowers at Chrysanthemum Show, per Mr. J. Lazenby, £10 ; Ealing Gardeners' Mutual Improvement Society, proceeds of concert, £20 2s. per Mr. E. Chadwick, secretary. With this amount came a request that this sum be divided into four life subscriptions of £5 each, to be given to Messrs, E. Chadwick, G. Cannon, E. Fountain, and A. Wright. This request was acceded to, and a hearty vote of thanks was passed to the foregoing societies and donors.

A letter was read from Mr. Gleeson, Clumber Gardens, informing the committee that the net result of the recent concert at Worksop, aided by some private subscriptions amounted to £56, and that it was the intention of the promoters of the concert to make the sum up to £60, so as to be able to place a child from that neighbourhood upon the fund for the period of six years in accordance with the rule providing for this being done. A communication was received from Mr. Jas. Brown, The Gardens, Great Doods, informing the committee that the sum of £100 had been obtained at the recent exhibition of the Reigate Chrysanthemum Society, and that it was the intention of the committee to present £50, to the Gardeners' Orphan Fund, and a similar amount to the Gardeners' Royal Benevolent Institution. The Hon. Secretary reported that the proprietor of the Theatre Royal, Covent Garden, had arranged a benefit performance in aid of the Fund, to continue from Feb. 3rd to Feb. 14th, tickets being provided admitting either to the morning or evening performance on any of the above inclusive dates. A cheque for the children's quarterly allowance, amounting to £61 15s. was ordered to be drawn. A cordial vote of thanks was given to the Chairman for presiding.

RICHMOND HORTICULTURAL SOCIETY.

At the annual meeting of this Society held at the Greyhound Hotel, Sir J. Whittaker Ellis, Bart., M.P., in the chair, the report submitted stated that the society is in a prosperous condition, and the experiment of a spring show last year would justify the committee in repeating it in March next. The summer show was well sustained, the entries for roses exceeding all previous years and it being generally agreed that the show was the best yet held by the society. What follows is perhaps yet more interesting, for the report says—"The committee note with pleasure the ocntinued interest which the ladies of Richmond and district take in the society, as demonstrated by the exceptionally large number of entries made for table decorations and bouquets. The committee tenders its best thanks to the subscribers and donors of special prizes for the support given to the society during the year, and would urge upon all the necessity for a continuance of the pecuniary support in order that the society may be maintained in the highly satisfactory position it now occupies among the horticultural institutions of the country. The committee also begs to offer an expression of its thanks to the honorary auditor (Arthur Cooper, Esq.), and to the honorary secretary (J. H. Ford, Esq.), for their gratuitous and valuable services." The accounts were satisfactory, and show a balance in hand.

On the completion of the formal business, the Chairman, on behalf of the society, presented to Mr. Gribble, the late assistant secretary, an illuminated address setting forth the appreciation by the society of his many services and expressive of the esteem and regard in which he is held by the committee and other members of the society. To this Mr Gribble made a suitable response, and the usual vote of thanks to the Chairman closed the proceedings.

EGGS AND FRUIT.—It is long since that the experts discovered that a hen's egg contains more albuminoids but rather less fat that an equal weight of butcher's meat. Also, that a pound of the mixed yolks and whites of eggs contains more albuminoids but rather less fat than an equal weight of butcher's meat. Also, that a pound of the mixed yolks and whites of eggs can produce fully two ounces of the dry nitrogenous substance of muscle or flesh. But, according to the *Chemical Trade Journal*, Dr. Fresenius now carries the comparison further. He shows that an average egg contains as much alimentary matter as 1¼ lb. of cherries or grapes, 1½ lb. of apples, 2 lb. of gooseberries, and 4 lb. of pears respectively. Fresenius's comparison of the egg with divers fruits, as above noted, is not a bit more interesting than his comparison of the potato with certain familiar fruits, as a nutriment. He makes it known, as the result of his researches, that 100 lb. of potatos are, in point of nutritiousness, equal in value to 114 lb. of grapes, 127 lb. of apples, 192 lb. of pears, and 327 lb. of plums. From this it will be seen that the potato has it by a long way. An average hen's egg before being boiled (it loses weight because it loses water in boiling) may be taken at 1¾ oz., an egg weighing 2¼ oz. being very large. The fact brings into relief the full significance of the foregoing figures — the contrast between 1¾ oz. of egg-stuff and 32 oz. of pears. Fresenius's comparison, of course, has to do only with the mixed white and yolk. But how great is the difference between the white and yolk as nutritious articles, is to be learned from the following :—"One pound of white of egg can set free force equal to no more than 357 tons raised 1 ft. high, and can enable a man to perform external work equal only to 71 tons raised 1 ft. high ; but 1 lb. of yolk of egg can set free force equal to 2,051 tons raised 1 ft. high, and could enable a man to perform external work equal to the raising of 410 tons 1 ft. high."

Replies to Queries.

Poinsettias.—J. B. R.: The variety known as Poinsettia pulcherrima major differs from the type in producing much larger bracts and in flowering much earlier. It is about a month earlier, and is therefore of much value for decorations during November and the early part of December. The bracts are hardly so bright in colour as those of the specific form, but they are by no means wanting in effectiveness. The major variety is decidedly the best for exhibitions held during the chrysanthemum season.

Books.—V : For the labels you have to write you had better have the *Garden Oracle* list of chrysanthemums, as they are all there in proper spelling. For plants generally *Johnson's Gardeners' Dictionary*, will answer pretty well, but *Sweet's Hortus*, and *Don's Hortus*, may be consulted for subjects not in Johnson. Mr. Hibberd's book on the *Watercress*, may be obtained from Mr. Allen price 2s. 6d. The *Gardeners' Magazine* volumes are published annually price 10s. 6d.

Saving Seed of Primulas.—F. B. C.: It is not very probable that you will obtain much seed from primulas that are now in full bloom because of the difficulty in ensuring the fertilization of the flowers. It will be necessary to apply the pollen with a small brush to the stigma of each flower, and a dry buoyant atmosphere should be maintained. The best crops of seed are obtained from plants of moderate size, that flower from the middle of February to the end of March, as the conditions are then more favourable both for the fertilization of the flowers and ripening of the seeds.

Forcing Chicory.—M. A. : We have no doubt that your predecessor grows the chicory for the supply of salading during the winter, snd we would suggest that you utilise the roots for that purpose. The roots should be taken up during open weather and laid in close together on a border where they can be readily protected with a little loose litter. From the border they can be taken at intervals to the mushroom house until the stock is exhausted. You can pack the roots rather close together in boxes just deep enough for them to be placed upright or they can be placed at the end of one of beds. If you have no mushroom house, put them in a box from two feet to thirty inches in depth, take the box to a structure in which a temperature exceeding 50 deg. is maintained, and cover the box with some material that will exclude the light, as, unless well blanched, the leaves will be worthless for the salad bowl. The leaves should be cut when from six to eight inches in length, care being taken to avoid injury to the partly developed leaves in the centre of the crown.

Plums.—G. S. : The paper by Mr. Rivers will probably give you all the information you require. In selecting varieties to grow for market, much must depend upon your conveniences and the kind of market you command. Speaking generally, the most servicable plums for a market grower are, Victoria, Belgian Purple, Early Rivers, and Green Gage. For early supplies say July Gage, Early Rivers, Early Orleans, and Early Favourite. Early Blue, scarcely known, except to amateur fruitist is a fine thing for profit where it thrives, and is well adapted for gardens near London, to follow Victoria Late Green Gage, Late Rivers, Pond's Seedling, and Farleigh Damson. One of the most useful plums for market purposes is Poupart's Purple Gage, which like the Early Blue is comparatively unknown. We cannot give you the names of the plums you refer to : with a proper description before us we might be able to do so, but when we hear only of "a small dark plum" the terms are too vague for serious consideration.

Epiphyllums.—R. S. : The epiphyllums are evidently in an unsatisfactory state at the roots, and should have attention with but little delay. As there is no probability of their flowering this season your best course will be to withhold water for four or five weeks, and keep them at the coolest end of the plant stove. At the end of this period turn them out of the pots, reduce the ball by one-half or two-thirds, and return to pots one or two sizes larger than those now occupied, and place them where they will have the assistance of a brisk temperature and a moderate degree of atmospheric humidity, a newly-planted cucumber house being admirably adapted to their requirements. In repotting epiphyllums it is essential to provide an efficient drainage, and a mixture consisting of peat and turfy loam (three parts each), and leaf-mould, old cow manure, and sharp silver sand (one part each) should be employed. A moderate degree of moisture in the soil will suffice until new growth commences, when the supplies must be increased. It is not necessary to repot epiphyllums, and in most cases it will suffice to shift them every second year. To ensure an abundant production of flowers they require distinct seasons of growth and rest. Each year as they go out of bloom they should be placed at the warmest corner of the stove, where they can remain until they have completed the season's growth. On the growth being completed gradually reduce the supply of water, and remove to a sunny position in the greenhouse, and keep the soil rather dry. From the greenhouse they can be removed to the stove, according to the time they are required in bloom ; but, generally speaking, the first batch should be started at the end of September, and the remainder of the stock about a month later. The best time for repotting is immediately they go out of bloom, and to avoid the use of excessively large pots reduce the ball by about two inches at each shift. An occasional supply of liquid manure during the growing season will be highly beneficial, more particularly in the years in which they have not received a shift.

TRADE CATALOGUES.

J. CHEAL AND SONS, CRAWLEY, SUSSEX.—*Vegetable and Flower Seeds.*

NATIONAL ARBORETUMS, ZOSCHEN, BY MERSEBURG.—*Trees and Shrubs.* (Weigela became Diervilla, and now it has "advanced" to Calyptrostigma) *Supplement* to the foregoing (*Nachtrag*) containing ornamental trees and fruits (*Laubgeholze und Obstgeholze*).

CH. LORENZ, ERFURT, GERMANY —*Illustrated Catalogue for Owners of Gardens and Amateurs.*

JOHN LAING AND SONS, FOREST HILL, LONDON, S.E.—*Seeds, Novelties, Begonias, &c.*

WEBB AND SONS, WORDSLEY, STOURBRIDGE.—*Vegetable and Flower Seeds, Potatos, Bulbs, &c.*

PAUL KLINCKSIECK, 52, RUE DES ECOLES, PARIS.—*Botanical Books, Periodicals, &c.*

DICKSONS (LIMITED), CHESTER, *Vegetable and Flower Seeds, Roots, &c.*

H. CANNELL AND SONS, SWANLEY, KENT, *Vegetable and Flower Seeds—Chrysanthemums.*

J. C. WHEELER AND SONS, GLOUCESTER.—*Little Book or short select Seed List.*

WILLIAM PAUL AND SON, WALTHAM CROSS, HERTS.—*Seeds and Garden Sundries.*

HARRISON AND SONS, LEICESTER.—*Seeds for* 1890.

W. E. BOYCE, ARCHWAY ROAD, HIGHGATE, LONDON, N.—*Chrysanthemums.*

COOPER, TABER, AND CO. (LIMITED), 90, Southwark Street, London, S.E., *Wholesale Seed Catalogue.*

H. AND F. SHARPE, WISBECH, CAMBRIDGESHIRE, *Wholesale Catalogue of Seeds.*

STUART AND MEIN, KELSO, SCOTLAND, *Amateurs' Gardening Guide.*

J. R. PEARSON AND SONS, 2, EXCHANGE ROW, NOTTINGHAM, *Seed List.*

DOBBIE AND CO., ROTHESAY, SCOTLAND, *Catalogue and Competitors' Guide.*

DICKSON AND ROBINSON, 12, OLD MILL GATE, MANCHESTER, *Seed Catalogue*, 1890.

CHARLES SHARPE AND CO., SLEAFORD, *Garden and Farm Seeds.*

FOSTER AND PEARSON, BEESTON, NOTTS, *Description of Amateur's Greenhouse.*

B. S. WILLIAMS AND SON, VICTORIA AND PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N., *Flower, Vegetable, and Agricultural Seeds.*

Obituary.

RECENTLY, at St. Albans, Dr. OSWELL LIVINGSTONE, the last surviving son of Dr. Livingstone. He was named after the Mr. Oswell who was the companion of the great traveller on the journey that resulted in the discovery of Lake Ngami. His age was 45 years.

RECENTLY, at Beaumont, Adelaide, Major PETER EGERTON WARBURTON, C.M.G., a veteran explorer, whose name is intimately associated with the history of Central Australia. His principal and most recent exploration was that undertaken in 1873, when he succeeded in crossing the Continent from a point on the overland telegraphic line to the De Grey River, in Western Australia, passing the terrible tract of country known as the Sandy Desert. His age was 76 years.

ON the 30th of December, Colonel Sir HENRY YULE, R.E., C.E., K.C.S.I., the geographical expert and editor of the "Travels of Marco Polo." No man in our time, or perhaps in any time, has attained to such a complete knowledge of the geography of Asia as Colonel Yule, who always readily placed his unique acquirements at the service of his country. His age was 69 years.

ON the 24th ult., Mr. THOMAS OLDHAM BARLOW, M.A., the most accomplished engraver of modern times, and the successful interpreter in black and white of many of the most famous pictures of John Phillip, Sir John Millais, H. Wallis, J. M. W. Turner, Frith, Topham, and Sant. He sat for the model of the Taxidermist in the noble picture in which Millais represented an invalid in bed explaining the history of a bird to a group of children.

Markets.

COVENT GARDEN.

FRUIT.

Apples	per ½-sieve	2s. 0d.	to 6s. 0d.
Apples, American, pr. brl.		12s. 0d.	,, 21s. 0d.
Cobs	per lb.	1s. 3d.	,, 1s. 6d.
Grapes	per lb.	1s. 0d.	,, 6s. 0d.
Lemons	per case	12s. 0d.	,, 25s. 0d.
Pine-apples, English, prlb.		1s. 0d.	,, 1s. 6d.
Pine-apples, St. Michael's each		2s. 6d.	,, 7s. 6d.

VEGETABLES.

Beet	per doz.	1s. 0d.	to 2s. 0d.
Brussels spr'ts, pr ½ sieve		1s. 6d.	,, 2s. 0d.
Cabbages	per doz.	1s. 0d.	,, 2s. 0d.
Carrots	per bun.	0s. 4d.	,, 0s. 6d.
Cauliflowers	per doz.	2s. 0d.	,, 4s. 0d.
Celery	per bundle	1s. 6d.	,, 2s. 0d.
Coleworts, pr doz bunchs.		2s. 0d.	,, 2s. 6d.
Cucumbers	each	1s. 0d.	,, 1s. 6d.
Endive	per doz.	1s. 6d.	,, 2s. 6d.
Herbs	per bunch	0s. 3d.	,, 0s. 4d.
Horse-radish	per bun.	2s. 0d.	,, 3s. 0d.
Leeks	per bunch	0s. 3d.	,, 0s. 4d.
Lettuces	per doz.	1s. 0d.	,, 2s. 0d.
Mushrooms	per basket	1s. 0d.	,, 1s. 6d.
Onions	per bushel	3s. 0d.	,, 4s. 0d.
Parsley	per bun.	0s. 3d.	,, 0s. 6d.
Rhubarb	per bun.	1s. 0d.	,, 1s. 6d.
Salsify	per bundle	1s. 0d.	,, 1s. 6d.
Seakale	per pun.	2s. 0d.	,, 2s. 6d.
Scorzonera	per bundle	1s. 0d.	,, 1s. 6d.
Shallots	per bun.	0s. 4d.	,, 0s. 6d.
Small Salading	per pun.	0s. 3d.	,, 0s. 4d.
Spinach	per bushel	2s. 6d.	,, 2s. 6d.
Tomatos	per lb.	0s. 9d.	,, 1s. 0d.
Turnips	per bunch	0s. 3d.	,, 0s. 4d.

CUT FLOWERS.

Abutilons	per doz. bun.	2s. 0d.	to 3s. 6d.
Azaleas, per doz. sprays		0s. 9d.	,, 1s. 6d.
Bouvardias	per bunch	0s. 6d.	,, 0s. 9d.
Callas	per doz.	4s. 0d.	,, 8s. 0d.
Camellias	per doz.	1s. 6d.	,, 4s. 0d.
Carnations, per doz. blms.		1s. 0d.	to 2s. 0d.
Christmas Roses, per doz. blooms		1s. 0d.	,, 1s. 6d.
Chrysanthemums, per doz. blooms		0s. 6d.	,, 3s. 0d.
Chrysanthemums, per doz. bun.		4s. 0d.	,, 10s. 0d.
Cyclamens, per doz. blms.		0s. 4d.	,, 0s. 8d.
Epiphyllums, per doz. blooms		0s. 6d.	,, 0s. 9d.
Eucharis	per doz. blms.	2s. 6d.	,, 5s. 0d.
Gardenias, per doz. blms.		6s. 0d.	,, 10s. 0d.
Heliotropes, pr doz. sprys		0s. 6d.	,, 1s. 0d.
Hyacinths, Roman, per doz. sprays		0s. 9d.	,, 1s. 6d.
Lilac, White, per bun.		6s. 0d.	,, 8s. 0d.
Lily of the Valley, per doz. sprays		1s. 6d.	,, 2s. 6d.
Maidenhair Fern, per doz. bun.		3s. 0d.	,, 6s. 0d.
Marguerites, pr doz. bun.		3s. 0d.	,, 6s. 0d.
Mignonette, per doz. bun.		2s. 0d.	,, 4s. 0d.
Narciss, Paper White, per doz. buns.		4s. 0d.	,, 8s. 0d.
Pelargoniums, per doz. trusses		0s. 9d.	,, 1s. 3d.
Primulas	per doz. sprays	0s. 9d.	,, 1s. 0d.
Roses, Tea, per doz. blms.		0s. 6d.	,, 1s. 6d.
Spiræas, per doz. bundles		7s. 6d.	,, 10s. 0d.
Stephanotis, per doz. sp's		5s. 0d.	,, 7s. 6d.
Tuberoses, per doz. blms.		1s. 0d.	,, 1s. 6d.
Violets, per doz. bun.		1s. 0d.	,, 1s. 6d.
Violets, Parme, per bun.		3s. 0d.	,, 5s. 0d.
Violets, French, per bun.		1s. 6d.	,, 3s. 0d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents	per ton	55s.	to 90s.
Magnum Bonum	per ton	50s.	,, 95s.
Beauty of Hebron	per ton	55s.	,, 95s.
Early Rose	per ton	45s.	,, 55s.
Imperator	per ton	55s.	,, 70s.
White Elephant	per ton	65s.	,, 75s.

ST. BRIGID HELLEBORE, flowers of which have been sent up by Mr. T. S. Ware, from Tottenham, is usually considered the finest of the H. niger group. It will not for that reason supersede either Maximus or the type, but will have its own value and uses, for the sufficient reason that the flowers are pure white, without any trace of red, or purple. The flowers sent are on stout green footstalks, showing a fine growth and a good constitution.

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1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.			1890
12	S	1st Sunday after Epiphany.	8 4	8 38	4 14	10 56	11 5	5 32	5 50	2 38	2 57	36·5	Cymbidium Mastersi	India.	12
13	M	Dimas Colliery Explosion, 1879.	8 3	9 0	4 15	Morn.	11 22	6 11	6 32	3 15	3 36	36·5	Dendrobium splendissimum	Gar. hyb.	13
14	Tu	Oxford Lent Term begins.	8 2	9 22	4 17	0 9	11 38	6 56	7 22	3 57	4 21	36·6	Lælia anceps superba	Brazil.	14
15	W	British Museum opened, 1759.	8 1	9 44	4 19	1 25	11 59	7 47	8 17	4 47	5 12	36·7	Odontoglossum Andersonianum	Mexico.	15
16	Th	Battle of Corunna, 1809.	8 0	10 4	4 20	2 45	After.	8 49	9 23	5 42	6 14	36·7	Phalænopsis amabilis	Borneo.	16
17	F	*St. Anthony,*	7 59	10 24	4 21	4 6	0 55	10 1	10 37	6 48	7 26	36·8	Zygopetalum Mackayi	Mexico.	17
18	S	*Prisca.*	7 58	10 44	4 23	5 27	1 35	11 12	11 48	8 2	8 37	36·9	Zygopetalum Clayi	Gar. hyb.	18

RUGBY CHRYSANTHEMUM, FRUIT, and FLORICULTURAL SOCIETIES' EXHIBITION.
NOVEMBER 19th and 20th, 1890.
WILLIAM BRYANT, Secretary, 28, North Street.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, JAN. 14.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral and Fruit Committees.

Auction Sales for the Ensuing Week.

WEDNESDAY, JAN. 15, AND SATURDAY, JAN. 18.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Standard and Dwarf Roses, Fruit Trees, Border Plants, Dutch Bulbs, &c.

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MONDAY, JAN. 13.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67, and 68, Cheapside; Dutch Bulbs and Lilies.

WEDNESDAY, JAN. 15.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Japanese and other Lilies.

FRIDAY, JAN. 17.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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The Gardeners' Magazine.

SATURDAY, JANUARY 11, 1890.

THE NEW PLANTS of 1889 include a fair number of interesting subjects, with a few that merit the title of "novelties." The number of entries in the "New Plant" department of the present issue of the *Garden Oracle* is 325, and these do not include the figures in such books as *Reichenbachia*, the *Orchid Album*, and other works in progress illustrative of special subjects. These are less in need of cataloguing than the subjects that obtain place in the *Botanical Magazine*, the *Gardeners' Chronicle*, the *Garden*, the *Revue Horticole*, the *Gartenflora*, and other periodicals that select plants for their uses and beauties, apart altogether from their affinities, and the interests of specialists and collectors. These last will find many things in the list to suit them; but a list of new plants prepared for the use of the world at large does not require "fattening" with indexes of monographs and special serials that carry indexes with them, and that make no appeal to the general plant-loving public. As regards the newness of the plants that are set before us in the list, the best that can be said is that certainly some of them *are* new, as the hybrid orchids, for example; while, as to the majority, it is fair to assume that they are as old as the third day of creation when "the earth brought forth grass and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind." They become "new" in various ways, as by being discovered and introduced to cultivation; by being recovered after having been lost or neglected for a time; or by sudden revelations of their beauties and uses bringing them into prominence; and again through being figured and described merely. As in a severe interpretation of the term there are no new plants, we allow accidents to determine newness, and there is but little opportunity left for cavillers and hair splitters as to the primary definition.

ORCHIDS claim first mention by custom much more that by right. We can follow custom without hurting any one, or slighting any good plant. The most interesting orchid of the year is *Catasetum Bungerothi*, which has fully illustrated the biological characters of the genus by producing under cultivation its female flowers. In the G.M., of December 7, 1889, the male and female flowers of this interesting plant are shown side by side, and the long horns of the column from which it takes its generic name are seen to be characteristic of the sexes, the horn of the male being bifid and prominent, that of the female single, and in a condition that may be called suppressed. Good men do not live long enough, for assuredly Charles Darwin should have been spared to see the female flowers of this plant if only to justify the accuracy of what he has written about it. For the future student of the larger evolution there is promise of frequent repetition of the occurrence, for already the female flowers have appeared in several places, and will occur again, as the species is diffused amongst cultivators. Useful orchids, not widely known but recently figured, include *Aerides expansum*, the flowers of which are larger than the average of the genus; *Calanthe vestita oculata gigantea*, a quite grand thing, if a C. vestita may be allowed such an epithet; *Cattleya Brymeriana*, with proper cattleya style in it; the hybrid *Cymbidium eburneo-Lowianum*, which combines the characters of its parents conspicuously: *Lælia Digbyana-Mossiæ*, a grand hybrid, as interesting as it is beautiful; *Odontoglossum egregrum*, probably a natural hybrid, and certainly a fine plant, with plenty of colour; *Vanda Amesiana* and *V. Kimballiana* have attractions that none can resist when admiration is demanded of them.

Hybrid orchids may be almost said to constitute a class of their own, but it is impossible to disassociate them from their several genera. As regards the interest attaching to these plants, it may be said to increase with the appearance of each new claimant for a place in the list, and again we are troubled that Darwin saw but few of them, because his mantle appears not to have fallen on any orchidist who enjoys the enlarged opportunities for the study of fertilization these acquisitions so strikingly afford. Of making hybrid cypripeds there appears to be no end. There are thirteen in the "Oracle" list, and they include *Rothschildianum*, nowhere properly figured as yet; *Nitidissimum*, a magnificent hybrid; *De Witt Smith*, notable for splendour of colouring; and *Warnerianum*, with a sumptuous labellum. Very soon the hybrid cypripeds will "sort themselves" in accordance with their relative merits as plants to be admired, and the handsomest will take the lead. But for the present we seem to require all of them, if only that they may stimulate us to rejoice that man has acquired some power to modify the forms that Nature presents him with, accomplishing in a few years what the great mother would probably require ages for, and in that sense setting man above her as a maker of organic forms. At that point of exaltation, it would be well to pause, were it possible, but we must go on to the consideration that the hybrids nature makes are probably capable of holding their own and of advancing to the dignity of specific rank, while what man creates by the subtleties of his art will probably only last as long as he cherishes them as toys; the task of Nature being to clothe the world, and that of man to adorn his doll's house, for such, in this connection, we may term the noblest edifice he has raised for the shelter of his orchids. It will be well to escape from the further consideration by mentioning the *Rothschild variety* of Cattleya Mendeli, the hybrid *Cattleya Miss Harris* from C. Schilleriana and C. Mossiæ; *Dendrobium micans*, a hybrid between D. Wardianum and D. lituiflorum, as worthy of special attention for distinctive and attractive qualities.

STOVE AND GREENHOUSE plants are in want of a leader on this occasion. We might put forward the wondrous *Amorphophallus titanum*, figured in the Christmas number of G.M. from the plant that flowered at Kew. But as the thing is of no use in gardens, and can never find its way out of the region of mere curiosities, we can but name it as one of the triumphs of the past year, and proceed to search for another. Shall we elect *Stapelia gigantea*, which is not

only a giant in magnitude, the flowers measuring fourteen inches over, but has a rich and rare tone of beauty in the pencilling of its petals that will compel admiration and fully justify its occupation of any plant house suited for producing and displaying it? That it is not "everybody's plant" goes without saying. The new cliveas *Lady Wolverton* and *John Laing* might suit for a front place, but they do not exactly stand for new plants but belong to the garden flowers that have no special specific claims on our attention. But, alas, many of the hybrid orchids are in that same category, and so, to escape the difficulty, we make choice of *Crinum Kirki*, a not very important plant, but one representing an interesting group of useful subjects that are obtaining increased attention and are likely to attain to some degree of popularity. The beautiful *C. Moorei*, which is still to be regarded as a new plant, proves so nearly hardy that we are hoping to see the list of crinums adapted for the open ground augmented by the addition of some hitherto reputed tender. But we cannot entertain any hope that C. Kirki will take to the hardy garden, for it is a warm climate plant, and must go with its congeners of the crinum and pancratium genera to the comforts of glass and hot water. Several new Anthuriums are in the list, and will not fail of admirers. Two varieties of A. Scherzerianum, named respectively *Mdlle. Lucienne Linden* and *Madame Desmet-Duvivier*, give new and splendid shades of colour; and A. Andreanum shows in the variety *atropurpureum* a departure from its peculiar sealing-wax scarlet tone of colour to a deep rich crimson. These plants are in high favour, and they tell well in collections with much green about them; but they usually present a coarse appearance in decorations, for the artist appears not to have been born who can associate them with other flowers without ensuring a hideous mixture. The distinctive and handsome *Billbergia thyrsoidea* reminds us of Professor Morren's collection of Bromeliaceous plants that found a home at Kew and have scarcely been heard of since. The B.M. must be illustrated as the learned editor lists, but it appears that between it and the *Belgique Horticole* there is in respect of these plants a great gulf fixed. Morren's contributions are probably sufficient for a monograph, which he certainly was intending to produce, and we may properly wish that our literature might be enriched by its publication. It is agreeable to see *Epiphyllum Mackoyanum* and *Exacum macranthum* in the list, for they are of universal usefulness, though far removed from the realm of grandeur to which we are occasionally conducted by new stove and greenhouse plants. *Nægelia pyramidalis* is a pretty trifle that will suit the cultivators of achimenes; and *Strelitzia Nicolai*, coming near to S. augusta, and reminding us of a group once popular and now forgotten, and with that for the present we conclude the selection. It will be seen that a tender plant of the highest merit for beauty and interest has not been brought forward in the past year; we must be content with what the gods may give us.

HARDY PLANTS of the year include nothing finer than *Spiræa gigantea*, which may be classed with such noble plants as Rheum palmatum, Eryngium pandanifolium, and the giant senecios and polyganums, plants that by their majestic bearing give dignity to the rockery, as mere colour can never do, however rich and varied. Nor is this spiræa wanting in beauty, though no rival of S. palmata or the fragrant S. ulmaria of our own water-courses, which, with C. aruncus, may be regarded as the handsomest for general purposes of all the spiræas. With a fine spread of radical leaves and a head of creamy white flowers on a stem seven to eight feet high, it will have its admirers when it finds a place in gardens, and the place to suit it will be where the thrushes and robins take their morning bath, while the lady fern looks on with admiration. *Verbascum Olympicum* has been in cultivation some time, but it has a good right to the place it occupies in G.M., for it is not often seen, and it combines grandeur with beauty. A very old plant, too, is *Tiarella cordifolia*, but it always appears new because of its very distinct and delicate beauty, and as it is a neighbour of the meadow sweets, so properly it assimilates with them in its more prominent characteristics. For a distinct and interesting plant, unique in style of leafage, we can recommend *Saxifraga latepetiolata*, the leaf stalks of which are curiously hammered out in a way we see a hint of in some of the smaller mossy-leaved saxifrages; but it has no special claim for beauty. But we can make amends for the plainness of the last by naming *Shortia galacifolia*, a perfect gem for the rockery, with glossy leaves and white campanulate flowers that will go nicely with the androsaces, alpine phloxes, primulas, and ramondias. Of the lilies something might be said, for there are not wanting novelties in this fine family. But we will specify only *Lilium Nepalense*, which must be spoken of as a magnificent lily, if only for its unique colouring, which is fairly represented by the figure in B.M., which should, and doubtless will, create a hunger for the plant. That it should ever take a place in the lily garden proper is not to be thought of, but amateurs of lilies will give it cool house culture with L. Nilgirense and a few others that are not to be trusted to the rigours of our climate. Of *Eremerus Himailacus* and *E. spectabilis* something similar may be said, for their hardiness is doubtful, but as some half-dozen species of Eremerus have proved hardy in sheltered gardens near London, these new comers may prove equally accommodating. Amongst the trees and shrubs, *Berberis angulosa* has special claim to attention for its fine habit, and the large size of its yellow flowers and scarlet berries. The brilliant golden holly, named *Ilex aurea maculata*, may be recommended for its usefulness. *Olearia insignis* is a fine curiosity, its large leaves being of thick texture and densely clothed with a beautiful wool. Such a plant was made for pure air, for in the smoke of a town its wool soon becomes unbeautiful as a mere dust trap. *Skimmia Foremani* makes a good finish to this lot; it is a hybrid, bearing scarlet berries in plenty, and one of the best plants of the useful class of shrubs specially adapted for winter decorations.

NEW FERNS are few because ferns are out of fashion. Of a certain few useful kinds hundred of thousands—we might as well say millions—are grown, but the collectors and amateurs of ferns are few in number now as compared with the fashion that came in about thirty years ago, and that lasted about half that time. But we have fine decorative qualities in *Pteris cretica nobilis*, *P. tremula Smithiana*, and *P. serrulata densa*, and to name them must suffice for the present. In due time we shall have a Conference on Ferns at Chiswick, and then we shall see—what we shall see.

A STATUE TO BOUSSINGAULT, the great agricultural chemist, is about to be erected at the Conservatoire des Arts et Métiers, Paris.

MR. H. RUSSELL has been engaged as head gardener at Doveridge Hall, Derby, the seat of Lord Hindlip.

COMMITTEES OF R.H.S. will meet on Tuesday next, January 14. The hour of meeting is fixed at Twelve noon.

WOLVERHAMPTON HORTICULTURAL AND FLORAL FETE in the Public Park, July 15, 16, 17.

THE DRAPERS' COMPANY have sent to the Fruiterers' Company a donation of £105 towards the fund in aid of national fruit culture.

CARDIFF GARDENERS' MUTUAL IMPROVEMENT SOCIETY commenced its second session on the 7th inst. with an address by Mr. A. Pettigrew.

MR. WILLIAM MEADS, fourteen years gardener at Reckett Park, Shrivenham, has been engaged as head gardener at Buscot Park, Faringdon, the residence of A. Henderson, Esq.

MR. CAMPBELL, several years gardener and bailiff at Coworth Park, Sunningdale, was, on the occasion of his leaving his charge, presented by his friends with a handsome marble timepiece.

NATIONAL CHRYSANTHEMUM SOCIETY will hold its annual meeting at Anderton's Hotel, on Monday, January 27, chair to be taken at 7 p.m.

HORTICULTURAL CLUB will meet on Tuesday next, at Hotel Windsor. Dinner at six; conversazione to follow, the subject, "Bulb-growing Abroad," to be introduced by Mr. A. J. Pearson.

NATIONAL ROSE SOCIETY.—The general committee will meet on Tuesday, at three p.m., in the rooms of the Horticultural Club, Hotel Windsor. The business will include election of Executive Committee, Supplement to Catalogue, and Local Secretaries.

ROYAL AQUARIUM HORTICULTURAL EXHIBITIONS, under the direction of Mr. William Holmes, will be held on the following dates: March 12, 13; April 29, 30; May 21, 22; June 27, 28; July 29, 30; and October 15, 16.

CLYDE DISASTER FUND is now closed, and at the final meeting of the committee, recently held at Messrs. Protheroe and Morris's offices, it was resolved that the sum raised (£453 3s.) be equally divided between Mrs. Hall and Mrs. Fraser, that the arrangements for investing the respective amounts be left in the hands of Mr. H. J. Veitch and Mr. Protheroe, and that, as soon as the investment has been made, a report be sent to all subscribers.

GARDENERS' CHRONICLE of January 4 contains a body of "Useful Memoranda," including a directory of botanic gardens and kindred institutions in all parts of the world; a list of books on botanical, horticultural, and allied subjects; a list of botanical and horticultural periodicals; and tables of measurements of manures, rainfall, market produce, conversion of French into English measures, &c. The accompanying almanac contains the dates of flower shows and other events of interest and importance to horticulturists.

MR. W. H. BAXTER, for more than forty years curator of the Botanic Garden, Oxford, relinquished that office about three years ago, owing to defective vision. He also held the appointment of Superintendent of the University Parks—a large garden-like space, tastefully laid out, and planted with numerous rare and curious productions, indigenous and exotic. The walks around the gardens are two miles in extent, the trees and other subjects being labelled with specific and botanical names, as in the Botanic Garden proper. The oversight of the parks Mr. Baxter has also been compelled to give up. On November 29 last, in a convocation of the authorities, it was decreed to "authorise the curators of the university chest to pay annually to Mr. Baxter the sum of sixty pounds." The Botanic Garden curators, and those of the Parks, each contribute equal sums of twenty pounds, thus providing an annual pension of £100, which we heartily hope Mr. Baxter may live to enjoy for many years to come.

DISTILLATION OF EUCALYPTUS OILS is steadily increasing in Queensland, and the *Chemist and Druggist* states that recently a chemist in the colony has erected plant for the distillation of the oil of Eucalyptus citriodora, which grows extensively in the Port Curtiss district. The still erected is large enough to deal with half a-ton of the citron-scented leaves in the course of a day, the product of oil from that quantity being about one gallon.

THE FLORISTS' LACED PINK has obtained some special attention of late, as our pages have testified. It is now proposed to establish a National Pink Society, and a temporary committee has been formed for the purpose of the initiation. This committee includes Rev. F. D. Horner, J. Thurston, S. Barlow, B. Simonite, A. R. Brown, W. Peakman, J. Gibson, J. Lakin, R. Dean, B. Wynne, E. R. Johnson, F. Hooper, and H. Turner. Arrangements have been made for including pinks in the arrangements for the exhibitions in June and July, at the Royal Aquarium. The secretary, *pro tem.*, is Mr. E. R. Johnson, 90, Harleyford Road, London, S.E.

A SPECIMEN CYCLAMEN PERSICUM worthy of record has been grown by Mr. E. W. Pawsey, gardener to J. C. Gilmore, Esq., Saltford. The plant measures 2 feet 7 inches across, and at the present time is adorned with 226 flowers of the purest whiteness. The plant is four years old, and the photo of it with which we are favoured shows that it is perfectly symmetrical, and the fine head of bloom is supported by a grand breadth of well-developed foliage. The production of this specimen is the more praiseworthy seeing that few cultivators succeed in keeping plants for so long a term as four years. It ought not to be a difficult matter, however, since our kindly system of cultivation, which does not allow of roasting and long resting, has been pretty generally adopted.

SPRING WEATHER IN JANUARY is enjoyable, but there is a consciousness that it must be paid for, which in some degree discounts the pleasure. It may comfort some of our friends to be assured that the unwonted warmth has not wrought any serious mischief as yet, for the flowering of soft plants like primulas is a matter of quite secondary importance. Pyrus Japonica and two or three early Loniceras are is a state of excitement, but that also is of no great consequence, for it is no unusual thing to see the pyrus and the early honeysuckles, with the fragrant chimonanthus in flower in February. The orchard trees have made no move, vegetation generally is as quiet as it ought to be at this season, but we really must bring the thermometer down a peg, or the case will be serious. The winter, possibly, is still before us, but happily nobody knows.

ROSARIAN'S YEAR BOOK for 1890 opens with an excellent portrait of Mr. R. N. G. Baker, who has vindicated own root roses by his success in competition with flowers grown on such roots in his garden at Heavitree, near Exeter. The brief biographical notice says "all his hybrid perpetuals are grown on the manetti," but we remember when judging with Mr. Baker, not many years since, he assured us he was winning with the aid of own root roses, and he may have meant that his manettis had shifted themselves from the stocks to an independent life, as roses so circumstanced are wont to do. The list of Mr. Baker's triumphs is particularly interesting, seeing that all his exhibition flowers have been derived from "cut-backs." The year-book is a good budget of stuff that all true rosarians will enjoy, and some certainly will profit from what is offered them.

THE WEATHER PLANT has been subjected to a systematic trial in the Jodrell Laboratory in the Royal Gardens, Kew, and the results are reported at length in the January number of the Kew *Bulletin of Miscellaneous Information*. Mr. Joseph Nowack himself was the operator and vaticinator, and the proceedings were watched by Dr. Oliver and Mr. Weiss. The results are in strict agreement with our observations as reported in G. M., December 21, 1889. When definite forecasts were made by Mr. Nowack, the observers made minute record of what followed. In the course of October there were many weather changes, and one hundred and forty predictions were made, of which one only was justified by the facts. Mr. R. H. Scott, of the Meteorological Office, examined the charts of barometric movements, and found them as unsatisfactory as the weather predictions. Of nine earthquake predictions, one was justified and eight were failures, a state of things that compels one to regard the successful case as an accident, for when many predictions are hazarded some are likely to come true by mere coincidence, But the whole case is vitiated by Mr. Nowack's method of changing the dates of his charts to suit the weather, so that if we may be allowed the Hibernianism, he ought, like other prophets, to prophecy afterwards, and not in advance.

MUSSÆNDA, THE NEW SUBSTITUTE FOR COFFEE AND CHICORY.—The British Consul at Réunion, in his last report on the trade of that island says that at one time he was besieged with letters from merchants in England asking for information respecting a shrub called "mussænda," the discovery of which, it had been said in some commercial journals, would deal a severe blow to the coffee and chicory trade. About two years ago a rumour was spread that the berry of this shrub could not be advantageously employed as a substitute for coffee and chicory. Its true name is "gaertnera." It grows to about 10 ft. high, has very few leaves, and its branches are wide apart. The berries do not grow all along the branches as is the case with coffee, but in bunches at their extremities. At present it is only met with in the mountains, where it grows in a wild state; but as it is widely disseminated over the forests, the picking of the fruit is not only an arduous, but, at the same time, an expensive process. It is just possible that, if regular plantations of the shrub were undertaken, "mussænda" might be produced on an extensive scale, and much more cheaply than at present; but even then it is doubtful whether, by reason of its inferiority in fragrance and colour, it could ever compete with coffee to such an extent as to endanger the trade of the latter, as has been supposed in England. In days not long since past mussænda frondosa was in great favour with cultivators for exhibition purposes but is now rarely seen, and has passed into the category of plants "not generally known."

Exhibitions and Meetings.

NATIONAL CHRYSANTHEMUM SOCIETY.

GENERAL COMMITTEE, JANUARY 6.

A MEETING of the General Committee of the society was held at Anderton's Hotel on Monday evening, R. Ballantine, Esq., in the chair, when as usual the attendance was eminently satisfactory. The minutes of the previous meeting having been duly read and signed,

Mr. W. Holmes announced the death of Mr. W. Blake, who had long been a member of the committee, and in moving that a letter of sympathy be sent to the family, bore testimony to the great value of the services rendered by Mr. Blake during his connection with the society. The motion was seconded by Mr. G. S. Addison, and unanimously passed. The vacancy thus caused was filled by the election of Mr. Drain, jun., who for many years has been one of the auditors.

The question of the early and mid-winter shows was next considered, and it was decided that the early exhibition be held September 10 and 11, 1890, and the mid-winter exhibition, January 7 and 8, 1891. Mr. R. Dean and Mr. G. Gordon were elected judges at these exhibitions. It was further decided that at the exhibition to be held at the Royal Aquarium, October 15 and 16, prizes for chrysanthemums be offered as follows: Twenty-four Japanese, not less than twelve varieties; twelve Japanese, distinct varieties; six Japanese, distinct varieties; six blooms Japanese, one variety, white; six Japanese, one variety, yellow; six blooms Japanese, one variety, any colour other than white or yellow; twelve bunches of pompons, three sprays in a bunch, not less than eight varieties; six bunches of pompons, distinct varieties. The classes for six Japanese, distinct, and six bunches of pompons will be limited to amateurs, the others being open. The sum of £20 was voted to be allotted in prizes in the several classes. Mr. Holmes stated that arrangements had been made by which members of the National Chrysanthemum Society would, on production of their tickets, be admitted at half-price to the exhibitions to be held at the Royal Aquarium under his superintendence. Also that to prevent overcrowding at the opening of the centenary festival and thus promote the comfort of the members of the National Chrysanthemum Society, a suggestion had been made that the charge for admission from twelve noon to two p.m. on the first day be half-a-crown. To this suggestion the committee readily agreed.

The Honorary Secretary reported, with reference to the provincial show, that a settlement with the Hull Chrysanthemum Society had been made, and was in every way satisfactory. Votes of thanks were passed to Messrs. J. Laing and Sons for their liberal contributions of plants on the occasion of the annual dinner, and to Mr. Bevan, Mr. Addison, and Mr. Boyce for the assistance rendered as stewards on the occasion. Eighteen fellows and members were elected, the total number now on the books being 691. Three societies were received into affiliation, one being the Auckland Chrysanthemum Society, which required a liberal supply of medals and catalogues.

The Catalogue Committee (Messrs. C. Harman Payne, Lewis Castle, and George Gordon) reported as to the desirability of preparing a new edition of the catalogue, and after a brief discussion authority was given to them to proceed with the work.

The proceedings terminated with the usual vote of thanks to the chairman.

MIDWINTER EXHIBITION, JANUARY 8 AND 9.

The midwinter exhibition of the National Chrysanthemum Society was held at the Royal Aquarium, Westminster, on Wednesday and Thursday last, and proved so thoroughly good in all its leading features that there was a concurrence of opinion amongst the experts that it was the most successful of the January shows that had yet been held by the society. There were magnificent displays of cyclamens and primulas, and chrysanthemums were staged in larger numbers and in finer condition than at any of the corresponding shows previously held. On the evening of the first day a conference of chrysanthemum growers was held, and was so highly successful as to give much additional interest to the gathering. The arrangements were carried out with Mr. Holmes's taste and judgment, and the effect produced was rich and eminently satisfactory.

CHRYSANTHEMUMS were staged in large numbers, and in such a fresh and otherwise excellent condition as to prove to demonstration that the majority of the exhibitors had been fully alive to the necessity for adopting a special course of culture in the production of the blooms. In previous years, a considerable proportion of the blooms have been the produce of side shoots of plants that had flowered in November, but on this occasion there were few of this description, and the position occupied by the exhibitors showed that they are of but little use for competitive purposes. There was a very severe competition in the great class for collections without reference to varieties, the collections being numerous and the blooms closely matched in point of merit. Mr. R. Owen, Maidenhead, was first with a collection rich in novelties, and containing blooms in a high state of development. Amongst other good varieties in the collection were Mr. J. C. Price, a pleasing pink variety; Beauty of Castlewood, red and orange; M. Barbe, a promising anemone of a pale pink colour; Mr. Frank Thompson, less coarse than usual; Mrs. Andrew Carnegie, crimson; Mrs. Irving Clarke, rose and white; Cyathere, deep pink; Sunbeam, orange yellow; Pollux, bright yellow; George Maclure; and Golden Gem, a reflexed flower of much value for midwinter, the colour rich golden yellow, in some instances shaded with orange. Mr. J. Kipling, gardener to the Earl of Lytton, Knebworth House, Stevenage, was a very close second with a collection in which nearly fifty varieties were represented in the freshest possible condition. Especially good were the blooms of Mons. Astorg, M. Charles Hubert, Meg Merrilies, Golden Gem, Mdlle. Cabrol, Duchess of Albany, Kæmpfer, Progne, Boule de Neige, Martha Harding, Etoile du Midi, Mr. Ralph Brocklebank, and Countess of Lytton, the last named a primrose coloured sport from Meg Merrilies. Mr. G. Bolaz, gardener to H. Chandos Pole, Esq., Hopton Hall, Wirksworth, was third with a capital collection. Very fine also were the collections from Mr. J. Brown, gardener to Mrs. Waterlow, Great Doods, Reigate; and Mr. Taylor, gardener to Sir John Lubbock, Bart., M.P., High Elms, Farnborough. First place in the class for twenty-four blooms was occupied by Mr. J. Brown, with remarkably fine examples of Boule d'Or, Pelican, James Weston, Mr. H. Cannell, La Sceptre Toulousaine, Belle Paule, Golden Dragon, Baronne de Prailly, Arthur Wood, Cythere; Mr. W. G. Gilbert, gardener to B. Le Neve Foster, Esq., Sennowe Hall, Guist, Norfolk, was second with an excellent board of blooms, Mr. J. Kipling third. In competition for the prizes for twelve, Mr.

R. Phillips, The Deodars, Meopham; Mr. J. Kipling, and Mr. Taylor, were first, second, and third respectively.

There was a sharp contest in the class for twenty-four Japanese, and the post of honour was occupied by Mr. J. Kipling, with superb blooms of Ceres, Mr. Ralph Brocklebank, Moonlight, Mrs. H. J. Jones, Mr. H. Cannell, Duchess of Albany, Cry Kwang, Mons. Astorg, Comtesse de Beauregarde, Gloriosum, Striatum, Carew Underwood, and other good varieties. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, was a good second; and Mr. Duncan, West Malling, Maidstone, was third. Mr. J. Brown obtained first honours in the class for twelve Japanese, with a collection in which Hamlet, Belle Paule, Charlie Sharman, Meg Merrilies, La Sceptre Toulousaine, Roseum superbum, Sunflower, and Dr. Jeanbernat, a bright red variety, evidently of much value for flowering at midwinter. Mr. W. G. Gilbert was a good second, and Mr. J. Kipling a close third. Several good boards of blooms were contributed to the class for six, and the awards were made in favour of Mr. R. Phillips, Mr. J. Kipling, and Mr. Duncan. Excellent blooms of Princess of Teck and Lord Eversley were shown by several exhibitors.

CYCLAMENS were splendidly shown and produced a brilliant display of colour. In the great class for collections, Mr. W. Clarke, Hanworth Road, Hounslow, was first with neat superbly flowered plants. Mr. J. May, Gordon Nursery, St. Margaret's, Twickenham, followed very closely for second place, with a collection remarkable for the high quality of the strain; and Mr. D. Phillips, Langley Broom, Slough, was third. In the class for twelve, in which the competition was limited to private growers, Mr. D. Phillips occupied the first place with finely flowered specimens, and Mr. D. White, gardener to Mrs. Farnell Watson, Redlees, Isleworth, was second, and Mr. A. Carter, gardener to Mr. Alderman Evans, Ewell, third.

PRIMULAS were strongly represented, and constituted a very interesting and attractive feature. For twelve Mr. A. Carter was first with an exceptionally fine collection, the plants neat and bearing large heads of bloom; Mr. Mursell was second with large, well-bloomed specimens, and Mr. D. Phillips was third with well-bloomed examples. There was a good competition for the special prizes offered by Messrs. Cannell and Sons, and the premier award was made in favour of Mr. Mursell, who had huge specimens of White Perfection, Swanley White Improved, Princess Mary, and Princess of Wales, the last-named an extremely beautiful pale pink variety. Mr. A. Newall, gardener to Sir Edwin Saunders, Fairlawn, Wimbledon, was a good second. The premier award in the class for twelve doubles was made in favour of Mr. A. Carter. Messrs. H. Cannell and Sons, Swanley, staged not for competition, a large and extremely beautiful collection of primulas, and were awarded the silver medal. Conspicuous among other varieties were Cannell's Pink, The Queen, Her Majesty, Pink Beauty, Intermedia, a bright scarlet variety, Swanley White Improved, White Perfection, and Emperor Improved, an effective variety, with brilliant salmon-pink flowers.

COLLECTIONS OF FORCED AND FINE FOLIAGE PLANTS contributed materially to the attractions of the exhibition. In the competitive class, Mr. Brooks, Upper Clapton, was the only exhibitor. Several excellent collections were shown, not for competition, notably those from Mr. William Holmes, Frampton Park Nursery, Hackney; Messrs. J. Laing and Sons, Forest Hill; and Mr. Drain, to whom special awards were made.

FRUIT comprised large highly-coloured examples of Catillac and Uvedale St. Germain's pears from Mr. J. Simmons, gardener to Hon. Miss Ellis, De Walden House, Eastbourne, to whom a high commendation was awarded.

The judges were Mr. R. Dean and Mr. G. Gordon, with Mr. W. Holmes as referee.

FLORAL COMMITTEE.

A meeting of the Floral Committee was held on the first day, R. Ballantine, Esq., presided, and the members present included Mr. H. Cannell, Mr. R. Dean, Mr. L. Castle, Mr. C. Gibson, Mr. G. Gordon, Mr. E. Sanderson, Mr. J. Mardlin, and Mr. W. Holmes.

Mr. E. Beckett, Aldenham Park, Elstree, submitted blooms of Mrs. A. Waterer, a Japanese variety of American origin. The blooms are greenish white, large in size, and with rather broad florets. As it was not in proper condition, the Committee expressed a wish to see it again. A similar wish was expressed in the case of Kioto, a yellow Japanese variety in the way of Mr. H. Cannell, submitted by Mr. R. Owen.

A first-class certificate was granted to Messrs. H. Cannell and Sons for *Primula Progress*.—A beautiful single variety, the flowers large, stout, and of fine form, and the colour brilliant crimson.

CONFERENCE.

On the first day of the midwinter exhibition, a conference of growers and others interested in the chrysanthemum was held in the Board room, Royal Aquarium. R. Ballantine, Esq., chairman of committee, presided, and the attendance was so large as to fill the room to its utmost capacity. The programme of the conference included the reading of a paper on midwinter chrysanthemums, and the discussion of the question "In what way can the interest and attractions of chrysanthemum exhibitions be increased?" The Chairman having briefly opened the proceedings, called upon Mr. J. Kipling to read his paper on "Are Chrysanthemums wanted at Midwinter?"

In the course of the paper, which appears in another part of this sheet, Mr. Kipling succeeded in showing not only that chrysanthemums are wanted in midwinter, but that they are unsurpassed for the supply of flowers for indoor decorations at that season. An excellent discussion followed, in which Mr. Cannell, Mr. Davis, Mr. Bevan, Mr. Ryder, Mr. R. Miller, Mr. W. Holmes, and others took part. Mr. Miller and Mr. Ryder referred to the highly satisfactory results obtained in the cultivation of Princess of Teck, and Mr. Norman Davis for the production of winter flowers by growing them in the open quarters during the summer, and then lifting them and placing in airy houses to bloom. Mr. Ryder stated that he had had three large houses full of Princess of Teck this season, and that the blooms had realized two shillings per dozen wholesale.

Mr. Kipling, in reply, said that occasionally the plants suffered from mildew, but when remedial measures were adopted immediately on the appearance of the mildew very little harm was done. He considered it essential to success that during the summer the plants should be screened from the sun during the hottest part of the day, and he usually placed them on the shady side of some trees. He also regarded it of much importance to plunge the pots, as when on the surface the wood attained a greater degree of maturity than is desirable when late flowers are desired. He had tried planting out, but had obtained the best results from growing them in pots, and therefore recommended pot culture. When grown in the open quarters and lifted it was necessary to take them up with good balls and to put them in boxes or large pots. It was necessary to regulate the time of propagation in some degree by the character of the varieties, and to strike the cuttings of the naturally late sorts a month or so in advance of those flowering in November.

A vote of thanks was, on the motion of Mr. W. Holmes, unanimously passed to Mr. Kipling for his paper. This having been suitably acknowledged,

The Chairman submitted for discussion the question, In what way can the interest and attractions of chrysanthemum exhibitions be increased? Mr. R. Miller thought exhibitions could be improved by the number of plants being increased; and urged the importance of arrangements being made with the railway companies to carry plants to and from the place of exhibition, as in the case of the Brighton Society.

Mr. W. Holmes said he fully appreciated the importance of the question raised by Mr. Miller. Some years since he placed himself in communication with the railway companies for the purpose of obtaining a reduction of rates, and he had found that the companies were not prepared to give the same facilities for the conveyance of plants to London as to towns on their respective systems. Last autumn he suggested to the committee of the National Chrysanthemum Society the advisability of paying exhibitors of plants a part of the cost of carriage. The committee adopted his suggestion; as the result there was increased competition in the plant classes, and he had no doubt the committee would adopt the same course this year.

Mr. Bevan expressed an opinion that naturally grown blooms should as far as possible have classes provided for them, and that arrangements of cut chrysanthemums should be liberally encouraged.

Mr. J. Weston considered it important to separate where practicable the several sections in the classes for specimen plants, and to provide separate classes for incurved, Japanese, and reflexed.

Mr. Davis thought it advisable to judge groups for effect alone, and thus encourage a class of plants somewhat different to those now generally employed in making up groups.

Mr. H. Cannell said that notwithstanding all that had been written about big blooms and trained plants, he was fully persuaded that to maintain the attractions of exhibitions, specimens showing skill of the highest class must be presented to the visitors. He was quite sure that the public would not attend shows where the plants or blooms are in no way better than those to be met with on all sides in back gardens. He hoped that the great centenary festival would be in every way worthy of the society and the occasion, and he trusted that a picturesque style of arrangement would be adopted.

Mr. George Gordon was well assured that the attractions of exhibitions would be greatly enhanced by effecting an improvement in the way in which the groups are presented. He suggested that plants with several stems should be more largely employed to avoid the close packing which obtains when the groups are formed exclusively with plants having single stems. It would also be an advantage to make provision for large groups interspersed with fine foliage plants. The interest of shows would be increased by stipulating that in all classes for cut blooms not exceeding twenty-four, the varieties be distinct. By adopting that course a larger number of varieties would be represented at exhibitions than is now the case.

A vote of thanks to the chairman terminated the proceedings.

DUTCH HORTICULTURAL SOCIETY,

AMSTERDAM, DECEMBER 3, 1889.

AT the meeting of the Plants and Flowers Committee, December 3, 1889, first-class certificates were awarded to Mr. H. J. Lemkes, for *Dracæna indivisa var.*, with leaves edged bright yellow. The plant presented was over a yard high, and was characterized by much beauty. Messrs. Groenewegen and Co., Amsterdam, for *Chrysanthemum Stanstead Surprise*, and to the same for a *Cyclamen Persicum* with double stelliform flowers. Second-class certificates were awarded to Mr. O. J. Quintus, Groninghen, for *Anthurium Andreanum*. Messrs. Groenewegen and Co., for *Chrysanthemum Mrs. Heale* The Zoological Garden of Rotterdam, for a hybrid *Dracæna* raised from seed and sent under the mark Zoological Garden No. 1. To the same was awarded honourable mention for a fine specimen of *Vanda cærulea*.

The Arboricultural Committee awarded a first-class certificate to Mr. H. A. F. de Vogel, of The Hague, for two new kinds of Salix, adapted for cultivation as osiers, of which samples had been sent up on September 10. last. The committee delayed judgment on these until their value as osiers could be tested in the usual way in the proper season, and now reported that they proved of excellent quality, and worthy of a high reward.

A second-class certificate was awarded to Mr. A. M. C. Jongkindt Coninck, Dedemsvaart, for *Cupressus Lawsoniana crispa*.

The Vegetable Committee awarded a first-class certificate to Messrs. Sluis and Groot, Enkhuizen, for two new varieties of turnips they have introduced from Russia, and severally known as *Precocious Flat Red*, and *Prince Engalitscheff*.

The dates for meetings in the present year, 1890, are February 12, March 18, April 15, May 14, June 19, July 17, August 26, September 25, November 12.

CLIMBING CHRYSANTHEMUMS.

A SHORT time after the note I wrote on the above subject in the chrysanthemum number of the G.M. for October 26, I received a letter from Mr. Rowland Wheeler, Oxford, son of Mr. Isaac Wheeler, whose portrait was given in the same number, on the subject of climbing varieties. Quoting from the letter before me, Mr. Wheeler says: "I remember going with my father, forty years ago, in Oxford, to see a chrysanthemum which had grown to the top of an outhouse eight or ten feet high, and which lay on the roof just as a vine would do. The plant was well flowered, the blooms being of a reddish-purple colour. It was thought to be a remarkable plant, my father being invited to see it, it being a descendant of one of those my father raised in 1832. Some favourable circumstance probably contributed to the unusual growth of this particular plant, which showed some tendency towards a climbing plant, and what has happened once may possibly happen again." Mr. Wheeler further on in his letter kindly says should he ascertain the existence of this variety at the present time he will let me know, which would be worth some trouble to obtain, therefore I do not even at this long date since the occurrence despair of hearing more about this particular plant with the climbing habit, as it indeed would be a decided novelty. The chrysanthemum already contains so many forms, some of which are certainly peculiar in their formation, there is no telling what we may yet obtain. E. MOLYNEUX.

CHRYSANTHEMUMS.—NEW VARIETIES.

By EDWIN MOLYNEUX.

IT is owing very much to the introduction of new varieties which possess merit that the great interest in chrysanthemums is maintained and increased yearly. For the information of those who have not the means of judging for themselves of the qualities or otherwise of new sorts when first placed before the public, or previous thereto, I will give a list of those which I consider worthy of trial, and on which I have formed opinions from personal observation. I will describe the varieties in my own language as I consider their merits individually deserve, therefore some of the descriptions may not agree in every respect with those in catalogues. I feel justified in following the plan of the last few years by reason of the fact that all or nearly so of those I have recommended have turned out creditably. As nothing succeeds like success, I will adopt the same plan again.

The INCURVED SECTION demands notice first, not because they are the most numerous, but because they appear yearly in such small numbers that when one worthy of recognition is introduced it is appreciated most fully. The present season is productive of but four kinds which can be called distinct. I note that certificates have been but sparingly given this season, and rightly so, because they should always be indicative of high merit.

Mrs. S. Coleman is a golden bronze sport from Princess of Wales, a sure indication that it possesses quality coming from so good a parent. There is more gold than bronze in the colouring, except in the case of terminal flowers, which are always deeper in colour in this family, but unfortunately such blooms are of little use for exhibition. Those coming from crown buds are the best, therefore in that case will be more coloured with yellow deepening towards the centre than bronze; each petal also shows a pink tinge, which adds to its distinctness. Growers of incurved blooms for exhibition should not fail to procure this variety, which is being sent out by Mr. R. Owen and Mr. Davis, the former having secured several certificates for it.

John Doughty is a sport from Queen of England; the colour is rosy fawn, paler at the tips of the petals than Bronze Queen of England, but of better form than the Bronze Queen. During the last season I grew a variety named *Mr. R. Mudie*, a sport from Alfred Salter, which, as far as I can see, exactly resembles John Doughty, while in bloom I regarded it as an improved Bronze Queen, but as this latter variety is affected so much in its colouring by cultural conditions, much care will be needed in staging to prevent disqualification.

Robert Cannell is a new style of colour, a sort of a dull crimson and amber or fawn, but as it is not to be sent out until 1891 further reference is unnecessary.

Willie is a sport from Captivation, a well-formed variety, seldom seen now on account of its small size. It was introduced by Pethers over twenty years since. Of course the new variety carries the same formation of character, differing in colour, which is a soft yellow in the centre. It may find its way into the front row of a large collection, but nowadays its small size is a drawback.

JAPANESE predominate amongst the newer introductions, and include several very promising varieties. The bulk of them are obtained from seed, many of the best coming from America.

Mrs. Alpheus Hardy first claims attention, as in the season just closed it flowered for the first time in this country. It proves to be quite the novelty it was said to be; it cannot be called of the purest white, nothing like Avalanche, for instance, as it is distinctly a dull white. The only fear I have about it is that upon strong grown plants the florets may reflex somewhat, which would at once destroy its novelty, as the hair-like accompaniments are all on the under side of the florets, and as the florets incurve its peculiarity is displayed. On fairly strong plants perfectly-formed blooms are obtained. I have no just reasons for suspecting the probability of such a defect, but I merely mention it now so as to put growers on their guard; because now that good cuttings are available, we shall hope to see this variety in its best form next season.

Etoile de Lyon, although seen last season once or twice, must be classed along with the present year's batch. When properly grown it is one of the best varieties we have, often growing eight or nine inches in diameter and five inches deep. When the buds are formed at the right time the centre of the flower fills up thoroughly, the florets flat and lance-shaped. The colour is a deep rose-purple; but when seen almost white, with fluted and quilled florets, it has a very coarse appearance, and is not represented in its true character.

W. W. Coles is quite a new type of Japanese; in form between Criterion and Val d'Andorre. The florets are nearly as broad as those of Carew Underwood; the colour is a warm terra-cotta. Altogether this is a first-class variety, which growers would do well to procure and cultivate in their best style.

L. Canning.—When I say that I think this variety is equal, if it is not an improvement on Avalanche, it will be thought that I have a very high opinion of its merits. Well, I have great confidence in its future, as being one of the very best of the white Japanese varieties. A well-grown bloom will measure from seven to eight inches across; the form is very similar to Avalanche, but the florets are flatter, and it does not show any signs of the tips of the florets being notched, as in the case of Avalanche. The centre is full of "stuff." I characterise this variety as extra good.

Coronet.—This is an incurved type of Japanese; the florets are narrow, of a light bronzy yellow.

Mrs. Irving Clark is a full flower, with narrow florets, which are a soft peach colour.

Charles Pratt.—This, like the previous four sorts, is of American introduction, belonging to the incurved Jap section. The florets on the inside are new in colour—a rosy wine shade; lilac pink outside. Having seen the above five named sorts in good condition in the nursery of Mr. Morton, Darlington, I can safely recommend them.

Lucrece.—This is a pure white, semi-incurved Jap, serrated edges; most promising.

G. Atkinson.—Blush white, heavily veined with pink.

Robert Crawford.—Incurved, pale magenta on inside of florets.

Annie Clibran is a pink sport from Mdlle. Lacroix. It is not a self-coloured pink, but really a blush white, heavily veined with pink. Coming from such a good parent, it is certain to become a favourite. Under this name it was certificated at Chiswick, although I note it is now being sent out as *Pink Lacroix* or *J. R. Pearson*, which may lead to confusion. But I am not prepared to say which of these names it should rightly bear.

L'Automne was certificated at the same place as the last. The florets are narrow, pointed, and thoroughly incurve in the centre. The colour is quite distinct from anything I know, being a soft shade of cinnamon or buff.

Leon Frache has flat petals, blush colour; very promising.

Mrs. J. Collins.—Very similar in form to Criterion, except that the florets are a trifle longer than that variety, and are broader certainly; of a rich brick red colour.

Mr. A. K. Neve.—Flat florets, outer silver white, centre blush; good.

M. Antoine Berges.—Of Mdlle. Lacroix type; sulphur centre, otherwise white.

Madame Lay.—Purple magenta, deeper in colour than Stanstead Surprise; a large flower.

R. C. Kingston is one of Messrs. Cannell's seedlings; purple violet, extremely well-filled centre; capital habit, being dwarf and robust.

Anatole Cordonnier (Lacroix).—This is a much superior variety to that of the same name sent out by Delaux. It is of the style of Criterion in formation, but has longer florets which recurve gracefully at the tips. The colour is quite unique—salmon suffused with lilac.

Puritan belongs to the Belle Paule type; peach colour, which fades with age; a good variety.

M. E. A. Carriere.—This has semi-drooping florets, which are creamy blush; most promising.

Mrs. Andrew Carnegie.—When it first opens the florets incurve; afterwards they reflex, showing their colour, which is the deepest crimson, with a dark velvety shade. In formation the flower is very similar to Edwin Molyneux.

The REFLEXED varieties make but poor progress, as regards novelties possessing sterling merit. The only varieties which have been shown in improved form are *Putney George*, *William Earley*, and *Mrs. Mayes*, neither of them new, but have not been seen in anything like condition until lately. They are all worthy of cultivation where this section finds favour. The first is dark red with gold tips; the second is a purple plum colour; and the last is creamy white, shaded in the centre with violet. All are of the true reflexed form, which is more than can be said of some varieties in this section, which have a tendency to incurve at the tips.

The large or SHOW ANEMONE section has not been so much added to, as was the case last year.

Mrs. Judge Benedict is the only one possessing merit. The guard florets are short, evenly disposed, blush in colour; the centre, or disc, which is full, being of the same tint, with the exception that the points are shaded with sulphur; a first-class novelty.

Rouche Toulousaine.—Deep lilac, good centre.

Boyce's Seedling.—Guard florets pale lilac, disc pale yellow; very full and good.

JAPANESE ANEMONE varieties are only added to by one kind that I know.

James Weston, one of last year's batch of Jap anemones has been seen so little this season that it may almost be classed as new. The colouring, sulphur centre with pure white guard florets, renders it a striking variety, added to by the excessive length of the guard or ray florets.

Eva.—I saw in a collection at Ghent, I do not remember seeing it before. The guard florets are silver white; the centre, rose colour, which is a pretty combination, quite distinct from anything we have in any section of anemone flowers. Judging from the bloom I saw there, I thought that it belonged to the large anemone type, but seeing it classed as a Japanese anemone, I conclude the bloom I saw was not fully developed.

The new POMPONS are few in number.

Lune Fleurie and *Alice Stevens* are the only new pompons that I have heard of, the former is most distinct, the florets are fimbriated, deep orange yellow; the flower very small and compact, quite a novelty. Alice Stevens belongs to the larger type of this family, possessing good form, the colour, orange yellow.

Bessie Flight is a sport from Madame Montels, somewhat like Queen of Anemones, except that it is pink. I know of nothing really new in this section.

SINGLE VARIETIES are steadily increasing in public favour, and have received several additions.

One of the best is *Florence* shown by Messrs. Cannell at the Edinburgh show, where it was much admired. It is a large bold flower, the florets recurving slightly at the points, just enough to give it form. The colour, a soft blush, is most charming.

Lily Owen.—Orange buff and red or terra cotta.

Rose Owen.—Bright brick-red, good.

Yellow Jane.—The exact counterpart in form of its parent Jane, a deep yellow, quite first rate.

Mozart.—Rose magenta,

Queen of Yellows.—Buttercup form, good.

Souvenir de Londres is quite one of the best, its form is excellent, the colour, rich crimson, a showy flower.

FORCING EARLY GRAPES.

By J. C. CLARKE.

WHEN ripe grapes are wanted as early as they can be had, forcing should commence about the middle of November, when, if everything goes well and the season an ordinary one, the fruit may be expected to be ripe by the middle of May. I am quite aware that they may be ripened in less time than I have mentioned, but to do so the cultivator must force hard during all sorts of weather, which will result in weakening the vines so much that they will be worn out past recovery in 12 to 15 years, while under the treatment I recommend a set of vines will last for 25 or 30 years if they are properly managed. It is much better for those who require very early grapes to grow the first crop in pots, and to have a small lean-to house devoted to them. In such cases it is quite possible to have the fruit ripe by the middle of April. The advantage of having the vines in pots is that both the roots and branches are under the control of the cultivator. Besides this, there is no necessity to study the future welfare of the plants, as they are invariably thrown away as soon as the crop is consumed. With regard to the forcing of vines that are permanently planted out in borders, if their roots are all inside the house the grower need not be particularly anxious about them. But if all or any portion of them are in an outside border, it will be necessary to protect the border in some way so as to keep the rain and snow as well as frost from entering it. In cases where fermenting materials have been used before, I advise a continuance of the same treatment. I do not say that it is necessary to make a hotbed on outside vine borders; but I know what care and anxiety attend the production of early grapes, and I am able to measure pretty accurately the amount of disappointment that would be felt in the case of failure. For that reason I do not advise the making of any violent change in the management. It is better always to follow in the same lines that have brought success in previous years. At the same time, I must say here that in the early part of my experience I was in favour of placing warm fermenting materials on outside vine borders that had to be forced early, and to maintain a genial warmth in the material until the crop was ripe. But for some years past I have discontinued the practice after the first warmth had left the material used. Latterly I have covered the borders with leaves about one foot thick, and allowed them to remain without any addition or disturbance until the spring. Such a thickness of fresh-gathered leaves will, of course, maintain a steady temperature for three or four weeks, and then gradually decline until the material becomes quite cold. Under this treatment, even when forcing commenced in the middle of November, I found the vines did quite as well as when more warmth was given. Protection of some kind is, however, very necessary, even when forcing does not commence until the middle of February.

Unless for special purposes I do not agree with very early forcing of vines, apart from the cost of firing. The weight of the produce from a given space is far below what is obtained from vines that are not forced at all, or only slightly in advance of the natural season. In large gardens where there are several vineries the case is altogether different, but where there are not more than two the end of January is soon enough to put on the heat. The crop will then have the benefit of the increasing daylight and solar warmth, and under ordinary treatment will be in every way more satisfactory than those ripened two months earlier.

With regard to the other details of management, I may mention that all vines should be pruned at least six weeks before forcing commences, and if there are any insects about them they should be immediately dressed with Gishurst compound at the rate of six ounces of the compound to one gallon of water. As soon as they are dressed the rods should be brought down in a horizontal position along the front of the house. This is more necessary with young vines than old ones. Young canes are always more difficult to handle. The buds near the top will start first unless that part of the cane is placed much lower than the other.

Rather than take up a young cane too soon I allow the leading bud to grow out several inches in length so as to give a longer time for those below to get a good start. Once the leading shoot gets far in advance of the others those lower down the rod never overtake it as regards strength.

The inexperienced practitioner should bear in mind that there is also a difference in the behaviour of old vines and young ones as regards the amount of heat they will bear. Vines that have been regularly forced for a few years will respond to fire-heat much quicker than quite young ones; the latter not only take a longer time to break satisfactorily, but they will bear more warmth at first. An advance of five degrees is not too much. Old vines will start into growth more regularly in a temperature of 55 deg. than old ones will in a temperature of 60 deg.

These may appear trivial matters to those who have not been trained in the business, but they make all the difference when one is in actual practice. A neglect to study these minor details frequently finds the grower a fortnight or three weeks behind the time the crop was expected to be ripe.

When forcing commences in November the temperature at starting should range between 55 deg. and 60 deg., according as to whether the vines are old or young ones. These figures may be maintained both night and day until the young shoots are two inches long, when the night temperature must be reduced to 50 deg. That for the day may remain the same until the young growth is showing its bunches, when a rise on mild days of 5 deg. may be given, allowing a further rise of 15 deg. to 20 deg. with sun heat accompanied with a free admission of air on the top ventilators.

With regard to air-giving, I may tell the young gardener that for many years past I have, except on very cold nights, left two or three of the top lights open for the space of six inches all night, both in early and late vineries. There are many of my pupils about the country who will bear me out in this—that the practice is sound. If I had to force grapes early for another twenty years I should adopt the same plan, because I have found that it kept the vines strong and healthy, and where there is healthy and vigorous growth there are invariably large bunches of grapes, and plenty of them.

A judicious application of atmospheric moisture is of great importance in grape growing, and never more so than in early forcing. Owing to the increase of artificial heat which is necessary in early work, a considerable increase in the water used for charging the internal atmosphere with moisture is necessary also. But as the natural temperature rises less moisture in the air of the house will be required. From the time the house is started until the young shoots are two inches long, I like to syringe the vines and damp the floors three or four times a day, according to the state of the outside air. In bright weather more moisture is required than is the case in foggy or wet weather. I always discontinue syringing the vines when the young growth is about two inches long. What moisture is required after that can be secured by damping the walls and floors. It ought to be a golden rule in every early forced vinery that no water should be used in any way about either the vines or the house in the morning until the thermometer reaches the maximum figures allowed, as syringing or damping the floors always lowers the temperature.

THE PINK.

By JAMES DOUGLAS.

I WAS pleased to read in the gardening papers that prizes are likely to be offered in London for pinks. It is not likely that there will be many competitors, because no amateurs in the South have collections, and very few in the North. Mr. Charles Turner, of Slough, and Messrs. Hooper and Co., of Bath, are the leading trade growers; both of them could show good collections.

The pink is a very beautiful garden flower, much more hardy than the carnation and picotee, because it will grow and flower freely in the open borders without any protection. It is also much more readily propagated from cuttings; "pipings" the fanciers term the small side shoots that are slipped off in July.

In the days of my boyhood the pink was very popular as a garden flower, and I well remember growing a fine collection of named varieties in our cottage garden at home, and was greatly delighted when a professional gardener came and begged cuttings from me. They strike freely in the open air if the precaution is taken of getting off the cuttings in wet weather and planting them in fine soil in a rather shady place. They can be replanted in an open position afterwards. There were many good pinks raised in those days, Dr. McLean, of Colchester, being the most successful raiser. Many of the best varieties were well figured in "The Florist." Some of them are still in cultivation, and in good healthy condition indeed.

The pink does not degenerate as the carnation and picotee do. One of the leading amateur growers at that time was the Rev. G. Jeans. He wrote some genial articles on his favourite flower under the signature of "Iota," and would have it that the carnation and picotee were "both only varieties of the dianthus or pink," thus giving, he said, "the pink the greatest importance of the three, as the parent of the other two," and boldly asserted ("The Florist," vol. X., page 283) that a pink had been raised from a carnation seed, and a carnation from a pink seed, he having seen a trustworthy instance. I have no doubt the reverend gentleman believed what he said, from no other evidence except that some one showed him plants that were presumably so obtained, but I should have wanted to know whether there was any chance of the seeds having been mixed up. I have sown thousands of carnation seeds, and never yet found any of them produce a pink or a plant having any resemblance to one.

The pink flowers a month earlier than the carnation, and is to all intents and purposes, specifically distinct. Dianthus Caryophyllus or Clove Pink, a plant naturalized on old walls in various parts of England, and producing pale flesh-coloured flowers is doubtless the parent of our garden carnations, while the pink is descended by ordinary generation from Dianthus plumarius; the Pheasant's-eye Pink, a plant also found in its natural state upon old walls and ruins in England. So much as this was known to the botanists years before "The Florist" was founded.

It is interesting to some to discuss the parentage of the flowers we cultivate, but the largest number of gardeners and amateurs accept the flowers as they are, and cultivate them for their sweetness and beauty, never caring for the rights of primogeniture or anything else beyond what they can see and touch. As a rule, the garden pinks are sweetly clove-scented, which is a point in their favour, but the rich lacing of scarlet, red, marone, and crimson on a glistening white ground are very beautiful indeed. The main point in their culture is the propagation of healthy plants early; the pipings should be taken off, even before the flowering period is over, and that is the end of June. They will root more freely if the cuttings are taken off early in the morning, if it cannot be done in wet weather, and they may be planted in frames or handlights on the north side of a wall or fence, and better still if they are planted over a hotbed with the gentlest of bottom heat.

In six weeks the cuttings will have produced nicely rooted plants, and they should be planted out three inches or so apart in an open position; to be replanted again in beds or borders about the end of September or early in October. The formation of a pink bed used in the old days to be a formidable undertaking, like the formation of a bed for ranunculi or other florists' flowers. Dig out your bed two feet

deep, and make it up with a compost of decayed turf leaf mould, cow manure a year or two old, with the addition of other things that might be obtainable.

We can now grow excellent pinks in ordinary garden soil, but like all others of our established garden favourites, they like it to be worked to a good depth, and good farmyard manure worked into it, and deep enough, so that the manure does not come into immediate contact with the roots, even if the manure is well decayed close contact with the roots is not desirable. The pink will repay any care that may be bestowed upon it; but a goodly show of bloom can be produced from plants set out in ordinary garden borders. When the soil of the borders is rather heavy I have used the siftings from under the potting shed bench to place round the roots. The soil from hyacinths, tulips, &c., is best as it is sandy, and contains much leaf-mould; a handful or two is merely placed around the roots of each plant, which gives them a good chance to start into growth at once. Mulching over the beds with short manure in winter keeps the plants from injury from alternate frosts and thaws.

Certain varieties of the pink are excellent plants for forcing; but when they are hurried on in a warm house to bloom very early the lacing will seldom bear criticism. An old red ground variety, Anne Boleyn, and a newer one, Lord Lyons, were excellent for forcing, but they are not seen so often as they used to be. I grew them for many years, and also a white variety, Lady Blanche, which produced the best formed flowers of all the pure white pinks. The ordinary fringed white is also an excellent forcing pink; it is grown in immense quantities by some of the farmers in this part of Essex. They lay the plants in rows, and turn the earth over on them with a plough. They do not put in cuttings, but merely pull the old clumps in pieces by hand. The flowers are cut and sold in handfuls at so much per dozen bunches. I have been told that sometimes the white pink flowers are a more profitable crop than cabbages or even potatos. They would do even better with a more careful system of culture. Only one variety is grown, the fringed, not very double white, alluded to above.

Notes of Observation.

HYBRID RHODODENDRONS.

In a walk through the structures in the nurseries of Messrs. J. Veitch and Sons, at Chelsea, that are devoted to plants requiring a temperature intermediate between that of the greenhouse and stove, the beautiful hybrid rhododendrons raised by the firm are the first to arrest attention. Those known as the Javanico jasminiflorum hybrids are extremely attractive, for they have an excellent habit, bright, glossy-green foliage, and produce noble trusses of flowers. Not the least important of the claims they have upon cultivators is their freedom of flowering. There is, indeed, at all seasons of the year a good display of flowers in the house specially devoted to rhododendrons, and at the present time there are sufficient flowers to produce an extremely beautiful display of colour. It may also be mentioned as a matter of some interest that flowers of these rhododendrons have been exhibited at many meetings of the Royal Horticultural Society. The double varieties in bloom comprise R. balsaminæflorum album, R. balsaminæflorum aureum, and R. balsaminæflorum carneum, which differ chiefly in the colours of the flowers, which are indicated by the names. Among the single varieties now in flower are R. carminatum, R. luteoroseum, R. amabile, R. President, R. Lord Wolseley, R. Princess Alexandra, R. Princess Royal, R. Queen Victoria, R. Taylori, R. Princess Frederica, R. Duchess of Teck, and R. Maiden's Blush, with several beautiful varieties not yet in commerce. B.

GROWING PARSNIPS FOR EXHIBITION.

Most growers agree that to obtain early and large parsnips it is necessary to sow the seed early in February, or as soon after as the weather will permit, but it was not until the summer just passed, that I had heard that better results are obtained by sowing in the autumn or early winter. I happened to call on a gardener at the end of August, who is great in growing vegetables for exhibition, who had just lifted some roots, and was preparing them for the show; they were such magnificent samples that I became curious to know what course of treatment had been adopted to obtain them in that condition so early in the year.

I, however, soon learnt that the seed had been sown in November previous, and that this was the invariable rule with the grower in question. No particular date is studied in regard to sowing, or for that matter, the month either. If the ground is not fairly dry in November it is deferred until December, as it is considered desirable that the soil should be in a kindly condition to receive the seed. Highly manured land is not so suitable for the production of long tapering roots, as that which has been somewhat exhausted but is deep and mellow. In the case in question the parsnips following after the scarlet runner crop has been taken away, and that without any preparation further than to hoe over the surface and clear away all weeds. My friend expressed the opinion that some growers do not give their parsnips room enough when growing. In the instance I allude to, the rows of plants were 2 feet wide, and 18 inches was the distance between the plants. It appears that there is some risk in sowing so early, as in severe weather in the early part of the spring, the plants sometimes are killed to such an extent as scarcely to leave enough to make a crop. With this exception the plan has certainly much to recommend it, and freely translated it affords an argument for early spring sowing. TRAVELLER.

WINTER-FLOWERING BEGONIAS.

Winter-flowering begonias are, as a matter of course, largely grown in the Chelsea Nurseries of Messrs. J. Veitch and Sons, and consequently now form an attractive feature. Especially noteworthy among them at the present time are John Heal and Adonis, two surprisingly beautiful varieties that may be described as the forerunners of a quite new type. John Heal has rather large deep green leaves, and produces its bright rose-carmine flowers in great profusion, and well above the foliage. A valuable characteristic of this charming variety is the duration of the flowers, which, under fairly favourable conditions, retain their freshness and beauty for at least three weeks. Even then the flowers do not drop, as in the case of most other begonias, but shrivel on the stalks. Adonis is a descendant from the foregoing variety, and quite distinct from it. It has a robust habit with bold foliage, and the flowers are light rose-carmine, fully three inches in diameter and borne well above the foliage. In the cultivation of these begonias the best practice to adopt is to allow them to gradually go to rest in January or February, and to give very little water during the resting period. When they begin to show signs of growth shake off all the old soil, put them in pots rather smaller than those previously occupied, subsequently shifting them on as becomes necessary. They can be readily propagated by means of cuttings, and plants raised from cuttings struck early in the season will bloom during the autumn and winter. I made note also of a third variety. This is known as Winter Gem, and is not as yet in commerce. It is somewhat similar to the foregoing, but partakes more largely of the character of B. socotrana. It is, however, dwarfer than that species, and the flowers are of a bright crimson-carmine hue. B.

LATE CHRYSANTHEMUMS.

A notable feature of the chrysanthemum season is that—unless it is in those gardens where the plants have been specially treated to flower late—the display of flowers as I write, in the second week in December, is smaller than has been the case for two or three years past. This is not because there has been a less number of plants grown, but because, owing to the mild weather that prevailed during November, they have gone out of bloom earlier than usual. I do not anticipate any scarcity of chrysanthemums in places where the stock has been grown purposely for late flowering, for since the year 1884 we have not had such a favourable autumn for them. The plants gave comparatively little trouble, owing to the absence of frost, those which stood in sheltered positions being quite safe without any protection until the closing days of November. My own stock, however, received this treatment and are none the worse, while financially they are more valuable now than they would have been had they been in bloom a month earlier. The whole of my plants I treated on the cutting down principle. The cuttings were put in early in February, and, when rooted, grown on in the usual way, the majority of the plants being in seven-inch pots when they were cut down in the middle of June, Japs, incurved, and reflexed varieties being treated alike a fortnight after they were shifted into the pots in which they now remain. When a good number of sorts are cultivated one must expect some difference in their behaviour. The incurved I find are the least satisfactory, but the stronger the plants are when cut down the better they respond to the treatment. I am satisfied these can hardly be struck too early, especially such sorts as the Princess Teck, Lord Eversley, Mrs. N. Davis, and Mrs. C. Gibson. These are, no doubt, amongst the best of the incurves for late blooming, but they are none too vigorous in growth for the kind of treatment I refer to. I may also mention that Mrs. C. Carey is a good late-flowering white variety, the best yellow is Mrs. N. Davis. The Japs are certainly less difficult to manage. I have the following just now coming into flower: Fair Maid of Guernsey, Duchess of Albany, Moonlight, Boule d'Or, Thunberg, Carew Underwood, Ethel, Yellow Ethel, and Grandiflorum. Boule de Neige is a good white, and free bloomer. This is a reflexed variety, in size intermediate between the pompons and the large reflexed class.
J. M.

NEPENTHES HOUSE AT CHELSEA.

The nepenthes house in Messrs. J. Veitch and Son's Nurseries at Chelsea is at all seasons of the year more or less attractive, but at no time could a walk through the structure be more enjoyable than now. The plants are, it need hardly be said, in the most luxuriant state of health, and their many thousand pitchers produce an effect that can be more readily imagined than described. Conspicuous among other fine kinds are Nepenthes Dicksoniana, N. Mastersiana, N. Curtisi, N. Northiana, N. rufescena, N. Morganiæ, N. Raffiesiana, and N. Hookeriæ, all of which have pitchers remarkable both for their large size and attractive colouring, and are worthy of a place in a collection of the most limited extent. B.

CHEAP PROTECTORS FOR PLANTS.

In the GARDENERS' MAGAZINE of October 22, 1887, page 643, you noticed a new shelter for plants, an osier hen coop covered with green scrim, which I then expected would prove a really useful, easily moveable protector. The late severe frost following mild weather, with no protecting snow, has given good means of testing the hardiness of plants and the efficiency of protectors. Our coops have proved most useful; among the plants sheltered is a clump of the large pure white Christmas rose. The flowers have been finer than we ever before had them. A New Zealand fern seems quite happy under its coop. I believe that many plants considered only half hardy will stand the winter with this protection. GEORGE F. WILSON.

Heatherbank, Weybridge Heath.

"A SIMPLE FACT ABOUT" KEATING'S COUGH LOZENGES. Ask throughout the world, in any country that can be named, you will find them largely sold. There is absolutely no remedy that is so speedy in giving relief, so certain to cure, and yet the most delicate can take them. One Lozenge gives ease. Sold in 13½d. tins.—[ADVT.]

DESSERT PEAR, BEURRE DE L'ASSOMPTION.

THIS noble fruit is of recent origin, having been first fruited by the raiser, M. Rouille de Beauchamp, of Goupillère, near Nantes, in the year 1863. Leroy gives it a high character, but Hogg is not enraptured with it. We have tasted samples equal to Williams's Bon Chretien, beyond which, in quality, we do not expect to go. As an early pear, ripening at the end of August, its great size is surprising, and that point should be noted as at least of some commercial importance.

In form *Beurre de l'Assomption* is bluntly pyriform, somewhat uneven, with a rounded shoulder (in Leroy's second type), shown in our figure as a fleshy fold at the insertion of the stalk, which is short and stout, and obliquely inserted. The eye is large, partially closed or open, and set evenly with the rounded crown or slightly raised above it on a nipple-like prominence. The skin is lemon-yellow, covered with patches of russet. The flesh is white, buttery, tender, juicy, and delicately perfumed. The quality being variable, it is not adapted for universal planting, but where it acquires a good quality it is one of the most profitable early pears. Leroy says, "qualité première."

The tree is a vigorous grower, with large leaves, forming naturally a handsome pyramid, and is highly productive. Leroy speaks of its fertility as remarkable. It thrives equally on the quince and the pear, but will be found to give the best quality of fruit from the pear stock, and as a matter of course, it will have to be waited for.



DESSERT PEAR, *Beurré de l'Assomption*. From samples selected at the Apple and Pear Conference.

MR. J. R. RODBOURN has been engaged as head gardener to Miss Watney, Haling Park, Croydon.

MASONS HAVE THEIR RIGHTS, but why do they overtop the bricklayers and the plasterers? Alas, brick and plaster have not the dignity of stone, and the men who use the trowel must give place to the men who make chips. Well, here is the *Masonic Review* in a grand double number, containing a story called "The Volume of the Sacred Law," and portraits of Lord Brooke and Augustus Harris, with Mr. Warner, who cures everything, sandwiched between to keep them both in health. Three cheers for the *Masonic Review*, and long life to "Bro." (short for brother) everybody.

LATE PLANTED POTATOS.

IT will be remembered that in the early part of the summer last past a paragraph went the rounds of the country papers recommending late planting of potatos as a sort of proof against the disease to which this crop is liable. A friend read the paragraph referred to and acted on the advice it gave. In due time he asked me to come and witness the lifting of the crop, which I did, with the result that I was neither disappointed nor edified. There was nothing in the condition of the crop that was any way noteworthy (certainly not enough to make me a believer in late planting). Looking at all the circumstances and the character of the tubers produced, I cannot see that there is a single point to recommend the plan, except in cases where it is not possible to get the crop planted earlier—even then the cultivator must be content with a moderate return unless he has better success than my friend. In the instance I refer to a long line was planted on a border facing east, the sort being Reading Russett; every set appeared to have started and made fairly satisfactory growth, but the tubers were neither large nor numerous; in fact there was not more than half a crop, although the soil was good and they had every attention. There was no disease in them, nor indeed was there any disease in those planted at the proper time. So perhaps it would be premature to judge what effect late planting may have in seasons when the potato murrain is prevalent. Another lot was planted on the 1st of July along the front of a vine border; here the soil was much richer, and the sort being that known as the Flounder. The tubers were much larger and more in number, but this was evidently to be attributed to the better quality of the soil. Although this lot was so favourably situated, the largest potatos were much smaller than some of the same sort that I saw lifted in the middle of August, or only six weeks after the others were planted.

Taken altogether, I can only recommend late planting as an experiment and nothing more; after it has been done once I do not think many people will trouble to prefer it the second time, unless there should be any one who, for the sake of being singular, continues the practice.

J. C. C.

THE BEAUTY OF THE HOLLYHOCK.

WHY speak of the beauty of a plant so well known that it has a place in almost every cottage garden, while it is worthy of the princely garden, and is peculiarly at home in that well-furnished, varied, natural, green and free domain known as the "English garden"? Because when it is well grown its beauty is not displayed; it imitates the stiff grenadiers of Frederick the Great, and is neither allowed to aspire or sprout, being shamefully shortened in the stem, and forbidden to produce those subsidiary spikes or spires that are actually wanted to ensure natural, or, in other words, beautiful expression. Here is a figure of a group we saw in a grand garden in the past summer, and we submit that the perpendicular lines form a fine harmony, which is enhanced by the ample spread of the leaves at the base, and the repetition of leaves and flowers on the long length of the tapering spire which may be likened to perpendicular architecture. Nor is the dignified beauty of this noble flower a matter of form alone, for it is one of the most varied and cheerful of garden plants, and its flowers are superbly enriched by their order by setting with the aid of bright green leaves. The mutilation of the hollyhock for show purposes we do not quarrel with, because we find immense delight in the sumptuous flowers that appear on the show table, and that cannot be produced when the plants are allowed to open all the buds they show, or when secondary spikes are allowed to rise freely. But we do wish the lovers of beautiful garden scenes to keep in mind that for garden purposes stopping the major spike and suppressing the minor spikes is a custom "more honoured in the breach than the observance."

The prevalence of disease is a serious calamity for the lovers of this flower, but those who grow it naturally, and allow it to have its own way, do well enough, and have delightful displays of its high-toned beauty. It is in "working it up" to a high pitch of floral excellence that the disease is encountered as an enemy, and occasionally thwarts the best endeavours. But for all this, through the long years in which disease prevailed, the plant was grown in quantities, and with complete success, in many gardens, and as a rule those who treated it simply as a biennial or an annual were the most fortunate, for, in fact, the flowers never failed them. Seed sown in January and assisted with a gentle warmth may be coaxed along to ensure a good bloom the sam



HOLLYHOCKS AS NATURALLY GROWN FOR GARDEN DECORATION.

year. But a strong heat is deadly to the hollyhock, and not a few who were exhibitors of the flower in its best days fully believe that the hard forcing resorted to for making stock of new varieties was the real cause of the calamities that followed, and that at last excluded the hollyhock from exhibitions. We have seen somewhat of a revival in recent years, and have hope of further progress. Those who sow good seed sufficiently early, and take reasonable pains to ensure a quick but healthy growth, may count upon having a good display of hollyhocks in the garden.

WANTED, A PUBLIC HALL FOR HORTICULTURE.

ON the 13th of November, 1888, a meeting of exhibitors and others interested in the work of the Royal Horticultural Society was held in the Council Chamber at Victoria Street, to consider the expediency of any further occupation by the society of the drill hall in Westminster. The meeting was of a satisfactory character, both as regards numbers and the character of the persons present, for all present were workers in the concern, and any decision arrived at by such a meeting was felt by all to be sufficient for the immediate purpose. Acting on a conviction that, at that time, I believed was shared by many, I made a definite declaration to the effect that the drill hall had proved unsuitable for the society's purpose, and might, with advantage, be vacated at the close of the first year's tenancy. Having moved a resolution to this effect, Mr. Harry Veitch sprang a mine beneath my feet by stating that the society could not legally hold floral meetings in the offices in Victoria Street, because anything in the nature of an exhibition was forbidden by the terms of the tenancy. The show of hands placed myself and my seconder in a minority of six. I have had such a run of good luck in carrying proposals, that it was an enlivening change to be so completely beaten, but, like the compliant one that Butler sets forth in a supposititious case, I was "of the same opinion still," and to this hour I sigh for a place of meeting in which the flowers can be seen, and to which the public will resort to admire them.

Immediately after that meeting I proposed to friends interested in the affairs of the society the desirability and possibility of obtaining a hall of our own for our meetings, and from that day to this I have occasionally discussed the matter, but quite rarely have I met with any encouragement, for the dread question always appears to block the way—How is the thing to be paid for? The question of primary importance is as to the need for a place of meeting that will be under our own control, and if not absolutely, at least in some part, the property of the society, or of some corporation operating in harmony with it, and with a view to mutual interests for the public good. The thing having been talked about vaguely—as must happen in such a case—it appears to me in the nature of a duty to place before the horticultural public an outline of the thing that appears to me to be wanted, and of the means that appear to me suitable to bring it into being.

We want a hall for horticulture. It should be in a central position, convenient for access from leading roads and railways, and the construction should adapt it for flower-shows, dinners, and other festivals, committee meetings, offices, and perhaps a general mart or exchange for miscellaneous business, as, for example, the display of plants for sale; the accommodation of trading firms for meeting customers, and for housing samples, models, drawings, and other materials required in business transactions in connection with agricultural and horticultural industries. There would be needful two or three (or more) well lighted rooms adapted for public meetings, in addition to one spacious and noble hall, lighted in the way of a picture gallery, with orchestral platform and such other necessary features as would render it complete for the convenience of flower shows and festivals. Should the idea take shape it will grow as the plan is developed, and it should be comprehensive as a place of resort for horticulturists, who only need some such centre of operations to assemble in thousands where, as the case now stands, the habitués meet only in scores, and fresh faces are rarely seen. Country gentlemen, participating in the pleasures of the London season, would make a place in the list of things to be done of such an attraction as the hall would offer them, provided only the thing obtained success commensurate with the purpose in view.

One of my friends who has heard of my proposals has made a public offer of a subscription towards the project. As a thing to be initiated by eleemosynary contributions it should have no help from me, and I cannot imagine that many of my friends, to whom from time to time I have spoken on the subject, would put their hands to anything of that kind. There is only one foundation proper for a horticultural hall, and that is the commercial foundation. It must pay its way, or prove itself a mockery, a delusion, and a snare. I have not attempted any estimate of the amount of capital that would be required, but not having in view a cheap shanty or a bad imitation of a railway terminus, a considerable sum would have to be invested, and business must be looked for to ensure reasonable returns. The one hundred per annum now paid by R.H.S. for occupation of the drill hall ought not to be taken into account in this connection. I may be outvoted any number of times, but I feel sure that were a door to open leading to something better and within the society's means, the exodus would be speedy and unanimous. The society is growing, and should grow. If it can pay one hundred pounds now for a year's accommodation, the day should be near when it could as easily pay a thousand. It is now, what it has not been for fully thirty years, a *horticultural* society; and the public are now taking a new interest in its work, and are daily more and more disposed to assist it, as is ever the case with a good thing that inspires confidence. The activities of the horticulturists carry them to all the ends of the earth for places of festivity and business. There may be a good side to the discursive system that fixes an exhibition in this spot and a dinner in that, but a recognized and generally acceptable central home would be an incalculable advantage to horticulture at large in the metropolis, and many sources of income would arise for a central hall that could afford accommodation for exhibitions, dinners, public meetings, and official correspondence for various institutions, both of London and the provinces.

This letter is not to be regarded either as a prospectus or a preliminary to any distinct business proposition. The subject has been lightly discussed in an erratic way, and the time appears to have arrived when I should give something like definite expression to my views that I may obtain the sympathy and aid of practical men, in formulating a plan should opinion tend favourably that way. For the present it is but an idea that I should be quite content to see carried out independent altogether of any interest, sentimental, or commercial, I may be supposed to have in it. I am fully occupied and happy in my work, and in no haste to make a mountain for the pleasure of piling a cairn on its summit. SHIRLEY HIBBERD.

Kew, January 7, 1890.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

STOVE PLANTS IN BLOOM comprise Amaryllis Mrs. Garfield, Aphelandra nitens, Bouvardia jasminiflora, B. Hogarth, B. Mrs. Green, B. President Cleveland, Eucharis amazonica, Euphorbia jacquiniflora, Gardenia florida, G. Fortunei, Gesnera cinnabarina, Jasminum gracillimum, Poinsettia pulcherrima, Salvia splendens, and Tabernæmontana coronaria fl. pl.

THE HOUSE.

DURING the winter season it is necessary to exercise a little extra care in the watering of ferns grown in cases, for although the soil must not at any time be allowed to become dust dry, it ought not to be kept in a constantly saturated state. Probably the most useful assistance that can be afforded upon this point will be to say that the soil should be maintained in a moderately moist state, and be allowed to become rather dry before the plants are watered. A moderate amount of ventilation will be necessary, and the best time for admitting air is about noon. Cases occupied with ferns susceptible to injury from damp during the winter season may with advantage have the inside of the glass wiped dry two or three times a-week, as may be considered expedient. Flowering plants employed in the embellishment of the drawing-room and other indoor apartments, more particularly those from the forcing pit and plant stove, must, to prolong their beauty to the fullest possible extent, be placed in positions where they will not be exposed to cold draughts. They ought also to be watered very carefully, and the precaution should be taken of supplying them with tepid water, as it is of the utmost importance that the roots as well as the tops should be guarded from extremes of temperature. In the formation of decorative groups in entrance halls and corridors the hardiest greenhouse plants should, as a rule, be employed, for in these positions it is impossible to avoid draughts, and when the weather is at all severe a stay of a few hours is sufficient to seriously injure tender subjects.

THE GARDEN.

VENTILATE the conservatory and greenhouse freely upon all favourable occasions, and guard against cold currents of air passing over plants lately brought from the forcing houses. Remove all decayed leaves and flowers, keep the paths and stages clean, and frequently rearrange the plants in the conservatory. They ought to be re-arranged once a week, and when a few fresh ones are brought in they light up the groups and give the house a beautiful appearance. These remarks are applicable to all times and seasons, but it is especially necessary that they should receive extra attention just now, for there is little to interest out of doors, and this structure is the principal and, in many instances, the only resort. As there is necessarily a mixed collection of flowering plants in this structure, and derivable from various sources, some requiring a higher temperature than others, a little attention is necessary in their disposition and arrangement to make all comfortable. Camellias, heaths, epacrises, and other hard-wooded plants should be arranged at the cool end. Forced bulbs and other plants, such as primulas, justicias, euphorbias, violets, lily of the valley, and poinsettias should be kept at the warmest end.

ORCHID HOUSE AND STOVE.

ORCHID HOUSE.—Orchids with fleshy pseudo-bulbs that are at rest should be kept dry; and others, such as the aerides and vandas, must have no more water than is necessary to keep them fresh and healthy. Any that may be making young growth must be placed in the full light, and a little extra care bestowed upon the watering. Those in bloom should be shifted to the coolest end of the respective houses, and be placed where no drip or damp of any kind can fall upon the flowers.

STOVE.—The occupants of this structure must be kept as quiet as possible at this season. Guard against the temperature being too high. In very sharp weather the thermometer may be allowed to fall to 55 deg., which is preferable to employing an excessive amount of fire-heat to keep it at the regular height. Plants at rest must have little or no water. Average temperature from 60 to 65 deg. by day, with a fall of five degrees through the night.

FORCING AND FRUIT HOUSES.

PEACH AND NECTARINE TREES indoors should be pruned at once. If the growth has been properly regulated through the summer, very little pruning will be necessary. Examine the trees and cut away all the wood that is worn out, and lay in young shoots to fill up the vacant space. Last season's shoots laid in for fruit-bearing should be left about a foot in length and shortened back to a wood-bud. Those shoots which do not exceed this length are well ripened and have a fair proportion of flower-buds, will not require shortening, and may be laid in their full length if there is space for them. Trees that are to be started at once should be regularly syringed and a moist atmosphere maintained. Fire-heat must be used sparingly, for these trees bloom naturally at a cold season of the year; 50 deg. by day is quite high enough to begin with. Allow the thermometer to go a few degrees higher by the aid of sun-heat, and then give a little air to prevent its going too high. At night 40 deg. will be a safe medium.

PINES swelling their fruit must receive every encouragement. The temperature should be kept at 75 deg. by day and 70 deg. by night. Those not yet showing fruit ought to be kept rather quiet, and in 5 deg. less heat. As the succession plants and suckers are now at rest, they should not have more heat than 10 deg. less than the fruiters.

VINERY.—Vines from which the fruit is gathered should be pruned at once and dressed. Loose bark that will part readily from the vine should be cleared off, and the whole of the remaining wood have a thorough washing with a solution of Gishurst Compound. A moderately soft brush should be used, and it should be worked thoroughly into every crevice. A moderate amount of care is required in doing this, to prevent the dormant buds receiving any injury. Vines that are to be started at once should be trained horizontally along the lower part of the rafters, to equalize the flow of the sap and induce the buds at the lower part of the rod to break strongly. If the vines are old, and there appears the slightest danger of injuring them by the twisting necessary to bring them horizontal, simply lower the tops of the vines on a level with the top part of the front sashes, and suspend them in that position with a piece of stout cord until the young shoots are from one to two inches in length. Houses just started should be kept at a temperature of 40 deg. by night, and 45 deg. by day, allowing a little increase by sun-heat. Vines in earlier houses showing leaf should have a temperature of 55 deg. by night, with an additional 10 deg. during the day.

FLOWER GARDEN AND PLEASURE GROUNDS.

THE lawn should be thoroughly swept and rolled once a-week at least, when the weather is open, to keep a good firm bottom and give it a clean and cheerful appearance. Gravel walks may now be turned. This should be done without disturbing the rough stuff underneath, for that is not wanted on the surface. Walks when first made should always have a sufficient depth of fine gravel on the surface to admit of their being turned over every other year if required; by turning them in a proper and workmanlike manner they can be kept clean and in good condition for a long time.

KITCHEN GARDEN AND FRAME GROUND.

ASPARAGUS BEDS.—Clear away weeds and give a good dressing of rotten dung; that from an old hotbed is preferable. Cover the manure with about three inches of soil from the spaces between the beds.

CARROTS.—A small sowing of an early variety may be made on a warm sheltered border; choose ground that was dug up roughly in the autumn, and has been thoroughly exposed to the weather. In light sandy soil, with a little protection in sharp weather, a nice crop may be had. Old soil from the potting bench, in combination with charred and thoroughly-decayed vegetable refuse, and all thoroughly incorporated together, will be invaluable for such purposes.

CAULIFLOWERS.—Those under handlights and in frames should have an abundance of air whenever the state of the weather will admit of its being done with safety. To keep them hardy and stocky take the lights entirely off for a few hours on fine days. Keep the foliage dry and remove all decayed leaves without delay. Cover the lights with mats, straw hurdles, or long litter on frosty nights.

ONIONS.—A small bed of the Silver-skinned sown now, under the same conditions as required for the carrots, will be useful for drawing for salads and flavouring.

PEAS.—Sow a good breadth of the first early sorts. Choose a south border, and excepting for the very dwarf kinds make the rows six to eight feet apart, provided the space will allow. The peas obtain more light and consequently bear better than they possibly can do when crowded together in the ordinary way, and the spaces between are invaluable for early potatos, lettuce, radishes, and other early spring crops.

VILLA FARM.

IT may perhaps be useful to direct attention to the fact that pastures will soon require some special attention, and indeed it is none too soon to begin whatever needs doing, if only the weather will allow. To feed late on hay-grass is to diminish the crop of hay as well as to lower its quality, and make it later in getting up than is perhaps advisable. Generally speaking, matters may be left as they are for the present, but there should be a look out for stuff for top dressing when the grass has been cleaned and rolled, and if muck cannot be spared, artificials of some sort must be purchased where the land needs any substantial refreshing.

A MATTER of considerable importance on the villa farm just now is to arrange the affairs of the poultry yard for the coming season. The mating of all birds from which stock is to be raised should be attended to at once. It often happens that male birds deny themselves food to the injury of the yard, owing to their fine generosity at feeding time and the exceeding gluttony of the hens. Therefore, have an eye to this matter, and when needful let the cocks have a little extra food apart, so that they cannot give it away. When we have had large stocks to manage, we have found tallow greaves, broken and soaked for twelve hours, a capital aid in view of the breeding season.

CARNATIONS.

CLASSIFICATION: A HELP OR HINDRANCE?

HAVING when charged with the pleasant but very responsible trust of prescribing conditions for the special prizes for yellow-ground carnations provided by the Kilmurry Yellow Grounds' Fund for our show of August 1, after much and careful consideration of the whole circumstances of the case, attached the note as follows: "The judges are instructed to award these prizes to the best and most effective flowers, whether selfs or with markings, and whether the markings be longitudinal or curvilinear, or of mixed character," as the ruling principle upon which the awards should rest, it was natural I should be somewhat startled when I found in the GARDENERS' MAGAZINE a paper from the pen of my friend, Mr. R. Dean, on Yellow-ground Carnations, calling attention to the necessity for "classification," indicating very clearly he had in his mind the classification as followed in the case of the white grounds, and closing with the expression of his "hope that in all future competitions this will be insisted upon alike by judges and by compilers of schedules." Whether my friend, when he penned his paper, had remembrance or was oblivious of the note recited above, I know not; though as I am sure he would show me no disrespect, I suspect he was oblivious; but, however that may be, the question raised is well worth consideration, and I am quite ready to justify, or attempt to justify, the position I assumed. First, and on the main question, we have no flowers in the yellow grounds to assimilate to the classification followed in the case of the white grounds; we have neither flakes, bizarres, nor flowers with defined curvilinear markings, the conventional picotee of the present day—a very different flower, let me say, to the true picotee—and so the proposition fails. But, secondly, and assuming (a very large assumption) that presently, in the near future, we shall have flowers that may be so classified, have the benefits of the classification as followed in the case of the white grounds been [so marked as to induce us servilely to follow in the case of the yellow grounds? I have no wish to thrust my conclusion upon my fellow florists, but I, for one, cannot hesitate to record a very emphatic "no." Let us see what it has done. Classification, as applied to genera, resting upon well-defined, broad, and easily-understood conditions, is the helpful handmaid to the man of science; as a means of reference and the simplifying knowledge of the utmost importance in the affairs of life; but as applied to the carnation, directly we go beyond what Mr. Rowan so well pointed out in our Report for 1886 as the natural division,—longitudinal or curvilinear markings, bizarres, and flakes in the former, the conventional picotee of the latter, with selfs and fancies—we get into the region of minute and arbitrary definitions, exposing us to the reproach of unreasoning and injurious restriction. Dividing, for the purposes of single-bloom exhibition, the bizarres and flakes and picotees into colours, we at once exalt an element, colour, naturally secondary as to a particular hue, into primary importance, and as the deeper tones are by contrast more striking to the uneducated eye, we give to contrast an evil prominence, and blind the florist to the higher beauty and refinement of combination.

So for years we had to struggle to obtain recognition for the sweetest of the bizarres, the pink and purple; and to this day it would be hopeless to set up a soft-coloured flake like Delicata, Dorothy, or Dorothy's Sister in the classes as against a full-toned flower like Rob Roy. And to this day, again, colour being the rule of selection, we reject, arbitrarily and barbarously in the case of the picotee, every hue or combination of hues not distinctly either a red, or purple, or salmon, pink, or rose. And, again, subdividing the colours into heavy-edged and light-edged sections, we leave out in the cold and make of no account the whole of the medium or feather-edged varieties—a section at least as worthy admiration as the heavy or light-edged. And this is done in the interest of a system—the exhibition of single blooms—which never yet advanced the florist beyond the initial stage of his art, which, teaching him nothing of proportion, arrangement, combination, perspective, or the picturesque, deadens indeed, instead of stimulating, his sense of selection; for it does not compel him to select, he simply crops his flowers and places them for the judge to select. And, finally, paradoxical as it may seem, for the system is constantly lauded as favourable to the grower of small stocks, a system which always gives the larger awards to the larger contributor, because there being a mean of merit in flowers as in all other things, under the law of chances the larger numbers will assuredly have the advantage of attracting the judge's eye. Many times have I known the grower of smaller stocks supplant the grower of the larger by his more skilful manipulation and superior selection and arrangement of twelve or even six blooms, but never have I known an exhibitor of the smaller number to carry prizes in the single blooms from exhibitors of the larger. Now I put it to my brother florists, is this a system, which charged to administer a fund unique alike in origin and purpose, I should seek to extend or bolster up? I ask for no consideration, no deference outside the facts, but resting upon fact, I cannot hesitate to believe that had I acted otherwise I should have been unfaithful to floriculture and unworthy to administer the bounty of Mrs. Gyles.

I know not what is in the future, near or afar off. But many things have to happen, I am persuaded, before there be necessity or elements for classification in the yellow grounds. Meantime I commend to my brothers the study of form—of colour—of contrast—of combination; to remember nothing present is permanent—the ideal alone is eternal; and their minds thus filled will safely rest in the enjoyment of the beautiful and be far beyond the petty quibbling of a class.

E. S. DODWELL.

LILIUM NILGIRENSE.

WITH reference to Mr. George F. Wilson's interesting note on Lilium Nilgirense, in a recent issue of the GARDENERS' MAGAZINE, I quite agree with him that it would be best to treat this bulb as a conservatory plant, for when the lily blooms so late in the season as the 10th of October, it is without doubt a very unsatisfactory out-of-door plant in this country. I have, however, put to the proof this year the fact that the bulb can be bloomed in this country during the months of July and August, when I think it might be treated as an out-of-door flower very successfully—at least, in a fairly warm summer.

In February of last year I potted up a number of imported bulbs, a large proportion of which flowered freely in the July and August following. I may mention that the bulbs were small, and that I potted them in large 60's in a compost of peat, loam, old mushroom dung, and sand. Those that flowered only produced solitary flowers on short stems of not more than a foot high, but the flowers were large, well developed, and highly scented.

Mr. Wilson does not say what sized pot his plant has been grown in, but five feet four inches from the bottom of pot seems to me a great height for a plant of Lilium Nilgirense, and would give me the impression that it was "drawn." I have seen this plant growing abundantly in its wild state, but never remember to have noticed it of a greater height than two feet; eighteen inches, I should say, being its average height of stem. During a residence of over five years on these South Indian hills, I never saw any individual plant that produced more than a solitary flower.

After flowering, I rested my bulbs by gradually withholding water, and eventually laying the pots on their sides. I have just finished repotting them, and I hope to see them in bloom again in July and August of next year, or perhaps earlier. A few I intend planting in an open border as an experiment, after all danger from severe frost is gone. I do not think they would stand well out-of-doors during even an ordinary English winter, under any circumstances.

The climate of the Nilgeri range of hills, over the whole of which the lily is, more or less, to be found—or was rather, as I believe it has now been almost exterminated by ruthless money-loving collectors—differs considerably. On the western side the south-west monsoon beats from middle of June till middle of September, and the bulb is not seen in flower in that district till within a week or two of the latter date. Whereas on the Eastern slopes, which are only within the influence of the much lighter north-east rains, the plant flowers in December and January. In the case of my bulbs it is possible they may have been collected on the Western slopes, and flowered in England at the time named in consequence.

Three flowers on this plant of Mr. Wilson's is a goodly number, and, if I mistake not, the same gentleman had five blooms on one stem last season, which, of course, means highly creditable cultivation. Although I have never myself seen more than one bloom on a plant at a time, yet I have it on the very best authority that as many as five blooms have been seen on one stem in a wild state.

In its native habitat, the plant does not affect dry ground, but is usually found growing among rocks and boulders, where there is plenty of moisture, ooze, and springs. The soil it most delights in is black vegetable mould, slimy in the wet, and dusty in the dry, seasons. I have often seen it waving its solitary blooms from the fissures of high and inaccessible cliffs, and looking a charming object indeed.

It may perhaps be of some interest to your readers to know the temperature of the district in which this beautiful lily is found wild, as a guide to its proper cultivation in this country. Mean annual temperature, 59 deg.; maximum, 77 deg.; minimum, 38 deg.; average range, 17 deg.

J. I.

CHRYSANTHEMUM ECHOES.

THE individual known as the printer's devil must have been on the spree the week before last, for the proof of the Echoes only came to hand on the morning of publication—not perhaps that it matters much, for proof revising is a job that I rarely take to and they often lie unlooked at for days together. It so happens, however, that in this case the presumed jollification lays me open to the receipt of polite intimations that lessons in orthography are as much needed as lessons in orthoepy, a word printed somewhat queerly in last week's contribution. For my own credit sake I am prepared to say that I never could have written such a horrible jumble as "orthoephy" and in case of need will unhesitatingly go before any justice of the peace or commissioner duly authorized to administer oaths in the Supreme Court of Judicature to make solemn declaration thereupon. Perhaps however, there will be no necessity for this as my friends who know the profession I am in would be quite as willing to take my word as my affidavit.

THEY sometimes manage things pretty well on the Continent and sometimes they do not—so they do everywhere. Mr. Shirley Hibberd declared at the N.C.S. dinner that he never knew a florist, or perhaps he said a chrysanthemum grower, who was a really bad man, and after a long experience like his such a statement is worthy of full belief; but I daresay he has known some very unpleasant ones at times. Coming back to the Continent, however, and as an instance of the kind, they tell me that there are in some places two rival societies, not as my informant says on emulation grounds, but rivals in the worst sense of the word. It is even carried so far that members of one society will not speak to the members of the other and that what one society does is attempted to be put down by the other. In fact, it is simply war to the knife. The only wonder to me is that we do not hear a little more of duels between horticulturists. That, however, seems to be a luxury sacred to journalists. I mention this matter because in my short experience of chrysanthemum matters something not a long way off this unpleasant feeling has been met with. I once knew a member of a chrysanthemum society who was treated to very unpleasant remarks because he exhibited some flowers at the show of another society in the same neighbourhood. Fortunately in England there are not many towns with two rival societies where members figuratively look daggers at each other.

THE *Daily Telegraph* has latterly been giving a series of articles by Sir Edwin Arnold, the accomplished author of "The Light of Asia," who has been staying in Japan. Owing to the indisposition of the Mikado, or Emperor, as it is now proper to call him, the great chrysanthemum festival had to be postponed. The weather also prevented it being held on the date ultimately fixed, and as that was November 20, the probability of it being held at all must have been getting remote. Sir Edwin Arnold tells us that his invitation ticket, beautifully emblazoned with the national flower, had been duly delivered, so that he has secured an honour which is greatly sought after and valued by all persons of distinction in Japan, whether foreigners or natives. Readers of the GARDENERS' MAGAZINE will remember that this annual fête in honour of the mum is already briefly described in the special chrysanthemum number of October 26.

THINKING men will agree that in taking up a subject for study, it is impossible to tell to what extent one's store of knowledge may be increased. Such has been my case with the chrysanthemum, growing it led me to read about it. Reading about it led me to seek for more knowledge of it in its native countries, and thus I have unconsciously acquired some knowledge of the many Chinese and Japanese manners, customs, art, &c., with which I should otherwise have remained profoundly ignorant. There is no telling to what extent my liking for Oriental curios would run if I had the means. Verily the house would be full of quaint pots, jars, vases, plaques, books, drawings, carvings in wood, ivory, and metal, kakèmonos, okimonos, kanemonos, netsukés and goodness only knows what else. Sir Edwin Arnold's articles were therefore a great treat to me, and especially the allusions to the chrysanthemums which he makes every now and then.

HERE are one or two extracts: "Here and there, near a temple, would be seen a garden of the dead—stone monuments of quaint form, inscribed with Japanese letters, and interspersed with clumps of the red camellia or tufts of chrysanthemum. Everywhere, indeed, is seen the Kiku—imperial blossom of Japan—growing at the cottage door, by the well, in the Temple yard, beside the graves, and even in the paths intersecting the rice fields." Referring to a sleeping apartment, he says: "It contains one Kagemono, or 'hanging picture,' in indian ink, *one* pot of chrysanthemums," besides the other articles. A little further we read: "The Japanese love of flowers is as genuine as it is refined. At Tmaichi a small boy brings us out a pot of chrysanthemums and places it beside us, as if it were in the nature of things that our rest would be made better and happier by the purple and amber blossoms." I quite envied the great writer his floral treats; and perhaps he may have noticed the marvellously artistic way in which the Japs arrange the stems of their flowers. Here, all we consider necessary, as a rule, is to arrange the flower heads only, but little Miss Jap, be she called O-Kiku-San or O-Taki-San, would no more think of sticking the stems of her flowers straight down into a pot or vase than she would of plunging the flowers in head first. No! Even the stems must be gracefully shaped and curved and twined into forms we never think of.

I HAVE long entertained a suspicion that the Anemone Pompon Jean Hachette, was not quite correctly spelled, although in nearly all our catalogues for many years past such has been the way adopted. Just as some folk mutilate the Maid of Orleans Jeanne d'Arc, and call her Jean d'Arc, making her of the masculine gender which, perhaps, after considering her soldierly exploits, is a little excusable, so the famous French heroine Jeanne Hachette has been robbed of her sex. Visitors to Beauvais need no reminding of her emulating the deeds of Jeanne d'Arc, whom she revered as a saint. Her real name was Jeanne Fourquet, but owing to her arming herself with a small axe or *hachette*, she became known as Jeanne Hachette. When Charles the Bold, Duke of Burgundy, laid siege to Beauvais, the gallant girl hurled the first invader from the battlements and so animated the defenders of the town that every assault was repulsed. I was reminded of the incident not long ago by a French friend, who thought the correction an important one. So it is, heroes and heroines are none too plentiful, and deserve that their memories be kept green.

C. HARMAN PAYNE.

FRUIT GROWING IN BRITAIN.

THE following letters have appeared in the *Times* of December 30, January 2, and January 3:—

"If the gentlemen who write you about fruit culture would take the trouble to find out first what a really good apple is their remarks might be of some use. 'T. W.,' who writes in the *Times* of to-day to blame people for not buying an apple that I always thought of very poor quality, is one of this class. The public are not such fools as they are supposed to be; they rightly refuse to buy English-grown Gravensteins. My experience is that people talk a great deal about fruit culture, and often spend their money upon it, without knowing what is really good among fruits. The nurserymen themselves give in their catalogues many fruits that are of very low quality, though they may be showy outside, very poor in flavour—like the King of the Pippins; and others decay in a short time like Peasgood's Nonsuch, big and large but useless. So long as people had no better apples than these they were contented with them; but now that we get apples from other countries of the highest class it is quite different. If the fruit grower continues going on growing apples of poor quality he must not be surprised if he finds a bad market for them. Early apples of a showy class sometimes sell off quickly in populous cities, but when it comes to the late keeping apples most people buy these of the best qualities only, if they can get them.

The other day, at Mr. Webber's in Covent Garden Market, I bought some of the true old Newtown Pippins—perhaps one of the most delicate-flavoured apples that exists, a perfect apple to eat as it comes, and equally good for cooking. Some may say that, unhappily, we cannot grow this fine apple here, which comes to us from Virginia. That is true. But the lesson of it is a useful one all the same. When people can buy apples of this fine, high flavour, with all the freshness and crispness that one could desire in an apple, they will not be satisfied with the second and third rate apples common in our orchards and gardens.

Only the very best English apples should be grown, and our efforts should go to the abundant production of the great English apples, the Blenheim, Cox's Pippin, and the Ribston, and only others of as good quality. When these are obtainable and at their best there is always a good market for them. For example, the Blenheim, a noble apple, is grown far too little. If we grew enough of that for our markets, if farmers and country gentlemen planted it as freely as they might plant it, there would not be much room, except in bad years, for any apples that came from America or the Continent at the time of its ripening.

THE EDITOR OF THE "GARDEN."

3*a*, *Southampton Street*, *W.C.*, Dec. 27.

I have read with much interest the many letters in the *Times* on this subject, including the two latest from "T. W." and the editor of the *Garden*. Although not a fruit grower for profit, I have long felt that there is room for much improvement in the growth of all hardy fruits in this country.

A few weeks since I gave my gardener a copy of Mr. John Wright's prize essay on profitable fruit growing, lately published by the Worshipful Company of Fruiterers, and was surprised a few days since to find that he had raised many of my pyramid apple and plum trees in some cases as much as eight inches. My soil is clay, and to make what was supposed to be proper drainage some brick rubbish had been thrown in when the trees were originally planted; this he has carefully removed, and by digging out a considerable space all round the tree and working in some good soil, and spreading three or four inches of half-decayed manure on the surface and for some little distance beyond the extremities of the roots, as recommended by Mr. Wright, I feel certain from what I was shown that the proper course had been pursued; and, although I may not have much of a crop next year, I shall be much surprised if the trees, from which I have had little in the past, are not among the best bearers I have in the year following.

The essay referred to (a copy of which I enclose) appears to me to be admirably adapted for small holders of land and others interested in fruit culture; it gives some very practical information on the subject, and cannot fail to be useful, especially to those who grow fruit for profit.

I am, Sir, your obedient servant,

H. R. WILLIAMS, Past Master of the Worshipful Company of Fruiterers.

6, *Lime Street*, *E.C.*, December 30.

The letter on this subject to the *Times* of December 30 puts the case obliquely and unfairly. Of the comparatively unknown apple Gravenstein but little need be said. Occasionally an English growth is as good as any that has been imported, but the variety is best adapted for amateurs who grow collections, and is scarcely thought of for market culture. Of Newtown Pippin something similar may be said, but this is more often met with in fine quality of home growth than the other, but for all that it may be disposed of as one of the curiosities of the fruit garden.

Your correspondent does himself and the cause a wrong by declaring that the public taste is sufficiently discriminative, and then pronouncing King of the Pippins as "very poor in flavour," because this is one of the most popular of apples, and the public taste has never had enough of it. It appears in the market when home-grown apples of many kinds abound, but it carries all before it in price, and the stocks, however large, are soon cleared out. Nor is its good quality a matter of recent knowledge, for Rea, in his *Flora*, published 1676, speaks of it as "better tasted" that the Juneating; and Dr. Hogg, in 1884, described it in the fifth edition of his *Fruit Manual* as "one of the richest-flavoured early dessert apples."

Your correspondent is unhappy in his choice of Blenheim and Ribston, for the first is slow to bear, and the second is so liable to canker that no one can predicate that it will pay in any place until it has stood the test of years. Of Cox's Orange Pippin, the best of the three recommended, it may be said that it supersedes the Ribston for all general purposes. It may be grown in any form, on any stock, and in any fairly good soil south of the Trent, and on the western coast as far north as the Clyde; it is not subject to canker, bears abundantly, keeps until March, and is the equal to Ribston in size, beauty, and flavour.

The tendency of market growers is to turn their crops of all kinds into money as soon as possible; hence they grow early maturing apples, such as Lord Suffield, Stirling Castle, the King, and Golden Noble. These and other favourites are cleared off before the Baldwins come in; but when the Baldwins are gone there remain so few apples that it may be said the season closes with them. There we touch a weak point in British fruit culture. Apples are wanted until April or May, but both in private gardens and in market gardens the late keepers appear to be least in favour.

There are, however, many apples of fine quality and sure bearing that carry the supplies to March and April and even to June or July. Fearn's Pippin, a beautiful fruit, keeping to March; Boston Russet, of the finest flavour, keeping to April; and Cox's Orange, good until the end of March, are all free bearers of excellent constitution, and as well adapted for profitable cultivation as any apples known. For a southern climate and a deep, light soil, Golden Reinette on the Paradise stock is invaluable, and keeps well until April or May.

There are two grand apples adapted for late use that, though in high favour with advanced fruitists, are not so well known to the general public as they deserve to be. These are Lane's Prince Albert and Dumelow's Seedling, also known as Wellington. These bear annually and abundantly: they have a fine appearance, are of excellent quality for culinary purposes, and keep well to March or April. Given a reasonable breadth of these on a fairly good soil, a fair return may be reckoned on, provided they are not sent into the market until they are wanted, for it is a miserable business to hurry such into competition with perishable sorts at a time when the markets are glutted. A handsome apple is at this time worth 6d. retail. I was asked that price for a brilliant sample of Northern Spy a few days since.

As for the noble Blenheim, it has been much overrated as a fruit for profit. In whatever form it may be grown—and the free standard is the best form—its persistent slowness to show a crop is a serious obstacle to its general acceptance. Many good sorts of apples may be found that will pay their way a dozen times ere the Blenheim of the same age has shown a single fruit. Moreover, it is not constitutionally adapted for general use, although in a place that suits it one has only to wait half a lifetime, and then it may prove a pearl of great price.

SHIRLEY HIBBERD.

Kew, Dec. 30.

ARE CHRYSANTHEMUMS WANTED AT MID-WINTER?

By J. KIPLING, Knebworth.

Read at Conference of National Chrysanthemum Society, January 8.

THE question I have to submit for your consideration, are chrysanthemums wanted at mid-winter? might well be answered by asking another, and correlative question, are flowers wanted at mid-winter? But it will probably be advisable to set forth the reasons why I consider that the answer should be in the affirmative. There are few people, I imagine, who have a taste for flowers, and thoroughly appreciate them that would deny the necessity for having them in abundance at a season of the year which includes the festivities of Christmas and the New Year. At that season, as so well-known, there is the greatest demand for flowers, and it is also a matter of common knowledge that they are then very scarce and most difficult to be had. This being the case flowers are at mid-winter appreciated as flowers irrespective of their names. Consequently chrysanthemums if they can be had at that season, are not likely to prove less welcome, or to be less appreciated by the general flower lover than the flowers of any other group of plants that could be mentioned. This is looking at the question simply from a common sense point of view. We might, however, look at it from another, and sentimental standpoint that, perhaps, from which the true lover and enthusiast of the chrysanthemum would view the matter.

Most individuals have a taste—sentimental if you will—or hobby for persuing some particular object, and as taste is not arbitrary they have a perfect right to follow the bent of their tastes and inclinations, so long as they do not interfere with other people. Well, the chrysanthemum enthusiast has a taste and hobby for the cultivation of this particular flower in its many phases, and I have no doubt, were he asked the question, Are chrysanthemums wanted at mid-winter? he would promptly reply, Yes, and add, perhaps, at any other time that they can be had. He would, I venture to say, be perfectly justified in his answer and opinion, notwithstanding what a few individuals may say about chrysanthemums not being wanted at this season or that season.

For my part, I can say that their flowers are appreciated at all seasons of the year, even to all the year round, which I have in my practice more than abundantly proved to be possible, but, perhaps, not generally quite desirable. However, at no season of the year do we find them so acceptable, so useful, and to fill so great a void as from the beginning of December to the end of January, or even later, a period of the year when there is a great dearth of other flowers, and those available are mostly forced, which are produced at considerable cost and last but a little time in good condition in a cut state.

It is here, then, that the usefulness of the mid-winter chrysanthemums is clearly apparent. They step into the breach, as it were, and supply a felt want, and I claim consideration for them on grounds other than those of a sentimental character. They indeed fill a unique and useful position amongst winter-blooming plants, and from them a general demand for flowers can be met and supplied. The mid-winter chrysanthemums have another, and not the least, claim to our attention. Their cultivation, as compared with those grown for autumn decoration and for exhibition, is very simple, very inexpensive, and require from the grower only a tithe of the labour and watchful care the others demand from him. The cuttings are struck late, are a very little time on hand before they can be finally potted off, and the pots plunged to their rims in some cool half-shaded spot for the summer, and where in the hottest and driest of weather they require water only once a day, and on dull days none whatever. As ordinary decorative bloom only, is the object sought, there is no anxiety about the time the buds shall be taken, no thinning out of buds and shoots, and no feeding up with liquid manures as in the production of a few fat blooms. They will stand out of doors to the latest date possible, without being injured even by a degree or two of frost, and when housed the accommodation of the coolest structures meets their requirements. Indeed, the peach houses or the latest vineries—where low temperatures are necessary for resting the vines and peach trees are the best places for housing and retarding late chrysanthemums up to the time it is necessary to push them into bloom. When this period arrives a little warmth becomes necessary and to this they respond gratefully. Lastly, I know of no class of plants that give so large a return for the labour bestowed, the space occupied while under glass, and the little fuel needed in their production, as these mid-winter chrysanthemums.

Not the least point in the favour of the late-blooming chrysanthemums is the long keeping qualities of the blooms, and their capability of enduring close packing and long journeys. With ordinary care in packing they will, on reaching their destination, come out of the box as bright and fresh as could possibly be desired. Of course, the long keeping quality of the blooms is to a certain degree common to all the sections, and under all phases of their cultivation. But I find this quality in the flowers greatly emphasized in the mid-winter blooms, and this, no doubt, is due to the plants having been grown under a natural system and under the hardiest conditions possible, thus giving to the flowers a toughness and greater substance of petal. Damping of the blooms is hardly known among them, and we are therefore saved from the annoying and tantalizing heartaches experienced by the exhibition bloom grower at seeing his brighest and fondest hopes, which are centred in his biggest and fattest of blooms, crumbling away day by day. With reference to the long keeping of the blooms, I may mention that my noble employer writes me to send her nothing but chrysanthemums, as no other flowers come to hand in so fresh and bright a condition or last so long. They invariably retain their freshness from a fortnight to three weeks after being sent, and I would like to ask what other cut flowers, except the Christmas Rose, will endure a two days' confinement and transit across the Channel, and yet come out fresh and bright and last for a fortnight or longer?

So much for the usefulness, and I might say the importance of the mid-winter chrysanthemums. A few remarks on the varieties that I have found to be the best to grow for the production of flowers at that season may not be uninteresting. There are three points or qualities essential in a mid-winter or late chrysanthemum. The first point is its lateness to bloom, which should be natural to and inherent in the variety. Secondly it should have a free habit of growth, and be a very free bloomer, as labour would be thrown away on a variety that would not yield liberal and adequate returns in the shape of flowers. Thirdly, the colour of the flower should show up well under both natural and artificial lights. Most of our floral decorations at this season of the year have to be seen under artificial light, colour in the flowers is therefore of some importance, and those colours which come out well under that light are the most valuable. Whites, reds of different shades, and yellows, including deep bronzy oranges, are the best colours, while purples, lilacs, and their several shades are the worst for the purpose.

The varieties which I have found to fulfil the several conditions therein enumerated are Etoile du Midi, Kaempfer, M. C. Hubert, Meg Merrilies and its sports Ralph Brocklebank and Countess of Lytton, Ceres, Mrs. C. Carey, Ethel, Yellow Ethel, Thunberg, Boule d'Or, Moonlight, Gloriosum, Mrs. H. Cannell, and Golden Gem among the Japs; Boule de Neige, Snowdrop, Madame Sentir, and one or two others among the reflexed and pompon sections. In the section of the single varieties will be found some that are admirable for the supply of flowers at mid-winter work. Hitherto, this section has not made much advance in general favour, possibly because the Japanese varieties have been more attractive and have elbowed them out of the way at a time when blooms are so very plentiful early in the season. I believe, however, the single chrysanthemum's most useful and proper position will be found as a mid-winter flower. Their free blooming and the long-lasting qualities of the flowers are not surpassed by any others, and they have in a cut state, and when arranged in vases an elegance and grace all their own, and they can be looked upon at the winter season, not as chrysanthemums, but as various coloured marguerites. Some years since I bought the set of twelve, the first I believe Mr. Cannell sent out, and each year has proved more and more their value for mid-winter blooming. This season they did not commence to bloom till the beginning of December, and they have been a perfect mass of flower up to the present date; the best varieties of the twelve are Mrs. Langtry, pinkish white, very free; Magenta King, bright purplish rose; Canariensis, terra cotta, very elegant; Brunette, brick red and orange, very free and useful in a cut state; Ellen Terry, Mrs. Killock, Monte Carlo, and Gus Harris, the two latter are very compact in growth and make excellent pot specimens.

THE WEATHER OF 1889.

THE following are extracts from the records of meteorological observations at the Gardens of the Royal Botanic Society, Regent's Park, London, for the year 1889, drawn up in the same form as those for the years 1871 to 1888:—

—	Means at 9 A.M.			Extreme Temperatures.						Rain.	
		Ther.		Shade.							
	Barometer Reduced to Sea Level.	Dry Bulb.	Wet Bulb.	Max.		Min.		Max. in Sun.	Min. on Grass.	Total Depth.	No. of Days.
1889.	Ins.	Deg.	Deg.	Deg.	Date.	Deg.	Date.	Deg.	Deg.	Ins.	
January ...	30·17	36·4	35·3	52·8	31st	20·0	6th	75·0	17·0	0·98	9
February ...	29·91	36·4	34·8	56·5	17th	15·0	12th	93·0	14·0	2·64	16
March	30·00	40·1	37·7	58·5	24th	19·8	4th	101·0	15·0	1·42	12
April.....	29·74	45 3	43·3	62·2	19th	29·0	10th	108·0	26·0	2.21	21
May	29·83	57·2	53·8	80·2	23rd	43·8	16th	129·0	35·0	3·30	16
June	30·03	61·8	55·6	82·0	6th	46 5	19th	129·5	41·5	2·10	7
July	29·94	62·1	57·4	79·0	8th	44·0	19th	130·0	41·0	3·20	18
August	29·89	60·0	56·8	86·0	1st	45·0	27th	131 0	40·0	1·87	17
September	30·07	56·5	53·5	79·0	11th	36·0	23rd	128·0	32·0	1·78	9
October ...	29·69	48·1	46·6	59·0	15th	33·8	14th	104·0	31·0	4·27	22
November	30·23	45·0	43·6	58·8	16th	27·8	16th	90·0	19·0	0·92	7
December...	30·18	37·6	36·7	52·0	17th	22·0	29th	63·0	15·0	1·48	16
Totals	—	—	—	—	—	—	—	—	—	26·17	170
Means	29·97	48·8	46·2	—	—	—	—	—	—	—	—
Extremes...	—	—	—	86·0	—	15·0	—	131·0	14·0	—	—

FORECASTING THE WEATHER is the subject of an interesting and quite amusing letter by Ralph Payne Gallwey, in the *Times* of Jan. 8. The writer kept a record of the published forecasts and actual weather for 312 days, and found the "clerk of the weather" correct on 208 days and incorrect on 104 days; the ratio of accuracy being 66 per cent. He made experiments of his own, not with the barometer, but with published forecasts which he wrote on cards and shook up in a bag, and then took out one for every day for a month, and it was a neck and neck race to within the last few days of the month, when the clerk of the weather won by a short length, having the advantage by four "corrects." Another amusement consisted in foretelling the weather of the next day by that existing the night previous, and this often ensured a correct run for a few days, and then a change would occur and damage the system. There is some fun and perhaps a little philosophy in the letter, but the moral seems to be that if people want forecasts they should make them themselves.

Correspondence.

"CENTENARY."

MR. HARMAN PAYNE in his "Chrysanthemum Echoes," asks for information as to the correct pronunciation of the word "centenary." "Centen'ary" is certainly incorrect, and so, I venture to think, is "cent'enary," these methods of pronunciation being probably due to the idea that the words "centennial" and "centenary" have the same Latin word for their foundation, which the weight of authority goes to show is not the case. "Centen'nial," where the second "e" is short and the accent is on the middle "n," is derived from *centennis*, from Latin *centum*, hundred, and *annus*, year; while "centenary" is from *centenarius*, Latin, relating to a hundred. Sometimes, but very rarely indeed, the word is spelled "centennary," in which case it has for its base the same words as "centen'nial," and should then have the accent on the middle "n," but the word "centenary," as usually spelled, should be pronounced "cen'te-na-ry," the "e" following the "t" being sounded, but not too strongly.

C. E. SHEA.

Foots Cray.

SCHOOL GARDENS.

One of the "nuts to crack" in the House of Commons during the next session, will for the first time in the history of British Home Legislature, include the provision of School Gardens. This may be news to some of the gardening fraternity. None will however be so sure to rejoice when we recollect what the value to us "old stagers" of such a training as it is shown may be given in the Elementary Schools in practical horticulture, would have been to us. Here we are, many of us at the end of 20, 30 and some even 40 years' gardening, with but a glimmering of the whys and wherefores, or to be more plain, of the causes and effects of things horticultural. Oh, we are eminently practical, I grant you, but a standard six school boy who shall have had the three years' course of practical instruction, and be fairly graded in the theories and sciences of horticulture and botany included in the proposed code, would be able to turn many of us inside out, figuratively speaking.

As Mr. J. Barry remarked at Chiswick a few days ago, when speaking of the value and importance of School Gardens—"they do these things better in France." Despite the fact that there are to-day in France, no less than 28,000 public elementary schools in which the rudiments of horticulture and agriculture are practically taught daily as a part of the ordinary school routine, the Minister of Public Instruction has decided that they have not enough. In future no master of a public elementary school will be considered efficient until he proves himself capable of giving practical instruction in horticulture and agriculture. This is where the French gardeners of to-day have the pull of us. They learnt in their youth.

Let me ask any one who may be disposed to cavil or throw doubt on the great necessity and importance of this much wished for measure what he really knew about "gardening" at the end of his first three years of apprenticeship? Perhaps I had better give it its real name—drudgery. He probably could dig mechanically, wheel dung, do rough potting and stoke a fire, and that would be about all! Did he know why he dug and when it should be done? Did he comprehend the consequences of admitting or shutting out oxygen and hydrogen? Had he ever heard the names even, and would he have been wiser and better capable of understanding his work if he had known these things? To the man who says no to the last interrogation I have nothing more to say: he had better remain in his density. What an advantage would it not be if the lads who came into the gardens fresh from school work and school gardening could handle a budding and pruning knife; could graft a tree stock; or could tell the amount of vitality in a sample of seed! True we do not want the boys to all be gardeners or farmers. They are no worse for knowing though!

I do not wish to call any acquired knowledge that may be useful in ordinary avocations in after-life useless. But I have very little sympathy with a lot that is in the present Elementary Education Code. What better will ninety-nine out of a hundred boys or girls who leave rural schools be for the tonic-sol-fa, or calisthenics, or poetry learning even! One in a hundred may become a teacher, but even he, or she, would have full opportunities during their pupil-teachership of studying music, or drill, or poetry.

There is a very able contributor to your columns who is a practical horticulturist and a schoolmaster. What will he say if asked whether the subjects mentioned above are of as much consequence to rural children as a better knowledge of things of every-day life? For myself I had a schoolmaster-gardener as my first preceptor and I feel beholden to him for much: for my longings and tastes are all owing to his kindly teaching.

The pity is that this most important question of domestic economy will have to be fought out in the arena of politics, and that it will be strictly a party matter. The importance of such a measure was fully admitted when the Government passed the Technical Education Bill for the sons of artizans. Why should the town-bred children have all the plums? We used to be proud of the saying "the Backbone of Great Britain is her Agriculture." We don't often hear that now.

But again I say we do not want all the boys to be gardeners. No: we only want the suitable ones. Our vocation, the noblest on earth, demands the best. The unfit ones will weed themselves out, but even they will not go away empty. Should they emigrate, should they settle to trades, or should they join the Army or Navy, they will still retain their first lessons. There will yet be some prospect of seeing the "sword beaten into a pruning knife" please don't cavil at the version. Aud really, when ones thinks of it in a very few years we shall see the country dotted and lined with small fruit farms, allotment plots, jam factories &c, much more than it is to-day; that is if things go on as they have been during the last year or two. The Rural Labourers' League; the Minister of Agriculture; the Small Holdings Bill; the Allotments Extension Act, are all of very recent date. Can it be said tcat we are wakening up at last? At all events we shall welcome the School Gardens. We cannot learn to love Nature at too early an age; and it is certain that a deeper love will spring from a closer acquaintance and a fuller knowledge.

R. BEALE.

TRADE CATALOGUES.

ARMITAGE BROS., NOTTINGHAM, *Vegetable, Flower, and Agricultural Seeds.*
BARR AND SON, 12, KING STREET, COVENT GARDEN, *Flower Seeds.*

MARKET PRIMULAS.

THE varieties of Primula sinensis are largely grown for market purposes, and choice strains, remarkable for a dwarf, close habit, freedom and quality of bloom, and appropriate colours, are selected for the purpose. It cannot, of course, be expected that a plant which produces several trusses of bloom can carry flowers as large as those found where only one truss of bloom is allowed to appear; but if they are of good shape, smooth, and acceptable in point of colour, with the flowers borne well above the foliage, they are well adapted for market.

When looking through Messrs. Sutton and Sons' collection at Reading a few days ago, I was much struck with three varieties that I think are admirably adapted for market and general decoration. The variety to which I give the palm is that known as Snowdrift. This is a single variety of the fern-leaved section, with pale green leaves, very close and handsome habit, the flowers pure white, produced with great freedom; and it is also remarkable for its earliness in blooming. There is another peculiarity about this variety. A charge is made against the single flowered Chinese primroses, that they are not lasting when in flower, and that the pips are soon shed from the truss. This is why it is that gumming is sometimes resorted to to make the flowers more lasting. But in the case of this variety no gumming is actually required, for while the corolla is narrow the head of the stigma is large, and the pips are held on with singular and unusual persistency. Plants raised from seed sown in June and now in five-inch pots had three and four trusses of bloom, and were quite model specimens. Next comes Reading Scarlet, a distinct variety, with palmate foliage, dwarf and compact, and the flowers bright scarlet, not large in size, but of good shape, freely produced, and, like the foregoing, very early in blooming. It is one of the bright-coloured varieties which retains its colour well, and it has a small, bright, yellow eye. A third variety is Rosy Queen, with fern-leaved foliage, and a compact habit. It is very free, and the flowers are of a pleasing shade of rose. There had been no attempt to force these varieties into bloom, and it is obvious that if the seeds of the foregoing were sown three or four months earlier, the plants would bloom in October and November, and indeed before this period.

Now it is the practice to offer prizes at some chrysanthemum shows for Chinese primroses. This was done during the past season at the Crystal Palace, with the proviso that the plants exhibited should be raised from seeds sown in the spring of the year. The result was very disappointing, as but few well-bloomed specimens were staged. I think the restriction that the plants shown should be raised from seeds sown the same year was not a prudent one, but if it is retained another year, intending exhibitors should take care to sow seed of early flowering varieties that can be depended upon to be in bloom in October.

Exception was taken to the requirement of the Crystal Palace schedule that double varieties should be raised from seeds sown at the same time as the single ones. It was contended that it could not be done. But if anyone will pay a visit to Reading just now they will see in Messrs. Sutton and Sons' Portland Road Nurseries a truly wonderful collection of remarkable double primulas, in several varieties, raised from seeds sown also in June last, and it should be recorded that the double varieties take a shorter time to get into bloom than do the single ones. But of these superb double primulas, which form a surprising exhibition of themselves, more anon.

R. DEAN.

Replies to Queries.

Names of Plants.—E. T.: 1, Zygopetalum intermedium; 2, Z. crinitum cæruleum; 3, Z. brachypetalum.—J. H. Barber: 1, Acacia Hugeli; 2, Gesnera zebrina; 3, Thyrsacanthus rutilans; 4, Justicia speciosa.—Torfar: 1, Crocus annulatus; 2, Coburgia humilis; 3, Impatiens Sultani; 4, Brachysema lanceolatum.

Planting.—Fantag: You do not say whether you possess the trees or have to purchase them. If you possess them, plant them as soon as possible, but be sure to choose a good time with dry open weather. Trees badly planted do not prosper, and this is not a good time for the work. In the course of two or three weeks the ground may be in a better state than at present, and the whole business must be regulated to suit the weather.

Names of Fruits.—R. H. H. B.: 1, Norfolk Bearer; 2, Kentish Pippin; 3, Ord's Apple; 4, Ringer. Fitz: 1, Pastorale; 2, Duchesse de Bordeaux; 3, Beurré Gris d'Hiver; 4, Flemish Bon Chretien; 5, Beurré Rance; 6, Groom's Princess Royal, otherwise known as Matthews's Eliza, not often good.—E. L., Bettws: 1, Ravelston Pippin; 2, Broad Eyed Pippin; 3, Catshead; 4, Waltham Abbey Seedling; 5, Warner's King; 6, Keswick Codlin; 7, Not recognized; 8, Winter Strawberry.

Annuals.—Amateur will gain nothing by sowing now. Generally speaking, seeds sown too early do not perish, but as they do not germinate until the temperature of the earth advances to a certain point, they are safer dry than damp, and therefore we do not advise early sowing. But where there is convenience for pushing a few choice things forward under glass, they may be sown in pans and boxes, but it is not well for inexperienced operators to do much in this way, as the mere sowing of the seed is but the beginning of the business.

Grapes Not Swelling.—A. B. writes: I should like to obtain the opinion of some of your readers experienced in grape growing as to the cause of the berries of a grape vine not swelling. The vine in question is growing in the garden of a friend, and is planted in a good position, the border having been well prepared and is efficiently drained. The vine is in a vigorous condition, and presents a healthy appearance, but fails to produce a satisfactory crop. Bunches of good size are produced, but quite three parts of the berries are stoneless and do not attain a size larger than peas. I have not previously met with a similar case, although I have seen bunches of which a few of the berries have failed to swell properly. Some of the bunches have not a perfect berry, and the colour is very pale. The vine has been planted about ten years, and occupies a position in a span-roof greenhouse in which flowering plants are grown throughout the year. But proper attention is paid to the vine in the matter of watering, ventilating, and atmospheric humidity during the season of growth. The vine is not forced in any way, fire heat being only employed to keep out frost and prevent the temperature falling below 45 deg. Whatever information can be given upon the point will be much appreciated both by my friend and myself.

[Failure in the fertilization of the flowers is the cause of the berries being stoneless and not swelling to their usual size.—ED. *G. M.*]

Day of Month	Day of Week	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.		Day of Yr.
			H. M.	H. M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.			1890
19	S	2nd Sunday after Epiphany.	7 57	11 2	4 24	6 43	2 30	—	0 20	9 13	9 45	37·2	Bletia campanulata	Peru.	19
20	M	Fabian. ● New Moon.	7 56	11 20	4 26	7 49	3 41	0 50	1 18	10 15	10 43	37·4	Dendrobium Ainsworthi...	Gar. hyb.	20
21	Tu	Agnes.	7 55	11 37	4 28	8 34	5 2	1 46	2 12	11 11	11 37	37·5	Limatodes alba	Borneo.	21
22	W	St. Vincent.	7 54	11 53	4 30	9 14	6 28	2 37	3 3	—	● 2	37·7	L. roseæ	Borneo.	22
23	Th	Canon Kingsley died, 1875.	7 53	12 9	4 32	9 43	7 53	3 27	3 52	0 28	0 52	37·9	Oncidium jonesianum	Paraguay.	23
24	F	R. Boyle died, 1827.	7 52	12 24	4 33	10 6	9 16	4 15	4 38	1 17	1 40	38·3	Odontoglossum Pescatorei	South America.	24
25	S	Princess Royal married, 1858.	7 51	12 38	4 34	10 26	10 34	5 1	5 25	2 3	2 26	38·4	Phalænopsis Sanderiana...	Borneo.	25

Auction Sales for the Ensuing Week.

EDNESDAY, JAN. 22, AND SATURDAY, JAN. 25.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, and Bulbs.
IUESDAY, JAN. 23.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; 30,000 Lilium auratum and many other Lilies from Japan.
ONDAY, JAN. 20.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67, and 68, Cheapside; Dutch Bulbs and Lilies.
EDNESDAY, JAN. 22.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilium auratum, Greenhouse Plants, &c.
IUESDAY, JAN. 23.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Nursery Stock from sample.
RIDAY, JAN. 24.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Imported and Established Orchids.

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The Gardeners' Magazine.

SATURDAY, JANUARY 18, 1890.

HE VEGETABLE GARDEN will shortly claim, and in some degree will ertainly obtain, a large share of the time and attention of gardeners. hat it obtains less than its fair share of attention in many gardens not to be questioned; for we often see in private gardens—that may e described in a general way as well managed—very poor examples of hat is termed kitchen gardening, while the plants under glass absorb he chief strength of the establishment. There are some few points, part from the obvious usefulness of the vegetable garden, that should ecure for it all the attention it deserves, for we cannot rightly estimate s importance by a mere measure of the money value of the produce. Whatever may be the actual quality of the crops, it is unquestionably rue that better vegetables of all kinds, in some instances immeasurably better, may be obtained from the home garden than from he market, and that consideration should have some weight with ersons who condescend to eat vegetables, as many do both for enjoyment and for health. In any case, freshness is of the first importance ith this class of comestibles, and it is the one that commends itself o the universal taste; for those who have been accustomed to fresh egetables of the first quality, find a serious falling off in the standard hen fate compels them to make the best of what the market can upply. The packing, the carrying, and the inevitable heating that in many cases follow, are effectual in deteriorating quality; while, as egards the first stage in the proceeding, the market grower cannot sually venture to grow the best varieties, because his first consideraion must be to make the business pay. In every class of vegetables nd roots there are choice varieties that are not sufficiently productive, r do not carry sufficiently well to suit for market purposes, but may e secured in sufficient plenty and in perfect condition from the omestic garden, the case there turning on the talent, and the means available for their production. One example is as good as fifty for the present purpose, and a suitable one is the pea known as Ne Plus Ultra. This is grown for market, but is rare as a commercial article. But wherever peas of the highest quality are esteemed, it has, from the time it first became known, been an especial favourite for the private garden. The real old Early Ashleaf potato may be cited as an example from another department; for while it does not suit the circumstances of many market men, it is considered indispensable for gardens where a potato of the first quality is appreciated. We might run through the catalogues and find parallel examples all telling the same tale, the moral being that those who would eat the best of vegetables, will have in great part to take the whole charge of them, from the sowing of the seed to the appropriation of the crop, an argument of some importance in favour of doing justice to the vegetable garden.

Now we must confess that we can with ease descend from the lofty heights of æsthetic gardening, where we are bound to air our conceits occasionally, to find great delight in the vegetable garden for the beauty of its occupants and the interest they excite. How beautiful are the regular rows of peas, with their lusty leafage, as the haulm rises, and how enhanced in beauty when they display their lively flowers like clouds of butterflies! The seed-beds attract us by the brilliant golden-green of the lettuce, the serious glaucous hue of beans and broccolis, and as the season advances, and crops are matured, the attractions culminate in the broad mark of honour that attaches to usefulness. It cannot diminish the claim of the thing to consideration that, as autumn approaches, and the rows are broken, and many things insist on wearing a shabby aspect, because the flower garden undergoes a corresponding change, and we are under no compulsion to see the vegetable garden when it has doffed its summer garments, for then we go to it with a view to business, and there are times when business is like charity, and covers a multitude of sins. But a well-kept vegetable garden is endurable to the fastidious eye at all seasons, and winter may bring with it a few special attractions, for these are easily provided, and would seldom be lacking were employers themselves to take an interest in the work that so immediately determines the merits of the gardener.

In any historical review of the vegetable garden there would be much to say of the improvement that has been effected within recent years—say, for the sake of a figure, within the past fifty years. Certain well-established types remain, if not in their ancient characters exactly, certainly in name and repute, with but little variation. But it should be remembered that variation in types will occur as the result of selection, and will be determined in some degree by considerations of convenience. Nature imposes limits to variation, and it might not be possible to dwarf Ne Plus Ultra pea to the dimensions of American Wonder, but all our types or standands are in the cause of years modified more or less, and generally for the better because of the watchfulfulness of seedgrowers and their ready encouragement of what they call a "true stock," or an "improved strain," which generally means the best form there or then obtainable of this or that variety. The mention of Ne Plus Ultra, which is a suitable subject for illustration of the fundamentals of the subject, reminds us that it may be allowed to represent a group of peas of the greatest value for quality, all of them of shorter growth, and some of them of stouter habit and larger productiveness, that owe to that fine example their parentage, for there are at least a score of new sorts under various names, all of which may be roughly described as dwarf forms of Ne Plus Ultra. When we say that Nature imposes limits, we have in view, not only a certain integrity or quasi-specific character in the more distinctive varieties, but the relation of the plant to the elements, for that relation is the key to the season of maturing. If every new early pea that is described as earlier than all others, proved true to the description, we should soon be enabled to gather peas at any time, even in the midst of frost and snow, but experience teaches that a certain total of solar heat is required for the production of a crop, and that fact is one of the limitations in respect of both earliness and lateness. The improvements, however, although not always corresponding to the descriptions and eulogies that bring them into notice, are in the main characterized by sufficient reality, both to justify perseverance in the work, and a generous confidence of the public, for there is ever this happy consideration for purchasers of

novelties in kitchen garden subjects that a bad thing is never brought forward to rank as a novelty, or a special improvement. For all this, it is well that every novelty seeking public favour should be submitted to a test generally recognized as sufficient, and of such a public nature as to be independent of all special interests. No better test has yet been devised in the public interest than that long since established and assiduously carried on by the Royal Horticultural Society in its gardens at Chiswick.

The comparison we have made between the market supply and the produce of the home garden needs no apology or smoothing down, for truth has pre-eminent claims upon us. But now we feel bound to say that the markets in all our great towns are grandly supplied with roots and vegetables. We do not expect the man who must have a crop to sell, to speculate largely on such a potato as Woodstock Kidney, and those who require such a delicacy must grow it. In every class choice varieties may be found that will suit the epicure, but would neither suit the market gardener for a crop, nor his customers for a dinner. Consequently his hands are twice tied—he must plant things that require no more than average care, and that will travel well and turn out well when days have elapsed; and when these ends are secured, he must select things that will sell, and this is not such a simple matter as the uninspired observer may imagine. To make a sale for a thing not generally known, no matter how good it may be, is sometimes a difficult matter, and by the time the public have been schooled into a partiality for it, the extra profit that should justify the venture in a novelty will be spoiled by an augmentation of the competitors, for the market men watch one another, and as they see a thing floating into favour they take care to make trial of it, measuring the matter by their own judgment of its merits and the tendency of the public taste. It is not many years since that a crop of tomatos might have proved unsaleable, but now that the public appetite has been aroused, the supply is abundant and ever increasing, and it is interesting to record, as we are bound to do, that the advance in tomato culture is in some degree answerable for the advance in the price of glass. But all this tends to the credit of the market supplies, and we will venture an assertion that probably no experienced observer will question the truth of, that there is no country in Europe that can show better market vegetables and roots than this old country, which the denationalising flosbrain order of critics are ever in haste to assure us, is behind in the race, and has everything to learn about vegetables. "None can show better." Where is the capital or the market beyond these shores that can equal our vegetable markets, making reasonable allowance for differences of climate and other circumstances that are beyond the control of cultivators? We cannot grow melons in the open air, but we can grow peas and potatos and celery and some other useful things of better quality—we say advisedly of better quality—than the average seen in European markets, and for all the essentials of good living and health and enjoyment, we need not be ashamed of our vegetable markets, but on the other hand should be proud of them, and should take whatever lessons they offer for the improvement of the home garden, which should be capable of even better things, and happily is so wherever gardeners of ability have reasonable freedom and sufficient means.

Gardeners do not invariably "take" to the vegetable garden. The young men have of course the failings of young men; they feel an itching of the shoulders, and imagine that wings are sprouting, and in imagination they learn to fly, and of course they soar above the cabbages and cauliflowers into the high branches, where orchids are lodged and stove and greenhouse plants colour the gay paradise of their hopeful dreams. It is well for young men to know what orchids and stove and greenhouse plants are, and we are ever anxious to help them in the cultivation, as our pages testify, but we will whisper this much to such as are not "hard of hearing," that orchids and stove plants are like "men" that "come to go," while the occupants of the vegetable and fruit gardens "go on for ever." The fashions and tastes may change, but the necessities of man do not change, and the gardener who can supply the table with sufficient asparagus will find it easier to keep the sublimities going than he who keeps the family short in respect of first-class vegetables for the table. The useful justifies itself, the ornamental is ever in need of a vindicator. We dote on orchids as many of our readers do, but we are not above confessing that we do love a potato that is beyond reproach, and a dish of peas that charm us out of all possible misanthropy into blissful benevolence while we eat them, and even now as we think of them. A considerable proportion of the successful cultivators of vegetables in the present day are men who appear equally happy in every department, and we call them "all round" men for a pithy description. But the stable boy who begins by digging the vicar's garden, and gives his mind to "taturs," often acquires expertness in the vegetable garden, and in due time comes out as an exhibitor, showing good stuff and a sufficient capacity. How much better should be the work of men who have had ample opportunities in good gardens of acquiring a knowledge of their business fr the very foundation; and yet often the gardener who takes h ground and looks down on the advancing stable boy cannot equal work in this department. It shocks us often to see young mer careless about vegetables and fruit and so ambitious in those dep ments that rest on fashion for sustenance, and that may sudde become as naught as may be determined by the current of influences out of which they originated.

RUGBY CHRYSANTHEMUM SOCIETY has decided to hold its exh tion on November 19th and 20th, instead of the 12th and 13th of t month, as previously announced.

CLIVIAS formed the subject of an interesting and instructive pa by Mr. L. Castle, read at the meeting of the Chiswick Garden Mutual Improvement Society, on the 10th inst.

TOMATO CULTURE was dealt with in an able manner by Mr. J. Riding, in a paper contributed to the recent meeting of the W Horticultural Improvement Society.

THE WINTER ACONITE, *Eranthis hyemalis* is now flowe freely in gardens near London, which may be roughly reckone month in advance of its usual time.

ROYAL HORTICULTURAL SOCIETY'S ARRANGEMENTS for 1890 set forth in detail in a handy book which may be obtained at society's offices. The general scheme we were enabled to include in new issue of the *Garden Oracle*, but now we have full particulars schedules of the several exhibitions.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—At the ann meeting, held on Thursday last, the balance-sheet showed income the past year amounting to £4,836, to which may be added interest stock and deposits £680. Mr. Ryland's legacy realized £527. stock held by the society amounts to £23,000 in 2¾ per cent. consol

THE FRUIT TRADE JOURNAL, addressed to producers, import preservers, and merchants, is a new weekly paper representing commercial side of fruit culture. It is announced as "the only of its kind in the world," a statement we are not disposed to quest The publishing office is at 171, Queen Victoria Street, London, E.C

MESSRS. BARR AND SON have cleared out from their old grou at Tooting, and are now settled at Long Ditton, where the nurs stock is now "all a-growing" and very soon will be, as we hope, 'll a-blowing" and attracting from all parts of the world the stern stalwart beings known as the "hardy men."

READING GARDENERS' MUTUAL IMPROVEMENT ASSOCIAT held its annual meeting the other day, when a highly satisfactory port was presented to the members. The financial statement sho a balance of £17 12s. on the year's work, and with a portion of t sum it is proposed to purchase standard gardening works for the of members.

AN IMPROVED JERUSALEM ARTICHOKE should obtain favour, should be tried by all the inquiring ones who have room in th beds for vegetables and roots. The new comer has the peculiar m of a handsome form, being globular or turbinate and regular, one sult being less waste in preparing the tubers, and a result expec being a greater dead weight of crop. The skin is whitish, and renders it very distinct from the old variety.

MESSRS. BARR AND SONS' new nurseries at Long Ditton, pron a new pleasure for lovers of hardy flowers, and a general invitatio given by the firm in their seed catalogue of 1890, to visit the pl during the season of floral gaiety. They have planted 2,000,000 daffo and other favourites in proportion, that there may be no lack expression of their intentions when the flowers come forth. We s hope to participate in the feast that is in preparation at Long Dit

CHRYSANTHEMUMS are not less popular in America than in United Kingdom, as demonstrated by the large attendance at the hibitions held at the great centres during the past season. With ference to this matter, *The Garden and Forest* remarks: "It is a f significant of the present tendency of horticultural fashion, that receipts from visitors at the chrysanthemum exhibition held at Bos in November last, exceeded the receipts taken at all the other exhi tions combined held by the Massachusetts Horticultural Soci during the year.

MESSRS. KELWAY AND SONS' new year's dinner is reported length in the *Langport and Somerset Herald* as a quite a joyous aff the firm entertaining the whole of the staff, over fifty in number. Mr. William Kelway's residence, Brooklands. The principal speak in the complimentary business following upon the dinner were the R J. Stubbs (vicar of Langport), Messrs. P. Drummond, R. Bonning, Drummond, A. Drummond on the part of the employés, and James Kelway and Mr. William Kelway, jun., on the part of firm; Mr. William Kelway, sen., being the efficient host on the ha occasion.

MR. WILLIAM HOLMES, of Frampton Park Nurseries, Hackn should participate in some degree in the praises bestowed on the c venient arrangements and scenic beauties of Dr. Barnardo's Ho at Ilford, for his taste and judgment and sound engineering are played in the formation of the grounds and their various embelli ments. It is not a small matter to manage so well a property devo to such peculiar uses, and so much as regards final success turns u roads, spaces, interruptions, boundaries and the like in the disposi of several acres of playing grounds, in aid of which nature may said to have done nothing in the first instance, that it is with pecul pleasure we direct attention to Mr. Holmes's work.

Notes of Observation.

CHRYSANTHEMUM MRS. S. COLEMAN.

MR. R. OWEN, Floral Nursery, Maidenhead, wishes me to state that he alone possesses the stock of this variety for distribution. When I penned the note that appears at page 15, I was not aware of that, and seeing it described in the catalogue of Mr. Davis, then before me, I concluded he also had stock of it. E. MOLYNEUX.

VEITCH'S EARLY FORCING CAULIFLOWER.

I HAVE grown a cauliflower under this name for the last three years, and without saying that it is better than any other, I can confidently say that it is a good one for sowing to succeed those sown in the autumn. The sort under notice if sown in a gentle heat early in February, and the plants grown on in a liberal manner, the crop is often fit for use before the autumn sown is over, this is a great gain to the gardener, for nice compact white heads of cauliflower, such as this one produces are always of great value. With regard to sowing the seed, I do so about the second week in February, using a pan about four inches deep, and raising the plants at the cool end of the early vinery. When they are large enough I prick them off into boxes four inches apart, three boxes thirty inches long and one foot wide, hold all the plants I require for an early crop. When the plants become established in the boxes, I take them to a cool house where they get less warmth and more air. Three weeks later I take them to a cold pit where they remain until the middle of April. As soon after that as the weather permits they are planted out in rich ground. For the first week or two I turn an inverted pot over the plants at night, and on cold days also to protect them from wind and frost. J. M.

MEALY BUG ON VINES.

M. B. who sends this question (see G. M., December 21st, page 824) respecting the destruction of mealy bug on vines, may rest satisfied that he does not require to use any stronger remedies than he has applied already. Therefore there is no need to run the risk of using paraffin or any other dangerous remedy. What is wanted is greater care in applying the same remedy again, as I am perfectly certain that Gishurst compound used at the rate of nine ounces to one gallon of water will, if it reaches the enemy, kill any insect with which it comes in contact that a vine or any other plant is infested with. It is very evident that M. B. has not applied the remedy in a proper manner, or there would not be an insect left according to the strength used. Perhaps the querist has dressed the vines and left the walls and wood-work untouched; if so, that accounts for the trouble he is now in. The wires and wood work should be painted with paraffin, and the walls limewashed. If the border is inside, three inches of the surface soil should be taken off and fresh supplied. Every inch of the interior surface must be thoroughly cleansed. I advise M. B. to stick to the Gishurst compound and to carry out my suggestions in other respects, and he may hope in time to get rid of his enemy. But if he uses paraffin he must do so cautiously at first or he may live to regret doing so. I have seen unskilful applications of this stuff kill the vines as dead as a door nail. In experienced and cautious hands there is not so much danger. J. C. C.

CHRYSANTHEMUM JOHN THORPE.

In the almanack issued with the Christmas number of the GARDENERS' MAGAZINE I notice a striking resemblance of the variety named above to the Purple Chrysanthemum of 1789 there figured, not only in colour but in formation of the florets. When the florets begin to unfold they are quite tubular in formation, and as they near the point of the extension of their growth they flatten out, as will be noticeable in the Purple figured. Gradually, as the flower develops in the centre, the florets are less tubular, the greater part of their length they are flat in formation. Although the colouring of John Thorpe—which is an American-introduced Japanese variety—is deeper than the old variety figured, yet there is a striking likeness between the two which is singular, that after this long space of time a new variety should turn up which is allied so closely to one introduced one hundred years since. I fear John Thorpe does not belong to the class of Japanese varieties which find most favour amongst English cultivators; it is too thin in the "build" to make it popular. The tubular formation of the base of its florets accounts for the thin appearance of the flower as a whole, that is, when developed from early formed buds. When a better stock of plants can be obtained so that a stronger foundation is laid for its future growth, this variety may come near that form now so essential in an exhibition variety. The colour is a bad one to describe. Some catalogues give it as the richest, deepest lake, which is perhaps nearer the mark than anything I can add to that or otherwise describe it. E. MOLYNEUX.

MESSRS. CANNELL AND SON claim priority in the enunciation of the proposal for a hall for horticulture. The subject has been discussed in a casual way from the time when the R.H.S. was preparing to quit South Kensington, and there may be many claimants of priority. But as regards publicity, Messrs. Cannell are certainly the first in the field in their tractate headed, "A Voice from Swanley." In this they announce their readiness to subscribe £25 towards the building "as soon as the freehold is secured."

SPRING FLOWERS are reported from Mr. W. B. Hartland's nurseries, Blackrock, Cork, as including daffodils Pallidus præcox and Tazetta Paper White; snowdrops, hepaticas, Triteleia uniflora, and Christmas and Lenten roses in variety. In addition to these, which are in great force, there are in flower primroses of many kinds, aubrietias, gentianas, violas, stocks, wallflowers, mahonias, Pyrus Maulei, and Azara microphylla. The Ard-Righ daffodil will presently present 100,000 flowers.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, JANUARY 14.

FLORAL COMMITTEE.

PRESENT: Dr. Masters, F.R.S., in the chair; and Messrs. G. Paul, J. Fraser, R. Dean, T. Baines, F. Ross, H. Herbst, J. Walker, G. Nicholson, H. B. May, H. Cannell, W. C. Leach, P. Blair, B. Wynne, H. Turner, C. Noble, Shirley Hibberd, R. B. Lowe, and W. Holmes.

The duties of the committee were particularly light on this occasion, for the novelties were few and the miscellaneous contributions limited in number. The most important of the contributions was the collection of pitchers of nepenthes from Messrs. J. Veitch and Sons, Chelsea, to whom the silver gilt Banksian medal was awarded. Especially well represented were Nepenthes Chelsoni, N. Dicksoniana, N. Mastersiana, N. Domini, N. Northiana, N. Hookeriana, and N. Rafflesiana, all of which are remarkable for the great beauty of their pitchers. Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, exhibited a group of well-grown ferns, chiefly of market size, and was awarded the bronze Banksian medal. Mr. O. Thomas, Chatsworth, exhibited good examples of Amaryllis aulica, and received a vote of thanks. Messrs. Walsham and Co., Scarborough, submitted spathes of a form of Calla æthiopica, said to be much dwarfer than the type. Messrs. H. Cannell submitted several new Chinese primulas, and received awards of merit for Eynsford Red, Eynsford Pink, and Her Majesty, and a vote of thanks for the collection.

From Messrs. Barr and Sons, King Street, Covent Garden, came examples of several winter-flowering crocuses, comprising Crocus Imperati, a charming species, with purplish lilac flowers, C. Sieberi, a handsome species, with bright purple flowers, and C. chrysanthus, a distinct and attractive species, the flowers of a bright golden yellow. The firm also exhibited Anemone fulgens, Galanthus Elwesi, and Narcissus Elwesi in fine condition for so early in the year. A vote of thanks was accorded. Messrs. Paul and Son, Cheshunt, contributed the elegant Spiræa astilboides to show its usefulness for forcing, and received the compliment of a vote of thanks. A fruiting specimen of Carica papaya was shown by Mr. O. Thomas, to whom a cultural commendation was awarded. The specimen carried some two dozen of the egg-shaped fruits, the majority of which were of a rich golden yellow colour.

ORCHID COMMITTEE.

Present: Sir Trevor Lawrence, Bart., M.P., in the chair; Baron Schroder, and Messrs. De B. Crawshay, F. G. Tautz, F. A. Philbrick, T. B. Haywood, H. Ballantine, H. M. Pollett, J. Dominy, C. Pilcher, J. Douglas, H. J. Veitch, L. Castle, F. Moore, J. O'Brien, and E. Hill.

Orchids constituted an interesting feature of the meeting, for they were staged in considerable numbers, and included several novelties.

Mr. White, gardener to Sir T. Lawrence, Bart., M.P., Burford Lodge, Dorking, exhibited a small but important group, in which were several beautiful hybrids raised in the Burford Lodge collection. The group included Lælia Patini, a beautiful species, with rich purple flowers; L. pumila, El Spirito Sancto variety, a dwarf-growing form, having comparatively large flowers, the sepals and petals bright rose and the labellum rich amethyst purple; and several dendrobiums, which had certificates of the first-class conferred upon them. Mr. Myles, Appley Towers, Ryde, sent well-developed blooms of C. insigne, and was accorded a vote of thanks. Mr. Glover, gardener to E. Ellis, Esq., Manor House, Wantage, staged a finely-developed specimen of Lycaste plana, bearing sixteen flowers, and was awarded a cultural commendation. Mr. J. Jones, gardener to N. N. Sherwood, Esq., Dunedin, Streatham Hill, submitted Lycaste Skinneri rubra, a distinct variety remarkable for the deep colouring of the sepals and petals. Messrs. J. Veitch and Sons presented Cypripedium Calypso, an attractive hybrid raised from a cross between C. Spicerianum and C. Boxalli. Messrs. Pitcher and Manda, 139, Barry Road, East Dulwich, exhibited a good form of C. Leeanum. Mr. Cowley, gardener to F. G. Tautz, Esq., Studley House, Hammersmith, exhibited Lycaste plana Measuresiana, a beautiful variety distinguished by the brilliancy of the markings on the petals, Cœlogyne lentignosa, and several good forms of Lycaste Skinneri. A vote of thanks was accorded the exhibitor. A like compliment was paid to Mr. De B. Crawshay, Rosefield, Sevenoaks, for Lælia Crawshayana, evidently a variety of L. anceps, with smaller flowers than those of the type. Mr. Harvey, Riversdale Road, Liverpool, sent a well-bloomed specimen of a white variety of Lælia anceps, and received the compliment of a vote of thanks. From Mr. R. Johnson, Stand Hall Gardens, Whitfield, Manchester, came specimens of Vanda Amesiana and V. Amesiana alba, both of which were well flowered. The latter differs from the type in having white flowers. Cattleya Trianæ albescens was represented by a nicely-flowered specimen from Mr. P. Blair. This variety has comparatively large flowers, of which the petals and sepals are paper white and the labellum white tinted with rose.

FRUIT COMMITTEE.

Present: J. Lee, Esq., in the chair; Dr. Hogg, and Messrs. P. Crowley, P. Barr, C. Ross, J. Cheal, G. Cliffe, W. Denning, G. Norman, A. Watkins, W. Warren, J. Wright, A. H. Pearson, G. W. Cummins, G. Bunyard, W. Wildsmith, R. D. Blackmore, W. Coleman, J. Hudson, T. J. Saltmarsh, and J. Smith.

The most important of the contributions to the meeting of the Fruit Committee was the excellent collection of apples from W. Roupell, Esq., Harvey Lodge, Roupell Park. Especially good were the examples of the Queen, Annie Elizabeth, Emperor Alexander, Peasgood's Nonsuch, Blenheim Pippin, Melon, Dumelow's Seedling, Colonel Vaughan, Cellini, Striped Beefing, Bramley's Seedling, Lane's Prince Albert, Manks Codling, Wealthy, and Cox's Orange Pippin. Mr. H. Morris, Stanfow Gardens, Taibach, South Wales, sent a well-ripened pineapple; Mr. Dean contributed several samples of onions; Mr. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallington, sent a dish of Remborough apple, a culinary variety of good appearance; and Mr. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, exhibited several baskets of mushrooms.

From the Society's garden came a small collection of broccolis, which included Snow's Winter White, Penzance Early White, Improved Purple Sprouting, and White Sprouting, in good condition.

NOVELTIES.

First-class certificates were granted as under:—

To Sir Trevor Lawrence, Bart., M.P., for

Dendrobium Luna.—A charming hybrid between D. Ainsworthi and D. Findleyanum, remarkable both for its elegant habit and freedom of flowering; the pseudo bulbs somewhat flat as in the case of the last-named of the two

parents; the flowers are of medium size, the sepals creamy white suffused rose, the petals white tipped with rose, and the labellum pale cream colour with lemon blotch.

Dendrobium Juno.—A handsome hybrid between D. Wardianum and D. moniliforme, in which the blue purple colouring characteristic of the last-named is very highly developed. The flowers are of medium size, the sepals and petals broad and roundish at the apex, somewhat pale at the base, deepening to brilliant blue-purple at the margin, the labellum tinted rose with large marone blotch and bright purple tip.

Dendrobium xanthocentrum.—An exquisitely beautiful hybrid of moderate growth; the flowers large, the petals and sepals tinted rose, the labellum white, bright rose at the tip, and marked with a large orange-yellow blotch.

To Baron Schroder, The Dell, Egham, for

Lælia anceps Schroderiana.—A beautiful variety in the way of L. anceps Sanderiana, but with pseudo bulbs of greater length and flowers of larger size. There is also a difference in the colour of the labellum which is rather lighter than in Sander's variety.

To J. Veitch and Sons for

Dendrobium Macfarlanei.—A charming species from New Guinea, the flowers of medium size, with greatly elongated labellum, and pure white, with a few amethyst markings at the base of the labellum.

Awards of merit were made as under:—

To Sir Trevor Lawrence, Bart., M.P., for

Dendrobium nobile, Burford Lodge Variety.—This differs from the type in the two lower sepals being marked with longitudinal blotches of marone-purple, which disfigure rather than add to the beauty of the flower.

To Messrs. H. Cannell and Sons, Swanley, for the undermentioned Chinese primulas.

Eynsford Red.—An excellent strain, with palmate leaves and bearing large finely formed flowers of a brilliant rose-crimson.

Her Majesty.—A beautiful fern-leaf strain, the flowers pure white, very large, exceptionally stout in substance, and finely fringed.

Eynsford Pink.—A distinct strain, with palmate leaves, the flowers large and of superb form, the colour bright pink.

To Mr. H. B. May, Edmonton, for

Pteris serrulata gloriosa.—A handsome form of this sportive fern, remarkable for its elegant growth and distinctive character.

BRUSSELS AMATEUR ORCHID SOCIETY.

The monthly meeting of this society was held on the 12th inst., in the Horticultural Buildings in the Leopold Park, and was remarkable both for the large number and excellent condition of the orchids staged. There was a good muster of members of committee, and a large attendance of orchidists.

Foremost among the private cultivators was M. G. Warocque, who submitted well-bloomed specimens of Odontoglossum Cervantesi lilaceum, an extremely beautiful variety, the flowers marked with bright lilac; several handsome varieties of Cattleya Trianæ, and of Odontoglossum crispum; O. Andersonianum, O. hastilabium superbum, a distinct and handsome variety of this bold-growing species and Vanda Amesianum, which is obtaining much favour on the Continent, as well as in the United Kingdom. M. Van Imschoot submitted a fine form of Oncidium splendidum; Cattleya guttata Prinzi, C. Trianæ alba, a chaste variety, which created much interest; and Sophronites grandiflora. M. G. Miteau contributed an interesting group, which included a variety of Odontoglossum crispum having flowers marked with large purple blotches; Cypripedium insigne albo-unguiculatum, C. Leeanum superbum, the finest variety of this hybrid; and C. regale and C. Leeanum Burford Lodge variety. M. du Trieu de Terdonck presented a good specimen of the beautiful Odontoglossum Nevadense; Madame Gibez exhibited Lycaste lanipes and a superb variety of Odontoglossum Rossi, the flowers being of exceptional size, and very rich in colour; Dr. Van Cauwelaert presented Cypripedium Sallieri Hyeanum and the Burford Lodge variety of C. Leeanum; M. Wallaert also staged several interesting lady's-slippers, the most important being Cypripedium Arthurianum, C. nitens, C. Leeanum superbum, C. Sallieri Hyeanum, and C. tonsum; M. Hye-Leysen exhibited an odontoglossum of great beauty, supposed to be a natural hybrid, and a white form of O. Pescatorei; M. Massange de Louvrex staged good specimens of Lælia Jonghi; M. Lallemand sent a beautiful variety of Cypripedium Barteti; and Madame Block contributed Houlletia Brocklehurstiana, Cypripedium ciliolare, and C. caudatum, the latter particularly good.

The collection from M. Lindeni was large and very interesting. The most noteworthy kinds were: Aerides Augustianum, a beautiful species recently introduced from the Philippine Isles; several excellent varieties of Cattleya Trianæ, C. Binoti, Oncidium cucullatum, Masdevallia macrura, Odontoglossum Lucienianum, O. Insleyi leopardinum, and Angræcum sesquipedale. M. M. Vervaet presented Cattleya Trianæ, Odontoglossum crispum, Cypripedium Dauthieri, a handsome hybrid, with purplish flowers; and an unnamed lady's slipper in the way of C. polychromum.

The following awards were made by the committee: Diploma of honour of the first class to M. Linden for Aerides Augustianum. Certificates of merit of the first class to Madame Gibez for Odontoglossum Rossi var.; to M. Hye-Leysen for Odontoglossum sp. and O. Pescatorei album; to Mr. Wallaert for Cypripedium Arthurianum. Certificates of merit of the second class to M. Warocque for Odontoglossum Cervantesi lilaceum; to M. Van Imschoot for Oncidium splendidum; to M. Wallaert for Cypripedium nitens; and to M. Linden and M. M. Vervaet for Cattleya Trianæ. First-class cultural certificates were awarded to M. Linden for Masdevallia macrura; and to Madame Block for Cypripedium caudatum. A second-class cultural certificate was awarded to M. Warocque for Odontoglossum crispum.

ENTOMOLOGICAL SOCIETY OF LONDON.

The fifty-seventh annual meeting of this society, which was founded in 1833, and incorporated by royal charter in 1885, was held January 15, the Right Hon. Lord Walsingham, F.R.S., president, in the chair. An abstract of the treasurer's accounts, showing that the finances of the society were in a thoroughly satisfactory condition, was read by Dr. Sharp, one of the auditors, and the report of the council was read by Mr. H. Goss. The ordinary business of the society having been transacted, Lord Walsingham delivered an address. He claimed that entomology was the chief attraction in the greatly increasing number of naturalists' societies and field clubs; and that the study was not only useful, but very popular, providing a civilizing and refining recreation for many dwellers in towns. Referring to the vast scope of this field of study, he accepted Dr. Sharp's estimate of 2,000,000 existing species of insects, of which about 200,000 are described. He regretted that the public funds available were insufficient to provide a much larger staff or to form a separate department, as in the case of the older and better-known science of botany. In connexion with the subject of the principal works in entomology continued or completed during the year, special mention was made of the "Biologia Centrali Americana," by Messrs. Godman and Salvin, and the "Revisio Insectorum Familiæ Mantidarum," by Professor Westwood. In conclusion, Lord Walsingham referred to the losses by death during the past year of several Fellows of the society and other entomologists, mention being made of Mr. F. Bond, Dr. Signoret, M. Puls, Colonel C. J. Cox, Pastor Holmgren, Dr. Franz Löw, Dr. Karl Venus, and the Rev. J. G. Wood.

GARDENERS' ROYAL BENEVOLENT INSTITUTION, ANNUAL MEETING, JANUARY 16.

The annual meeting of the Gardeners' Royal Benevolent Institution was held on Thursday afternoon, at "Simpson's," Strand, Dr. Masters in the chair. The minutes of the previous annual meeting having been duly read and signed,

Mr. E. R. Cutler submitted the annual report and financial statement. The committee at the commencement of the report express themselves as highly gratified with the result of the year's work, and then proceed to say that after careful consideration it was resolved to mark the Jubilee year of the Institution by endeavouring to raise the sum of £3,000 to enable them to place upon the list of pensioners the fifteen unsuccessful candidates at the previous election, and two applicants who had been subscribers at least fifteen years. The committee were successful in obtaining Mr. Leopold de Rothschild as chairman of the anniversary festival, at which the sum of £2,451 was received in donations, the largest amount contributed at any dinner of the Institution. In addition, the sum of £994 9s. 9d. was contributed by gardeners by means of collecting, making a total of £3,445 15s. 7d. The committee were greatly indebted to Mr. Leopold de Rothschild, both for his advocacy of the claims of the Institution, and for his generous contribution to the funds.

In consequence of the successful results of their appeal the committee had been able to add seventeen pensioners to the list. Fourteen pensioners had died during the year, four leaving widows, who, being eligible, were placed on the pension list in accordance with the rules. The number of pensioners at the end of the year was 139, and with the fifteen added on Thursday is now 154.

The committee also reported that Harry J. Veitch, Esq., had kindly consented to preside at the anniversary festival to be held in the course of the summer.

The financial statement shows that the total income during the year was, with a balance of £647 14s. 4d. from the previous year, £6,044 5s. 5d. Of this the sum of £1,328 was received as annual subscriptions, £2,451 5s. 10d. as donations at and in consequence of the annual dinner, £680 7s. 1d. as interest on investments, and £527 1s. 9d. as the proceeds of the legacy left by the late Mr. J. Rylands. The disbursements include £2,348 13s. 4d. paid in pensions and gratuities, £1,000 placed on deposit, and £1,846 14s. invested in the purchase of consols. The investments in consols now amount to £23,000. After a brief discussion, the report and balance-sheet were passed.

The election of officers was then proceeded with, and as the result, H. J. Veitch, Esq., was re-elected treasurer, and Mr. Cutler secretary. Lord Revelstoke and C. Czarnikow, Esq., were elected vice-presidents, in the place of the late Sir M. Peto, Bart., and the late Mr. R. Marnock. Mr. H. Turner and Mr. G. Wythes were elected, and Messrs. J. H. Weston, J. Webber, W. T. Baker, and S. Osborne were re-elected, members of committee.

Fifteen candidates were placed on the pension list, six by right and nine by ballot. The six placed on the list in accordance with Rule 6 were Emily Friend, Mark Hebblethwaite, Eden Georgina Murray, John Skene, John Trotter, and John Wainwright. The successful candidates in the ballot were James Baillie, 3,241; Sophia Burt, 2,369; Mary Ann Milroy, 1,890; Elizabeth Parker, 1,568; Sarah Brush, 1,543; Robert Cox, 1,537; George W. Young, 1,493; Maria Milley, 1,430; James Robinson, 1,213.

GARDENERS' ORPHAN FUND.

KINDLY give me a little space to record some generous and most successful efforts which have recently been made in aid of our gardening charities. The promoters and conductors of such undertakings deserve our warmest and most sincere thanks, not only for the time and trouble they have devoted to the work, but for the splendid example they have set others to go and do likewise.

At Worksop last month the gardeners of that ducal district, headed by our good friends Mr. Henderson, of Thoresby (secretary), and Mr. Gleeson, of Clumber, organised a concert, which, being patronized by the *elite* of the place, secured as a result a net profit of £56 4s. for the benefit of the Gardeners' Orphan Fund. In accordance with the rules of the fund, the following members of the committee have elected to become life subscribers: Mr. Egglestone, Firbeck Hall Gardens, Rotherham; Mr. Gleeson, Clumber Gardens, Worksop; Mr. Horton. Welbeck Gardens, Worksop; Mr. Henderson, Thoresby, Ollerton, Notts; Mr. Jefferson, gardener, Carlton House, Worksop; Mr. Mallender, Hodsock Priory, Worksop; Mr. Sutton, Worksop Manor Gardens, Worksop; and Mr. Woods, Osberton Gardens, Worksop.

At Reigate the committee of the Reigate and District Chrysanthemum Society (Mr. J. Brown, Great Doods, Reigate, secretary) decided to hold their show last autumn for the benefit of the two great gardeners' charities—the Gardeners' Royal Benevolent Institution and the Gardeners' Orphan Fund. Their efforts have been so successful as to secure a net profit of £100, and with grateful thanks I have to acknowledge the receipt of £50 sent in aid of the Gardeners' Orphan Fund. The following members of the committee have elected to become life subscribers: Mr. James Brown, gardener to Mrs. Waterlow, Great Doods, Reigate; Mr. Thomas Bugden, gardener to Miss Baker, Holmfels, Reigate; Mr. Alfred Elphie, gardener to J. Clutton, Esq., South Park, Reigate; Mr. William Hamilton, gardener to Mrs. Grice, Beechwood, Reigate; Mr. James Hoad, gardener to G. Simpson, Esq., Wray Park, Reigate; Mr. Fred Parfitt, gardener to E. Horne, Esq., Park House, Reigate; Mr. Wm. Peters, gardener to W. Finch, Esq., Danecroft, Reigate; Mr. James Port, gardener to J. C. Saunders, Esq., Shagbrook, Reigate; Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate; and Mr. Robert V. Smith, gardener to A. G. Taylor, Esq., The Margery, Reigate.

A. F. BARRON, *Hon. Sec. Gardeners' Orphan Fund.*

MR. W. SWAN will lecture on "Orchids" at the meeting of the Chiswick Gardeners' Association, on Friday next.

ECLIPSE TOMATO.

This variety belongs to what may be termed the "cluster" group of tomatos, of which Chiswick Red and Horsford's Prelude are types. All tomatos show fruit in clusters, but the habit is characteristic in certain cases, and, as might be expected, the larger the cluster the smaller the individual fruits, and *vice versa*. With all raisers of new varieties, it is an object to retain the cluster style of production, but to augment the size of the fruits. In theory the total weight of fruit producible must bear a definite ratio to the area of the leaf surface, but as we have not discovered the ratio, we can but pursue the work of improvement, and nature will be quite careful to prevent our success overpassing reasonable limits.

The Eclipse is a seedling from Nisbet's Victoria, with fruits three times the size, the bunches being produced in the same prodigal manner as in the parent plant. The fruit is oval in form, of a rich cherry-red colour, and of excellent flavour. Messrs. Charles Sharpe and Co., of Sleaford, have directed our attention to this valuable variety, and we gladly avail ourselves of their permission to place a figure of it before our readers.



CLUSTER TOMATO, *Eclipse*. (Adapted for wall or house culture.)

HARDY SHRUBS FOR EARLY FORCING.

By W. Bradbury.

In the production of a bright display of flowers in the conservatory early in the year, some of the hardy shrubs are extremely useful, and it is now many years since I began to take advantage of the assistance they are so well able to render. At first I included in my selection nearly all the shrubs remarkable for the beauty of their flowers that naturally bloom early, and thus burdened myself with many things that were decidedly second-rate. But with an increase in experience I gradually reduced the number, and now have but comparatively few kinds, which, as a matter of course, comprise those that are thoroughly attractive when in bloom, and can be forced without any special difficulty. Those found of the greatest service are the azaleas, deutzias, lilacs, and rhododendrons, and although the selection ought not to be limited to them, they should in all cases have the first attention and be employed in the largest quantities.

In gardens where no structure is provided specially for forcing flowers, satisfactory results may be obtained by devoting a melon pit or cucumber house, intended for summer crops, to the work. In other cases the shrubs may be started in the early peach house or vinery, as there is not the same risk of introducing insect pests to these structures by means of hardy shrubs as when plants are brought from the greenhouse or stove, more particularly the latter. The conditions most favourable for starting the shrubs are a temperature of about 60 deg. and a liberal degree of atmospheric humidity. It is also advantageous to assist them with a rather brisk bottom heat and occasional syringings. It is an excellent plan to make up a hot-bed with leaves alone or leaves and stable manure in equal proportions, and to plunge the pots to one-half or two-thirds their depth, according to the temperature of the fermenting materials. Leaves are in all cases preferable, as the heat produced is more steady than when stable manure is employed, whether alone or in combination with other materials.

With reference to the preparation and selection of the shrubs required for forcing, it may be useful to state that in all cases they should be well set with flower buds, and, where practicable, be potted up in the autumn, and placed in a sheltered position where they can remain until drafted to the forcing-house. It is an excellent practice to place them on a hard surface, on a layer of coal ashes, and then to pack sufficient loose material about the pots to prevent the soil being frozen. It is also advisable to remove them to a cool-house for ten days or a fortnight previous to their being taken to the heated structure. With this brief introduction I will proceed to point out a few of the hardy shrubs that are of special excellence.

Andromedas suitable for forcing are few in number, and the best for the purpose is unquestionably A. floribunda. Flowering naturally early in the year when the weather is open, it requires very little artificial heat to have it in perfection by the end of the current month. Vigorous examples, well set with flower-buds, and just large enough to be put into six-inch pots, are the most generally useful, and they should have a place at the coolest end of the forcing-house. When developed under glass, with a moderate degree of artificial heat, the flowers have much the appearance of sprays of the lily of the valley. When the flowers have lost their freshness and beauty, the plants should be removed to a pit or frame, and be protected until they can be placed outside without risk of injury to the young growth.

Azaleas constitute one of the most valuable classes of hardy shrubs we have for flowering under glass early in the year. The Mollis varieties are especially useful, as they are free in flowering, attractive in colour, and naturally so early that to have them at their best at the end of February or early March is a very easy matter, They can be had in bloom at the beginning of the first of the two months mentioned if desired. It is not necessary to purchase named varieties for forcing, and I would suggest that seedlings well set with flower-buds should be selected, as they are cheaper in proportion to the size of the plants, and they will afford a delightful diversity of colours. The Ghent varieties are remarkably showy, and give colours quite distinct from those forming the Mollis section. These may be obtained under name at a comparatively cheap rate, the most suitable colours being scarlet, white, and yellow. Whether it is intended to force them a second time or to plant them in the beds, they should, where the conveniences exist, remain under glass until the new growth is completed, as they will then set a good crop of buds, and bloom satisfactorily in the year following.

Deutzias are surprisingly beautiful when well flowered, and invariably obtain a full share of attention. D. gracilis is perhaps the most generally useful, but it is by no means the only kind that should be forced. D. candidissima fl. pl. has been found of a high degree of utility, and we force a large batch annually. It is more robust in growth than the first-named species, and the large double flowers are produced in comparatively long racemes. It is essential to have the deutzias well set with flower-buds, and in their preparation I obtain the best results by growing them in a sunny position where the soil is not over rich. It is very important also to start them rather gradually, for when subjected immediately on their being taken indoors to a high temperature the flowers fail to become properly developed, or remain but a short time in perfection. D. candidissima fl. pl. is best of the two to cut from for indoor decoration, as the flowers stand better.

Kalmias present such a distinctive and delightful appearance when forced that a few examples should annually be started early for the embellishment of the conservatory. Bushes ranging from two to three feet in height, and of a proportionate diameter, are the most suitable, but smaller examples will produce a pleasing effect when in bloom. Those selected for forcing must be well set with flower buds, and they should be carefully hardened off after they have done duty in the conservatory.

Lilacs are of exceptional value, for they are not only extremely beautiful when in bloom, but they are so readily propagated and prepared for the forcing pit that the maintenance of a stock of plants of a size suitable for forcing is perhaps as simple as anything to which the gardener has to give his attention. Both for the conservatory and for the supply of cut flowers for the indoor apartments the most useful examples are those with heads about eighteen inches in diameter, and clear stems twelve inches or so in length. The best of the several kinds are Charles X., Persian, White Persian, and Virginalis, the last-named being a beautiful pure white form of the common lilac. Imported lilacs are commonly supposed to be much superior for forcing to those of home growth, but no greater fallacy could possibly exist. Lilacs can be prepared as well in England as in France, and in proof of this I would mention the fact that for many years past I have depended wholly upon plants grown by myself, and more satisfactory results could not possibly be desired. I commence by selecting strong suckers and plant them in a bed in the kitchen garden, where they remain two years. When planted they are cut back to within eighteen inches of the surface of the soil, and all the shoots that make their appearance on the lower half of the stem are removed. After the second year they are replanted annually, and receive each time they are moved an increase of space. By this course of procedure we obtain firm, short-jointed wood, an abundance of foliage, and, what is of still greater importance, a plentiful production of flowers.

Rhododendrons, when of medium size and finely developed, are unsurpassed in effectiveness, and should therefore be employed somewhat largely for forcing. Some of the best varieties for flowering under glass are Brayanum, Broughtoni, Cleopatra, Jacksoni, Kate Waterer, Michael Waterer, Mrs. Fitzgerald, Mrs. John Clutton, Purity, Salmonea rosea, and Sir R. Peel. These give a good diversity of colours, and are so early in coming into bloom that very little fire heat is necessary to have them in bloom at the beginning of the spring. Examples of all sizes may be forced with equal facility, but those of medium size, and having from six to eight buds, are in some respects preferable. As in the case of the azaleas, careful hardening off is necessary to prevent injury to the plants.

AUDIT OF CHRYSANTHEMUM EXHIBITIONS, 1889.

IN preparing the audit of the exhibitions of chrysanthemums held during the season of 1889, I have proceeded on the same lines as in the preparation of that of the previous year. Consequently it has been limited to stands of not less than twelve blooms, and to flowers to which first prizes were awarded. The exhibitions included in the audit are forty-two in number, or two more than in 1888, and eleven more than in 1886, and they comprise all the most important of the gatherings of chrysanthemum growers held in the United Kingdom. The number of stands taken into account is one hundred and eighty-eight, of which ninety-seven were incurved, and ninety-one Japanese. The number of blooms is three thousand one hundred and forty-six, of which one thousand six hundred and two were incurved, and one thousand five hundred and forty-four were Japanese. These numbers are important, and in instituting comparisons between the number of blooms of any particular variety staged last season and in a previous year, it is necessary to make due allowance for the increase in the totals. But as no change has been made in making the audit, this increase will not in any way affect the relative positions of varieties in the list.

The following is the audit of the

INCURVED VARIETIES.

Relative Order.		No. of Blooms.
1	Golden Empress of India	108
	Lord Alcester	108
2	Queen of England	104
3	Empress of India	100
4	Emily Dale 38 / Golden Queen of England 33	71
5	Princess of Wales	64
6	Barbara	58
7	Alfred Salter	57
	Jeanne d'Arc	57
8	Miss M. A. Haggas	56
9	Lord Wolseley	55
10	John Salter	54
11	Princess of Teck	43
12	Mrs. Heale	41
13	Miss Violet Tomlin	40
	Mr. Brunlees	40
	Mrs. W. Shipman	40
14	Prince Alfred	35
15	Hero of Stoke Newington	34
	Lady Hardinge	34
	Nil Desperandum	34
16	Mrs. Norman Davis	29
17	Cherub	26
18	Princess Beatrice	23
19	Empress Eugenie	22
20	Jardin des Plantes	21
21	Refulgens	20
22	Mabel Ward	18
23	Mr. Bunn	17
	Bronze Queen	17
	Venus	17
24	Beauty	16
25	Charles Gibson	15
26	White Venus	12
27	Eve	11
28	Novelty	10
29	Baron Beust	8
	Lady Carey	8
30	Nonpareil	6
31	Beverley	5
	Isabella Bott	5
	Lord Eversley	5
	Mrs. G. Rundle	5
	Prince of Wales	5
32	Antonelli	4
	Golden Eagle	4
	Guernsey Nugget	4
	Lady Dorothy	4
	Sir Stafford Carey	4
33	Bronze Jardin des Plantes	3
	George Glenny	3
	H. Shoesmith	3
	Mrs. W. Haliburton	3
	Perle Precieuse	3
34	John Lambert	2
	Lady Slade	2
	Mrs. Sharpe	2
	Pink Perfection	2
35	Angelina	1
	Cassandra	1
	Duchess of Manchester	1
	Faust	1
	Globe	1
	Golden John Salter	1
	Golden George Glenny	1
	Lady Talfourd	1
	Queen of the Isles	1
	Rev. J. Dix	1
	White Formosa	1

A comparison of the present audit of incurved varieties with those of 1888 (G.M., December 15, 1888) and 1886 (G.M., January 15, 1887) will be found highly interesting, and can hardly fail to prove instructive to cultivators, more especially those who take an active part in competitive gatherings. It will be seen that the several members of the Queen family occupy as usual a high position on the list, and it may be mentioned as a point of some interest that they number five hundred and sixty-five, or more than one-third of the total. Empress of India, instead of occupying the highest place on the list, as in 1888, 1886, and 1885, has fallen to the third place, and Lord Alcester and Golden Empress, which in 1888 were second and fourth respectively, are bracketed together at the top, and Queen of England, which was third in 1888 and fourth in 1886, is second. Emily Dale and Golden Queen have risen considerably, and now occupy the fourth place instead of the seventh, as in the preceding audit. Princess of Wales is one number higher, but Alfred Salter and Jeanne d'Arc, which were bracketed with it in 1888 for the sixth place, are bracketed together, and now occupy the sixth place. Barbara has bounded from the sixteenth place with sixteen blooms to the sixth place with a total of fifty-eight blooms. Lord Wolseley has dropped from the fifth to the ninth place, the number of blooms staged having been less by twelve than in 1888. John Salter occupies exactly the same position as in the previous audit, with ten more blooms. Miss M. A. Haggas, the beautiful yellow sport from Mrs. Heale, has proved a most valuable addition to the list of yellow incurved varieties, and came well to the front last season, as proved by the fact that it occupies the eighth place in the audit with the substantial total of fifty-six. This variety has proved a formidable rival to Mr. Bunn, which has dropped from the twelfth to the twenty-third place, and it is probable that it will show an equally large drop next year, for both in size and finish it is decidedly inferior to Miss Haggas. Miss Violet Tomlin, the dark sport from the Princess of Wales, although of much value, is not so decided a gain as Miss Haggas, and it is not probable that it will attain a much higher position than that occupied during the past season. As will be seen, it is bracketed with Mr. Brunlees and Mrs. W. Shipman for the thirteenth place. Mrs. Shipman and Mr. Brunlees were sixteenth and twenty-third respectively in 1888, the latter being represented by thirteen blooms as compared with forty last season. Prince Alfred has dropped from the seventh to the fourteenth place with sixty-three and thirty-five blooms, this change being due chiefly to the rapidity with which the flowers lost their freshness and beauty. Hero of Stoke Newington, Princess Beatrice, and Empress Eugenie have not undergone much change, neither have Nil Desperandum or Cherub. Golden John Salter would appear to find but little favour with the general body of growers, for it is represented in the audit by a solitary bloom, as compared with three in 1888. John Lambert makes its appearance in an audit for the first time, and the two blooms were shown by Mr. Lambert, who obtained it as a sport from Lord Alcester.

The following is the audit of the

JAPANESE VARIETIES.

Relative Order.		No. of Blooms.
1	Mr. Ralph Brocklebank	74
2	Avalanche	69
3	Boule d'Or	66
4	Edwin Molyneux	62
5	Meg Merrilies	60
6	Madame C. Audiguier	58
7	Jeanne Delaux	56
8	Carew Underwood	44
9	Madame J. Laing	41
	Val d'Andorre	41
10	Japonais	39
11	Sunflower	38
12	Baronne de Prailly	35
	Fair Maid of Guernsey	35
	Gloriosum	35
	Mdlle. Lacroix	35
13	Madame Baco	34
14	Etoile de Lyon	33
	Triomphe de la Rue des Chalets	33
15	Thunberg	29
	Stanstead White	29
16	Sarah Owen	26
17	Criterion	25
18	Duchess of Albany	24
	Mons. Bernard	24
	Mrs. J. Wright	24
19	Belle Paule	23
20	Lady Lawrence	22
21	Mr. H. Cannell	20
	Marguerite Marrouch	20
22	Comte de Germiny	18
	M. J. M. Pigny	18
23	Mdlle. Blanche Pigny	17
24	Elaine	15
	Golden Dragon	15
25	George Daniels	14
26	L'Adorable	13
27	M. Burnet	12
28	Mrs. Cannell	11
	La Triomphante	11
	M. John Laing	11
	Mrs. F. Thompson	11
29	Marsa	10
	Mrs. Wheeler	10
30	Maiden's Blush	9
	Pelican	9
31	Grandiflorum	8
	Mrs. H. Wellam	8
	M. H. Elliott	8
	M. Astorg	8
	M. Tarin	8
32	Balmorean	7
	Condor	7
	Comtesse de Beauregard	7
	Fimbriatum	7
	Florence Percy	7
	Stanstead Surprise	7
33	Amy Furze	6
	Soleil Levant	6
	Mrs. Falconer Jameson	6
34	Album fimbriatum	5
	Frederic Marrouch	5
	Bertha Flight	5
	Hamlet	5
	Le Sceptre Toulousaine	5
	L'Or du Japon	5
	Martha Harding	5
	Mdlle. Paule Dutour	5
	M. Freeman	5
	Moonlight	5
35	Dormillion	4
	M. Ardene	4
	Peter the Great	4
	Triomphe du Nord	4
36	Album plenum	3
	M. Garner	3
	Mrs. W. K. Harris	3
	Volunteer	3
37	Bertier Rendatler	2
	Bouquet Fait	2
	Mr. D. B. Chapman	2
	Dr. Macary	2
	Duke of Berwick	2
	Edouard Audiguier	2
	Maggie Mitchell	2
	Madame Louise Leroy	2
	M. Henri Jacotot	2
	Mrs. Mahood	2
	Madame de Sevin	2
	Roi des Japonais	2
	Roseum superbum	2
	Source d'Or	2
38	Angele	1
	Buffalo Bill	1
	Charlie Sharman	1
	Fernand Feral	1
	Hogarth	1
	Hiver Fleuri	1
	Madame Payne	1
	M. J. A. Laing	1
	M. A. de Leau	1
	M. Paul Fabre	1
	Theodore Bullier	1
	Thomas Stephenson	1
	W. Menck	1
	W. Holmes	1
	Yokohama Beauty	1
	W. H. Burbridge	1
	W. K. Harris	1

In glancing at the audit of the Japanese varieties, it will be at once seen that Edwin Molyneux has not fulfilled the prediction made subsequent to the publication of my audit of 1888, that last season it would occupy the top place. It stands well, for it occupies the fourth place, the same as in the previous audit, but it is doubtful whether it will stand so high next year. At least one half of the blooms staged were more or less unsatisfactory, being either wanting in colour or rough in appearance, and no better proof could have been given that to have it in first-class condition cultural skill of the highest class is necessary. Mr. Ralph Brocklebank occupies the highest place in the audit, as compared with the fifth in 1888. Madame C. Audiguier, then first, is now sixth, and Val d' Andorre shows a still greater drop, being ninth instead of second. Boule d'Or again occupies the third place. Avalanche, which was eleventh in 1888, is now second. Meg Merrilies is two places higher, being now fifth, but Criterion, which was bracketed with it for seventh place, has dropped to the seventeenth place. Belle Paule has also fallen ten places, and Mdlle. Lacroix shows a slight decline in popularity. Japonais and Sunflower have improved in position considerably, and had the season been an average one there can be no doubt that the last named would have occupied a still higher place than the one it now has. Mr. H. Cannell and Stanstead White have both come well to the front, as indeed has Etoile de Lyon, which in but few instances was shown in its true character. Comte de Germiny, on the other hand, has fallen considerably, the result chiefly of the earliness of the season. M. Freeman, Soleil Levant, and Peter the Great show a marked decline in popularity. In 1888 M. Freeman was twenty-third, now it is thirty-fourth; Soleil Levant was seventeenth, and now it is thirty-fourth; Peter the Great was twenty-second, and is now thirty-fifth. One of the most remarkable of the changes in the positions is that in the case of

Triomphe de la Rue des Chalets. In 1886 it was thirteenth in the audit, in 1888 it dropped to the bottom with one bloom, and now it is fourteenth with a total of thirty-three. This point is of some interest to cultivators as showing how great is the influence of the seasons upon some of the varieties. To institute further comparisons would not serve any useful purpose, but attention may well be directed to the fact that, as shown by the audits, but few of the many Japanese varieties introduced annually succeed in taking a prominent position amongst the first-prize flowers. GEORGE GORDON.

THE AMARYLLIS OR HIPPEASTRUM.

By JAMES DOUGLAS.

As I write these few lines we are in the midst of our work potting up the bulbs of our amaryllis after they have been shaken out of the old soil. This is an important annual operation that cannot be omitted. But on this point there is difference of opinion. One amateur grower of considerable experience told me he never thought of repotting his hippeastrums except about once in two or three years. I began this year on the last day of the old year, and will finish on January 12. We begin potting rather sooner than some of the best growers do, because other work presses heavily upon us about the end of January, and I like to be beforehand with the work. Those who can choose their own time may not deem it necessary to begin repotting before the middle of the present month, and it is quite certain that it is much better to repot them, even if an effort must be made to find time to do so. We have nearly a thousand bulbs to repot of one kind and another, some of them very large, others of smaller size, and all requiring careful examination to remove any decay spots that may be upon them. Some varieties are quite free from decay and in exuberant health; others, do as you like with them, are difficult to manage; they lose many of their roots, and as a result of this the outer coating of the bulbs decays near the base. If not arrested in its early stages this would cause the death of the bulbs.

Insect pests require looking after, and none of them like tobacco powder; even the mealy bug will not stay upon a bulb that is dusted with dry tobacco powder. It also exterminates thrips, which will get upon the plants soon after Midsummer, and is very difficult to get rid of at that time. I have fumigated the houses night after night, and the lively little insects drop at once into the plunging material, to be up and at it again in a few hours after the smoke has cleared away. They sadly disfigure the leaves if allowed to work without being disturbed for some time. Red spider will also attack the leaves in hot weather, and if it is not kept under by syringing will do as much mischief as the thrips. If any of these insect pests were present on the leaves last autumn, it would be a wise precaution to dust the crowns of the bulbs when repotting them with tobacco powder. I keep a small tin pepper box at hand, and also a flower-pot containing dry powdered lime; the latter is useful to dust any portion of the bulbs that may have decay upon them.

The potting soil was prepared six weeks ago. In all cases when we have to deal with choice plants of this kind, I like to prepare the soil three or four months before using it, so that the constituent parts may be well incorporated together, especially the manure. This certainly ought to be absorbed in the soil to a considerable extent before repotting delicate constitution plants with it. The potting soil ought to be rather moist when it is being used, as the bulbs must not be watered for a long time after they are potted. When a dry compost is used they do not seem to grow away so strongly. Of course a wet compost might cause some of the bulbs to decay. The potting soil should be formed of three parts good yellow loam, one part brown fibrous peat, one part decayed stable manure, and one part leaf-mould, with some sharp sand added, also powdered charcoal, to be mixed with it at the time of potting. Some persons may say, What a deal of trouble you take with your composts! Would something more simple not do quite as well? Perhaps it might, but I have used the above compost for many years, and our plants have flowered remarkably well, and grown very strongly, therefore it would not be wise on our part to alter it.

There is a right way and a wrong way even in repotting a plant. Let us examine a full grown bulb from the base to the apex. The base of the bulb is usually furnished with roots all round the outer part, the inner portion being quite bare of roots; and even in the case of healthy bulbs some decayed skins require removal. These must be hooked out with one finger, and if the base is sound put in a little white sand, if unsound use dry powdered lime well rubbed into it. In either case this hollow space at the base of the bulb must be filled in with good soil freely intermixed with pounded charcoal; the dried outer coatings of the bulbs may be picked off, as underneath these harmless silvery scales may be lurking snowy white bug, deep red spider, or black thrips, ready to act with disastrous effect as soon as the temperature is warm enough for them. But if the scales are removed, and the surface and crown of the bulb lightly dusted with dry tobacco powder these pests may be exterminated.

In placing the bulbs in the pots they should not be covered in more than a third of their depth, and in some cases they do not go down even so deep as this. The soil is worked well in amongst the thick fleshy roots, and pressed well around the base of the bulbs with the fingers. As the bulbs are potted we plunge them close together in tan, and I like the bottom heat to be not less than 85 deg., the temperature of the house about 50 deg. to start with; but we are very careful not to have much moisture in the atmosphere, as this would cause decay in those bulbs predisposed that way. For this reason we do not give them any water at the roots for quite a month or six weeks after they have been plunged in the bed.

I need not say much about the best varieties to cultivate, as the Editor keeps his readers well posted up on all matters pertaining to the varietal forms of these as well as all other classes of plants as they are introduced to the public. I may say [this much, however, that it is of more importance to have a hardy, vigorous plant, even if the quality of the flower is not so good, than it is to have high-class quality in the flower if constitutional vigour is lacking. In some cases, indeed in many, garden varieties of the hippeastrum are found with much vigour of plant, combined with high-class quality of the flower, and in that case it is doubly welcome to our gardens. The raisers of hippeastrums have been careful to follow the lead of the old-fashioned florists in regard to the substance and formation of their flowers. The introduction of such distinct and handsome species as H. pardinum and H. Leopoldi, from the Peruvian Andes, by the Messrs. Veitch, of Chelsea, gave that firm the first chance to hybridize these beautiful plants with the best garden forms already in cultivation, and gave the handsome form to the flower so much desiderated by the florist. Other forms and species have been tried as seed or pollen bearers recently, amongst them the long tubed H. solandriflorum conspicuum, known to Herbert; and later we hear of a blue species recently introduced from South Brazil, H. procerum, or Amaryllis Rayneri of the "Botanical Magazine" (t. 5883). The plant is very distinct, both in leaf and flower, although the flowers are seldom produced, and they are not blue; nor will it be of much, or perhaps any, value at all to hybridize with.

MR. J. BROWN'S NURSERY, DUNSFORD ROAD, EXETER.

IT would be more proper perhaps to describe this place as a plant manufactory, seeing that many subjects, such as ferns, pelargoniums, bouvardias, Persian cyclamens, and similar plants, are raised in large numbers, and supplied both to the trade and private growers, in all parts of the country. But it is not the varieties and numbers that are cultivated that I wish to refer to, so much as the skilful way in which they are handled. A quiet walk through the many different houses here, affords such a lesson in plant culture, that one does not often get outside the radius of the London market growers.

Amongst the most seasonable subjects that were prominent at the time of my visit, I may mention the berried solanums. There were two batches of these, one raised from cuttings, the others from seed, the cutting plants being much the best. They were large, more compact in habit, and the berries much finer and riper than the others. As a matter of fact, there was quite a month difference in the time when the plants would be ready for use. There cannot be two opinions that plants raised from cuttings are the best. Winter-flowering carnations are also a strong feature, from the condition of the stock here, it is very evident that private growers as a rule give their plants too much root room. The three principal sorts grown are La Belle, white; Miss Jolliffe, flesh colour; and Lucifer, scarlet. Plants which furnish white flowers are grown largely. Eucharis amazonica, is of course, to be seen in large numbers; some resting, and others just putting up their flower spikes. I noticed a particularly fine white pelargonium of the show class, by the name of Madame Koenig. The colour is of the purest white, and the trusses of flowers neatly formed. A fine stock of plants was just coming into flower, which furnished one of those features of high-class culture for which this place is so remarkable, no matter which way one turns. Of Daphne indica rubra, there are plants enough to form a miniature forest, they vary in height from six inches to two feet. Indeed, amongst hard-wooded plants they appear to obtain the lion's share of attention. Private growers sometimes find this daphne a rather miffey subject to deal with, but at this place they appear to make them grow by the aid of a magic wand. Just fancy putting one's head inside of a house full of these deliciously sweet smelling plants. It requires a strong will to leave them, such at least was my experience. Poinsettias are in strong force here, the plants being dwarf and the foliage well developed, a good sign that the bracts which are to follow will be of corresponding proportions. By this time probably nine-tenths of the stock I saw have been turned into money. Miniature roses in pots we do not often meet with in quantities, but here they appear to obtain a good share of attention. The varieties grown are those known as White and Red Pet. They are both dwarf in stature, with short wiry growth, and are of the "Lawrence" group of roses. If they are fairly well fed at the root, they will flower a greater part of the year in a suitable window.

I must leave many good subjects unnoticed, simply because to refer to them all would require more space than is available just now, besides which I have left until the last a very important departure that has taken place here, which I feel will be of some interest if I refer to it. I allude to the conversion of some of the houses that were at one time devoted to plant culture into vineries. This is such an important step, and the success attending it has been so thoroughly successful that I felt my time was well spent in going out of my way to see the particulars. These vineries, I may mention, are span-roof, running north and south, and about twelve feet wide and about seven feet high at the ridge. The roots are all inside, being planted on the south border, and the rods trained up to the ridge and down on the other side. In some cases the canes have been laid down on the north side and induced to form roots, so that they have so to speak, two sets of roots. But this does not appear to be any advantage, as the double rooted vines are not doing any better than the others. The sorts of grapes grown are for the most part Muscat of Alexandria. There are a few Alicantes, which are to be discarded. I must remark that the houses are dry glazed, and that there is comparatively but little woodwork on the roof, so that the vines are growing in a perfect flood of light. Such large solid wood, and such foliage I have not seen on the same sorts of grapes for a long time. I shall purposely refrain from giving the length of the bunches and the size of the berries, as I might be thought to exaggerate. I may, however, say that they surpass every thing else I have seen in the way of grapes in the past season. As showing how much vines are influenced in their behaviour by the amount of sunlight that reaches them, the condition of two or three vines which occupy the centre of one of these long houses clearly shows. Some distant trees shade that part of the house for three or four hours in the middle of the day; the vines so shaded are the least satisfactory out of the large number planted. I do not remember ever seeing a case that so clearly demonstrated that vines do not like shade. The mention of this case here may help others whose vineries are shaded by trees or buildings, to understand why the vines do not do so well as in other places where the houses are more favourably situated. J. C. C.

DESSERT PEAR BERGAMOTTE ESPEREN.

THIS fine pear is now coming forward, and will be serviceable for fully two months as a delicious dessert fruit. Leroy gives its season from December to April; Hogg says middle of February to April; Thomas Rivers reckoned its season March to May.

Bergamotte Esperen was raised by Major Esperen, of Malines, about 1830; it was introduced to France in 1844.

The fruit is medium to large in size; the samples here figured are about twice the size of Leroy's figure, but agree generally in form, which is roundish, or slightly turbinate, agreeing generally with the bergamot group of pears. The eye is almost large and open, with a horny calyx; the stalk long and stout, inserted in a very small cavity; skin rough, when ripe dull greenish yellow, with many grey russet dots, the flesh is fine-grained, melting, juicy, and altogether delicious.

This fine pear succeeds in most places that are adapted for pears; but in a wet climate it requires the aid of a wall, and in soils of questionable suitability it should be on the quince in bush form, as more likely to succeed than on the pear.

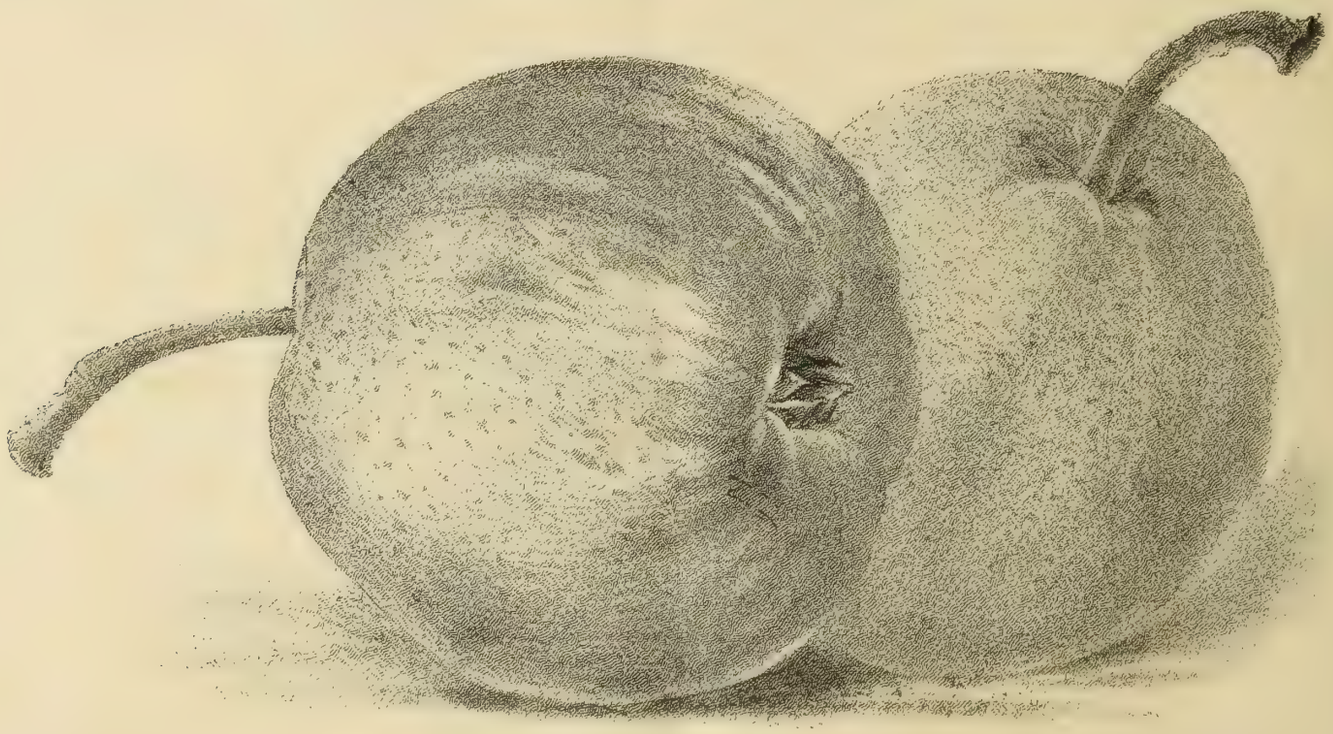
THE HOME OF THE IMPATIENS JERDONIÆ.

IT is a great number of years since this charming plant was first introduced into England, and yet it is rarely seen cultivated, even in our largest establishments. To my mind it is a plant of such rare beauty when seen grown and flowered in perfection, that it has not unfrequently occurred to me that one of the reasons for not seeing it more frequently may possibly be some difficulty experienced in its cultivation so as to bring out all the charms it is capable of. I have seen on several occasions in different parts of the country attempts at its cultivation, resulting mostly in miserably stunted stems with one or two diminutive colourless flowers on each, looking no more like the plant in its native wilds than a badly-grown chrysanthemum bloom is like one of those glorious flowers we see in the prize stands at our autumn exhibitions.

I will in this note refrain from offering any hints as to the best mode of cultivating the plant in England, but will merely describe the different phases of growth in which I have seen it frequently in its wild state in Southern India.

This Impatiens was, I believe, first introduced into England from the Nilgiri Hills, 1852, by the late Mr. W. G. McIvor, director of Cinchona Plantations, Ootacamund. He found it growing on trees on the Sispara Ghaut, at an elevation of about from five to six thousand feet above sea level. In that locality the south-west monsoon beats with great violence, and from middle of June till middle of September the rainfall is excessive, averaging, in all probability, over one hundred and fifty inches annually, the remaining months of the year being comparatively dry. There is another locality in South India where the plant is to be found in great abundance, viz., the plateau of the Bramagherry range of hills, situated between 11 deg. and 12 deg. north latitude, and dividing the Collectorate of Malabar from the Province of Coorg, and rising to an elevation of a little over five thousand feet. This range is also within the influence of the heavy rains of the south-west monsoons, the fall between June 15 and September 15 being quite two hundred inches. The Impatiens grows on the stout branches of trees, which on this plateau are somewhat stunted, owing to the elevation, and are thickly covered with mosses and lichens, among which the Impatiens grows, but at the same time clinging hard to the branches with its roots. It flowers during the month of October, and lasts a considerable time in beauty, literally clothing the branches with a mantle of its lovely scarlet and yellow blooms, making the detached woods, or sholas, as they are called, look gay beyond description. Between the middle of September and middle of June following only a few showers fall, so that the plant has, as it were, to pass annually through a course of climatic privation of a very extraordinary kind. By November 1st all the Impatiens flowers have vanished and the seed pods are ripe. The dry season has then fairly set in, and the grass on the land that separates the evergreen woods or sholas gradually becomes dry, and is eventually destroyed by the annual fires that lick the plateau and mountain sides. Strong and cold east winds blow from the Mysore for months together, with a burning sun overhead. At the close of this period of trial the Impatiens plants, reduced to one-fifth their flowering size, hang from the branches looking as dead as anything in nature can look, and no one who has seen the plant in this phase of its existence can do otherwise than marvel at the transformation it must undergo before it can be again seen robed in its former floral splendour. The above are the true conditions under which the Impatiens jerdoniæ is found in its native habitat. The plant in bloom had such great attractions for me that during a long residence in the country I never failed to make an annual pilgrimage to the plateau of the Bramagherry range as the flowering season came round. J. L.

[Within the past half-dozen years we have seen the plant occasionally in the Royal Gardens, Kew, in fine condition, its management being fairly well understood there.—ED.]



DESSERT PEAR, *Bergamotte Esperen*. From samples selected at the Apple and Pear Conference.

FLORA AND FAUNA OF ICELAND.—The Rev. F. A. Walker, who has recently returned from an exploring expedition to Iceland, read an account of his researches before a crowded meeting of the members of the Victoria Institute, at Adelphi Terrace, and exhibited numerous specimens of the botany, geology, entomology, and zoology of the island, collected by him. In commencing his paper, the author stated that there being no collection of Icelandic insects in England, an expedition was planned in the summer of 1889 to remedy these defects, and at the same time to set at rest the long and much-disputed question as to the existence of butterflies in "Ultima Thule." This last point must now be regarded as having been answered in the affirmative, as thirteen fiords previously unvisited by any naturalist were surveyed, and insects caught in them all. Dr. Walker described the botanical, entomological, and zoological specimens to be found in Iceland, pointing out those common to Europe, and those known only in Iceland. The paper was followed by a discussion, in which many members of the institute joined.

DR. BARNARDO'S HOMES.

The announcement in the papers that the customary New Year's entertainment to the children in Dr. Barnardo's Homes must be postponed or possibly intermitted for the present year, in consequence of the appearance of influenza in the family, throws a painful shadow on the remembrance of a visit I paid to the homes at Ilford, in Essex, in the summer of '89, when I experienced a thrill of delighted astonishment at their extent and beauty and completeness. As one of the great public I was familiar with the institution as one about which much was said and of some things that were said that perhaps had better have been unsaid; but there was needed what Hugh Miller used to designate "eye-witness" for any proper apprehension of the nature of the work this prince among working philanthropists has harnessed himself to, and the unquestionable magnificence of the results. Some kinds of successes cannot be counterfeited, and this is one of the number; its reality is declared on the face of it; the thing exists from day to day and from year to year; and it grows and bears fruit; and all its movements and expansions and fruitions are exposed to the light of day and to the searching eye of criticism and envy so far as these have taken their turn to discover its weaknesses and find opportunity to question its efficiency.

On the occasion of my visit I had spent a happy hour at Great Gearies, and Mrs. Whitbourn had shown me her part of the interesting garden there, for her part consists of certain beds and borders and rockeries, more especially sists of over 3,000 children. The figures are not an accidental expansion of 30 or 300, the number given is 3,000, and the great spaces with their numerous cottages suggest such a number, and of the youthful population we see perhaps a thousand or near upon that number usually walking through in the mid-hours of a sunny summer day. These are all waifs and strays of humanity; helpless children, many of whom have no parents, and not a few of whom may be said never to have had parents, having never experienced parental love, or tasted of any material mercy until rescued from the streets by Dr. Barnardo. These children are of necessity poor material to begin with, they include cripples that have never had the full use of their limbs, and cripples that have become so by accident. They include children emaciated by want, cold, ill-usage, and disease; children familiar with every wickedness the childish mind is capable of absorbing: children unused to any kind of discipline, the very last rags of human society defiled in soul and body; friendless, ignorant, perverse, and often with faculties that rise to no higher aim than to filch for subsistence, and to "dodge" the policeman.

Bearing such facts in mind, look round here on the beautiful village. The children are pouring forth apparently without any control whatever; they form groups and parties in their own way, order their innocent games, sing their childish songs, appear to be without direction or control of any kind and yet evidently under admirable discipline, for perfect order and harmony, reign. We see, a first class children's lawn party, making allowance, of



VILLAGE AND PLAYGROUND, DR. BARNARDO'S HOMES, ILFORD, ESSEX.

one side walk with a hedge of sweet brier roses that the lady has raised herself, and these particular features are managed according to her wish, and constitute for her the most enjoyable part of the garden. At a suitable time my friend, Mr. James Douglas, generously proposed a walk over to Dr. Barnardo's, and we proceeded thither. In the course of a few minutes, I found myself in a beautiful village consisting chiefly of picturesque and substantial cottages separated by wide lawns of the greenest grass, liberal plantations of trees and shrubs, flower beds, apparatus and other aids for childish sports, and everywhere groups of happy children killing Time by tickling and teasing him with their abandonment to fun and prattle. In every direction I saw something like a complete picture; a little too prim and orderly, perhaps, for any such effects as artists doat on when painting country scenes, but informed by a fairer spirit than what is termed the "romantic" in art, the whole speaking in the same language as the several parts of an immense work accomplished in a spirit of the purest Christian beneficence, a work of no momentary initiation, but the growth of years on the deep and strong foundation of an idea born of faith and love, and aided in development by a powerful mind and a will capable of grappling with difficulty and opposition. We see all this as we look around and walk on, for one village opens on another village; the extent of the place makes a profound impression, but yet even that impression is presently dominated by another, and that arises from observation of the spirit that animates the moving scene.

In a book that has been forwarded to me I find it stated that the family consists, course, for the fact that the basis of village and youthful villagers is Christian charity. And their health and beauty correspond to their evident cheerfulness and good behaviour. We do not ask whether they are sufficiently fed, or healthily housed, for all the story of the life they lead is in their faces and movements, and to harbour a doubt would be to begin bargaining with the Devil in the heart of the happy scene. The weak ones and the invalids are all cared for, and have their sports and amusements, and only the more vigorous are in the parties we see at play, for from first to last the best is done for all that the means permit and the cases demand.

The book cited above is entitled "Something Attempted," and is published price 1s., at the office of the homes, 18, Stepney Causeway, London, E. From it we learn that in the 22½ years (to December, 1888), 12,652 boys and girls have been actually admitted to the benefits of the homes, and the great majority of these, after having been placed out for their life work, are known to be doing well, in decent, industrious, and Christian households throughout the United Kingdom, in Canada, South Africa, and New Zealand, as well as in many countries of Europe. With this note is a picture of one of the great green spaces with its cottages and adornments. The ornate is carried out as far as needful for ensuring cheerfulness and aiding in the recovery of health, by children much needing all possible aid that way; there is no extravagance, nor is there any meanness. Good taste, generosity, and gentleness are found consistent with strict economy in the management of these homes, and we commend them to the kindly consideration of our readers.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

HARDY PLANTS in bloom are necessarily few in number, chief amongst them being Daisies, Cheiranthus alpinus; Helleborus angustifolius, H. antiquorum, H. niger; Primula altaica, P. vulgaris; Eranthis hyemalis; Hepatica angulosa; Iris stylosa; Ornithogalum fimbriatum; Tussilago alba.

THE HOUSE.

BULBS, that in the autumn were potted up or put in glasses for the production of a display of flowers in the dwelling house, should have rather frequent attention as the best means of guarding against their making any considerable portion of their growth in the dark. Until the bulbs show signs of growth they should remain in the plunge bed or the warm cupboard, as the case may be, but immediately they are beginning to grow freely they should be removed to a suitable position where they can enjoy a fair share of light to enable them to make a growth at once strong and compact. Those in pots should, if convenient, be placed in a frame in which they can be kept safe from the frost, and in a fortnight or so be removed to the forcing pit to accelerate their flowering. They may remain in the frame altogether, but they will, of course, be later in coming into bloom. The bulbs grown entirely indoors should be placed near the windows or in other light positions. As they progress in growth the supply of water to those in pots must be increased, and it will be an advantage to use water in a tepid state. Both hyacinths and tulips may, as they come into bloom, be shaken out of the pots or pans and arranged in vases, baskets, or other fancy receptacles. They will not be in any way injured, or the flowering season shortened, provided the flowers are not damaged. Hyacinths may, if it is so desired, be put in glasses, and as the finest spikes are invariably produced by bulbs that have the advantage of a rich compost, the best course, generally speaking, is to grow the bulbs in pots until the spikes are fully developed, and then shake them out of the soil, well wash the roots, and put them in the glasses. In arranging the bulbs in baskets or vases a light sandy mixture, or moss, or cocoa nut fibre refuse can be employed, as may be the most convenient. Although frequently done, it is not a good practice to arrange hyacinths, tulips, and narcissi in the same receptacle, because of the difference in the duration of the flowers.

GREENHOUSE.

CAPE HEATHS require great care at this season, as overmuch artificial heat is injurious, and damp and frost are not much less so. In mild weather ventilate freely, and at all times be careful to avoid slopping water about amongst them, as such a course will end in their suffering from mildew, which is one of the worst enemies with which they have to contend.

PELARGONIUMS of the decorative and show classes must be encouraged with the aid of an increased temperature and as much air as the weather will permit. It is a common occurrence for them to be assailed with green-fly when the new growth of the season commences, but if the cultivator is on the look-out and puts a stop to that pest in good time it may be got rid of for two months to come. Keep as near the glass as possible, and of course avoid unduly stimulating the growth.

VENTILATE freely or mildew and damping will prevail, and many plants pushing their flowers will cast them unopened. But to give air there must be a gentle fire, whether the temperature be mild or severe; in case of mild weather, give plenty of air, and have a look round to see if any plants are suffering from want of water. A high night temperature is most mischievous, and is the common failing everywhere, but especially in small gardens.

ORCHID HOUSE AND STOVE.

EPIPHYLLUMS are extremely valuable for winter decoration under proper management. As they go out of bloom repot or top-dress them, place in a warm and light position in the stove, and supply them rather liberally with water. During the summer season keep them in a light airy position in the greenhouse, and they will be in splendid condition for starting in heat in the following November for winter bloom.

ORCHIDS commencing to make new growth should be top-dressed or repotted, according to their requirements; but it is a good rule to disturb plants in a healthy condition as little as possible. In top-dressing orchids remove as much of the exhausted material from the surface as can be taken away without injury to the roots, and replace with peat or sphagnum, or a mixture of the two, according to the requirements of the plants. Those at rest must, for the present, be kept as quiet as possible. Plants in bloom must be placed where there is no danger of their flowers being damaged by moisture in the form of drip or otherwise.

FORCING AND FRUIT HOUSES.

ASPARAGUS should be forced in a temperature ranging from 45 deg. to 60 deg.; beyond 65 deg. it should not be allowed to rise. When the heat goes down below 45 deg. apply a lining of hot manure round the bed, and cover the lining with straw or thatched hurdles, to shoot off wet and prevent cooling down by wind or frost.

CAPSICUMS, TOMATOS, AND EGG PLANTS for the earliest crops to be sown at once and placed in heat. Use light rich soil, sow thin, and prick the plants out to strengthen as soon as they are large enough.

HOTBEDS may now be made up for every kind of early work. In many suburban districts it is no easy matter to obtain stable manure for the purpose, on account of the immense demand from the beginning of February to the end of April. Where there is any such risk, the amateur should remember that every scrap of dry fibrous material can be made available to increase the mass for the production of heat. Straw, fern, mouldy hay, and leaves are all of value to mix with manure, for the continuance of the heat depends entirely on the bulk of undecomposed fibre in the mass.

PEACHES and other trees in flower may be greatly helped by shaking the trellis, or whisking a light brush over them, or the plumes of the Pampas Grass, to disperse the pollen. Rough play with the trees will do more harm than good, but any slight agitation will assist materially in setting the fruit.e

STRAWBERRIES require as much air and sunlight as possible as soon as the fruit begins to colour. Use no more heat than needful to keep them in free healthy growth, or the crop will be worthless; this fruit cannot, in fact, by hurried. A temperature ranging from 50 deg. to 60 deg., the latter, of course, with sun-heat, will be the most suitable.

FLOWER GARDEN AND PLEASURE GROUNDS.

EVERGREEN SHRUBS should not be transplanted or in any way disturbed for a few weeks hence.

LAYERING of hardy shrubs may be practised during open weather for increase of stock. Draw down a suitable branch and peg it to the ground, to mark where the tongue should be cut; then enter the knife on the under side and make an incision half through the wood, and turn the knife toward the top of the shoot, and cut a slit an inch or an inch and a-half long; peg it down firmly, and cover the tongue with an inch or two of soil.

ROSES to be planted as soon as possible. In light soils standards will thrive better if some clay or strong loam is dug in with the manure. Roses on their own roots need a lighter soil than briers. Roses will not produce first-class flowers unless the ground is effectually drained, deeply stirred, and liberally manured.

FRUIT GARDEN AND ORCHARD.

FRUIT TREES will be on the move in a short time hence, and every delay now in planting and pruning will be injurious. Let any arrears of this work take precedence of other operations.

PLANTING must be completed as early as possible; but, as the latter part of January is one of the most uncertain times of the whole year, the planter must be cautious, and avoid taking up more trees or making larger purchases than he can deal with quickly and completely, for in the midst of the work may come hard frost, a deluge of rain, or long-continued snow. Better let the trees lay in by the heels a few weeks than plant them, unless the ground is really in a proper condition.

VILLA FARM.

IN the management of the apiary one of the chief points requiring attention at the present moment is the maintenance of the interior of the hives in a perfectly dry condition, for bees suffer more from damp than they do from cold, as is so well exemplified by the fact that they usually come through a cold dry winter much better than a warm and damp one, provided, of course, the conditions in other respects are equal. All that can be done towards keeping the hives dry is to ward off the rains by temporary coverings, and otherwise to prevent the wet soaking through, and to provide sufficient ventilation to carry off the moisture generated by the bees. For straw skeps the opening provided for the ingress and egress of the bees will be quite sufficient, as owing to their porosity the moisture can readily escape; but hives of wood require an opening at the top as well as at the sides, and it is a very good plan to have three or four very small holes in the sides, almost close to the top, covered with perforated zinc. Wooden hives that have a covering for carrying off the wet should have the plug or slide employed in stopping the feeding hole in the crown board removed, and when that has been done have a tight wisp of straw laid over the opening.

FRUIT-GROWING IN BRITAIN.

[THE letters that have appeared in the *Times* of late far exceed in bulk the space at our command for reproducing them. One letter we give *verb. et lit.*, as a matter of politeness; those from Mr. Hibberd and Mr. Badger we have abridged for the convenience of our readers. A weekly horticultural paper has other aims than a daily political paper, and in any case assumes that its readers are more strictly critical in matters horticultural than those of a paper intended for universal reading. The first letter in the present batch is in reply to the letter by Mr. Hibberd that will be found at page 22 of our last issue.]

MR. HIBBERD misleads your readers in various ways. (1) In saying that the Newtown Pippin is "often met with in fine quality of home growth." A monstrous statement, as no Newtown Pippin has ever been grown in England with any flavour. (2) That the King of the Pippins is an apple of fine flavour. He quotes Rae, who wrote over 200 years ago in praise of this fruit, Rae being dead long before Cox's Pippin, the Ribstone, the Newtown, or any of the best apples of Europe and America were raised.

Then he quotes Hogg to show that this poor apple is "one of the richest flavoured early dessert apples."

The care that Dr. Hogg gives to the flavour of apples may be tested by looking at his book, in which he describes 152 apples as first-rate, 88 excellent, six delicious, 14 one of the best, ten very good, four finest, one of great excellence, and in all 278 apples to which the highest praise is given.

Now, there are not thirty apples of the highest class in Britain. (3) "I am very unhappy in my choice of Blenheim and Ribstone." A pretty statement to make by anybody who knows anything of fruit culture. The Blenheim—the best apple, take it all round, grown in England—must be rejected because it is slow to bear, but many of the best growers are too wise to follow this advice, as of all other apples it is the most in demand in Covent Garden when it can be got. (4) The Ribstone is "liable to canker." That is no reason for giving it up. English fruit-growers and gardeners will, I believe, be able to get over this difficulty with the Ribstone. I have planted many trees of Ribstone to test how it grows on different stocks, using all the sorts of apple stocks I could get in Britain. There is a wide difference, the growth being cleaner and harder on the English Paradise and the Doucin and Goff (a Kentish apple) than it is on the crab, which I think the Ribstone hates. There are other stocks I am still more hopeful of, but will have to wait for results. The fate of the Ribstone in England is by no means hopeless.

A child who eats apples would reject some of those Mr. Hibberd praises. I am as certain that some apples are as hurtful to use as that others are wholesome. Flavour is not merely a matter gratifying to the taste; it is a question of health. The Blenheim makes a perfect dish cooked without sugar—the highest test of an apple. The Blenheim is worth any ten of those Mr. Hibberd mentions—Boston Russet, Golden Reinette, and others of that ilk.

37, *Southampton Street, Strand, W.C.* THE EDITOR "GARDEN."

The letters of Mr. Shirley Hibberd and of the "Past Master of the Worshipful Company of Fruiterers" are very interesting and valuable in their way, dealing as they do with two very important aspects of this question—namely, the necessity for the selection of suitable varieties for market purposes, also of more modern and improved methods of culture, if fruit growing is to prove remunerative; but they afford no answer to the question propounded in the *Times* of the 27th ult. by "T.W.," who, like many others, cannot understand why English-grown fruit often commands a much lower price in our home markets than inferior fruit of an exactly similar sort imported from abroad.

Your correspondent observes that "It is certainly not all the English growers' fault that the best English-grown fruit is not put more abundantly on the English market."

This is certainly true. Into the craft-mysteries of the agent and middleman I do not propose to enter here, but I can safely say that the Fruiterers Company can do no act more practically conducive to the prosperity of the fruit-growing interest than to promote the establishment, in the chief con-

suming centres, of depots for the sale, on commission, of produce consigned direct from the grower, thereby bringing at least a section of the producers and consumers face to face, and affording some means of escape from the tyranny of the middleman, which at present does more to oppress the fruit-growing interest than all other causes combined.

The moral effect would inevitably be far wider than the immediate and direct results of the step indicated. C. E. S.

Foot's Cray, January 3.

"Some letters have recently appeared in the *Times* in which the merits and demerits of certain varieties of apples are discussed. English-grown fruits of the Gravenstein have been alleged to be not worth eating, King of the Pippins inferior, while the American Newtown Pippin was extolled for its high quality. Samples of all the varieties are sold that differ greatly in merit, according to the age of the trees, and the soil and district in which they are growing, or dying. The true German Gravenstein ripens in this country, and the fine fruits are deliciously refreshing, quite equalling, and even excelling, some of the imported Newtown Pippins, but not all. But it must be remembered that quantities of apples are sold as Gravensteins which are not Gravensteins, just as tons of strawberries are sold in London yearly as Dr. Hogg's, which are not of this variety, but inferior. King of the Pippins apple is not so rich as Cornish Gillyflower, nor as the best examples of the two varieties above named; but if plantations of an equal number of trees of the four varieties were established in a field of good soil there is very little doubt that by the time sufficient fruit had been gathered from three of them to pay the rent of the land the crops yielded by King of the Pippins would have realised enough money to buy the freehold. It is one of the most certain bearers of all table apples, and the trees have often afforded good crops in 'bad' years when those of most other varieties were barren. The correct name of this apple is Golden Winter Pearmain, but the popular name is employed, as under that name trees are generally sold, and mistakes are not likely to occur, as the true king, a much earlier apple, is scarcely grown in nurseries. It is a great mistake for persons who plant trees for profit to choose the most highly-flavoured varieties simply because they possess this one quality—an important merit no doubt, but there are others, such as hardiness of tree and blossom, with productiveness, that are of more substantial value. Then some handsome and excellent sorts are notoriously slow bearers. Mr. Shirley Hibberd, in the *Times* of January 3, refers to the Blenheim Pippin as one of these. I agree with him and his estimate of varieties generally. In the prize essay of the Fruiterers' Company I excluded it from the list of profitable sorts, on the ground that half a generation must elapse before young orchard standard trees prove satisfactorily remunerative. As I have no pecuniary interest whatever in the sale of this essay, and as the Fruiterers' Company sell it at a price that leaves them no profit, their only object being the public good, I may perhaps be allowed to say that the manual contains the most rigidly condensed selections of useful apples and other hardy fruits to be found in any work hitherto published. Inexperienced amateurs are bewildered by the number of varieties, and know not which to choose. I have ventured to choose for them, and have urged on persons who desire to grow for sale to follow the American plan of planting several trees of a few varieties, instead of one each of many. It is that practice, as carried out with vigorous young trees in good soil, that has gained for Transatlantic cultivators the practical command of our markets with apples; but it will not be maintained much longer. The best-grown English apples from trees planted during the past few years equal in size imported samples, and excel them in quality, especially for culinary purposes, for which the immeasurably greater bulks are grown. But apples must not absorb all the attention of intending planters; ground and bush fruits are more quickly profitable, and with our cheap sugar we ought to export them, in the form of jam, to a far greater extent in value than the value of our imports of raw, hardy fruit. J. WRIGHT.

171, *Fleet Street*, Jan. 3.

The editor of the *Garden*, in his second letter, makes an approach to acceptance of my modifications of his propositions. It is with market apples and the public taste in the selection of them that we are concerned, not with individual tastes and fancies. He has faith in the public taste, but denounces as of "very poor quality" an apple, known as King of the Pippins, that happens to be one of the greatest favourites, with more money in it probably than any other apple in cultivation. I would sooner trust his taste in selecting fruit than in framing arguments, but we are not far separated and may find it possible to agree in time for some more useful work than disputation. I will follow the example set me and take the points in order:—

(1.) Newtown Pippin I have not described as "often met with of fine quality of home growth." I said it was "more often met with of fine growth" than Gravenstein, but that it might be "disposed of as one of the curiosities of the fruit-garden." The imported fruit is of such fine quality that it would never pay to grow it here for market, for the tree is slow in bearing and requires, even in good apple climates, the aid of a wall. The negative declaration that is hazarded displays greater courage than reason. I consign that also to the region of curiosities.

(2.) King of the Pippins is not described by me as "an apple of fine flavour," but I have quoted Dr. Hogg, whose testimony the editor of the *Garden* rejects. I protest that if the public judgment is sufficient for determining the merits of market apples, then King of the Pippins must be one of the best, for there is no apple of its season that sells so well or pays the grower better. The thing that sells is of some importance when we cater for the markets. I accept the verdict of the public and also the logical consequence as regards this apple, for it looks well, eats well, is tender and digestible, and the tree bears well and will grow in almost any soil. The editor of the *Garden* may attempt to vindicate the public taste by depreciating the apple it loves, but I prefer the rational way and care more for facts than for fancies.

(3.) The writer admits that Blenheim is slow to bear and that Ribston is liable to canker. For the purposes of this discussion that is sufficient; for disputants rarely admit all that is urged against them. Men who plant their own land and can afford to wait may do well to plant this fruit on soil that suits it, and I again speak of it as "the noble Blenheim." It is none the less noble that for a market gardener of only moderate means to plant it largely on another man's land would be to pledge himself to ruin; and this market grower of moderate means is a person of some importance in the present discussion. What Covent Garden can consume is but one part of the question; we wish the men to live who supply the market; for it is on the commercial foundation we are endeavouring to build in our advocacy of extended fruit-culture. The editor of the *Garden* believes the Ribston will be delivered from liability to canker, and is himself experimenting in the hope of making useful discoveries. But all this has nothing to do with the question before us, for we are tied to the facts, and it would be a condonement of his peculiar reasoning if he would candidly own that the Ribston, like the Newtown pippin, is one of the curiosities of the fruit garden. I quite agree with him that "the fate of the Ribston is by no means hopeless," but what a commentary is that on his assertion that the Ribston is one of the few "very best" English apples that "should be grown" for the supply of the market!

The taste of the child that is brought forward is simply childish; more so than the public taste that may be relied on because it approves an apple that is "very poor in flavour." There are times when children, well cared for in respect of all their dieting, will eat any apple they can get hold of, and there are times when they are a bit fastidious and prefer good to bad apples. The market-grower who is about to plant will trust his own judgment before that of all the children in the world.

Now permit me the preacher's privilege to say "lastly." It appears to be agreed that Cox's Orange is of the greatest importance for the supply of the market and for a place in the domestic garden. It may be grown as a standard or a dwarf on the Paradise stock with advantage wherever the circumstances are favourable to the production of first-class apples. The Ribston is so uncertain that it would be most unwise for anyone to speculate in it largely when Cox's may be relied upon to keep in health and bear abundantly. Ribston ripens slowly, and at its best is hard and indigestible, though of the finest flavour. Like the "noble Blenheim," it is superb when cooked. Cox's orange is best from dwarf trees; Ribston is best from trees on Doucin stock, trained as espalier, and in cold climates it is worthy of a wall. Blenheim is fastidious in respect of atmosphere as well as soil. On heavy land near London it rarely attains to fine quality, either without or within, having little colour and a poor flavour. In its home and all around Oxford it is grand; it is even more grand in some gardens in Hampshire, and has actually been named Beauty of Hants on account of the splendour of samples grown in that county in gardens near the sea. Another Blenheim district is in the neighbourhood of Reading, where it attains its largest size and finest quality on trees that from the day they were planted to this hour have scarcely been touched by the pruning knife. SHIRLEY HIBBERD.

Kew, January 7.

No one who has actual acquaintance with the lack of technical knowledge on this subject among our cottagers and small farmers, aye, and large farmers too, except only one here and there, can doubt that before the fruit-growing industry will be carried on in England extensively and successfully there must be a wide diffusion of technical instruction in this little-understood pursuit. For, with the exception of our best professional gardeners, here and there an orchardist and market gardener, and a comparatively small number of amateurs, how many men are there in England who could from memory write out a trustworthy list of fruit trees of the kinds most suitable for their own neighbourhood, could plant them properly, could prune them so as to induce fruitfulness, and accurately describe the other processes of cultivation on which success depends? If we could but get a reliable census on this point the eyes of Englishmen would be opened very wide.

The Fruiterers' Company have asked the public to assist them in raising £5,000 for the purpose of encouraging fruit-growing in England; they have also issued a very excellent and cheap handbook on the subject, written by Mr. J. Wright, F.R.H.S., which deserves to be widely circulated, for it is thoroughly practical and reliable, and admirably illustrates the difficult art of pruning so far as this can be done in a small book. But, however useful such a book may be in the hands of educated people who can imbibe practical instructions from written directions, it will be a dead letter to the more or less illiterate persons for whose benefit it is specially designed. The English peasant needs oral instruction and practical personal instruction before "book learning" can be made useful to him; and this oral teaching must be repeated again and again before much impression will be made on his unreceptive brain. If, then, the Fruiterers' Company are in earnest to do something in this matter worthy of their name they will have to enlarge their programme; and one way in which they can do so most usefully will be to enlist the services of a number of competent men and send them to our villages to lecture and instruct cottagers and others in the various branches of the art of fruit cultivation. This, I need not add, will prove to be a work of considerable magnitude, which will take time and cost money; but I believe nothing else would be so likely to foster successful fruit-growing among the English people.

EDWARD W. BADGER, author of the Royal Horticultural Society's "Essay on Cottage Gardening."

It was in the autumn of the year 1831 that a gentleman, broad-shouldered and portly, with a slight cast in one eye, walked down the centre row of Covent Garden Market. He was dressed after the fashion of a country gentleman of the day—a broad-rimmed beaver hat, a blue coat with massive gilt buttons, white cravat, frilled shirt, buff waistcoat, breeches and gaiters, gold chain and seals. He had been recommended to a certain fruit salesman, for whom he inquired. He gave his name as William Curtis, of Glazenwood, Essex, and of the "Botanical Magazine." He had some time before taken a half-finished mansion and some land. He had ploughed up the old pasture and had planted orchards with the choicest trees, chiefly apples, with a few pears. He was full of enthusiasm and advanced ideas, was a first-rate judge of fruit and flowers, and would converse by the hour upon their different beauties and properties. The orchards were young and were just coming into good bearing. In a favourable season he could grow 4,000 bushels of fruit. The apples were for kitchen purposes, the Wellington, the Alexander, and the Lemon Pippin for their fine acid, the Hawthornden, Keswick Codlin, Kentish Codlin, Cat's-head, Kentish Fill-basket, Blenheim, Northern Greening, Dutch Codlin, and others; and for table and dessert, the Jeaneting white and red, the Pomme de Roi, Old Pearmain, Golden Pearmain, Golden Rennet, Kerry Pippin, Ribston Pippin, Old Golden Pippin, Scarlet Nonpareil, Old Nonpareil, Cour de Wyke, the beautiful red Astracan or peach apple, and others. He had a good crop that year, and the fruit was being hand-gathered and handled with the greatest care, and was being stored in barns and lofts. The apples were stored in bulk upon a thin layer of oat straw, with another layer of straw between each two feet of fruit, so that there might be ventilation without the fruit coming into direct contact with the outward atmosphere. The fruit was sent to London in long, flat baskets, each containing six bushels. The apples were later in ripening at that time than now. Ribstons and Nonpareils were usually sent up in February. It was a sight to be at the opening of a flat of Ribston Pippins, every apple a picture in size and colour, only the finest fruit sent. William Curtis made a clear distinction between cooking and dessert

fruit. Cooking apples should have a fine acid and good cooking qualities. The dessert apples had each a special and distinctive flavour. "There," he would say, "did you ever notice that the flavour of that Nonpareil is finest in the peel, and that Old Golden Pippin will be finer in flavour when the trees are older, and the Ribstons with their rich colour, and how delicious in flavour?" But the foundation of all fine-flavoured apples commences with the Pomme de Roi and Old Pearmain, now almost out of date; size and appearance have taken the place of quality and flavour. We have now the Fruit Congress calling Blenheims and King Pippins dessert apples. The Fruit Congress wants another William Curtis among them. He did not care to grow the Quarrenden, French Crab, Corpendoux Plat, Golden Knob, and Norfolk Beaufin while he could grow so many better in quality and more useful. He had a plantation of Jersey Chaumontelle pears, and grew them to a good size, but the result was a failure; he wrote one day to say that fifty bushels of Chaumontelles had been blown down; could anything be done with them?

And then, after some years, a visit to his home in Jersey—high up and near the sea. His one idea, strong in death—how he could make this cold world more beautiful and fruitful by the study of flowers and fruit.

140, *Adelaide Road, N. W., January* 8. JAMES HODGE.

Literature.

Woodstock is the story now in progress in Messrs. Ward and Lock's "selected edition" of Waverley novels. The story is a general favourite, for it tells, in a stirring way, of stirring times. The beautiful illustrations have an interest of their own apart from the story, for they are "engravings," and they advertise us of the welcome fact that we are not as yet completely delivered over to "process" for pictorial literature. The illustration at page 96, of "Cromwell contemplating the portrait of Charles I., painted by Vandyke," is a nice refresher.

From Messrs. Ward and Lock we have received continuing parts of *Imperial History of England*, part 14; *England's Battles by Sea and Land*, part 15; *Illustrated History of England*, part 4; *Hone's Every Day Book*, part 26; *Haydn's Dictionary of Dates*, nineteenth edition, part 4; *Scientific Recreations*, part 3; *Universal Instructor*, part 4; *God's Glorious Creation*, part 15; *Beeton's Encyclopædia* (to be completed in 39 parts), part 14; *History of the World*, part 26; *Every Man his own Mechanic*, part 3; *Beeton's Garden Management*, part 2; *Sylvia's Young Ladies' Treasure Book*, part 4; *Amateur Work*, part 14 of new series; *Sylvia's Home Journal*, and *Boy's Own Magazine*.

Industrial Self Instructor is a new serial published by Ward and Lock, having for its object to carry to a higher range of subjects and operations the general policy of "Amateur Work," which, we may assume, has prepared the way for it. The treatment of the mechanical and decorative arts in this book is directly shaped in aid of technical education; it begins at the beginning, and applies its lessons to the business of the school of design, the workshop, and the home study of the application of artistic invention to economical purposes. All young artists, all ambitious artizans, all practitioners of work that requires or admits of embellishment will find something immediately useful, and we will venture to say that a better family book will not be easily found, for it will engage the attention of young people and influence them aright in their amusements and in the more serious business of life.

Ladies' Treasury, a Household Magazine, edited by Mrs. WARREN (Bemrose), pursues its useful career, and opens a new volume with abundant variety and with a spirit of freshness that will ensure for it a continuance of the favour it has enjoyed for many years with the ladies. In the January number is a capital article on the curiosities of the English Bible, and some interesting particulars of Alpine travel, the scenery of Lebanon, a few good stories, and a miscellany of domestic matters of practical value.

The Drapers' Diary (148, Aldersgate Street) is distinct in plan and purpose, its first business being one of special usefulness to the traders in drapery goods. It has claims on all who come in contact with the fashions, and with the movements of popular taste in respect of colours and decorations generally. The book is a substantial quarto, with a good body of commercial information and ruled pages for diary entries.

Home, Sweet Home, by FRED. FITCH (published by Nathan) is a grand innovation, and should put aside a lot of the rubbish called "Christmas cards." It is an original, elegant, cheerful, and attractive artistic trifle illustrative of the theme of its title. It consists of verses and pictures that fit one another. Mrs. Hemans's poem, the "Stately Homes of England," is here. Margaret Davidson and James Montgomery, with other of our sweetest English singers, are put under contribution, and the vignettes that accompany the selections establish Mr. Fred. Fitch in the front rank of pictorial illustrators. The music of the old song fills one of the pages, and that is worth the shilling charged for the dainty book.

Quinine as a Prophylactic or Preventive against Malaria Fever.—This is a neat octavo pamphlet published by Messrs. F. W. Heilgers and Co., of Calcutta, and 22, Great St. Helen's, London. Of the importance of the subject treated nothing need be said, for it is well known that travel in tropical countries would be well nigh impossible without the aid of quinine, the most potent of all life preservers. To enter into the philosophy of the subject here is not necessary, but we can advise officers, merchants, travellers, all indeed who are in any way interested in tropical countries to obtain this pamphlet and keep it handy for consultation as the accidents of life may require.

The Sun, a weekly paper in which fiction is a primary feature, appears to have claims beyond the average of such things by reason of a certain solidity and seriousness that commends it to readers of good books. It is uniform in size and style with *Chambers's Journal*, but less miscellaneous and more romantic than that old friend, and its neat appearance in monthly parts fits it well for a family table book for general reading. It is published by Gardner, of Paisley, and E. W. Allen, 4, Ave Maria Lane, London.

MR. JOHN WATKINS, Pomona Farm, Withington, Hereford, has favoured us with a copy of his admirable paper on *Profitable Fruit Culture*, read before the Herefordshire Chamber of Agriculture, the perusal of which has greatly interested us by reason of its pithy concentration of the most useful information on the subject Mr. Watkins understands so well.

EARLY POTATOS IN POTS.

THE forcing of early potatos cannot be regarded as a profitable undertaking, but when people wish to have things out of the common way they do not stop to inquire into the £ s. d. part of the business. The forcing of early potatos in pots is not an expensive affair, but such good results must not be expected as when the crop is grown under more favourable conditions. At the same time, fair returns for time and space are to be obtained when the work is gone about in the right way, and, what is of as much importance to some people, there is a good deal of interest attaching to it that more than makes up for any deficiency in the returns.

To come to the practical details, I may state that anyone having a light, airy structure, heated up to 50 deg. by fire-heat, may commence business at once. In the first place, procure some eight-inch pots, and after crocking them, fill them three parts full with good soil. Two-thirds loam and one-third leaf-soil is a good compost for them. But any good ordinary mixture, if fairly rich and not too light, will do. In any case the soil must be fairly dry when used, to allow it to be made pretty firm in the pots before the sets are planted. With regard to the best sort to grow, if a good mealy potato is required there is none to equal the old form of *Ashleaf*. This sort is known to be unsurpassed for the table when the tubers are quite young. It also crops moderately well, and has short shaws. This latter feature is of some importance when the crop has to be grown under glass. When high table quality is not the first consideration, then I can confidently recommend *Sharpe's Victor*, because it is a better cropper than the Ashleaf. This is a comparatively new sort, with roundish tubers and short top.

To return to the planting of the sets, they should be placed on the soil when the pots are three-parts full, and may then be covered with earth, leaving room in the pot for another inch of soil, to be put in as a top dressing when the growth reaches the top of the pots.

We must now deal with the crop in the forcing house; and I may remark here that disappointment will follow unless the plants obtain plenty of light from the first. A shelf on the top of a stage, where they can have both light and air, is the proper position for them. The tops should be tied up to sticks, or they will fall over the pots and be injured, besides being deprived of light. With regard to watering, the plants require liberal supplies, especially after they begin to form tubers. Liquid manure will be of great assistance in helping to swell out the crop. It may be given regularly after the pots are full of roots, and a table spoonful of Clay's Fertilizer, or some other concentrated manure, if applied when the young tubers are first formed, will help them immensely.

With regard to the temperature, I may remark here that after the beginning of March it may be increased to 60 deg. by day if it is convenient. The crop will be all the earlier for more warmth if accompanied with a corresponding amount of air; but any attempt to force the growth too quickly for the first six weeks will defeat the end in view.

There is no reason why those who have only an ordinary greenhouse should not have a few dishes of early potatos. Half a-dozen pots, placed on a shelf now, with one strong set in each, may be expected to furnish at least two dishes of tubers about the beginning of May. They occasion but comparatively little trouble. J. M.

LEEKS.

THERE is no vegetable which receives in Scotland so much attention as the leek; the magnificent examples exhibited at the autumn shows, and the liberal prizes offered for competition testify to its popularity. The method of culture here detailed is the result of long and successful experience, and if intelligently followed out will lead to the production of the highest class specimens, and enable anyone to win prizes in the keenest competition. The seed should be sown very thinly, in a gentle hot-bed, early in February. We are quite opposed to the system of sowing in shallow pans or boxes, and potting off the seedlings, as calculated to check the plants, and cause the leaves to turn yellow. When well started, and the roots have reached the manure composing the hot-bed, the top of the frame may be left partly open in mild weather during the day, and after the beginning of May it should be left open, both night and day, to thoroughly harden off before planting out. Prepare a trench for the plants in exactly the same manner as recommended for celery, and plant out about the middle of May, if the weather is mild and warm. The plants should stand crosswise in the trench, and be not less than twelve inches apart, in a single line. When finished, give a good soaking of water, and repeat once a-week if dry weather continues. By the middle of July the plants will be ready for the first earthing, and to keep the blanch clean a strip of brown paper six inches wide should be wrapped round the plant, and the soil pressed lightly and equally round the stem up to the division of the leaves. The process may be repeated again a fortnight later, adding another three or four inches. Previous to the first earthing up the plant should be supplied with liquid manure, and this must be repeated every week afterwards, for the conveying of which directly to the roots a drain tile should be placed on end between every two plants If these directions are faithfully followed the leeks ought to be ready by the end of August, with a clear blanch of ten to twelve inches. Select those for exhibition that are firm, and clean and straight, without any indication of bulb at the base. Do not wash the roots, but strip off the outer one or two leaves before staging, and tie a piece of bast round the plant just below the leaves. —From *Stuart and Mem's Amateurs' Guide*, 1890.

HEATING SMALL GREENHOUSES.

THE individual who will invent some means of heating small greenhouses that shall be reliable and economical, and at the same time furnish sufficient warmth to repel a severe frost, and that does not give off injurious fumes to the injury of the occupants, will deserve well of his countrymen, especially that portion of them that are interested in their gardens. A primary consideration, however, will have to be given to the question of labour in attending whatever form of heating is adopted. In the matter of attendance the labour must be reduced to the lowest possible minimum, and at the same time it must be effectual, without presenting any ugly features in the structure. When such a system of heating small greenhouses is invented, the inventor—certainly the manufacturer—will find a rich reward, as there are thousands of small cultivators waiting for the advent of some form of heating that is at once inexpensive and effective.

In these days of rapid mechanical inventions such a want ought not to be much longer delayed in the face of the demand that calls for it. Some reader may perhaps be disposed to say that we have got all that is necessary in the many forms of oil stoves. But I shall demur to such a statement, as when they are required to be in constant use they are injurious to the plants which they are intended to protect. I have in my time seen at the end of a long winter a house full of plants of various kinds entirely without foliage, owing to the injurious fumes given off from the oil stove used to prevent the frost from getting into the house. This may not always be the case, but it is so in the majority of instances which have come under my notice. Do what one will to make these stoves effectual, there is always more or less of an unpleasant smell with them, and the less attention they get the more unpleasant they make the air of the house. I have experimented a good deal, both last winter and the present, with oil stoves, and I find that the only way to keep the air of the house free from the fumes of the stove is to leave a little air on one of the top ventilators. But it must be understood that the space allowed for the injurious fumes to escape, also affords means for the escape of heat; but as there appears to be no help for this, I substituted a second stove for the purpose of the experiment, which so far has furnished sufficient warmth, and answered very well. But of course it was at the cost of an increase in oil used.

I may have been unfortunate in the form of stoves used, but so far as my experience goes I have formed a very low estimate of their value for general use. The only thing I can say in their favour is that they are useful for the owners of small houses, when they find in the morning an unexpected frost, and the temperature in the house lower than is desirable. When such is the case, say at daylight in the morning, it will prevent the temperature from getting lower, and if left to burn for two or three hours will do no harm, because as the frost passes away the ventilators can be opened to change the air of the house. To such as are obliged to use oil stoves, I would say give them greater attention than the manufacturers declare to be necessary, as I find the fumes are more disagreeable the longer they are left unattended. Four hours is quite long enough for them to burn without having the wick trimmed, and twice at least during that time, after it is well alight, the wick should be turned up, as the oftener this is done the less smell is emitted by them.

With regard to the use of small hot-water boilers and pipes I may perhaps be singular in my opinion, but I feel constrained to say that they are not so meritorious as they might be. They require too much attention to please me. I admit that they are quick in action, and that they do not give off any offensive smell. But if the pipes are heated quickly, they cool as quickly as the fire burns down. They hold so little fuel that they cannot be trusted to maintain a steady temperature on a frosty night for more than three or four hours. The only way one can manage them at all satisfactorily on a frosty night is to attend to the fire very carefully for the last two hours before leaving them for the night. By raising the temperature of the house eight or ten degrees higher than the usual figure, is, I find, the only safe plan to adopt on a cold frosty night.

With regard to other means of heating small houses, I may say, at the risk of being considered old-fashioned in my views, that the old flue system of heating has not in some points been surpassed. During my experience I have had to manage hot-water boilers capable of heating 2,000 feet of four-inch piping. I have ripened, by the assistance of a flue only, a crop of grapes in the middle of April. I am not a stranger to the old-fashioned Polmaise system of heating by hot air. Without any hesitation I now say that the old flue system of heating is better adapted for small houses than the present forms of small boilers and hot-water pipes.

The flue is, I grant, more extravagant in the consumption of fuel, but in other directions the gain is much greater in comparison. The flue does not require so much attention; but what is most important of all, is that when once the flue has been warmed sufficiently to raise the temperature to a safe point, there is no fear of its receding on a frosty night if the fire is well backed up the last thing. This is a point of so much importance that I only wonder that the small hot-water boilers have been tolerated so long as they have, especially when a house can be heated with a flue at about half the expense of a boiler and pipes.

There is, I must admit, room for improvement in materials used in the construction of the flue. If half of the genius used in improving the form and heating capacity of hot-water boilers had been devoted to the improvement of the materials and construction of the flue, we should have long before now had a means of heating small houses that would satisfy all requirements. Instead of the ordinary furnace built with fire-bricks and bars, we want a fireplace composed of cast iron with fire bars attached. My idea of such a construction is that the cast iron fireplace for small houses should be about two and a-half feet long, twelve inches square, with the sides and top of plain iron, and the fire bars at the bottom. The inside end would of course require to be open, while the outer or feeding end would have the ordinary furnace door attached.

The next point is to find a material to form the flue, that when made into parts can be quickly taken away and put down again. The ordinary glazed pipe now sometimes used is not sufficiently fireproof. What is wanted is a similar material, that when once heated will retain the warmth for a considerable time. With regard to the chimney, an ordinary six-inch smoke pipe would answer perfectly.

Such is my idea of a heating arrangement for small houses, that will, I know, cost a trifle more in fuel, but its value will be saved in reducing the attention required, as well as affording greater security in the case of frost.

Who will put my ideas to a test? J. C. CLARKE.

ROYAL ACADEMY EXHIBITION OF WORKS BY OLD MASTERS.

THE present exhibition at Burlington House is by all parties considered equal in interest to any of its predecessors, and, like many of them, it has features of its own to give it distinctness of character. It is not rich in the works of great English masters, but makes amends by its many fine examples of Spanish and Dutch painters, and the fourth room has special claims on the students of historical portraiture.

In the first room Reynolds, Callcott, Romney, Morland, Turner, Landseer, and Richard Wilson are fairly well represented, but there is no work of special distinction from any of these great painters. The Morland, No. 11, in which a cart horse, some pigs, and two rustic men divide attention, is a choice article, with much of the artist's best work in it. Landseer is represented by the famous "Whiskey Still" (12), from the gallery of the Duke of Wellington; and the "Jocko" (15) and "Impertinent Puppies" (16) that have been so often engraved as illustrative of the painter's art in the delineation of dogs. "Barking Trees" (19), by John Linnell, here reminds us of the sweet things that appeared in the same room last year showing Linnell's mastery of woodland landscape and clear understanding of the forms of trees. "The Pig-stye" (27), by Morland, "Cows" (29), by James Ward, and "Horses" (31), by the same, may be compared with Landseer's work. The decision in many instance will be that Morland, as ever, stands alone and unapproachable, while Ward supersedes Landseer in pure art, while Landseer has the best of it in seizing upon character and developing humour without sacrifice of truth. Passing some dreadful things by Francis Danby, we find delight in Sir Joshua's portrait of Fanny Kemble (49), which reminds us to look round again at the portraits, and more especially to note the one by Turner (24) as a rare example of his talent in this branch of art.

In the second room, Rembrandt, Jan Steen, Albert Cuyp, and Adrian Van Ostade are great. The best-known of the portraits of the first, as painted by himself, is here (61), and near it two portraits of men (68, 69) that may properly engage one's attention for a quarter of an hour. One of the sweetest things in the exhibition is Dietrich's "Adoration of the Shepherds" (63), combining with a most effective design perfection of drawing and marvellous colouring. The scene is a stable, with the Mother and Babe and Joseph receiving the gifts and joining in the praises of the kneeling shepherds, the time being night, and the illumination a few lanterns. The exquisite harmonies of the grouping and the general tone are all in keeping with the simple realism employed by the artist to tell the story: very different to the customary mode of Italian and Spanish artists. There are two characteristic flower pieces (79, 83) by Jan Van Huysum, the object of the painter evidently being to show as many flowers in each as could be crowded in. The details are delicately accurate, the colouring transparent, and the touch everywhere that of the master, but the crowding troubles one, for fewer subjects would have sufficed to ensure beauty in the grouping. Cuyp's portrait of himself (91) is an interesting contribution from Lord Ashburton; the "Carouse (93), by Jan Steen, is a scene quite after his own heart; the Paul Potter (88) is doubly precious because of its fine quality and the rare appearance of this master's works in miscellaneous collections.

The third gallery has in place of the wall of Rembrandts of last year a wall of Velasquez and Zurbaran. But before we reach these examples we encounter good things labelled Reynolds, Romney, Gainsborough, and Wilkie. Particularly interesting is the portrait by Sir Joshua of Sir William Chambers (126), who planned Kew Gardens and built the present Somerset House; a handsome rosy-faced man in a showy costume, making quite a grand picture. The portraits of Great Spaniards and the ruddy Venus of Velasquez make a magnificent series, but they will not make a deep impression on the English public as compared with any equally important Dutch, Flemish, or English pictures. The Rembrandts here finely illustrate the peculiar genius of the greatest of all portrait painters, and especially of his peculiar mode of giving solidity by the aid of the dark transparent background which cost him years of labour, and in which none but he has succeeded. A comparison of Van Dyck's endeavour in this way may be studied here, and the result cannot in any way be doubtful. Two grand English pictures give light and life to this room, and though both are old friends they are of the kind that one never tires of. Here is the Academy Constable, the subject scarcely needing to be named, "Dedham Lock" (159), in perfect condition and in the position Constable has so often occupied in the winter exhibitions. Not far away is Gainsborough's "Market Cart" (163), a perfect composition in the best manner of the master, and unfortunately in the injuriously dark state that Gainsborough's landscapes usually acquire as time "ripens" them.

In addition to the fine series of portraits in the fourth gallery, the water-colour room contains a collection of drawings and models by Alfred Stevens, whose Wellington Monument is the best known of his works. Some day we may be permitted to see in the embellishment of St. Paul's Cathedral what Stevens considered desirable in that way, and in this collection is a model of his proposed embellishment of the reading-room at the British Museum, the great dome of which would tempt any ambitious decorator to do something with it that should immortalize his name.

THE CYCLAMEN PERSICUM, grown by J. C. Gilmore, Esq., and reported on at page 13, was raised from seed supplied by Messrs. James Carter and Co., as they have been careful to inform us.

Replies to Queries.

Fumigator.—A. B. : The fumigator to which you refer is probably that manufactured by Messrs. C. Toope and Co., Stepney Green, E.

Names of Fruits.—Constant Reader : Your handsome apple is Tibbett's Pearmain.—J. Parsons : 1, Winter Pomeroy ; 2, Yorkshire Greening ; 3, Powell's Russet ; 4, Royal Russet.—F. H. F. : 1, Vicar of Winkfield ; 2, Catillac ; 3, Black Worcester or True Warden ; 4, Verulam.

Entrance Court.—Farleigh : The plants you propose to us are not of suitable character. It will be far better to rely chiefly on hollies, variegated euonymuses, tree ivies, fastigiate yews, mahonias, and the like for all the frontages. The scheme of the place is too ornate to afford any scope for rustic material of the rough kind you have in view. If you are resolved on using cheap material you must alter your plan.

Names of Plants.—J. H. : 1, Libonia floribunda ; 2, Selaginella Wildenovi ; 3, Selaginella cæsia ; 4, not sufficient for identification ; 5, Blechnum brasiliense.—J. H. Foster : 1, Eucomis regia ; 2, Velthemia intermedia ; 3, Amaryllis aulica ; 4, Crinum Mauritianum.—F. F. R. Z. : 1, Calanthe plantaginea ; 2, Dendrobium aureum pallidum ; 3, Dendrobium Ruckeri ; 4, Cymbidium iridifolium.—Francis : The leaf is that of Rosa berberidifolia ; the flower is of a papilionaceous character. Your artist friend has made a mistake.

Apples and Pears for Small Garden.—Subscriber : The most desirable apples for a garden of limited dimensions are King of the Pippins and Margil, of the dessert varieties ; and Lord Suffield, Ecklinville Seedling, Lane's Prince Albert, and Dumelow's Seedling, of those suitable for the kitchen. The following pears are all well adapted to your requirements, and will maintain a supply extending from August till February : Jargonelle, Williams's Bon Chretien, Louise Bonne of Jersey, Marie Louise, Doyenne du Comice, and Josephine de Malines. The Jargonelle should be grown as a standard or bush, as in consequence of its diffuse habit it does not make a good pyramid.

Bouvardias.—M. T. : When the plants are past their best, remove them to the greenhouse, reduce the water supply, and keep them rather dry at the roots for about four weeks, but not so dry as to cause the leaves to shrivel. At the end of three weeks they should be moderately pruned, and in a week or so be removed to the stove, and be encouraged to make new growth by increasing the supply of water to the roots, and overhead syringings. On their commencing to make new growth they can be repotted, previously reducing the ball of soil by about one-third, or they can remain undisturbed until the new shoots have attained a length sufficient to admit of their being utilized for propagating purposes. If the latter course is taken they can be repotted when a sufficient supply of cuttings has been obtained.

Walnut Tree Bleeding.—A. N. has lately removed some offending branches from a walnut tree and considerable bleeding has followed. The cause of this is simply that the roots are in action pumping up fluid and an outlet has been made for some part of it. All trees would probably bleed if at the time of being pruned, especially from the trunk, they were in some degree gorged with fluid. It is a mechanical rather than a vital affair, and though vexatious and unsightly is generally of no great consequence as regards the health of the tree. Probably if the wounds are painted with "knotting," which may be obtained from any house that trades in oils and colours, the bleeding may be checked ; but should that not be accomplished it is likely to diminish as the leaves expand, and to cease entirely when the tree is in full summer growth, and the leaves will then take all the sap that the roots can supply.

Unhealthy Carnations.—Herewith I enclose for your inspection some grass taken from carnations that do not present so healthy an appearance as I could wish. The plants were obtained in November, and since that month they have been growing with tomatos in a house in which a temperature of about 45 deg. is maintained. They appear to be growing in a mixture of loam and peat, and had the appearance of being in a healthy condition until a week ago, when on examining them I found the leaves covered with brown spots. They are evidently becoming worse every day, and the grass is now curling very much. The house is kept rather dry, and is damped down a little on fine days ; air is admitted both at the top and bottom, and the plants are near the glass. If you could give me any information that will enable me to check the disease I shall be greatly obliged.—T. COCKERILL.

[The carnations have evidently been kept too cold and damp, and with moderate supplies of water at the roots and less atmospheric moisture they will probably recover in the course of the spring.—ED. G. M.]

Crickets.—A. T. S. : Crickets may be destroyed by mixing arsenic with oatmeal or honey, and then placing the mixture in the frame in positions where they can readily partake of it. If you use oatmeal add two ounces of arsenic and a little ground aniseed or carraway seed to one pint of fine oatmeal, and well mix together. In the evening place a little of the mixture on pieces of crock or paper laid in suitable positions. When honey is employed add one part of arsenic to every three parts of honey, thoroughly mix and lay it in small portions about the frame. Portions about the size of a large pea are the most suitable, and they should be placed on pieces of glass or crockery with a glazed surface. When placed on potsherds the material soon absorbs the moisture, and when dry the mixture of arsenic and honey is of but little use. It will, of course, be necessary to exercise great care in handling so deadly a poison as arsenic.

TRADE CATALOGUES.

DANIELS BROS., NORWICH, *Illustrated Guide for Amateur Gardeners, Spring*, 1890.

PETER HENDERSON AND CO., 35, CORTLAND STREET, NEW YORK, *Manual of Everything for the Garden—American Farmers' Manual.*

J. E. BARNES, 9, EXCHANGE STREET, NORWICH, *Vegetable and Flower Seeds, Potatos, &c.*

J. BACKHOUSE AND SON, YORK, *Seed List.*

THOMAS LAXTON, BEDFORD, *New Seeds, Potatoes, and Roots.*

FISHER, SON, AND SIBRAY, 4, MARKET STREET, SHEFFIELD, *Kitchen Garden and Flower Seeds.*

CARTER AND CO., 237, HIGH HOLBORN, LONDON, *New Chrysanthemums.*

JOHN WATKINS, POMONA FARM, WITHINGTON, NEAR HEREFORD, *Hardy Fruits, Seed Potatos, Cider and Perry in casks and bottles.*

OAKSHOTT AND MILLARD ; READING, *Vegetable and Flower Seeds.*

JARMAN AND CO., CHARD, SOMERSET, *Seed Manual*, 1890.

W. CUTBUSH AND SON, HIGHGATE, LONDON, AND BARNET, HERTS, *Flower, Vegetable and Farm Seeds.*

M. CUTHBERTSON, ROTHESAY, SCOTLAND, *Seeds, Pansies, Herbaceous Plants.*

Correspondence.

WANTED A HALL FOR HORTICULTURE.

WE are very pleased to see you are giving publicity to suggestions as regards a hall for horticulture. After reading the various comments respecting it, many must have been surprised at the wide difference of opinion as to the best method of attaining the object in view.

Dr. Masters, in the *Gardeners' Chronicle*, January 4, 1890, in reviewing our circular which proposes to solicit donations from the wealthy who have horticulture at heart, remarks, "Like our friends, we too, hope to see the day when we shall have a hall worthy of our great nation," and one which shall be available not only for the meetings of the Royal Horticultural Society, but of all the special societies, of the library, of the horticultural club, and of the charitable societies connected with horticulture. This has been a dream for many a long year, but when we see the proposal being sent broadcast, we begin to hope the dream may be fulfilled. Our friend Mr. Hibberd in the GARDENERS' MAGAZINE, *Gardeners' Chronicle, Journal of Horticulture, Gardening World*, and probably a host of other papers says, if our suggestions are carried out, it will be a mockery, delusion, and a snare, and almost commands his friends not to have a hand in such an awful and dangerous work. Yet the very same means we suggest are adopted to build nearly all our churches, chapels, and many other public buildings, and how your readers will understand and reconcile the statements coming from two such distinguished men is beyond our comprehension. However, we are delighted to think that we have been the means of publicly uncovering the light which that gentleman (Mr. Hibberd) has so long kept under a bushel, be it a rushlight or a star of the first magnitude, yet remains to be proved. If he alludes to us as the friends who heard of his scheme, a sort of a pseudo joint stock market, or co-operative store company, or some such kindred title, our friend was never more mistaken in his life ; he should be sure, and certainly show some evidence before putting forth such statements. Mr. Hibberd also speaks of a resolution he put to the meeting in 1888, and lost. A year before that, in the side room at the Albert Hall, we asked the Council not to finally engage the Drill Hall until the Fellows had had time to consider its adaptability ; and again at the same meeting he (Mr. Hibberd) mentions, we proposed that we should ask the Crystal Palace Company. This was also lost, consequently here is far moreground for considering that his ideas were borrowed from us. He was present on both occasions, and probably heard us converse with many about procuring a site on the Thames Embankment. We think we are safe in saying very few projects have had a happy time where capital had to be borrowed for horticultural purposes. Many have had, we know, a disastrous ending. No one knows the extent of such better than our friend, yet he almost makes it appear as if the Horticultural Society is not doing as much good work and deserving of sympathy as any of the polytechnic institutions, whose eleemosynary donations are to the extent of £50,000 a-year, in London. Our friend is so definite and determined on this point, we are afraid that if some well-wisher was to bequeath us, for this hall, a thousand or so, in the same way as Mr. Davies, Mr. Hibberd would, by his teachings, be for immediately returning such donation and saying it would lower the dignity and injure the very foundation of our Society. Every farthing to build this hall must be obtained by its own commercial pursuits, and of course be called "The Royal Horticultural Hall Trading Company (Unlimited)," the very thing, in our opinion, to destroy its charter, character, independence, and all purposes for which the Society is intended. However, judging from the several inquiries of the sort of building needed, our hopes are more and more strengthened that we shall have assistance from some amongst the great and wealthy of this country, and so place the Society in a comfortable and becoming building equal to those possessed by horticulturists in Belgium and America, to enable us to look up with pride and pleasure, and feel that the Society is advancing in the improvement and encouragement of the earth's productions.

H. CANNELL AND SONS.

Markets.

COVENT GARDEN.

FRUIT.

Apples.....per ½-sieve	2s. 0d.	to	7s. 0d.
Apples, American, pr. brl.	12s. 0d.	,,	24s. 0d.
Cobs.....per lb.	1s. 3d.	,,	1s. 9d.
Asparagus, Sprue, per bun.	1s. 3d.	,,	1s. 6d.
Grapes.....per lb.	1s. 0d.	,,	6s. 0d.
Lemons .....per case	10s. 0d.	,,	20s. 0d.
Pine-apples, English, prlb.	1s. 0d.	,,	1s. 6d.
Pine-apples, St. Michael's each.....	2s. 6d.	,,	7s. 6d.

VEGETABLES.

Beans, French .....per lb.	0s. 8d.	to	0s. 9d.
Beet .....per doz.	1s. 0d.	,,	2s. 0d.
Brussels spr'ts, pr ½ sieve	1s. 6d.	,,	2s. 6d.
Cabbages.....per doz.	1s. 0d.	,,	2s. 0d.
Carrots .....per bun.	0s. 4d.	,,	0s. 6d.
Cauliflowers .....per doz.	2s. 0d.	,,	4s. 0d.
Celery .....per bundle	1s. 6d.	,,	2s. 0d.
Coleworts, pr doz bunchs.	2s. 0d.	,,	2s. 6d.
Cucumbers .....each	1s. 0d.	,,	1s. 6d.
Endive.....per doz.	1s. 6d.	,,	2s. 6d.
Herbs .....per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish.....per bun.	3s. 0d.	,,	4s. 0d.
Leeks .....per bunch	0s. 3d.	,,	0s. 4d.
Lettuces .....per doz.	1s. 0d.	,,	2s. 0d.
Mushrooms ...per basket	1s. 0d.	,,	1s. 6d.
Onions.....per bushel	3s. 0d.	,,	4s. 0d.
Parsley .....per bun.	0s. 3d.	,,	0s. 6d.
Rhubarb .....per bun.	1s. 0d.	,,	1s. 6d.
Salsify .....per bundle	1s. 0d.	,,	1s. 6d.
Seakale .....per pun.	2s. 0d.	,,	2s. 6d.
Scorzonera ...per bundle	1s. 0d.	,,	1s. 6d.
Shallots .....per bun.	0s. 4d.	,,	0s. 6d.
Small Salading...per pun.	0s. 3d.	,,	0s. 4d.
Spinach .....per bushel	4s. 6d.	,,	5s. 0d.
Tomatos.....per lb.	0s. 9d.	,,	1s. 0d.
Turnips .....per bunch	0s. 4d.	,,	0s. 5d.

CUT FLOWERS.

Abutilons ...per doz. bun.	2s. 0d.	to	4s. 0d.
Azaleas, per doz. sprays	0s. 9d.	,,	1s. 6d.
Bouvardias.....per bunch	0s. 9d.	,,	1s. 0d.

CUT FLOWERS.—*Continued.*

Callas .....per doz.	4s. 0d.	to	8s. 0d.
Camellias .....per doz.	1s. 6d.	,,	4s. 0d.
Carnations, per doz. blms.	1s. 0d.	to	2s. 0d.
Christmas Roses, per doz. blooms.....	1s. 0d.	,,	1s. 6d.
Cyclamens, per doz. blms.	0s. 4d.	,,	0s. 8d.
Epiphyllums, per doz. blooms.....	0s. 6d.	,,	0s. 9d.
Eucharis ...per doz. blms.	2s. 6d.	,,	5s. 0d.
Gardenias, per doz. blms.	9s. 0d.	,,	18s. 0d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Hyacinths, Roman, per doz. sprays.....	0s. 9d.	,,	1s. 6d.
Lilac, White, per bun. ...	6s. 0d.	,,	8s. 0d.
Lily of the Valley, per doz. sprays.....	0s. 9d.	,,	1s. 6d.
Maidenhair Fern, per doz. bun.....	3s. 0d.	,,	6s. 0d.
Marguerites, pr doz. bun.	3s. 0d.	,,	6s. 0d.
Mignonette, per doz. bun.	2s. 0d.	,,	4s. 0d.
Narciss, Paper White, per doz. buns.	4s. 0d.	,,	8s. 0d.
Pelargoniums, per doz. trusses.....	0s. 9d.	,,	1s. 3d.
Primulas...per doz. sprays	1s. 0d.	,,	1s. 6d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	1s. 6d.
Spiræas, per doz. sprays	1s. 0d.	,,	1s. 6d.
Stephanotis, per doz. sp's	9s. 0d.	,,	12s. 0d.
Tuberoses, per doz. blms.	1s. 6d.	,,	2s. 0d.
Tulips ...per doz. blooms	0s. 9d.	,,	1s. 6d.
Violets, per doz. bun. ...	1s. 0d.	,,	1s. 6d.
Violets, Parme, per bun.	3s. 0d.	,,	4s. 0d.
Violets, French, per bun.	1s. 6d.	,,	3s. 0d.

BOROUGH AND SPITALFIELDS.

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Regents .....per ton	50s.	to	85s.
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Beauty of Hebron .....per ton	55s.	,,	105s.
Early Rose .....per ton	45s.	,,	55s.
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"THERE IS UNQUESTIONABLY" no better remedy in the whole world for all cough and throat troubles than KEATING'S LOZENGES—any medical man will assure you of this fact. Relief is speedy ; they contain no strong acting, but only simple drugs ; the most delicate can take them. Sold everywhere in 13½d. tins.—[ADVT.]

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
26	S	**3rd Sunday after Epiphany.**	7 50	12 51	4 36	10 44	11 50	5 46	6 7	2 50	3 11	38·5
27	M	☽ First Quarter.	7 49	13 3	4 38	11 2	Morn.	6 30	6 52	3 32	3 55	38·6
28	Tu	Capitulation of Paris, 1871.	7 48	13 14	4 40	11 23	1 2	7 14	7 40	4 17	4 39	38·8
29	W	Lord St. Leonards died, 1875.	7 46	13 25	4 42	11 46	2 13	8 7	8 35	5 5	5 32	38·9
30	Th	King Charles beheaded, 1649.	7 45	13 35	4 44	After.	3 22	9 9	9 47	6 0	6 34	38·9
31	F	The Young Pretender died, 1788.	7 43	13 44	4 46	0 45	4 26	10 25	11 5	7 12	7 50	40·0
		FEBRUARY.										
1	S	George Crnikshank died, 1878.	7 41	13 52	4 48	1 24	5 26	11 41	—	8 30	9 6	39·1

Orchids in Flower.		Day of Yr.
		1890
Calanthe Williamsi	Cochin China.	26
C. lutea	Cochin China.	27
Cattleya Warscewiczi.....	Brazil.	28
Cypripedium Meirax	Gard. hyb.	29
C. melanopthalmum	Gard. hyb.	30
Epidendrum vitellinum	Mexico.	31
Lælia superbiens	Guatemala.	32

Exhibitions and Meetings for the Ensuing Week.

MONDAY, JAN. 27.—NATIONAL CHRYSANTHEMUM SOCIETY.—Annual Meeting at Anderton's Hotel, 7 p.m.

Auction Sales for the Ensuing Week.

MONDAY, JAN. 27.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67, and 68, Cheapside; Lilium auratum and Hardy Bulbs.

TUESDAY, JAN. 28.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38 and 39, Gracechurch Street; Roses, Trees, Plants, &c.

WEDNESDAY, JAN. 29.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Greenhouse Plants, &c.

WEDNESDAY, JAN. 29, AND SATURDAY, FEB. 1.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, and Bulbs.

THURSDAY, JAN. 30.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids, Lilies from Japan, &c.

FRIDAY, JAN. 31.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

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Displayed Advertisements are charged according to the space occupied.

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The Gardeners' Magazine.

SATURDAY, JANUARY 25, 1890.

THE SUPPLY OF THE MARKETS WITH APPLES is a matter of more than passing interest, and the recent discussion in the columns of the *Times* will have attracted attention as presenting the subject in somewhat of a new light. The editor of the *Garden* opened the debate by extolling some imported samples of Gravenstein as superior to any of home growth, and founding on the alleged superiority a justification of the (supposed) public preference for imported over home-grown apples. He then proceeded to give King of the Pippins a bad character, and to pronounce Cox's Orange, Ribston, and Blenheim as the varieties that should be grown for the supply of the markets. He did not, indeed, exclude other kinds, but these he named as of pre-eminent importance. The editor of the *Gardeners' Magazine* had doubts of the soundness of the views thus enunciated. As regards King of the Pippins, he contended that if the public taste was as discriminating as had been alleged this must be a good fruit, because it is a special favourite, and sells as well as any apple of its season; in fact, he said, "There is more money in it than in any other apple in cultivation." There was no difference of intention as to the identification of the variety. This apple is the Golden Winter Pearmain of the books, but it is the "King" of the markets. The quotation from Dr. Hogg, describing it as "one of the richest flavoured" refers to the King properly so called, an earlier and different apple. Practically, the case is not altered by this admission, for what Hogg says of Golden Winter Pearmain—that is, of the "King" of the markets—is this: "A beautiful and very handsome apple of first-rate quality, and suitable either for the dessert or for culinary purposes; it is in use from the end of October to January." Being one of the best known varieties, the name occasions no difficulty; but it may be well to say that a figure and description of it will be found at page 704 of the *G. M.* for 1889.

The three apples set before us as the best and the most suitable for the supply of the markets are beyond all question of great excellence. But the editor of this paper felt that there was somewhat of danger in the recommendation, and in this conviction made reply that Blenheim is slow to bear and Ribston subject to disease. As regards Cox's Orange, there appears a perfect agreement that it is one of the best of apples, whether for the domestic or the market garden, and may be planted to almost any extent where soil and climate are suitable, with reasonable expectation of satisfactory results. It will be seen that the editor of the *Garden* admits that Blenheim is slow to bear and that Ribston is liable to disease, but still he considers these objections are not of great importance, and as to Ribston, he has hopes it will yet be found amenable to management. Now, we share in that hope; but as hopes and wishes count for nothing in matters of business, they afford no excuse for placing Ribston in the front as a thing that should be extensively grown for market. As for Blenheim, we have said the man who plants his own land may do well to speculate on this noble fruit, for although it has been over-rated as a table fruit, it is so handsome and so good that a plantation of Blenheim, even if not yet in bearing, may be considered to add something to the value of a tract of land on which they appear consistently with conditions and surroundings. It is of little use near London, for even when it produces a few fruits it has no quality; but in a pure air and on a good soil it is one of the grandest apples for those who can wait twenty years to see it come into fruit. It is to be feared that many who have not had experience of waiting for trees to bear may be deluded into ruinous speculations with this variety, which must have time to mature, and requires the most favourable conditions for success. There is a nice little lot of thriving Blenheims in the R.H.S. garden at Chiswick, where they have made satisfactory progress during fifteen years, and have not as yet acquired the condition called "bearing." We have before us some beautiful samples of fruit from a garden near Reading, the trees from which they were taken being described as twenty-five years planted, and not as yet in full bearing. As for the Ribston, its tendency to canker is notorious, and as we now possess apples as good in quality and less liable to disease, this fine old apple should be excluded from lists intended for general usefulness.

The best paper on commercial apple culture amongst the hundreds that have appeared within the past fifteen or twenty years is that on "Apples for Profit," contributed by Mr. George Bunyard, of Maidstone, to the Apple and Pear Conference of 1888. In that paper is a list of fifty-seven varieties, and they include Blenheim and Cox's Orange, but Ribston is not mentioned. A paper of larger purpose on "Fruit Culture for Profit," by Mr. William Paul, contributed to the same Conference, contains a list of twenty-four varieties, including Blenheim and Cox's Orange, but excluding the vexatious Ribston. For those who can wait Blenheim is worthy of consideration, but in our opinion it is more in place on the land of an improving gentleman than on that of a market grower, who has to find the capital and pay the rent; for him there are many better things, quick returns being of more than sentimental importance. The varieties we have many times recommended appear in the lists of the two eminent fruitists named above with but little variation, as will be seen from the selection of Mr. William Paul. This includes: Blenheim Orange, Cox's Orange, Cox's Pomona, Devonshire Quarrenden, Ecklinville, Duchess of Oldenburg, Irish Peach, Keswick, King of the Pippins, Lord Suffield, Small's Admirable, Stirling Castle, Sturmer Pippin, Warner's King, Wellington, Hawthornden, Cellini, Beauty of Kent, Dutch Mignonne, Northern Greening, Early Julien, Golden Spire, Worcester Pearmain, and Pott's Seedling. It is strange, and it illustrates the possibility of divergence of opinion on matters that are demonstrable one way or another, that the culinary apple we consider best of all for use and profit is not named by either Mr. Paul or Mr. Bunyard. That variety is Lane's Prince Albert. Is it *the* best or *one* of the best, or of no consequence at all. And is not Wellington second to it in merit? We believe it is.

THE "PLUNGING SYSTEM" that was practised for several years by Mr. Shirley Hibberd at Stoke Newington, and was discoursed upon at length by him in the *Floral World* in the year 1864, has been very usefully revived by the Rev. W. Wilks in his beautiful garden at Shirley, near by Croydon. At the meeting of R.H.S., January 14, Mr. Wilks gave a delightful discourse on the subject, having in view more particularly the embellishment of the prominent parts of the flower garden with potted evergreen trees during the winter. The furniture Mr. Wilks has found most useful comprises variegated hollies, conifers, and a few of the neater growing dwarf-habited evergreens that are commonly planted in the front lines of shrubberies. Mr. Hibberd carried out a larger scheme, the plunge garden being furnished with successional batches of plants, including many gay flowering subjects, the whole year round. But not many persons were disposed to do likewise. The system made too much work, and was too costly for general adoption. Mr. Wilks has developed the most useful part of the system, for beds and borders that are gay during a great part of the year have a bleak and bald appearance in the interval between the last of the autumnal and the first of the spring flowers. Nor is it necessary to damage the permanent occupants of beds and borders to make places for the evergreens. The places can be provided for them in advance, and empty pots may be inserted to prevent intrusion of roots from distant subjects.

THE CONTROVERSY ON APPLES SUITABLE FOR CULTIVATION FOR MARKET that for a brief space engaged the attention of readers of the *Times*, derived its chief interest from the letters of the Editor of the *Garden*, and the Editor of the *Gardeners' Magazine*. The four letters from these two writers have been reproduced in this paper, but only three have appeared in the pages of the 'Garden.' The editor of that paper placed before his readers his own two letters, and only one of Mr. Hibberd's. The second letter from the last-named writer may be assumed to have placed the editor of the 'Garden' in a difficulty, for he had to choose between publishing a letter damaging to his assumption of superior wisdom on the subject of apples, and appearing deficient of the sense of fairness and courtesy commonly looked for in editor who might have some desire to be regarded as a gentleman. The latter alternative was adopted, and the event should be noted as of some importance in connection with our horticultural literature.

YORK FLORAL FETE, last year, resulted in a profit of £164.

MR. D. LEWENDON has been engaged as gardener at Beech Hill Park, Barnet, the residence of C. Jack, Esq.

MR. T. OLDHAM has been engaged as head gardener by H. L. Powys-Keck, Esq., Stoughton Grange, Leicester.

MR. F. ELMES has been engaged as head gardener by W. W. Riddell, Esq., Shenstone Lodge, Lichfield.

MR. JAMES UDALE has been engaged as head gardener at Haverland Hall, Norwich, the seat of Lord de Ramsey.

BROMLEY CHRYSANTHEMUM SOCIETY will hold its annual exhibition November 13 and 14.

MR. C. J. WAITE, of Glenhurst, Esher, will read a paper on the cultivation of vegetables for exhibition at the meeting of the Chiswick Gardeners' Association on Friday next, the 31st inst.

IMPORTATION OF APPLES during December last amounted to 426,629 bushels, or a decrease of 450,680 upon the imports in December, 1888.

IMPORTATIONS OF ONIONS in December last reached in the aggregate 324,600 bushels, or a decrease of 31,033 bushels upon the quantities received in the corresponding month of 1888.

POTATOS IMPORTED in December, 1889, show a great drop as compared with the importations during December, 1888, the quantities being 18,311 cwt. and 108,610 cwt. respectively.

WARE AND DISTRICT HORTICULTURAL SOCIETY is leading a busy life. At the last meeting, the Rev. A. E. W. Lofts in the chair, Mr. H. H. Smith read an excellent paper on Adiantums.

AN EXHIBITION OF PICTURES of cathedral towns and picturesque places in Germany and Italy, painted by Mr. E. H. Bearne, is now open to the public in Mr. McLean's Gallery, 7, Haymarket, London.

OXFORDSHIRE CHRYSANTHEMUM, PRIMULA, AND FRUIT SOCIETY'S twenty-eighth annual exhibition, November 18, 1890. At the annual meeting, Mr. Sheriff Grubb in the chair, the accounts showed a clear surplus on the year of £15 19s. 7d. Mr. W. Greenaway has held the office of secretary and treasurer for just over 20 years. The society has a membership of 250, of whom 207 paid the minimum subscription of 2s. 6d. in 1889.

COVENT GARDEN THEATRE contributes directly to Gardeners' Orphan Fund during the whole of the month of February. The arrangement is that for all tickets sold in the interest of the fund a portion of the proceeds is assigned to the fund. Therefore to benefit the society in this way tickets should be purchased from any members of the committee or of Mr. A. F. Barron, honorary secretary, R.H.S. Gardens, Chiswick. Money paid at the doors of the theatre will not benefit the fund in anyway whatever.

THE WORK AND GENERAL organization of R.H.S., more particularly as reflected in the gardens at Chiswick, are described and commented on at length in the *Times* of January 21, in an article at once appreciative and encouraging.

BIRMINGHAM CHRYSANTHEMUM SOCIETY achieved so high a degree of success during the past year as to be able to place £80 to the credit of the reserve fund, which now amounts to £277. It is probable that the liberal prizes offered for forty-eight blooms last year will be repeated at the exhibition in November next.

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY will hold its exhibitions for 1890 as under: Spring Show, May 14; First Summer Show (Commemoration), June 24; and Second Summer Show, August 28. At the annual meeting of members held under the presidency of the Mayor of Oxford (Mr. Alderman Hughes), Mr. W. Greenaway was re-elected secretary. The revenue account showed that the receipts exceeded the payments (including prize-money £330 17s. 6d.) by nearly £30. The officers of 1890 were generally re-elected, Messrs. J. Bates and E. Thorne taking the places of Rev. R. H. Charsley and Mr. R. J. Johnson, retired.

BALLOTING LISTS FOR COUNCIL AND OFFICERS OF THE ROYAL HORTICULTURAL SOCIETY have been issued, preparatory for the Annual meeting to be held February 11. The names of members of council proposed for retirement are Mr. J. R. Bourne, Mr. W. Coleman, and Mr. A. H. Smee. To fill the vacancies caused by the removal of these it is proposed to elect Mr. E. A. Hambro, Mr. N. N. Sherwood, and Mr. Martin R. Smith. The persons recommended by the Council for the several offices are: For *President*, Sir Trevor Lawrence, Bart.; *Treasurer*, D. Morris, M.A., F.L.S.; *Secretary*, Rev. W. Wilks, M.A., *Auditors*, Mr. George Deal, Mr. W. Richards, and Mr. Harry Turner.

WINTER FLOWERS are reported on from various places, but the facts have not much interest for our readers. But we note that in several instances the hardy and accommodating *Anemone coronaria* makes a conspicuous figure, especially in gardens in the extreme west and south. Mr. Herbert Story, dating from Douglas, says, "I sowed the seed on May 22, in Jubilee year. Owing, no doubt, to the then prevailing drought, not a plant appeared until St. Swithin, yet they began flowering on October 28, and in November the bed was full of bloom." He also adds that at Douglas Cytisus racemosus is in full flower at the present time, the plant having stood out for nine years without shelter.

A HALL FOR HORTICULTURE has obtained the attention of the Council of the Royal Horticultural Society, and we are informed on authority that in the autumn of last year a committee was appointed for the purpose of elaborating a scheme, and it is hoped that shortly some definite proposals will be made to the Fellows. So far as the matter has proceeded, we believe we shall be correct in saying that the Council has not entertained the idea that the thing desired could be established on a commercial basis, and on that point there will perhaps be a divergence of opinion. But whatever proposals the Council may make will assuredly obtain the generous consideration of the Fellows, and we shall hope to hear of the matter as the season opens, for the coming season promises to be coloured with good fortune.

EDINBURGH CHRYSANTHEMUM SHOW, held in November last, proved the greatest financial success of the season, and in all other respects did honour to the Scottish Horticultural Association, under whose auspices it was held. From a report presented by the treasurer to a meeting of the association a few days since, it appears that the total receipts were £1,389 11s. 9d., and the disbursements £958 6s. 5d., leaving a balance of £440 5s. 4d. It was also stated that over 40,000 passed the turnstiles during the three days of the exhibition. It was resolved to contribute £20 of the surplus to the general funds, and £5 to the benevolent fund of the association, and £5 to the Royal Infirmary, Edinburgh, and £5 to the Gardeners' Orphan Fund. Messrs. Munro and Ferguson, the joint honorary secretaries, were presented with honorariums in recognition of the energy and skill with which their duties were performed. At the same meeting it was decided to hold a similar exhibition in November next.

ROYAL HORTICULTURAL SOCIETY once more appeals to its immediate supporters, and through them to the public at large, for the means to carry on and to enlarge the general scheme of work on which it entered on closing accounts with South Kensington, and thenceforward becoming *de facto* a Horticultural Society. The "arrangements for 1890 are set forth in detail in a publication obtainable from the offices, and they include terms of Fellowship, an account of the Society's Gardens, and of the Lindley Library, lists of the several Committees for flowers, fruits, orchids, and science in relation to horticulture, with meetings of committees, and exhibitions, and conferences. The more important of these arrangements we were enabled to include in the new issue of the *Garden Oracle*, which was published in the later days of December last, and it will suffice now to give dates and subjects only, as we shall have to treat at length of the several meetings as they occur, and with special reference to results. The dates and subjects are as follow: April 23, National Auricula and Primula exhibition; May 28 and 29, Great Exhibition in Temple Gardens, Thames Embankment; July 22 and 23, National Carnation and Picotee exhibition at Chiswick, in connection with exhibition of Ferns, and Conferences on Carnations, Picotees, and Ferns; September 23 and 24, Dahlias and Grapes, and conference at Chiswick. At the meetings in the Drill Hall lectures will be delivered on matters of interest arising out of the course of the business before the committees, these lectures taking place on each occasion at 3 p.m.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE.

JANUARY 14.—Present: D. Morris, Esq., in the chair; and Professors A. H. Church, H. Marshall Ward, Drs. Hugo Muller, M. T. Masters, Messrs. G. F. Wilson, W. H. Blandford, R. McLachlan, F. Pascoe, and Albert Michael.

Acari of Sugar-cane.—Mr. Michael reported on mites affecting Sugar-canes in Barbados. Contrary to anticipation, the acaroids belong to the family Oribatidæ, and either to the genus Notaspis or to Damæus, having the appearance of the former, while the internal anatomy is more like that of the latter genus. The species is allied to the English N. lucorum, but is probably undescribed.

Dactylopius (Mealy-bug).—Referring to a communication made to the committee on December 10, Mr. Morris now read a letter from Professor Riley on the use of rosin washes for bark-lice. "If," says Mr. Riley, "the insect is a Dactylopius, the Alexandrians cannot do better than use one of the rosin washes with which we are spraying Icerya so successfully in California." The following extract from *Insect Life* contains a good formula for the purpose:—

"*Rosin Wash for Red Scale.*"—In accordance with instructions, Mr. Coquillet has been making experiments with this wash against red-scale (Aspidiotus aurantii), and after twenty different tests made with various preparations, from July 17 to August 8, the one which gave the best results was found to be composed of rosin, 20 lb.; caustic soda (70 per cent. strength), 6 lb.; fish oil, 3 lb.; and water to make 100 gallons. In preparing this wash the necessary materials were placed in a boiler and covered with water, and then boiled until dissolved, and stirred occasionally during the boiling. After dissolving, the preparation was boiled briskly for about an hour, a small quantity of cold water being added whenever there was danger of boiling over. The boiler was then filled up with cold water, which mixed perfectly well when added slowly and frequently stirred. It was then transferred to a strong tank, and diluted with water to 100 gallons. Neither the leaves nor the fruit was injured, while a large proportion of the scales were destroyed. Those which escaped were either on the fruit or the underside of the leaves. The cost of the wash is 80 cents per 100 gallons, or four-fifths of a cent per gallon. An orange tree 16 feet tall by 14 feet in diameter was given 14 gallons. This, however, seems to us to be an unnecessarily large amount, but upon this basis the cost of spraying per tree is 11·2 cents." *From "Insect Life," Oct.*, 1889, *p.* 92, *U.S. Department of Agriculture.*

The Winter Moth.—Mr. Wilson called attention to a communication in the *Hereford Times* of November 9, 1888, as to the efficacy of greased bands as a check to the insect, and wherein Mr. Cranston says: "I consider that the greasing process which is being adopted is injurious to the bark of the trees, especially to young trees. To the older trees it may possibly not do much harm, but I believe the old plan of painting the trunks of the trees with a solution of quicklime is the best. Some use soot with the lime, but I don't know that the soot is of much consequence except to dull the white glare of the lime. The painting should be done in the autumn."

Mr. McLachlan pointed out that the proposed trap to be affixed to the lamp-post, in the case of suburban fruit plantations, would be practically useless, as only the male insects would be thus captured, the females being nearly destitute of wings, and incapable of flight. All attempts at stamping out the winter moth should be directed to the destruction of the females, which are capable of depositing eggs for many generations in succession without the intervention of the male. The capture of myriads of males would not have the slightest appreciable effect on the fertility of the untrapped females.

Monstrous Cypripediums.—Dr. Masters showed drawings of two Cypripedia, in one of which the three sepals were separate, as in most orchids, whilst in the others there was an adhesion between the median sepal, the lateral petal on the left side, and the lateral sepal on the same side, the adhesion of these parts being accompanied by corresponding adhesion of the labellum to the right lateral petal. The median stigma, G, 1, of the Darwinian notation, was also petaloid.

Keteleeria Davidiania.—Dr. Masters showed a cone sent by Dr. Henry to Kew, from Ychang, and which has special interest as being intermediate in character between the Spruces (Picea) and the Silver Firs (Abies). It is congeneric with Keteleeria Fortunei, a tree introduced to this country from China, but which is too tender for general cultivation.

It was announced that the next meeting will be held on February 11, after the annual meeting, and therefore, possibly, a little later than the usual hour, 4 p.m.

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY.

The annual meeting of the Royal Oxfordshire Horticultural Society was held under the presidency of the Mayor. There were also present Mr. Sheriff Grubb, the Rev. H. A. Pickard, the Rev. R. H. Carsley, Ald. Buckell, G. C. Druce, Esq., Councillor M. Wootten, and Messrs. W. F. Cross, G. Browning, sen., J. E. Jefferies, G. Harris, G. Salter, J. Lakin, J. Mattock, C. Patey, C. Hill, J. Bates, J. Wyatt, J. Hill, McGrail, R. Ryman, J. Basson, A. Cripps, W. Narroway, E. Thorne, A. J. Adams, F. Sellars, R. Bullen, N. E. Minty, C. B. Anstey, W. Edwards, M. Solloway, J. Nix, G. Edwards, J. Fortescue, J. Cullam, E. Moody, H. Farrant, E. Clarke, E. B. Doe, C. Godfrey, C. J. Browning, J. Craddock, J. Filsell, R. W. Soames, W. Greenaway, sec., &c.

The Mayor said he saw there were fewer members present than on previous occasions, which showed, in his opinion, that the subscribers were satisfied with what the society had done. He occupied the chair at the request of the committee for, he thought, the seventh time; he was very pleased to be appointed as their Chairman, as he took a great interest in the Oxford flower shows, for this reason, that it gave so many people very nice half-holidays, and he thought it was the duty of every citizen of Oxford to support the Horticultural Society. (Applause.) He was very glad to find that the last was a better season than they had had for some time, and he hoped this year they would enjoy fine weather and that there would be as good a season as last year. (Applause.) It was very pleasing to him to find that the first show seemed to be a success, and he hoped it would continue to be so because it was held at a time when a great many people were in Oxford, and in all probability as it was more known they would get a better attendance.

The revenue account for the year showed that the receipts had amounted to £596 19s. 3d. altogether, and that after the payment of all expenses there was a surplus on the year of £26 6s. 6d. The balance sheet showed that the liabilities up to the year ending October 31st last were £190 11s. 9d., and that the assets comprised arrears of subscriptions £6 6s., plant, &c., £37, amount in Post Office Savings Bank £110 9s. 7d., and cash in hand £37 5s. 2d.

The election of officers was then proceeded with as follows:—President, the Earl of Abingdon; Treasurer, Mr. Herbert Parsons; Hon. Secs., Mr. John Thompson and Mr. M. Wootton; Acting Secretary and Collector, Mr. William Greenaway. Mr. Carver was elected auditor in the room of Mr. Preston, resigned.

The committee, consisting of 12 members, was then elected, the voting resulting as under:—Messrs. G. Salter, 32; C. Patey, 28; Jefferies, 26; C. Hill, 25; Cross, 24; G. Harris, 21; J. Lakin, 22; and Mattock, 21. Messrs. J. Bates, Smart, and Fortescue, each received 19 votes, and the Mayor said he would give his casting vote to the man he had known longest, and that was Mr. Joseph Bates. The first twelve names are therefore the committee.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

The quarterly meeting of the above society was held on Monday, Jan. 13, at the Caledonian Hotel, Mr. Riley Scott in the chair. Four new members were elected, making a total of forty-two during the past year. The annual meeting will take place on Monday evening, February 10, at the above hotel. Any information may be obtained of the secretary, Mr. W. Collins.

ORCHIDS IN FLOWER.

COLLECTIONS beyond the influence of the fogs, with which cultivators in the neighbourhood of London and a few other large centres have to contend, now contain a liberal proportion of specimens in bloom and present a highly attractive appearance. The houses devoted to orchids within the metropolitan boundary are by no means wanting in attraction, but the fogs experienced a short time since severely thinned the buds of many of the kinds, and thereby materially reduced the several displays. Cattleyas and phalænopsis have perhaps been the greatest sufferers, but the calanthes have by no means escaped, as exemplified by the pale washy appearance presented on all sides by the flowers of C. Veitchi.

ANGRÆCUMS in bloom include the stately A. eburneum, and the singular and extremely beautiful A. sesquipedale, both of which greatly enhance the attractiveness of the East Indian house. The first-named does not find much favour with the present generation of orchidists, although its bold habit and handsome flower-spikes form a striking contrast to the other occupants of the structure. The finest of the forms is that known as superbum, which is distinguished by the larger size of the flowers and the snowy whiteness of the labellum. A. sesquipedale, less noble in aspect than the foregoing, charms by the beauty and singularity of the flowers.

CALANTHES flowering in winter have been so greatly increased of late, chiefly by the effects of the hybrids, &c., that those now in bloom form a large and decidedly important group. To dwell upon the effect produced by the tall spikes of bright pink flowers, namely C. Veitchi, is not necessary so well is that fine hybrid known. Nor is there any occasion to discuss the usefulness of C. vestita rubro-oculata and C. vestita luteo-oculata, whether for the supply of cut flowers, or for adding to the attraction of the orchid house. Several as yet, but little known, and not less valuable than the foregoing, must be mentioned, more especially C. Veitchi superba, a very high-coloured form of great beauty. C. Veitchi lactea, a distinct variety, having milk white flowers. C. porphyrea and C. rosea, two beautiful hybrids raised in the Burford Lodge collection from crosses between C. vestita and Limatodes labrosa, and C. Sedeni, a hybrid raised at Chelsea. With reference to this trio it may be useful to state that C. porphyrea has flowers of a brilliant carmine crimson colour, and is the highest coloured of all the calanthes, and that the flowers of C. rosea are of a pleasing rose colour. C. Sedeni is very similar in character and colour to C. Veitchi, the two chief points of difference being the bright crimson blotch at the base of the labellum, and the retention of colour under adverse atmospheric conditions.

CATTLEYAS make a bright display in the Mexican house, and will render substantial aid in maintaining that structure in an attractive condition for some months hence. C. Trianæ is in strong force, and one of the most beautiful of the numerous varieties that now attract attention is C. Trianæ delicata, remarkable alike for the large size and pleasing colour of the flowers. In striking contrast to this is C. Percivaliana, the prevailing colour rich purplish-rose, the labellum painted crimson and gold. There is a great diversity in the size and colour of the flowers of the several forms of this species, some being so poor as not to be worth the room they occupy. Others, on the contrary, are rich in colour and extremely beautiful. C. Lawrenceana is also variable, but in a less degree than Percival's Cattleya, and good forms are highly attractive when well flowered, the rich amethyst-purple flowers forming a pleasing relief to the more delicate lines of C. Trianæ. The dwarf growing C. Walkeri is also just now in perfection, and suspended in small baskets from the roof it forms a capital companion to the brilliantly coloured sophronites.

CYPRIPEDIUMS comprise so many species and varieties flowering in winter that of necessity they are now in strong force. Amongst others well deserving of special mention are C. insigne Maulei, so remarkable for the broad white margin of the dorsal sepal; C. Schlimi, a charming species, so well known as the parent of C. Sedeni; C. Boxalli, a handsome form of the most distinct character; C. porphyreum, a beautiful hybrid, the flowers produced in large, branched spikes, and of rich carmine hue; and C. Harrisianum, C. Leeanum, C. callosum, C. Dauthieri, and C. Sedeni, four fine kinds, now well-known and highly appreciated.

DENDROBIUMS now flowering comprise some of the most beautiful species in cultivation, and produce a beautiful display. Less showy than many of the other kinds is D. aureum, but its distinctness and beauty fully justifies its having a place in a small collection. The growth is dwarf, and the flowers are produced in neat racemes; the petals and sepals pale primrose, and the labellum crimson purple and yellow. Very showy is D. nobile, which, with a sufficient stock of plants, can be had in bloom fully six months in the year. As we admire the large, densely-flowered specimens that are now so conspicuous in the East Indian house, the utility of the species is at once admitted, as indeed is its right to a foremost position amongst the most beautiful dendrobes we have. Also in full bloom is D. nobile Cooksonianum, a variety in which the petals have a large marone blotch at their base of a similar character to that on the labellum. D. superbiens, a handsome species from tropical Australia, is still flowering finely, and its rich purple flowers, elegantly poised on the slender stalks, at once arrest attention. D. Wardianum is the most formidable rival D. nobile has at the present time, and without pausing to discuss their relative merits, it must be said that Ward's dendrobe should have a place in a collection limited to a score or so of kinds. Hardly less noteworthy, and certainly not less desirable, are D. Ainsworthi, D. micans,

and D. splendidissimum, a trio of hybrids which are well able to render good service in the maintenance of a good display of flowers during the winter months, being free in blooming and attractive in colour.

LÆLIAS in bloom comprise the handsome L. anceps and its numerous varieties, and several other kinds. The typical L. anceps as so well known to those engaged in orchid culture, is dwarf in growth and bears tall spikes of comparatively large flowers of a beautiful mauve purple hue, the labellum marked with bright amethyst purple. It is unsurpassed in effectiveness by any other occupant of the Mexican house of its season, and it is not difficult to account for the estimation in which it is held. Chief among the varieties now in bloom are L. anceps Williamsi, the flowers large pure white marked with purple and yellow on the labellum, L. anceps rosea, the flowers of medium size, white tinted with rose; L. anceps Percivaliana, the flowers rather large, the sepals and petals tinted with lilac and the labellum painted with bright rosy crimson; L. Dawsoni still one of the finest of the white blooms and L. Sanderiana which also has pure white flowers and of great beauty. Two other kinds must be mentioned as being very attractive at the present time, and those are L. alba, a pretty little species, and new L. Gouldiana, remarkable for its dwarf growth and the rich colouring of the flowers.

MASDEVALLIAS do not contribute very materially to the attractions of the cool house at the present time. M. Tovarensis is now in perfection, and good specimens having from fifty to sixty of the chaste white flowers, present a charming appearance. There are a few stray blooms of M. Veitchiana and a sprinkling of flowers of M. Lindeni.

ODONTOGLOSSUMS include a few good things, the most important being the ever-popular O. crispum in great variety. Other species also in bloom comprise O. blandum, O. nebulosum, O. pulchellum, and O. Rossi majus, the last named being one of the most useful of those in perfection during the winter.

SOPHRONITES produce a brilliant effect suspended from the roof, and one of special value for the distinct shade of colour they afford at this season of the year. Another strong claim they have upon cultivators is the length of time the flowers remain in good condition. When placed where the plants will not be exposed to drip or any other form of overhead moisture, the blooms of S. grandiflora, now the most conspicuous, will retain their freshness for fully six or seven weeks.

VANDAS include the comparatively new V. Amesiana, which, if less showy than many of the established species, is a welcome addition to those already in cultivation. It is comparatively dwarf in growth, the leaves are stout and of a dull green colour, and the flowers are comparatively small and borne in erect racemes; the sepals and petals white; the labellum white, marked with rose lilac.

ZYGOPETALUMS have a good representative in Z. Mackayi, one of the oldest, and still one of the best, of the several species in cultivation. The spikes are bold; the flowers large; the sepals green, blotched with brown; and the labellum white, reticulated with bright blue.

NOTES ON PEAS.

PEAS form such an important crop in the gardens of all classes that a brief reference to them at the present time can hardly fail to prove interesting to many of your readers. I do not propose to deal with the cultivation of these vegetables, but to mention a few varieties that have been found of special service in the gardens here.

In the first place I would state that last year I grew about a dozen varieties, and amongst them were Telephone and Telegraph, both of which, as so well known, are remarkable for the large size of their pods, for productiveness, and for high quality. The supplies obtained from them were in due course sent to table when, much to my surprise, they were refused on the ground of their being too large. My noble employer has since told me not to grow them again. The time at which early peas are sown is a matter of considerable importance and, as well known, many gardeners sow in the autumn. But to sow at that season is, in my opinion, quite unnecessary, in fact, undesirable. The crop obtained from the autumn sowing is no earlier than that from the sowing made at the end of the winter, and the produce is not so good in flavour as that obtained from plants grown quickly without any check. Last year, in consequence of a delay in receiving the seeds, my first sowing of early peas was not made until March 6, the varieties being Veitch's Selected Extra Early and Chelsea Gem. From this sowing I gathered my first dish (one peck) on June 14, and obtained supplies from it for some time afterwards. I also saved some seed of Chelsea Gem, and as I was afraid that I should not have sufficient peas in the autumn I made a sowing of the home-saved seed of Chelsea Gem on August 2, and from this sowing I gathered my last on November 2, after having had nine degrees of frost several nights.

The best of the twelve varieties grown proved to be Gladiator, the produce of which was simply marvellous. Ne Plus Ultra ranked next in value, for it is very productive, high in quality, and stands the autumn frosts well, the pods being hidden in the haulm, and therefore well protected. Champion of England is a good variety, but it is hardly required where Ne Plus Ultra is grown. Sturdy is a grand autumn pea, and should be grown in every ordinary garden. I am satisfied that the five varieties mentioned are sufficient for the majority of gardens. Under good cultivation they keep the table well supplied upwards of four months, and in the matter of quality will not fail to give satisfaction. Autocrat and Marvel are both good peas, but hardly wanted where Gladiator is grown. William I. and Daniel O'Rourke are also good, but Veitch's Selected Extra Early is a long way ahead of them both in productiveness and quality.

The peas are sown in trenches, and just as they appear above the surface I give them a good sprinkling of soot, and then cover it with a little soil or fork it lightly in as may appear the most desirable. I am satisfied that no fertilizer suits peas at this stage better than soot. Should it be found with others, as with myself, that the small varieties of peas are more acceptable at the table than those of large size, I hope they will make the fact known, as the record can hardly fail to prove useful, more especially to the raisers of new varieties.

Curraghmore. E. TUCKER.

CHRYSANTHEMUM ECHOES.

WHEN a florist names one of his seedlings after a friend, it may be looked upon as a little compliment or testimony of kind regard. It is usually a spontaneous action, and the idea of anybody asking point blank for such a dedication is, to put it mildly, rather cool. But the climax is reached when a raiser of seedlings publicly prints in his catalogue something to this effect: "The limited number of chrysanthemums I am distributing this year not having allowed me to satisfy all the persons who have asked me to name plants after them, I beg they will send their correct names to me, when I promise they shall be the first in the next lot sent out." It will be interesting to see the new list when it appears next year, and to take due note of those who are so desirous of being immortalized as to make direct personal application for such a horticultural distinction.

IT seems to be an excellent idea to incorporate in the October show of the Aquarium series some classes for chrysanthemums. Usually growers who cultivate any number of plants at all have many flowers during the month of October, and particularly Japanese varieties, that are far too advanced for the November shows. The consequence is they are wasted, but now capital opportunity of turning them to account will be offered, and there will undoubtedly be a fine display.

THE Rev. W. Wilks has drawn attention, in the last number of the journal of the Royal Horticultural Society, to the confusing nomenclature of roses. Almost all he says applies with equal force to chrysanthemums. In one way there is not much in a name, because if a flower is good it will be grown and shown, Agréments de la Nature and Triomphe de la Rue des Chalets to wit. These two varieties, in spite of the length of their names, have for many years remained pretty general favourites, although not so frequently shown now that we have had such surprising acquisitions from Japan. But the greatest confusion possible will certainly occur when the raisers go all round their families and give us new flowers with one surname and perhaps fifteen or sixteen Christian names. It has already been pointed out that the system of nomenclature is faulty but no notice seems to be taken of it. At all events, although we may lament it, no one will seriously dispute the right of a raiser to bestow such names on his gains as he may think fit.

NEW continental chrysanthemums again this past year have not been specially eminent for the position they have occupied. Taking first-class certificates as a test of merit, Delaux only counts eight varieties, of which but four belong to the 1889 set—they are M. E. A Carrière, Lune Fleurie, M. Chas. Lebocqz, and Madame la Comtesse Foucher de Careil. Rozain-Boucharlat's famous Etoile de Lyon was one of the novelties of the year before, and the other French varieties, such as M. Bernard, L'Automne, and M. Pankoucke, which were awarded certificates, had been in our possession for several seasons. The record for the year 1889 may, therefore, be regarded as anything but gratifying to our Gallic seedling raisers.

AMONG the new seedlings for 1890, offered by M. Delaux, I notice several are stated to be seedlings from the well-known jap Edwin Molyneux. It is to be hoped they will do credit to their parentage.

THE Royal Agricultural and Botanical Society of Ghent do not intend to allow the ardour for chrysanthemum culture to cool. They have just announced that another chrysanthemum show will be held in November next, from the 16th to the 19th of the month, both days inclusive.

WHATEVER may be the extent of the enthusiasm for the chrysanthemum in other countries, it must necessarily remain in the rear of ours for a time. In this country in the classes for good prizes, the competition is severe to a degree not imaginable by our foreign friends. I have already mentioned in a former column the numerous entries at Edinburgh, in some of the classes. At many local shows it is not rare to find from ten to fifteen competitors in some of the classes, although, as an exception to the rule, I remember once going to a little show where every exhibitor was a prize winner, and every board of blooms duly ticketed to that effect. Although at Ghent some of the classes were well represented, there were, I fancy, no instances where more than four or five competitors entered in one *concours*. In America a correspondent tells me that what they miss more than anything is that severe competition, which is so interesting. He adds, "If we have two first-rate exhibits in a class we are doing very well."

CHRYSANTHEMUM is an inconvenient word and often curiously pronounced by those who know not much about it. Occasionally we hear "chrysantherum," sometimes "chrysantheum," and other variations. The tendency is always and with all peoples, to cut down lengthy words in common conversation. There was one society I belonged to in which we always called our flowers "chrysanths," another preferred "chrys," the national folk, almost to a man, say "mum," while I believe down Blackheath neighbourhood it is not uncommon to say "chryssie."

IN the January number of the *Revue de l'Horticulture Belge*, a writer calls attention to the necessity for a correct descriptive list of all the varieties of chrysanthemums in cultivation. It is gratifying to find that the interest in the popular flower is becoming more than superficial, and it would not be surprising to find the Ghent society publish an official catalogue.

THE late-flowering show having been held reminds me that in accordance with the usual custom the "Echoes" will cease to appear until the next chrysanthemum season. I therefore bid my readers adieu.

C. HARMAN PAYNE.

CLAY'S INVIGORATOR is described as a "perfect manure for plants," a statement we are not disposed to question, seeing that Clay's manures have long since acquired fame for efficacy and lasting power, and have been in great favour with growers of specimen plants. Samples of the "Invigorator" have been sent to us for trial, which compel us to say once more that we do not undertake the trial of manures. Readers who wish to obtain full particulars of this manure are referred to the manufacturer at Marsh Island, Stratford New Town, London, E.

NOTES FROM CORNISH GARDENS.

DR. JOHNSON has said that our pleasures lie in the anticipation rather than the realization of events; but the tea-imbibing lexicographer lived at a period when a mid-winter railway journey from London to Penzance was not possible, or he would have had to qualify his dogmatic contention. It is all very well for the Great Western Railway Company to publish pamphlets on the desirability of Cornwall as a health resort; but it is their own inactivity which prevents hundreds of people from attempting a journey which the company appears to endeavour to make as unpleasant as possible. Rivalry alone will wake the G.W.R. up to its innumerable shortcomings.

But if one can quite separate one's thoughts from the slowness and the general inconvenience of a twelve or fourteen hours' railway journey, there is a certain amount of consolation to be obtained in calculating upon the probabilities and the certainties of finding certain exotic treasures and rarities "all a-blowing and a-growing" at the other end of the journey.

The first place to which the hunter of horticultural rarities directs his attention, on arriving in West Cornwall, is, of course, Trewidden, the seat of Edward Bolitho, Esq., the father of Mr. T. B. Bolitho, M.P. This place has most of the many rarities without the stiff and formal arrangement of a large botanical garden. The variety is truly bewildering, for Mr. Bolitho spares no expense in obtaining the best and newest species of interesting plants, particularly of those likely to prove hardy in the favoured locality of Trewidden. Trewidden House, which faces S.E. by E., is a plain but substantial building, erected in the earlier part of the second quarter of the present century. It is charmingly situated, with an extensive panoramic survey of the southern coast of West Cornwall, and a sweeping view of one of the loveliest bays in England, with St. Michael's Mount standing out in bold relief.

Visit Trewidden at whatever season of the year we may, the present writer nearly invariably finds both Embothrium coccineum and Cassia corymbosa in flower. The former is comparatively an immense tree of thirty feet high, and quite as many feet in diameter. The Cassia, which has for many years grown in a warm southerly corner trained against a wall, was in full bloom at Christmas, its glorious golden-yellow flowers giving quite a warm appearance to the neighbourhood, in which it grows so freely. Next to it the deep red flowers of an old-established plant of Lapageria rosea stood out in admirable contrast, whilst here and there the last roses of summer were apparently waiting to welcome the earliest of spring. Trewidden, which has a world-wide fame for its magnificent avenue of commoner varieties of rhododendrons, deserves also an equally extended reputation for the extraordinary variety of the newer and choicer species and varieties of this noble genus; indeed, Mr. George Maddern, the genial gardener, who has grown with the place, and who has been here for nearly half a-century, assures the writer that the the collection contains nearly every sort in commerce, and several that have not yet passed into the hands of the trade. Many of them are now in flower, notably a fine specimen of barbatum, which is over seven feet in height. Camellias, too, almost as a matter of course, are also in flower in the dead of the season; and Euryba Gunni profusely so. Among other fine specimens of exotic plants which we noticed flourishing unprotected in the open air here may be mentioned Puya gigas, Chamærops Fortunei, Phormium tenax Veitchi, Dicksonia antarctica, and Eucalyptus coccinea; but to do anything like justice to the place would require an entire couple of numbers of this magazine.

The extreme mildness, and consequent possibilities, of the climate in the neighbourhood of Penzance are further evidenced by the most superficial glance at the garden botany of the Scilly Isles. But here it will be well to warn the too euthusiastic traveller against crossing over to Scilly in winter, unless indeed his stomach be proof against the lively sensations which accompany *mal-de-mer*. The present writer had seven miserable hours (double the usual time) of the worst passage experience during the past quarter of a-century, and his warning therefore should count for something!

Scilly offers some highly interesting phases of study to the horticulturalist. It is also exceedingly interesting in other respects. Bolts, bars, and locks, for example, do not enter into the Scillonian's consideration. Rambling about one bleak and showery Sunday afternoon, we arrived at Rocky Hill, the residence of Mr. W. Trevillick, the pioneer of the narcissi trade. No one appears to have been at home, which was not the slightest hindrance to a saunter through Mr. Trevillick's interesting place. The most noteworthy incidents which strike one on approaching the place are the splendid hedges of Euonymus and Escallonia macrantha, and the numerous and vigorous examples of Dracæna indivisa, which defy the wind. Within these fences are small squares of about a quarter of an acre each, in which the narcissi are grown for market. The fences were originally planted some few years ago to prevent the early potatos from being literally blown out of the ground. At Rocky Hill the usual method of growing narcissi appears to be in narrow beds of two feet wide, with the bulbs almost as close as they can stand.

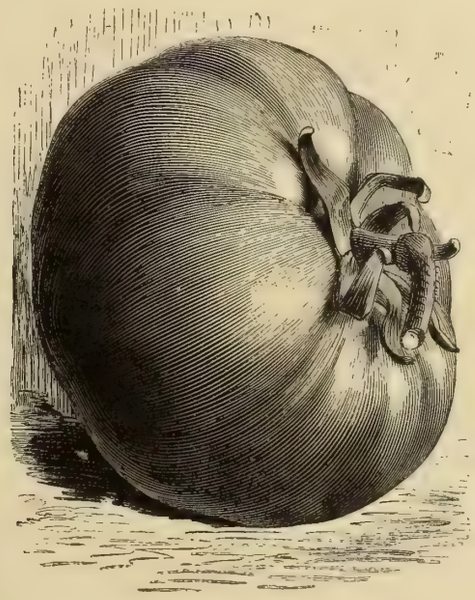
In various parts of the garden we noticed several very fine Arum Lilies in bloom; some sturdy plants of the double blue primrose in flower, which at the best are only washy things; Hydrangeas and fuchsias—an example of the latter seven feet high—all in full beauty, as if the period of the year were June instead of December. But perhaps the most remarkable of all was the gigantic specimen of Abutilon Boule de Niege, which is over ten feet high, and laden with its pretty pure white flowers. Near this, and flourishing with only a small degree less luxuriance, is another variety, with blood-red coloured flowers. The wind has dealt less kindly with the latter than with the former, which overtops its more showy compeer with an apparently conscious superiority. Hollyhocks scarcely past their beauty, and roses just bursting into flower, and the long graceful spikes of Pampas grass, which neither wind nor rain has yet damaged, and Anemone fulgens, may be selected from our long list of plants which have acclimatised themselves so thoroughly at St. Mary's, Scilly.

A TRAVELLING BOTANIST.

NEW HARDY BORDER TOMATO.

Laxton's Open-air.

GROWERS of tomatos in open borders often err in their selection of varieties. They meet with handsome fruits of fine quality, and without considering their suitability for rough conditions, they save the seed and raise the plants, and in the end are disappointed because the crop does not fully ripen in open borders, or even when aided with a sunny wall. It should be understood that varieties differ considerably in relative hardiness. For general purposes out of doors Horsford's Prelude has proved one of the most useful, but the small size of its fruits is a cause of dissatisfaction, although for culinary purposes the size of the fruits is absolutely of no consequence provided dead weight of crop and quality are sufficient. A trial of the leading kinds for out-door culture was made in the R.H.S. Gardens at Chiswick last year, and it was found that comparatively few are adapted for that mode of treatment by reason of the late production and consequent imperfect ripening of the fruits. The best in the whole series was one supplied by Mr. Thomas Laxton, of Bedford, and labelled *Open-air*. This produces fruits of good size and handsome shape, depressed globular, with a few shallow sutures, and a brilliant vermilion colour. The plant is stout and woody, bears freely, and in the Chiswick trial proved to be the earliest to ripen out of 81 varieties. In many gardens the demand for tomatos has far outrun the accommodation



NEW TOMATO, *Laxton's Open-air.*

under glass for them, and Laxton's Open-air variety will prove of the greatest value to supplement the crops grown with the aid of artificial heat.

RAISING CARNATIONS AND PICOTEES FROM SEED.

By J. C. CLARKE.

IT is pretty well known that there is not much difficulty in raising seedling plants of carnations and picotees provided that in the first place the seed is of good quality. It is equally well known that when the plants come in flower they are often very disappointing, and my experience is that the greater the number of plants from a given quantity of cheap seed, the greater proportion there will be of plants bearing single flowers. This to the uninitiated is vexing, but it is one of those things to be looked for. And the reason is that the general public are not prepared to pay for seeds that would produce a good percentage of double flowers. Most people require a large number of seeds for their money, but they cannot have quantity and quality too at a cheap rate. Since they prefer the former, the seedsmen are compelled to meet the case in the best way they can. The class of cultivators I refer to are not aware of the care required to save seed from double flowers. They appear to think that good seeds are plentifully produced, but it is not so. The single flowers seed freely, but the percentage of double flowers from such plants is a very low one, while from seeds secured from the double ones the proportion is often as high as eighty per cent.

Then with regard to securing a variety of colours, it may not be generally known that some varieties seed much more freely than others. This will be sufficient to account for there being several plants of one colour in a single packet of seed. In a general way the very best sorts produce the least number of seeds, so that unless one is prepared to pay a fair price for a given quantity of seed, the prospect of getting many plants that will produce double blossoms is not great.

The quality of the seed varies in this respect sometimes. The reason for this it is difficult to explain, but that it is so is the experience of many. I should be sorry to say a word that would deter anyone from raising seedling carnations. What I want the reader to understand is that there is a great difference in the quality of the seed offered for sale. This is inevitable, as a certain portion of the public will have quantity for their money. In the present state of their knowledge this is a pardonable mistake, but they would be better satisfied in the end if they were content with a less number of plants, the majority of which would produce double flowers.

For years past I have had no difficulty in securing good seed that has given every satisfaction, but I take care to make it known that I shall be content with a little that is good. Last spring I purchased a half-crown packet of seed from a well-known firm. After counting the seeds, I found they cost me a fraction under a penny each. Every-one of these grew. If the plants are of the same quality as in previous years I shall be perfectly satisfied, and I have no doubt they will be. I recommend all who can to save their own seed, but to do so only from the best flowers and those that are first produced on the plants. Side flowers are rarely of any use for seed saving. Should more seed be obtained in one year than is wanted it may be kept over until the next, when it will grow as freely as in the first.

To obtain strong plants the seed should be sown not later than the middle of February, and if it can have a little warmth so much the better. The choicer the strain the more necessary it is to sow early and to raise the plants in gentle heat, as the choice stock is invariably weaker than the more hardy kinds. I like to sow the seed in deep pans of soil, and as soon as the seedlings are large enough I prick them out into other pans or boxes, separating the weak ones from the strong, as I invariably find that the best varieties are amongst the weaker-growing plants. I find also that if there are a few plants growing away from the others that they generally turn out to be single flowers. They verify the adage, that "ill weeds grow apace."

The ordinary border kinds of carnations may be raised in a cold frame or greenhouse, and if only a few plants are required a pot eight inches in diameter will be large enough. In that case the seed need not be sown until the middle of March. The seedlings may then remain in the pot in which they were sown until they are large enough to plant out. Pinks may also be raised in the same way, and if the seed is obtained from a good source some useful varieties may be expected. A few years ago I purchased a packet of seed which cost a shilling. It contained fifteen seeds, nine of which grew into plants, and all but one was good enough for garden decoration. As a matter of fact, quite half the number were worth naming, and I have them now. I mention this case to show that it is not a difficult matter to get up a stock of pinks if care is taken to secure good seed to start with. As I have already said in reference to the carnations, many people are disappointed because they obtain so many plants with single flowers, and when one looks back at the trouble they have given, and the space they have occupied to so little purpose, it is not a pleasant retrospect. But as I have already shown, if the cultivator would deal with a less number of seeds of higher quality, both time and space would be saved, and in all probability some disappointment would be escaped, and in place of it there would be complete satisfaction.

FLOWERING AND FRUITING OF APPLE TREES.

THE paragraph in the GARDENERS' MAGAZINE of January 4 on the influence of the term of flowering of Apple trees on the crop, and the keeping qualities of the fruit trees greatly interested me, as I have given some attention to the subject for some years past. A few years ago I started a plantation of fruit trees in which I test all varieties worth growing, as to the suitability of this climate and to their productiveness. The plantation is useful also in enabling me to keep a check on synonyms and make sure that my stock in the nursery is true to name. I had often heard it said that early blooming was not conducive to a good crop and that late flowering usually meant a good crop in the autumn. From my observations I very much doubted these assertions, and to practically test their correctness I carefully noted the time of the opening of the flowers of the different varieties in 1888 and 1889. The full report would occupy too much space, and instead of giving it I send herewith my observations on some of the best known and leading varieties.

From these observations I have come to the conclusion that the time of blooming has not any influence whatever on the cropping qualities of any variety, and it is doubtful whether it in any way affects the keeping quality of the fruit. If late blooming is conducive to a good crop it might well be asked why should plums (which are usually the first to open their blossoms amongst hardy fruit trees) be generally pretty sure to be productive? I believe that, of late years at any rate, frost has little to do with the failure of the fruit crops; this has more often been attributable to insect attacks, or the imperfect ripening of the wood and buds in the year previous.

As regards the cropping and the time of blooming of the different varieties, I would state that the two first to open their blossoms were Early Harvest and Jennet Moyle, neither heavy croppers, the date being May 13. These were followed by Irish Peach, also a medium cropper, the flowers of which begin to expand on May 14. On the two days following the last-named date some of the heaviest croppers we had commenced to bloom, namely, Keswick Codlin, Lord Suffield, Stirling Castle, Duchess of Oldenburgh, Early Julian, and Manx Codlin. These were followed on May 17, 18, 19, and 20 by other heavy croppers, such as Ecklinville Seedling, King of the Pippins, Yorkshire Beauty, Jolly Beggar, Lane's Prince Albert, Pott's Seedling, and Grenadier. It was also noted that more of our very heavy croppers bloom late. The last two varieties to open their flowers are Bess Pool and Court Pendu Plat, which flowered on May 27. The first of the two is a very shy bearer here, and the other is a fair, but not heavy cropper. But the fact must not be overlooked that some of the shy bearers bloom early and at mid-season. Red Astrachan and Golden Harvey, both poor croppers, bloomed here on May 15, and Irish Gilliflower, another poor cropper, on May 21.

With reference to the late keeping varieties blooming late it may be said that there appears to be something in it, as these good keeping varieties, Bess Pool and Court Pendu Plat, bloom the latest, namely, on May 27 and 29. The best keeping apple we have is Hambledon Deux Ans, which blooms on May 20, and other good keepers, including Duke of Devonshire (very late), Alfriston, Sturmer Pippin, Bramley's Seedling, and Striped Beefing, bloom from May 19 to 21. On the other hand, we have Pearson's Plate, Golden Harvey, and Barcelona Pearmain, all good keepers, which bloom as early as May 15. But it is strange that these all belong to a class of small, high flavoured dessert varieties. It will be seen that a goodly number of the early apples are the first to bloom, amongst them being Keswick Codlin, Red Astrachan, Lord Suffield, Duchess of Oldenburgh, Early Julian, and Manx Codlin, and also that almost the earliest apple (Mr. Gladstone) we have does not bloom until May 21.

These facts all point to the conclusion that good or bad cropping, early or late keeping, has nothing to do with the time of blooming, but is inherent in the variety itself. My experience as to the blooming of plums points to the same conclusion. The first to bloom are Black Diamond, and Reine Claude de Bavay, the date being April 27. Then follow Isabella, May 1; Mitchelson's and Late Orleans, May 2; Prince of Wales, May 3; Early Prolific, May 4; and Victoria, May 6. The last to bloom are Blue Prolific and Peach, May 9; and Pond's Seedling and Late Transparent, May 10.

The following are the dates of blooming, season, and relative productiveness of some of the leading dessert and culinary varieties:—

NAME OF VARIETY.	DATE OF FLOWERING.	SEASON.	PRODUCTIVENESS.
Adams's Pearmain	May 16	Late	Medium
Alfriston	,, 19	Late	Poor
Barcelona Pearmain	,, 15	Late	Poor
Bess Pool	,, 27	Rather late	Poor
Betty Geeson	,, 17	Late	Good
Blenheim Pippin	,, 21	Mid-season	Medium
Bramley's Seedling	,, 20	Late	Medium
Cellini	,, 20	Mid-season	Good
Cox's Orange Pippin	,, 21	Mid-season	Medium
Cornish Gilliflower	,, 21	Winter	Poor
Cox's Pomona	,, 21	Mid-season	Medium
Court Pendu Plat	,, 29	Late	Medium
Duke of Devonshire	,, 19	Very late	Good
Dumelow's Seedling	,, 18	Spring	Good
Devonshire Quarrenden	,, 18	Early	Medium
Duchess of Oldenburgh	,, 16	Early	Heavy
Ecklinville Seedling	,, 18	Autumn	Heavy
Emperor Alexander	,, 21	Autumn	Poor
Early Harvest	,, 13	Early	Medium
Early Julian	,, 15	Early	Heavy
Frogmore Prolific	,, 20	Mid-season	Good
Grenadier	,, 20	Mid-season	Heavy
Golden Harvey	,, 15	Late	Poor
Hambledon Deux Ans	,, 20	Very late	Medium
Herefordshire Beefing	,, 23	Late	Good
Irish Peach	,, 14	Early	Medium
Jennet Moyle	,, 13	Mid-season	Good
Jefferson	,, 15	Mid-season	Medium
Jolly Beggar	,, 19	Mid-season	Heavy
Kerry Pippin	,, 16	Early	Medium
King of the Pippins	,, 19	Autumn	Heavy
Keswick Codlin	,, 15	Early	Heavy
Lord Suffield	,, 16	Early	Heavy
Lane's Prince Albert	,, 19	Winter	Heavy
Lord Derby	,, 22	Mid-season	Medium
Manx Codlin	,, 16	Early	Heavy
Mr. Gladstone	,, 21	Very early	Medium
New Hawthornden	,, 18	Mid-season	Good
Peasgood's Nonsuch	,, 21	Autumn	Medium
Pearson's Plate	,, 15	Late	Medium
Pott's Seedling	,, 20	Autumn	Heavy
Red Astrachan	,, 15	Early	Poor
Ribston Pippin	,, 19	Mid-season	Poor
Reinette du Canada	,, 21	Late	Medium
St. Alban's Pippin	,, 21	Mid-season	Poor
Stirling Castle	,, 16	Mid-season	Heavy
Sturmer Pippin	,, 19	Late	Medium
Schoolmaster	,, 18	Winter	Heavy
Striped Beefing	,, 21	Late	Good
Warner's King	,, 17	Mid-season	Good
Wyken Pippin	,, 22	Winter	Medium

The cropping qualities of the different sorts are taken from my experience of them in this county, and of course may not hold good for all parts of the country. The dates of blooming were taken in 1888, but they varied little in 1889. JOHN WATKINS.

Pomona Farm, Withington, near Hereford.

"ANY DOCTOR WILL TELL YOU" there is no better Cough Medicine than KEATING'S LOZENGES. One gives relief; if you suffer from cough try them but once; they *will* cure, and they *will not* injure your health; they contain only the purest and simplest drugs, skilfully combined. Sold everywhere in 1s½d. tins.—[ADVT.]

EXPERIENCES IN GRAPE CULTURE.

THE excellent article by your correspondent, "J. C. C.," in G. M. for December 21, brings to my mind a few particulars that might with advantage be discussed at this season of the year, when the thoughts of gardeners are ripening to their eventual plans in the coming year, and recounting their successes or failures during the past season. Every gardener should view his position from his own experience, taking into consideration the particular views held by his employer, and very few establishments will be found where the requirements are the same. "J. C. C." mentions four excellent grapes, and speaks of them as being grapes of the future, and he might, in my opinion, have mentioned four other varieties as also being grapes of the future.

In many establishments employers derive much enjoyment from seeing grapes hanging on the vines, and I have a vivid recollection of questions put to me about two excellent grapes—one growing by the side of Black Hamburgh, and the other next to a vine of Madresfield Court. The question put was, "What is the matter with those vines?" My reply was to the effect that these are two excellent-flavoured grapes—viz., Muscat Hamburgh and Mrs. Pince, but they do not appear to thrive so well as their neighbours. Then, in despite of their quality, in regard to flavour, I was advised to remove them, which was done partly by inarching and partly by extending the neighbouring variety. But not being satisfied with the partial failure of Muscat Hamburgh, I made another start with it, and am well pleased with the result.

With regard to Madresfield Court, which I presume "J. C. C." classes with the four varieties named as being introduced with grand characters which they cannot maintain, I may say that we have derived more satisfaction from the culture of this grand grape than from any other which we grow. It has the double quality of handsome appearance, while the flavour will compare favourably, if it does not surpass, any of the black varieties, except Muscat Hamburgh, and now that its particular requirements come to be better understood, it will no doubt become more generally grown. The two most important points in the successful management of this grape is to allow a moderate extension of lateral growth at the time colouring commences, and at the same time to maintain a drier atmosphere, as the fault generally found by growers of this grand grape is its liability to crack. But with the special treatment mentioned above we have no cause to complain, as we seldom get one cracked berry to each ten bunches we grow, or three or four in the whole crop.

Alnwick Seedling is also likely to find a prominent place in not very limited collections, as its beautiful colour, its sweet and refreshing flavour make it a valuable variety to come in between the Hamburgh or summer kinds and the late or winter kinds such as Alicante and Gros Colmar.

I beg here to take a little exception to "J. C. C.'s" opinion as to Gros Colmar being such an easy grape to manage. If that be so why do so many inquiries appear from time to time as to their colouring? So far as my experience goes, and what I have seen at different places, and also at shows, this noble grape is almost as seldom met with in first-rate condition as the good old Hamburghs, which may not be seen in prime condition more than once in every ten times exhibited. I have often heard it said that some red Hamburghs are of good flavour, and have found well-finished examples that have gone off in colour through hanging too long, still very good. But this losing of colour through hanging is seldom met with in Colmars, as Gros Colmar is not usually ripe until November, and, unfortunately, seldom then, and I am firmly of opinion that the complaints generally bestowed upon the flavour of this grape more often arise from not being properly finished than any other.

Does Muscat of Alexandria require a much higher temperature than Hamburghs to ripen it properly? We ourselves have never been in the habit of giving this ever-welcome grape a high temperature, but have been content to allow it to come along gently. The year before last we cut some of the best Muscats of Alexandria and Black Hamburghs from the same house that we have had for years, but there was a wide difference in the season of ripening, the one being ready in August and the other in October, or say the end of September. During the early stages of growth we always maintain a comfortable growing temperature which suits all the varieties; and when the colouring stage with black varieties commences, and air is put on in greater abundance it also suits the Muscat of Alexandria. At this stage the white varieties are better with a little more light. In the Muscat house proper very little difference is made in the temperature, except by closing, or partly closing the house early in the afternoon to allow the temperature to rise considerably from sun-heat. But this treatment cannot well be applied to vines of that variety growing in the Hamburgh house. I well remember the remark made by Mr. Hudson, the able gardener at Gunnersbury House, when I visited him some three years ago. He pointed out to me some handsome and well-filled bunches of Muscat of Alexandria in the Hamburgh house, and he compared them with some of the same variety growing in the next house, and he remarked that he should another year try both houses under Hamburgh treatment, or what I should more properly say Hamburgh temperature. It would be interesting to know whether Mr. Hudson's further experience confirmed the opinion he then formed.

Clarendon Park. C. WARDEN.

PANDANUS ODORATISSIMUS is largely grown in the moist valleys of Arabia, for the supply of the markets in the Tehama district, with the flower spikes of the male form, which alone is cultivated. The flower spikes are highly appreciated for their fragrance, and for personal adornment, being worn by the natives in their turbans like an aigrette

SWEEPING AWAY THE ORCHARDS OF DEVON AND SOMERSET.

I WAS much interested in seeing the above remark in the G.M. for January 4, page 2, knowing as I have many of the orchards lying west of the Quantock Hills, and the Bristol Channel, between Taunton and Minehead, for nearly thirty years. Many of those orchards used to be very productive, and pruned, or more properly thinned, out every second or third year. This was not, as some may suppose, done by inexperienced men armed with a ladder, saw, and billhook, but by men acquainted with the work, with a pruner that may be described as a chisel with a hook a little below the point, and a mallet, the former having a long handle, and with this instrument nearly all the work could be done by the men standing on the ground. All stem suckers, cross, and overcrowded branches, could be readily cut away; also those branches that were too thick to be got off otherwise were easily cut through with a tap or two on the end of the handle with the mallet, and the cut as clean as could be made with a knife. Many of those trees years ago would bear from fifteen to twenty bushels of apples, or, in the words of the country people, one tree would make a barrel of fifty-six gallons of cider. But I quite agree that now many of the orchards are in a dilapidated condition, as there has been little done to them for years beyond, perhaps, planting a tree where one has blown over or died, and but few of those have done any good. I should say that, both in the interest of the owner and occupier, the worst of those orchards should be cleared away and replanted, or there is no doubt what would be much better choose new ground, as there are plenty of good situations that could be chosen along the sides of the valleys. But if such was done it should be doubtless with varieties with a view to supply the market, as it is well known that our forefathers planted with varieties calculated to make good wine which is still drunk with such a relish as would give one the impression that their successors still enjoyed it.

There is little doubt that if the right varieties for the requirements of the present day were chosen and managed with anything like care and skill, there could be almost any quantity of good fruit grown in those districts. Still for one thing, I should be sorry to see the old orchards chopped down, as one does not easily forget the grand sight of beautiful bloom which those orchards were wont to produce years ago, and ropes of fruit in the autumn, with which nearly every branch was brought down with its point towards the ground.

Hall Grove. E. WEBBER.

[To replant the same ground would be to court failure. It is a mistake often made, and is always dearly paid for. It is the worst of practice to plant trees again on ground that has been long occupied with trees. The land should be made arable for some years, and fresh sites should be found for new plantations.]

SPECIMEN CHRISTMAS ROSES.

WHEN describing the Hellebores, or Christmas roses, growing in Mr. Kerswell's nursery at Exeter, which I saw growing there in the past autumn, I said that the plants would grow as well in a position in the full sun as when in the shade. That observation was based on previous experience which I had obtained in the cultivation of these plants. At the time of penning my remarks, I did not think that I should meet with a case so soon that would substantiate what I said with regard to that matter. But within the past few days I have been fortunate enough to do so. On calling upon Mr. Perkins, the gardener at Sidbrook House, near Taunton, I was shown some grand specimens of Helleborus maximus growing in a position in the full eye of the sun. The luxuriance of the foliage and the large number of flowers the plants were carrying, struck me as being very remarkable, and I became curious to know what the treatment had been to secure such grand results. The plants had only been lightly protected in frosty weather by temporary coverings with mats, yet the blooms were not only numerous but large in size and pure in colour. I refrain from mentioning the number of flowers produced by six plants for fear I may be thought to exaggerate, but I do not scruple to say that the foliage is so luxuriant that the flowers are quite hidden by the leaves. I measured the stems of some of the largest leaves, and found them to average one inch in circumference. This will give the practical reader an idea of their vigorous character. On inquiring as to the nature of the soil in which the plants are growing, it was explained that the staple earth had been removed to the depth of two feet, and its place supplied with three parts leaf soil and one part old stable manure. I have seen a good many hellebores in my time growing in a variety of soils and positions, with and without glass protectors, but the plants under notice surpass by a long way all I have ever seen before. The lesson to be learnt from their behaviour is very plain, and it is, that when the roots are placed in the right sort of medium they not only luxuriate, but in a great measure they defy both rain and frost to injure them. J. C. C.

ANCIENT SOCIETY OF YORK FLORISTS, held its annual meeting a few days since when a very satisfactory report was presented by Mr. Lazenby, the secretary. There was a large increase in the list of members, the minor shows and the chrysanthemum exhibition were alike successful, and there is a balance at the bankers of £111 14s. 5d.

LEEDS PAXTON CHRYSANTHEMUM COMMITTEE achieved a great success last season. Commencing operations seven weeks before the date of the exhibition with nothing but the assurance that all the chrysanthemum shows previously held in Leeds had been failures, they held a very successful show and obtained a balance of £59 1s. 3½d.

NEW CULINARY KEEPING APPLE.

Vicar of Beighton.

It is with great pleasure we introduce to our readers a new and excellent culinary apple of the class that so much needs enlarging, the late keepers. Although varieties abound even to the perplexity of cultivators, we have not so many that are good in April and May that we can afford to regard with indifference the advent of so handsome and substantial a fruit as the one now before us. Its fame has gone before it, and in all probability it will soon obtain a position of importance for market purposes with those growers who are content to keep apples until the market prices will pay for the keeping.

Vicar of Beighton was raised in the vicarage gardens at Beighton, Norfolk. The fruit is large, roundish, depressed, the eye closed, in an even basin, the stalk woody, inserted in a slight depression. The colour is deep, bright crimson, mottled all over with green and yellow, the colours being brightest on the side next the sun. The flesh is pale yellow, firm, juicy, agreeably acid, and of the finest quality when cooked. When well kept it retains its beauty and good qualities unimpaired until April or May.

The stock is in the hands of Messrs. Daniel Bros., Norwich.



NEW CULINARY APPLE, *Vicar of Beighton* (Colour deep crimson mottled yellow and green).

PARAFFIN FOR VINES.

For the information of "M. B.," I give my experience of the use of paraffin for the destruction of mealy bug on vines, which is one of the best of insecticides when used with care, and in a thorough manner. I do not believe in scraping the bark of the rods until the stems are made as smooth as walking-sticks, as I consider this a barbarous practice, but any loose pieces of bark should be removed, which is best done by holding the rod in the right hand firmly and with the left hand rub around the bark, which will displace easily any loose pieces. It is in such places as these where the mealy bug lurks during the winter months. Around the spurs all loose bark should be removed also, as between the spurs and the rod there are good hiding-places which, if not properly attended to, all other efforts to dislodge the enemy effectually will be futile. Therefore special attention should be given to the removal of loose bark around the spurs. When the bark has been thoroughly examined, and any difficulties removed which would prevent the washing reaching all parts, the vines are ready for the application of paraffin.

Previous to this the woodwork of the roof and the glass should be thoroughly cleansed, as it would be folly to wash the vines first and then the woodwork, as from the roof some of the mealy bug is almost certain to be dislodged, falling perhaps on to the washed vine stems, rendering these little better—and perhaps the worse—for the labour spent. Thoroughly wash every particle of the woodwork with hot water and soft soap, working it well into the crevices; the wires should be similarly treated, removing any tendrils that are entwined around the wires, for under these may be lurking some mealy bug. Where it it is possible, all the woodwork should have a coat of paint, which will do much to eradicate the enemy it is so desirable to get rid of. The walls should be well scraped where there are signs of green upon them before another coat of lime is applied, which is a capital purifier. The lime should be put on as hot as possible, using it in a quick state. Should there be any suspicion that the lime is not of the freshest nature, when slaking it ready for use, apply hot water to it, which will help to renovate its declining properties.

When these preliminaries have been performed, then comes the time to set about the washing of the rods. Take a quarter of a pound of either soft soap or gishurst compound, dissolve it in a gallon of soft boiling water; take a 2½-inch potful of paraffin, stirring the whole violently, which with the soft soap and boiling water will render the paraffin easier of mixing with the water. Then, with a suitable hard brush thoroughly wash the rods with the mixture at a temperature of about 120 deg, taking care to leave no crevice or part dry, but thoroughly saturating the whole. In a fortnight's time, if any suspicion suggests itself that any insect life still exists, repeat the dose. All loose soil on the surface of the border should be removed, replacing it with fresh compost, as in the dry soil some mealy bug is sure to be secreted, and in the spring time will rise into active life as heat is applied to the vines. No matter how carefully the washing process is done there is almost certain to be some of these objectionable insects still alive; and about April, when the vines are clothed with foliage, they will make their appearance in the case of early forced vines, and later of course for those started correspondingly. A weekly hunt should be made for stray enemies. A small camel-hair brush should be dipped in methylated spirits, just simply touching any exposed mealy bugs which have previously escaped. S. P.

POTATO, WHITE BEAUTY OF HEBRON.

The cooking quality of this potato at the present time here is quite of the best, and has been since we commenced to use this sort in September. When cooked the flesh is especially white, very floury, and quite tasty, as every potato should be. I am not like some persons, who prefer whiteness to flavour. I like a potato for its flavour even if it be of a yellow colour, and not simply for its appearance. Many potato eaters say, "I like to see them white," so do I, but flavour I say is the first consideration. This variety crops well, making but little haulm, and does not appear to be much troubled with disease. As a field potato on a chalk soil it is capital for producing a winter supply of clean, almost eyeless, tubers. M.

CAPSICUMS.

CONSIDERING that well-grown capsicums are of some importance as decorative plants at a time when material of the kind is running short, gardeners who are responsible for aiding in house embellishment as well as in public exhibitions may be advised to give a reasonable share of attention to these plants. To grow them is a matter of the most commonplace routine. The seed is sown in February and March in light soil on a mild hotbed, and the plants are in due time potted singly in small pots, and shifted on as needful until they remain in 24 size for fruiting. Nice little plants may be fruited in 32 size, and a few of the border kinds may be potted on to 16's or 12's. But there is some merit in making fine plants in smallish pots, and over-potting is a dangerous business. A light rich soil is required, and the plants must be near the glass in greenhouse temperature. They may be planted out in a frame in May if desirable, and treated as half hardy plants that may be fully exposed after the 1st of June, and they may also be grown in the stove, although in this case they will give some trouble by the appearance of red spider. In the shifting and general management the usual rules prevail; these plants being by no means peculiar in their requirements. A little stopping may be needful to secure nicely-balanced specimens, but as a rule the more naturally they are grown the better.

In selecting varieties the ultimate uses of the plants have to be considered. If required for ornament only, the more distinct and showy kinds producing medium-sized fruits are to be preferred. But if for culinary purposes a few of the "sweet" capsicums should be included, as these are employed to flavour various dishes, and so far from being pungent may be eaten with safety, although no one would make a banquet of sweet peppers, for they are not so sweet as to be in demand as fruits to be "eaten from the tree." For the flavour they impart they are much valued, and the secret of success in using them consists in steeping them for a few minutes in the sauce or gravy they are intended to flavour and then removing them.

The *Common Red* and *Common Yellow* capsicums will be found sufficient where only a few handsome plants are required. The *Red Tomato*



NEW CAPSICUM, *Celestial Pepper* (Fruits at first yellow, afterwards brilliant scarlet crimson).

capsicum is extremely handsome, and the plant is of bold, vigorous growth. The *Monstrous* has twisted fruits. Messrs. Vilmorin presented at the Vegetable Conference some new and beautiful varieties. Amongst them we noted *Golden King*, with large fruits of a brilliant deep yellow colour; *Sweet Mountain*, a sweet pepper, large, brilliant crimson; and *Large Bell*, the fruits of immense size and of a fiery crimson colour. An extremely beautiful novelty is the *Celestial Pepper*, here figured. It fruits early and freely; the fruits are at first yellow, after scarlet crimson. There is no more useful pepper in cultivation.

METEOROLOGY OF 1889.

By H. COURTENAY FOX, M.R.C.S., late F.R. Met. Soc., Cornwallis Gardens, Hastings.

ON glancing backward over the meteorological record of the past five years the first thing that strikes one is the low temperature that generally prevailed throughout this period. The most marked examples of this occurred in the cold and wet autumn of 1885; in the unusually cold and dry February of 1886; in the very cold, harsh spring and autumn of 1887; and in the latter part of the winter and first two months of the spring of 1888. Occasionally the long wave of cold was, from some unknown cause, arrested for a moment, and a warm eddy took its place for a short time, and then was merged in the stronger current and lost. During these five years there were but seven very warm months. These exceptions are sometimes as interesting as the rule which they are said to prove, and therefore I need hardly apologise for placing them once more on record. They were: February, 1885; October, 1886; June and July of the Jubilee year; November, 1888; and, lastly, May and June, 1889.

The following table exhibits for 1889 the mean temperature and rainfall of each month at the Royal Observatory, and their departures from the averages of 48 and 74 years respectively:—

1889.	Mean Temperature. Degrees.	Departure. Degrees.	Rainfall. Inches.	Departure. Inches.
January	37·1	—1·3	0.84	—1·04
February	37·0	—2·4	2·20	+0·64
March	40·6	—0·9	1·32	—0·22
April	45·7	—1·2	1·85	+0·31
May	56·5	+4·0	3·30	+1·24
June	61·4	+2·5	2·07	+0·09
July	61·0	—1·2	2·07	—0·48
August	60·0	—1·4	1·81	—0·56
September	55·8	—1·2	1·68	—0·72
October	48·6	—1·5	3·91	+1·11
November	44·3	+0·9	0·79	—1.54
December	37·6	—2·3	1·44	—0·55
The Year	48·8	—0·6	23·28	—2·0

TEMPERATURE, &c.

The mean temperature of 1889 was 48·8 deg., or 0.6 deg., below the average of 48 years. The maximum in the year was 86·6 deg. on August 1, and the minimum was 18·7 deg. on March 4, so that the annual range was 67·9 deg. The last five Januaries were all under average, but none of them was very cold. To find a severe one we must go back to the memorable trio, from 1879 to 1881, when we felt some of the sternest rigours of a "good old-fashioned winter." The weather during January, 1889, was controlled by a great area of high pressure, which covered not only the British Isles, but the greater part of Europe. At Moscow, the barometer rose to 31·23 in. on the 14th. Consequently we had a settled state of foggy, misty, and gloomy weather over England, with very little rain, but with no great cold, though a temperature of 14 deg. Fahr. was once recorded at Cambridge. February was colder than January, and a dull, squally month, with frequent snow and rain. The worst periods were from the 9th to the 13th and from the 23rd right on to March 5th. Harsh winds from the north and north-west prevailed almost continuously over Great Britain and the north-west of Europe. Sometimes they attained the force of gales, with snow and hail, and even thunder and lightning. Our western coasts were strewn with wrecks, and three trains were at once snowed-up on the Scotch railways, one of them being detained for sixteen hours. The mean temperature of the winter (December to February) was 38·3 deg., or 1·1 deg. below the average, and its rainfall was 1·5 in. less than the normal. It was distinctly more temperate than either of the last three cold winters, and although (as we shall see) it lingered late into March and April, its touch was gentler far than in 1887 and 1888. There were fifteen mean frosts and two entire frosts in the three months. The former were of about the normal frequency, but the latter were not quite half their average number. (Those readers who may have seen my former essays on this subject will scarcely need to be reminded that the term, mean frost, is applied by me to all cases where the mean of 24 hours was at or below 32 deg., whilst entire frost denotes that the highest temperature was not even above the freezing point). March gained an unenviable distinction in the west of England by the alarming floods, due to heavy rain falling on snow-covered and saturated soil. The water stood five feet deep in the streets of Taunton, stopping the railway traffic, and even compelling the passengers to sleep in the trains. Bath was transformed into an inland Venice. In the neighbourhood of Bristol (where 3·4 inches of rain fell in three days) some boys were seen paddling a boat among the tree-tops in the fields. May was, with five exceptions, the warmest on record, back to 1815. The temperature exceeded 80 deg. on three days, the maximum being 85·2 deg. on the 23rd. The atmosphere must have been in an abnormal condition, for several solar halos and a mock sun were seen, and thunderstorms were frequent, and at times very destructive. At the end of the month a brief shock of earthquake was felt in London and on the south coast, as well as in Paris. As a whole, the spring was moderately warm—the first warm one since 1884. Though very deficient in sunshine, it was a fairly genial season, and the vegetation (which had been backward at first) was brought rapidly forward by the steady moisture of April and May, the freedom of their nights from frost, and the great warmth of the latter month.

June was hotter than any former one since 1859, with the sole exception of 1868. The fine drying weather of its latter part enabled the farmers to secure one of the largest crops of hay than has been gathered for many years —the "wat May" brought them a "fu' stackyard." Leaving June, we find ourselves once more struggling with the long, cold wave, which, with one short interlude in September (to be presently noticed), maintains its ascendency until the threshold of November. As a whole, the summer, from June to August, was of average temperature and rainfall. The thermometer rose to 80 deg. and upwards six times in June, twice in July, and three times in August. The maximum was (as before stated) 86·6 deg. on August 1—by no means an excessive temperature.

What do the records of past summers tell us as to the prevalence of temperatures of 90 deg. and upwards (which, for convenience, I have designated hypertherms)? Looking back over thirty-four years, it appears that in twenty-one of these there were no hypertherms at all at the Royal Observatory, while the remaining thirteen years numbered between them thirty-three hypertherms in all. The grand summers of 1868 and 1876 possessed each seven of these extreme temperatures. Those of 1859 and 1881 had four apiece, but no other year possessed more than two. The absolutely highest temperature of the whole series was 97·1 deg., which was registered on St. Swithin's Day, 1881.

The lovely little bit of second summer in September is worthy of a few words of grateful remembrance. The temperature of the five days, from 9th to 13th, averaged nearly 8·0 deg. above the normal. The 11th was especially sultry, and registered a maximum of 81·8 deg. The fine dry weather of this month was of much service to the harvest; but a great bulk of cereals had been already laid—in part by wind and rain, and in part owing to the thinness of the straw. There was very little trouble from insect or fungoid pests, and the crops which down to July made a splendid promise, ended by a performance little above the average.

The reinvasion of cold in mid-September was very abrupt. The mean temperature declined from 66·8 deg., on 13th, to 50·6 deg. on 16th, that is 16·2 deg. in three days. The weather became very cold, with occasional hoar frost and morning fogs, and this in spite of some days of beautiful sunshine. October was wet and chilly, and at times very windy. A severe gale on the 7th effected a breach in the massive breakwater at Holyhead, and for a time endangered the lighthouse erected on it. Why have so many recent Octobers been cold? If we write down the seven coldest ones of the past seventy-five years, we find that no fewer than five of these have occurred within the last eleven years. This is a curious fact that is difficult to account for, and I offer it for the consideration of those who may think that the "good old times" were colder than the present degenerate days.

November was a very mild and dry month, and roses and dahlias were in bloom out of doors at Edinburgh. But a sudden change occurred near the end of the month, with occasional rain, snow, sleet, and lightning. This early spell of sharp wintry weather continued, with little interruption, from November 26 to December 15. Warm and generally muggy weather then prevailed for about eight days, and Christmas morning rose bright and clear, with a good drying easterly wind, and some seasonable frosts accurred in the closing days of the year. There were six means frosts in this month, and one entire frost, and the minimum temperature was 22·0 deg. on the 29th.

RAINFALL.

The aggregate rainfall for the year was 23·3 in., being 2·0 (or 8 per cent.) under the average of 74 years. As the previous year had exceeded the average by just this amount, they balanced one another. The number of so-called rainy days was 159 (slightly above the normal), and ranged from six in June to nineteen in February. There was but one day at Greenwich on which the rainfall amounted to one inch or upwards. This was Whit Monday, June 10, when it poured continuously, with a north-north-east wind, and 1·4 inches of rain was collected in the gauge.

On the other hand, there were some periods of comparative drought. Thus, in 22 days ending July 7 only 0·02 inch fell; there was no rain in the last week of August, and none in the fifteen days ending with September 18. Snow was recorded twenty-three times, of which no fewer than thirteen occurred in February. The last snowfall in the spring was on March 21, and the first occurrence in autumn was on November 27. The curious and rare phenomenon, known as red rain—apparently due to a fungus present in the air—was observed at Cardiff on May 24.

SUNSHINE.

The following table gives the mean daily duration of bright sunshine in each month; its percentage on the possible sunshine (so-called); and its departure from the average of ten or eleven years:—

1889.	Mean Daily Duration of Bright Sunshine. Hours.	Percentage. %	Departure from Average. Hours.
January	0 6	7	−0·3
February	1·4	15	−0·1
March	2·5	21	−0·7
April	2·9	21	−1·2
May	5·6	36	+0·0
June	6·5	39	+0·5
July	4·5	28	−1·3
August	5·5	38	+0·5
September	4·2	33	+0·5
October	2·5	23	+0.2
November	1·1	13	−0·5
December	0·7	9	+0·0
	3·2	26	−0·2

It will be seen that the mean amount for the year was at the rate of 3 hours 12 minutes daily, equal to about one-fourth of the actual time that the sun was above the horizon. The duration was also 12 minutes shorter than the average per diem. We notice how poor is the record in January, which bears witness to the prolonged foggy and gloomy weather; but we may remark, in passing, that there was three times as much sunshine at St. Leonards in the same month. June was a bright month, and afforded some telling examples of the uncertain and capricious prevalence of sunshine. Thus, from the 8th to the 15th (a period of eight days) only 3·3 hours of sunshine were registered altogether; but during the next seven days there were 65·3 hours (that is, twenty times as much sunshine) recorded! The best day's sunshine in the whole year was 13·2 hours on May 24. This amount was equal to 83 per cent. of the possible sunshine.

The use of instruments to record the duration of bright sunshine has added a new interest to meteorology. At present we are too near the time of their introduction to have the advantage of comparing the observations of to-day with an average derived from a long course of past years. But this slight drawback will diminish with every year. One cannot but feel some surprise that the principle of the burning-glass was not long ago applied to this practical service of recording the duration of bright sunshine. Probably more often than is imagined we stand unconsciously on the verge of new inventions and discoveries, little deeming how nearly we have approached to their realization.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

ORCHIDS in bloom form a comparatively large group, and produce a bright display of colour. Conspicuous in the several houses are Angræcum citratum, A. eburneum virens; Barkeria elegans; Brassavola Digbyana; Burlingtonia candida, B. venusta; Calanthe bella, C. vestita rubro oculata, C. vestita luteo-oculata; Cattleya Trianæ; Cœlogyne cristata, C. speciosa; Cymbidium giganteum, C. Mastersi; Cypripedium Leeanum superbum, C. Sedeni; Dendrobium Ainsworthi, D. superbiens; Limatodes rosea, L. rosea superba.

THE HOUSE.

ONE of the most essential points in the management of ornamental leaved plants employed in the embellishment of indoor apartments is the maintenance of the leaves in a thoroughly clean state. At no season of the year does this matter require closer attention than during the winter, for owing to the fires being constantly burning, the leaves become so quickly covered with dust that unless the plants receive frequent attention they have an unsatisfactory appearance, and suffer much in health. Syringing should not be resorted to at this season of the year, and for the removal of the dust there is nothing to equal careful sponging. To many this will perhaps appear a very tedious process, but, as a matter of fact, the leaves of a comparatively large specimen may be thoroughly washed in a very few minutes, and the number that can be conveniently accommodated in an ordinary apartment will not be found to impose a very heavy tax on time and patience. It is essential to the proper performance of this work that a perfectly clean sponge and tepid water be employed. Birds of all kinds require rather liberal feeding, and to be kept moderately warm and free from cold draughts, which are most injurious in their effects; at the same time they must not be coddled to their injury.

CONSERVATORY AND GREENHOUSE.

CLIMBERS in conservatories require attention now to cut out dead wood, remove any pushing buds that are badly placed, and train in young shoots where desirable.

HERBACEOUS CALCEOLARIAS ought now to be growing freely, and nothing will suit them so well as a warm moist atmosphere.

FUCHSIAS for the conservatory may be obtained with very little trouble by striking cuttings now, and growing them on rapidly. Shift as often as they fill their pots with roots until they are in those six inches in diameter, and then allow them to flower. If not stopped at all, but simply kept growing, they will make handsome plants, averaging two feet high and two feet through, covered with bloom, in July.

GREENHOUSE to be kept clean and airy, and the whole of the stock to be revised, that there may be no propagating of useless stock and no delay in securing stocks of things really desirable. Nearly all the small plants from cuttings of last autumn will now require to be repotted, and as they are now intended to grow a generous soil may be used, rather rough, turfy, and quite sweet. Fill in round the roots with a fine sandy mixture. Keep close till they make fresh roots.

NERIUMS require to be started in a brisk moist heat, and to have abundance of water as soon as the sap is fairly in motion. See that they are free from scale and all other vermin. Old plants should be shaken out and repotted in equal parts peat, loam, leaf-mould, and rotted cow-dung.

ORANGE TREES to be well cleaned before new growth commences. Top-dress with fat dung, and give the roots a good soaking with tepid water.

ORCHID HOUSE AND STOVE.

ACHIMENES required in bloom early in the summer must be started now, and the best place for them is the propagating house or stove.

GLOXINIAS started now will make rapid growth. In potting these use the compost in a moderately damp state, and give no water until the bulbs begin to grow, after which supply it with caution until the plants have a pretty good show of leaves.

ORCHIDS will in many cases require to be repotted, after which they must have the warmest end of the house. Those beginning to grow that do not need a shift should have a little of the old surface material removed, and its place supplied with fresh; at the same time make fastenings safe, and repair blocks and baskets.

FORCING AND FRUIT HOUSES.

CUCUMBERS will soon be growing freely, and as the days lengthen they will benefit by a little extra heat. The temperature may now be allowed to rise to 75 deg. Train the plants quite ten or twelve inches from the glass; if nearer, the leaves are occasionally broken when the lights are moved.

MELONS for early crops to be put out on their fruiting beds as soon as they have filled five inch pots with roots. They should be kept in vigorous growth from the first, and when turned out have an ample and healthy foliage. The bed should be in a sweet condition to give a lasting and steady heat, and the soil for the surface should consist chiefly of rotted turf and loam. Melons require a more free ventilation than cucumbers, and a few degrees more heat will allow of ventilation without any risk to them.

PEACH AND NECTARINE trees indoors will set their fruit more freely if there is a good breeze through the house every day; the atmosphere at the same time to be kept as dry as possible. Peaches that have set fruit to be only partly thinned, so as to leave room for another thinning. Cold draughts are very injurious, and it is important to keep the temperature steady, and give air freely on fine mornings.

STRAWBERRIES coming into fruit need abundance of water, and occasionally liquid manure. Give as much air and light as possible, to ensure well-flavoured fruit, and those that set heavy crops thin to a moderate number, or the berries will be small.

VINES started now will not need so much caution as to raising the temperature as those started in December, as there is now more solar light, and vegetation is becoming active. Use the syringe freely among vines newly breaking, but sparingly, or not at all, to vines in flower. The bunches of vines in the early house to be thinned as soon as the berries are of sufficient size. Tie in the young shoots, to prevent the tips touching the glass, and remove laterals early.

FLOWER GARDEN AND PLEASURE GROUNDS.

ANNUALS wanted in large quantities should be sown in pans and placed in a pit.

AURICULAS are by no means difficult to raise from seed, and now is a good time to sow it. Use large shallow pans filled with fine soil, consisting chiefly of loam from rotted turf, leaf-mould, and peat. Press the soil firm and soak well with boiling water. When the soil is cold, sprinkle the seed on the surface, and lay a flat tile or square of glass over each, and place the pans in a cold frame. Leave them alone for a fortnight, then if the soil is getting dry place the pans in a vessel of water, so that the soil will be moistened by absorption without washing the seeds off the surface.

BEDDERS of all kinds may now be propagated in quantity. The reminder may be useful that, generally speaking, cuttings put in now make fine plants and bloom early; but if deferred beyond this time the plants must be comparatively weak when put out, and an early bloom is out of the question

RANUNCULUSES and ANEMONES to be planted when the weather is open in beds of sound loam, well drained and well manured. Place the roots in open trenches two inches deep, which are to be previously sprinkled with coarse sand, and then cover with the soil that was taken out.

ROSES may be planted, and plantations that need trenching and manuring may be lifted for the purpose. Put strong stakes to all newly-planted standards. Be in no haste to prune roses yet; a few for early blooming may be cut back, but the general stock should remain unpruned until March.

KITCHEN GARDEN AND FRAME GROUND.

EARLY sowings of seeds of summer crops should be made soon on warm rather dry soils; but on cold damp soils there is really nothing gained by early sowing; for if bright weather brings up the plants, the next change to cold and wet kills them off, and the vexation is greater in proportion to the extent of the original promise of forwardness. Take advantage of fine weather to complete all digging and manuring; in fact, let outdoor work now take precedence of everything else. Crops that are specially valued for earliness, such as saladings, may be greatly helped by means of warm borders under good walls, and protection with straw or reed mats.

ROOT HOUSES should be properly ventilated and the stores examined frequently at this season of the year, for the fœtid exhalations from decaying vegetables is very injurious The best temperature for the root house is one as low and equable as possible above freezing. Protect the walls with a bank of earth outside, if exposed to the weather. It is most desirable to have these structures partly above and partly below the general level, and to bank up the soil against the walls, and then plant the banks with trees and shrubs of medium growth.

VILLA FARM.

The feeding of poultry at the present time must have special attention, and laying hens must have a sufficiency of food or the eggs will be few in number and of indifferent quality. Some little difference of opinion exists as to the food most suitable for laying hens, but, taking all things into consideration, there is not perhaps anything better than maize, more particularly during the winter, with a moderate quantity of green vegetables and a small proportion of scraps from the kitchen. Maize is perhaps a trifle too fattening in its tendency, but this a matter of less importance in the winter than in the summer, and it requires no preparation, a matter of no small importance in cold weather; it is readily consumed by the poultry, and the sparrows, by reason of its size, cannot pick it up. A mixture of bran and middlings is considered by some of the most experienced American poultry keepers as the best egg-producing food that could be prepared. The bran and middlings are mixed together in the proportion of five parts of the former to one of the latter, and the mixture has poured over it sufficient boiling water or milk to moisten the whole without making it at all wet. If the birds do not take to it readily the sprinkling of a small quantity of Indian meal over it is suggested, and it is strongly recommended that no more should be prepared each morning than will be consumed during the day, and for the evening meal a mixture of maize and wheat is considered the best. Pullets from which the supplies of eggs later on are expected, must also be well fed, or they will soon fall away, and the returns will be less satisfactory when they begin to lay than could be desired. Cockerels required for the table must, in common with the laying hens and the pullets, be kept in good condition, for when half-starved, and then highly fed to bring them up to the mark again as quickly as possible, they incur a larger outlay for food, and are not so good eating as when supplied with a sufficiency of food throughout.

THE PROPOSED HALL FOR HORTICULTURE.

ON Tuesday, January 14, I had an opportunity of discussing the proposal with several friends at the meeting in Westminster, and I am well satisfied with the tone that prevails amongst men who are at once leaders in horticulture and in great business undertakings. The hopeful spirit that now appears in the consideration of such a project contrasts strangely but pleasantly with the despondency that years of forbearance and vexation had engendered in the later days of the unfortunate occupation at South Kensington when the R.H.S. exhibited symptoms that by some were mistaken for approaching dissolution. It was then foreseen, as it is now, that in the event of the old phœnix renewing its youth, it would need a nest to sleep in and a sky to fly in; and it was neither this nor that man's hap to conceive the idea of a home for horticulture. But so far as the matter obtained casual attention, the general opinion appeared to be that the society must provide for itself, and therefore must wait until rich enough. Whether wisely or unwisely, I certainly did at times urge that the society itself need not be concerned about building and incurring debt; all it need do would be to pay a reasonable rent for a suitable place, and as for the rest, the commercial principle might be trusted in this as in other things. Messrs. Cannell and Sons profess to have originated the idea of a hall for horticulture, and I should be very sorry to damage their sense of satisfaction, and as I have made no such claim, there need be no conflict, save, indeed, as to the ways and means, for at that point I must leave them to form their party and develop their plans. But I will warn them in time that a sum of from twenty-five to fifty thousand pounds will be required for the thing that is wanted, and one thousand, perhaps, might be, with good management and great effort, scraped together, and then —Well, beyond that they probably would not proceed and the end would be as Messrs. Cannell hopefully anticipate, "a disused church or chapel," to be "utilized so that the society could call it their own." I have no ambition to appropriate the idea; Messrs. Cannell and Sons are, in respect of any possible purloining on my part, as safe as if they had kept their dignified ideas entirely to themselves.

It does not appear that in the whole of this great metropolis there is any such respectable centre for the association of men of science and lovers of such arts as horticulture may be honourably associated with, whether for corporate

action in a common cause, or for their several separate labours, discussions, and festivities. The peculiarities of the negative case were forced upon the attention of the gentlemen who went forth to find a place of meeting for the R.H.S., and could find nothing better than the Drill Hall in Westminster. There are any number of places in which men may meet conveniently and with light enough for the display of plants, but there is usually a serious objection of no subtle nature, but flagrant and notorious. The case does not affect us solely; it is one of general public interest, and bears directly on the round of recreations that are in daily demand, and abundantly pay their way in proportion to their merit and the cleanness of the management. Establish a handsome hall in a spot commanding a constant flow of traffic; here initiate daylight occupations for the scientific, and evening entertainments for the people, and you will not fail of your reward, which will doubtless correspond with your deserts, and will crown good management with complete success. Our fortnightly meetings would soon acquire renown in a place reasonably adapted for them, and a flower show under the electric light, with suitable accessories, would do for horticulture what has never been done yet—we should outdo the "palmy days of Chiswick," minus the dreadful weather that first abolished Vauxhall and then applied the surplus of its savagery to the best flower shows of this nineteenth century. A thousand uses for such a hall would arise as it acquired a name and a place in the economy of society, and the life of the thing would be in its independence and respectability. As an arena for lions and lambs, as a home for the trapeze and the wire rope, as a mere shelter for so many drinking bars, it would be a failure first, and finally a disgrace and a curse. That it would fail if perverted from the purpose for which it is proposed cannot be doubted, and upon that assumption may be founded our expectation of success. We want a beautiful building, with sufficient space for half-a-dozen meetings to be held simultaneously, and a noble hall abundantly lighted both by day and night, with, perhaps, a bijou plant house, in which subjects requiring to be on the spot for a few days or more might be kept under observation, and flowered or fruited without disturbance, or danger of transit at unseasonable times. The Weather plant offers an example. It has been under operation for forecasting in a house in the R.H.S. Gardens at Chiswick, and has been seen by some dozen or score of persons only. In a conservatory on the Thames Embankment it would have been visited by hundreds, possibly by thousands.

The kind of institution I have in view should be somewhat of a costly affair, and the requirements of the R.H.S. should have direct and primary attention in the original design and its several details. It need not be said that under present circumstances the R.H.S. could not pay for such accommodation as it is proposed to provide, but it is a fair speculation that it soon will be able. In the meantime I wish this point to be kept in view, that the edifice suitable for horticulture will be suitable also for many other purposes that may be honourably and usefully associated with horticulture. There is no such hall as we require, but there are a thousand uses for such a thing from the moment you have established it. To be safe against perils that are better understood than explained, you have but to adopt as the foundation of the business that the edifice shall be used only for such purposes as consist with the advancement of science, art, and literature, and all the rest will turn on management. Shirley Hibberd.

Kew, January 21, 1890.

VALUE OF A GOOD SEED BED.

Among the things that are well understood in this country, is that good tilth is one of the first essentials in the seed bed. But we little realise how great is that influence on the actual crop gathered into the barn. A little fact sent out by the Arkansas experimental station as to the effect of good cultivation is well worth giving here, as it is full of thought. The experiment was made to see the effect of extra working on the crop, and for this purpose a field was divided into four plots of an acre each. The first was ploughed once, the second was ploughed over once and harrowed once, the third was ploughed twice and harrowed once, while the fourth was ploughed twice and harrowed twice. In all other matters the plots were treated exactly alike, both as to manuring and seeding, the variety of wheat sown being the Fultz. The result was as follows:—

Plot.	Cultivation.	Bushels per acre.
1.	Ploughed once	16
2.	Ploughed once and harrowed once	18½
3.	Ploughed twice and harrowed once	21¾
4.	Ploughed twice and harrowed twice	23¼

Here we have a gradual increase in the yield in almost mathematical proportion to the amount of labour expended in cultivation. Of course, there is also the question of whether the extra labour is paid for by the increase in the crop—that is a matter not to be lost sight of. But the fact that by cultivation alone, a crop can be increased something like 45 per cent. in yield over that obtained from one ploughing only, will come as a surprise to many—even among those who know that good tilth is a first essential in the seed bed.—*Mark Lane Express.*

A Substitute for Oak-bark in Tanning.—Mr. Merry, an American official, who was lately in Australia on special service for the State Department at Washington, in a recent report, which is issued with the Consular reports, describes a "vegetable product which will become a ready and perfect substitute for the rapidly vanishing oak of our own country." This is the Australian wattle, which belongs to the widespread family of acacias, and which is cultivated extensively in New South Wales and Victoria, where it lends a charm to the scenery both by its fragrant blossoms and its exquisite foliage. The two varieties most cultivated are the black and the broad-leafed wattle, and both are indigenous to an exceedingly dry climate and a poor soil. The black wattle produces a larger amount of tannic acid. Its value for tanning will be understood when it is mentioned that hides can be readily tanned in a bath of liquor made from black wattle in 47 days, whereas in liquor made from the bark of the Santa Cruz oak, the best known in the Pacific States, the time required is 75 to 80 days. The black wattle contains 30 to 32 per cent. of tannic acid, broad-leafed wattle 26 to 28, Santa Cruz oak 16 to 18, and other kinds of oak less still. Although the broad-leafed wattle has less acid, it has certain advantages over the black variety. It is a larger and handsomer tree, and can withstand a greater amount of frost. Mr. Merry strongly urges that a quantity of the seed of both varieties should be purchased in Melbourne by the Government and given to agriculturists in certain States which he indicates, and he gives directions for planting and general treatment.

HOLLYHOCKS.

The beautiful group of hollyhocks figured in the Jan. 11 issue of the Gardeners' Magazine, leads one back to the palmy days of the flower, when it was at the height of its popularity. That really fine hollyhocks are still grown in several districts we have not the slightest reason to doubt. But when such a statement is made as that on page 19 of the issue referred to, I think it is full time that some one should speak out who has experienced the disastrous effects resulting from such misleading statements It is certainly pleasant reading, but not digestible to the practical grower, when we are told "that those who grow it naturally, and allow it to have its own way, do well enough, and have delightful displays of its high-toned beauty." We cannot help remarking that he has yet to learn the lesson of practical experience. The fungus is now established in so many places that we think it almost impossible to grow a collection without the aid of, shall I say science. For the mode of propagation has nothing whatever to do with the disease. No combination of climatic effect without the pre-existing germs of the fungus will bring on the disease. Where, therefore, the germs of this fungus do not exist, no possible combination of circumstances can cause such fungus to spring up into life and development; although I believe it is possible that change of habit sometimes occurs to such an extent that a fungus species not formerly capable of growing on a certain host species, becomes adapted to the latter. But nothing of this kind has been definitely observed with regard to the hollyhock. The parasitic fungus that especially attacks and injures the hollyhock plant, seems to have been imported to us in some way from South America, as it was found there in 1865. In a very few years it was observed in France, carrying destruction to the hollyhock as it went. Reaching England and Scotland, its ravages were especially marked, as considerable prominence was then given to this stately autumn flower. Yes, many of the grand old varieties were soon numbered with the things that were. I often look back to the palmy days of the hollyhock, and wonder if we will ever again see the flower in such a high state of excellence. I often amuse myself by looking over the splendid collections as raised by Chater, Turner, Roake, Parsons, Bircham, Downie and Laird, Bragg, Paul, and others, and grown by the latter at Cheshunt about thirty years. A list of these varieties is given in Paul's interesting brochure, "An Hour with the Hollyhock." This charming little work ought to be brought to the notice of amateurs of the present day. The remarks on propagation and exhibiting are especially useful. Then we had another fine collection grown by Mr. Turner at Slough. We are told how the disease first put in its appearance at Slough. "It manifested itself first in a batch of seedlings that would have flowered at the end of the summer, and it appeared as if a firebrand had been thrown among them during the night, burning the leaves and destroying them. Then it appeared among the named varieties and spread rapidly, and in order to save the stock all the eyes possible were made, but hundreds of them died by the disease, and then it became almost impossible to grow hollyhocks in that famous florist's flower nursery." It will thus be seen that the ravages made by the disease was not the work of years brought about by propagation, as so often reiterated in the Gardeners' Magazine during the last few years. The seedlings at Slough were attacked before the named sorts; the former could not have been subjected to much "overdoing." From my own personal experience, I have noticed the same course in my own garden; seedlings have been affected before the named varieties, although not twenty yards apart. It is also a fact that some varieties are more susceptible to the disease than others. Those with a thick epidermis are often found nearly disease proof. The immunity from disease of these varieties should be carefully noted by those who take an interest in raising seedlings. Indeed, I believe an enterprising firm has already the matter under their notice. In a letter I had from a gentleman in Essex quite recently, he remarks: "You will be pleased to hear that we have a variety which has proved itself nearly disease proof for two or three years; we have it crossed with several good sorts, and are anxiously looking forward to the result."

Those who have seen the blooms of Shirley Hibberd and Princess Beatrice, as figured in the Gardeners' Magazine for February 2, 1889, will not doubt but that really fine hollyhocks can still be raised from seed, notwithstanding the disease. But for people to tell us that good hollyhocks reproduce themselves true from such, is an assertion that I, for one, would like to see verified. Of the many thousands of seedlings that are raised annually, how many do we find fit to introduce to the public? Even in the brightest days of the hollyhock, when competition was keen and every encouragement given, how few varieties, comparatively speaking, were sent out annually.

At the present time, as in days gone by, there are still a few who have taken more than a passing interest in the flower. They have stood by the hollyhock during the term of its eclipse, and now that it is emerging from the darkness, they are more enthusiastic than ever. By referring to the *Garden Oracle* of 1888, we find 18 new varieties introduced, but since then no great advance has been made. This year, however, we have a fine variety in Delicata (Webb and Brand), which has been honoured with a first-class certificate from the R.H.S. We have also several fine new varieties here in the north which are not yet largely distributed. I believe a great advance is being made in the cultivation of the hollyhock, but every inch of the way is to fight for at present. The first step, however, is sure; we can now take a diseased plant from the ground that has previously been cut down to the dormant bud, wash it in a pail of soft water, in which a little sulphur of copper has been added; we then bury this root in a cold frame in which some clean soil has been put; the young wood will then come through as clean and healthy as if the fungus had never existed. The next step is to keep them clean. Here my experience is not yet sufficiently tested to speak with confidence, but you may judge from the stem and leaves sent; the former is a sample of the first stage not yet hardened. The leaves are from plants that are treated to prevent the disease, but time has yet to prove the result. [Sample sent appears in perfect health without any sign of fungus.]

I hope the disease question will now have the attention of your readers, who will give us a plain and unvarnished account of their experience. There are now several growers again and we have also a good collection when they are seen together. I have myself been able to pick up many of the gems that were thought lost. I have Leviathan, the prince of Chater's superb collection, so often asked for through the horticultural journals—indeed I have most of the varieties that emanated from that classic home of the flower, together with the latest introductions of Blundell, Webb and Brand, Smith, Finlay, Thompson, Rogerson, Oliver, and others. These form an interesting collection, which brought many people miles to look upon during the past season.

Heatherslaw, Cornhill-on-Tweed. George Steel, F.R.H.S.

FRUIT GROWING IN BRITAIN.

[THE following are selected from letters that have appeared in the *Times* of January 14 and 20.]

I have been watching, from its inception, the correspondence which you have published on this subject, but I fail to have noticed any discussion as to the real point of consequence in considering any particular culture or application of land as a profitable industry.

The matter seems to have lapsed into a controversy between the champions of particular varieties of certain fruits, especially apples.

Lifelong experience and observation in this country, throughout the European Continent, America and Australia, have convinced me that the real cause of the decay of fruit growing in this country is its relative unfitness of climate for such perfect maturity of fruit. There is not sufficient sunlight.

So long as the importation of fresh fruit from more or less distant but more favoured lands was rendered both too costly and too precarious by the length of time and high rates of freight required for conveyance hither, there was no incentive for the transmission of foreign fresh fruit to our market, and therefore home-grown fruit commanded its regular, certain, and lucrative sale. Facilities, rapidity, and cheapness of transportation, seconded by simultaneous distribution of "price currents," all the world over, have entirely overborne the home-grower's former sale advantage.

Fruits of all kinds—and notably apples—are not only superior in flavour but are far better keepers (store fruits) when ripened under a glowing, intensely bright sunlight, and in dry air (to say nothing of temperature) than when matured in a comparatively opaque and humid atmosphere such as ours.

Add to this that fruits cultivated under such superior conditions cost considerably less to produce, and the result has been, and is, that, so soon as transmarine fresh fruits could be conveyed hither quickly enough and cheaply enough to insure delivery in good merchantable condition, and exempt from undue charges, they naturally supplanted home-grown fruits in command of our own market.

I do not believe that fruit growing in this country can now be revived as a really profitable industry, or that the substitution of this or that particular variety for any other in cultivation, has anything to do with the question.

January 10. EDWARD GIBBON SWANN, C.M.E.

Your correspondent is seriously in error, and his error tends to the injury of what should be, and in some parts is, an important British industry. His lifelong experience in Europe, America, and Australia has not at any time revealed to him better apples than he might have obtained as products of British gardens. We can challenge the world to beat us in apples, and our consumption of imported fruit needs no such explanation as the assertion for it of superior quality. We eat much imported meat, but none of it is better than our best growths of beef and mutton. Baldwin apples are needed here because our home-grown apples fall short of the quantity required, and should we succeed in greatly augmenting the yearly total of home growth, they will probably still be wanted, as we want bread and cheese and butter from over sea. I will say in the world-read columns of the *Times* that our soil and climate are capable of producing, and actually do produce, apples of the finest quality, such as, all points considered, no country in the world can surpass. Being in the way to do it and with all the means at command, the problem is how to make the business pay. But we must agree as to the quality of the possible article, or the end of the discussion will never be reached, and but small progress will be made in any direction whatever. As the Gravenstein and Newtown Pippin have lately been set up as of the first importance, I will now say that they are of no importance whatever. The first is a fine thing when you catch it; the second is not worth catching, for it is an insignificant thing, and a dozen Newtowns would scarcely equal the value of one good Cox's Orange. Our market men well know how to select when they see a fair prospect of profitable results, and until that prospect is opened we but beat the air to discuss the merits of varieties.

Your correspondent assures us that apples ripened under intense sunlight are better keepers in consequence. Will he then explain how it happens that the only keepers known in our markets are those of our own growing? Strong sunshine promotes high colour and tenderness of flesh, but it promotes also perishability, and even now the brilliant Baldwins are passing away. There is too much sunshine in them for the lasting power they should have to justify the *dictum* of a gentleman who has had a lifetime of experience in Europe, America, and Australia.

The only truth in the letter under review is to the effect that the fruits imported "cost considerably less to produce" than fruit of equal quality of home growth. But we did not need such information, except, perhaps, to compel us to keep in view the vital point of the problem how to make fruit-growing pay. The solution will not turn on the belief of any one, whether well or ill informed, but upon serious inquiry and actual experiment; and as British orcharding pays under some circumstances, the problem may be said to be in some degree solving itself. There is but one quality of imported apples that our home-grown sample lacks, and that is colour. But as that is only skin-deep, and has no necessary relation to quality of flesh, we have but to produce good apples at less cost than at present, and their goodness will carry them without the aid of extravagant colour.

Kew. SHIRLEY HIBBERD.

I have not followed the whole of the correspondence upon the question of fruit culture through your columns, but noticing the letter from Mr. Swann in the issue of the 14th, I think there are many points in it that are very misleading if allowed to pass unchallenged. He has failed to notice "any discussion as to the real point of consequence in considering any particular culture or application of land as a profitable industry."

The discussion carried on during the last two or three years at the various congresses and conferences has been, most of it, of a particularly practical nature, and the various improved methods of culture have been advocated and discussed, methods that have been proved by practice to be advantageous.

Whatever Mr. Swann's experience of fruit growing may have been abroad, surely that at home must have been gained from some of the orchards and plantations uncultivated according to the old methods. Let Mr. Swann visit any fruit plantation that is conducted properly on modern principles, and let him compare this with those that may be conducted upon the old systems, and then let him say whether the decay of fruit growing in this country is real or imaginary.

His concluding opinion shows pretty clearly that he has not much practical acquaintance with the subject, or he would know that the particular varieties of fruit cultivated usually make all the difference between success or failure.

Again, I am surprised to hear him advocate a climate with an "intensely bright sun and dry air" as that most suited for apple culture.

As to the suitability of our climate, with all its failings, for apple culture, the following figures may interest some of your readers as to the crop taken from one apple tree during a period of ten years. The facts I know to be correct, as they were furnished me by a friend of mine, an Essex farmer, who planted the tree himself in November, 1871. The variety of apple was the "Warner's King," and the form of tree pyramidal. Crop the first year, three large apples.

1873 crop	1½ peck	1879 crop	6 pecks
1874 crop	2 pecks	1880 crop	5 pecks
1875 crop	4 pecks	1881 crop	4 pecks
1876 crop	6 pecks	1882 crop	5 pecks
1877 crop	7 pecks		—
1878 crop, 2 or 3 apples		In 10 years ...	40½ pecks

These were sold in Chelmsford at an average price of 1s. 6d. per peck. The tree occupies a space not exceeding 4 yards square, or at the rate of 1,210 trees per acre.

This is a result which, I think, will compare favourably with any foreign country. JOSEPH CHEAL.

Crawley, Sussex, December 16.

Correspondence.

TEACHERS OF FRUIT CULTURE.

IT is not my intention to take any part in the discussion on fruit growing in Great Britain, which has received so much attention of late, farther than to refer to the unjust charge which Mr. Badger has made against the general body of gardeners. In his letter at page 35, Mr. Badger, after deploring the lack of knowledge that exists amongst cottagers and farmers, proceeds to say: "For, with the exception of our best professional gardeners, here and there an orchardist and market gardener, and a comparatively small number of amateurs, how many men are there in England who could from memory write out a trustworthy list of fruit trees of the kinds most suitable for their own neighbourhood, could plant them properly, could prune them so as to induce fruitfulness, and accurately describe the other processes of cultivation on which success depends." We are, in fact, told that the great majority of gardeners, several thousand in number, are ignorant of one of the most important branches of their work, and therefore utterly unfitted for the positions they occupy. A more unfounded charge could not well have been brought against a body of respectable and able men, such as I venture to say gardeners are. There may be old and decrepit orchards attached to homesteads, as indeed there are; but it is only necessary to visit gardens in different parts of the country during the summer and the early part of the autumn to see that fruit growing is well understood by the majority of gardeners; and moreover is carried out with much ability, not by a few, but by thousands of gardeners.

With reference to the proposal that the Fruiterers' Company should employ men to travel about the country and teach fruit growing, I will say that there is plenty of room for difference of opinion as to the advisability of that step being taken. I will go further and say that if the farmer and cottager are to be taught, gardeners resident in the respective districts are in a better position to give sound advice than men from a distance. Soils and districts differ very materially in their adaptability to fruit culture, some being quite suitable for fruit production for market; moreover, districts in which fruit growing may be carried on with success, are not all equally adapted for the same descriptions of fruit. Neither are all the varieties of apples, pears, or plums equally suitable for the same district. Before success in fruit growing for profit can be achieved it is necessary to determine whether the district is suitable for the purpose or not. If this question is answered in the affirmative, the next step is to decide what class of fruit is the most likely to succeed, and the varieties of that class best adapted for the district. This being the case, I should like to know whether a gardener who is well acquainted with the soil and climatic conditions of the district, and is, moreover, daily amongst fruits, is not in a better condition to give advice than anyone wholly unacquainted with the locality. There can be but one answer, and that yes. Also, in advising cottagers as to the best fruits to grow in their garden for home consumption, and the best methods of management, the gardener on the estate has an immense advantage over the stranger.

That there are thousands of acres of orchards occupied by trees practically worthless, and that in cottage gardens there are thousands of trees of second and third rate apples, no one knows better than myself. But the fault is not with the gardeners. The blame rests rather upon the owners of the land, for not having new orchards made on their farms to take the place of those worn out or consisting of sorts either inferior or not suitable for the locality. So also in the case of cottagers, it is the duty of owners of cottages to provide a few trees for each garden, and very little progress will be made in the case of cottagers until this is done. It is unreasonable to suppose that a labouring man will spend his money in the purchase of trees from which he will probably not have an opportunity of gathering the fruit.

A PRACTICAL GARDENER.

HEATING SMALL PLANT HOUSES.

In your last publication there appears an article by J. C. Clarke, one of your able contributors, asking for ideas as to the heating of small greenhouses, and I agree entirely upon his remarks. I have had a small house erected recently, and have it heated by a small apparatus, which is very unsatisfactory, and the apparatus cannot be left more than two hours without the fire going out; and it is always out in the morning, and the house left cold. I have a mind to take it out and have a flue erected, which I know will answer and can be depended upon. The only thing in my opinion that recommends a heating apparatus is that the heat is a moist one, whereas that from a flue is a dry one; that is the only difference in this respect that I know.

Small Heath, Birmingham. MATTHEW GARDNER.

A GERMAN EXHIBITION is in course of organization in London, a site for which has been secured. It will be on a large scale, and probably will represent German arts and industries more faithfully than the more recent exhibitions have represented the countries owning them.

Replies to Queries.

Peaches.—E. R. : The following are productive and of high quality, and will form a good succession : Alexander, Early Grosse Mignonne, Royal George, and Noblesse.

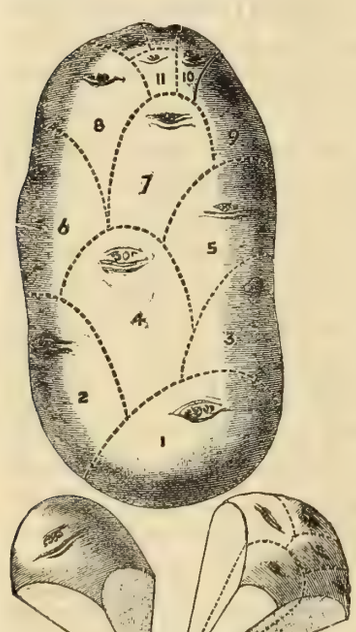
Names of Plants.—E. R.: 1, Æschynanthus grandiflorus ; 2, Gymnogramma ochracea ; 3, Begonia Marshalli ; Peperomia marmorata ; 5, Rhipsalis cassytha. —A. Barker : 1, Ruellia Purdieana ; 2, Begonia falcifolia ; 3, Exacum macranthum ; 4, Stapelia spectabilis.

Names of Fruits.—J. Fairfax : 1, Catshead ; 2, Claygate Pearmain ; 3, Dutch Mignonne ; 4, Lemon Pippin ; 5, Winter Hawthornden ; 6, Sam Young (too small for profitable culture).—F. L. : 1, Catillac ; 2, Forelle ; 3, Easter Beurre ; 4, Beurré de Jonghe.

Books.—Francis : "The Gardeners' Dictionary," published by Bell, price about seven or eight shillings, is the best book of its kind to keep on hand for ready reference. Cassell's "Popular Gardening," in four volumes, is thoroughly sound in its teachings, and sufficiently light in style to interest one unaccustomed to the technicalities of garden literature. Hogg's "Fruit Manual," in one volume octavo, is the best book of reference for standard descriptions of fruits —J. H., Barnet : *The Garden Oracle* for 1890 contains information on the vegetable garden far in advance of current works on the subject, and a general treatise on the management of the vegetable garden throughout the year.

Centenary of Chrysanthemum.—Critic : Your letter is too long, and treats too freely of matters that have been sufficiently discoursed upon. But you are in error on many points. It is quite reasonable to say that the chrysanthemum was certainly introduced in 1796, for until then it was virtually unknown although it may have been in the country since the year 1790. It was in 1796 that it was first introduced to the British public by means of the now famous figure in B. M., 327. From that date it may be spoken of as an established fact, and a festival in honour of the event may with perfect propriety be held in the year 1896 by any persons who are in that way inclined. A variety of views may be entertained as to the "proper" date for a centenary celebration. It may date from a man's birth or from his death, or from his completion of some great work. In like manner the centenary of a flower may be dated from this or that event at the discretion of the movers in the business.

Cutting Potato Sets.—Novice is advised to plant whole potatos of medium size, selected for good shape and quality ; the custom of planting mere refuse and chats being but the first stage in a system of bad management that has wrought great mischief with the potato. Some cultivators cut out all the eyes, save one or two at the crown, and this is good practice, because it limits the top growth to a few shoots and these obtain abundant light and air, whereas when the shaws are crowded the leaf growth is less complete as the exposure is imperfect. For it should be remembered that the tubers that form below are really manufactured by the leaves above ground, and if leaf action be defective the crop will be deficient. When expensive kinds are grown it is customary to cut the seed sets, and there are right and wrong ways of doing this. Messrs. Daniel Bros., Norwich, have supplied us with a diagram of the best mode of cutting to obtain many eyes and with each the largest possible amount of flesh, for the first growth of the eye is sustained by the flesh in which it is embedded, as it can obtain no food from the soil until it has put forth roots. It will be observed that the "nose" or "crown" end of the tuber has a cluster of eyes or buds and the "heel" or "tail" end none. The crown eyes when cut out should be used for a separate plantation or say, a separate row from the side eyes, for although in the end they will produce the same kind of potatos as the others, they will be a little earlier and perhaps stronger in growth and will be likely to produce tubers of better form than the side eyes. The cut sets must be planted at the same distance as whole sets, for free exposure of the top growth to light and air is the first condition of success in potato culture.



Trenching Ground.—R. T. : There may be cases in which it is an advantage to trench the quarters of the kitchen garden a short time previous to their being sown or planted. But, generally speaking, the work should be done a sufficient length of time before the planting season for the soil brought to the surface to have been well pulverised. Especially is it necessary to have the trenching of heavy soils completed before the winter is far advanced, for not only is the bottom spit difficult to work immediately after it has been brought to the surface, but seeds do not germinate readily in it, nor plants become established quickly because of the unfavourable conditions under which the new roots are produced. Great care is necessary in trenching strong soils, for when, as is sometimes the case, a considerable depth of the clayey subsoil is brought to the surface, much harm is done. In dealing with heavy soils, it will in many instances be preferable to dig out the soil to a depth of ten or twelve inches, and break up the bottom spit with a fork as the work proceeds. This course should be taken in the preparation of the quarters that are to be cropped next month. To facilitate the work it will be necessary to open out at at the commencement a two-feet trench. When trenching is done in the autumn or early in the winter, the soil should either be thrown into ridges or left as rough as possible, for when made level and well broken up the surface becomes so consolidated in the course of the winter as to render it necessary to dig over the quarters in the winter.

Hyacinths Losing their Roots.—I write to ask if you can tell me the cause of my hyacinths losing their roots after they have filled their pots. They were potted in September in good sound loam and mushroom bed manure, and covered with fine ashes to a depth of eight or ten inches. I commenced to get them out in batches in November. The Romans did well, but the others are losing their roots although they look strong in the spike and foliage when I uncover them. In some of them they are all rotted, others only one side gone dead. They seem in nice condition as regards moisture, the soil is quite sweet. The tulips under the same treatment are first-rate. I should feel obliged to you if you can help me to your advice on the subject.

OLD SUBSCRIBER.

[The statement of the case suggests that the roots have been injured by underground vermin, and that a search should be made for the enemy. When through defective growth or disease, the roots of plants are affected, it is not usually in the way your hyacinth roots suffer. The enemy that eats produces a different effect to that of disease or decay. But between eating and rotting the difference is so great that you can for yourself determine that point. There is a fell disease that causes rotting of the roots, and for this there is no known remedy.]

Pot Vines.—R. S. : The best results in the cultivation of the grape vine in pots are obtained from canes that are of medium size, short jointed, and well ripened. To commence very early in the year in raising a stock of pot vines is not necessary, the best time for starting the eyes being the beginning of February. Select for propagating purposes well-ripened laterals, and prepare the eyes in the usual way. Insert them singly in small pots filled with a mixture consisting of loam, leaf-mould, and sand, and press them into the soil just deep enough to leave the point of the bud visible. Place in a pit or house, in which a brisk temperature and a liberal degree of atmospheric humidity are maintained, and if available plunge the pots to the rim in a brisk hotbed. This is the only bottom heat they should have throughout the season, for when the pots are plunged in a hotbed the vines produce large fleshy roots, which usually decay in the course of the winter. After the eyes are struck the best course is to keep the pots on a hard surface within a convenient distance of the glass. It is important to avoid checks to the young vines, and it is a good practice to give each shift before they become much pot bound. Use a substantial compost, and pot firm at each shift, and stop the laterals in the course of the first season to ensure the proper development of the buds throughout the whole length of the canes. As a rule, stop when the canes are about three feet in length, and give the subsequent stoppings at six and eight feet respectively.

TRADE CATALOGUES.

H. CANNELL AND SONS, SWANLEY, KENT, *Floral Guide for* 1890.

J. AND R. THYNE, 83, ST. VINCENT STREET, GLASGOW, *Garden Seeds.*

CHARLES TURNER, SLOUGH, *Kitchen, Flower, Garden, and Farm Seeds.*

W. B. HARTLAND, 24, PATRICK STREET, CORK, *Year Book of Seeds*, 1890.

LITTLE AND BALLANTYNE, CARLISLE, *Flower, Vegetable, and Farm Seeds.*

T. S. WARE, TOTTENHAM, LONDON, *Flower Seeds and Florists' Flowers, Novelties, &c., Chrysanthemums, Dahlias, Begonias.*

JOHN GREEN, DEREHAM, NORFOLK, *Annual Guide for Seeds, Rooted cuttings, &c.*

R. NEAL, WANDSWORTH COMMON, LONDON, S.W., *Flower, Vegetable, and Agricultural Seeds.*

WILLIAM BULL, 536, KING'S ROAD, CHELSEA.—*Flower and Vegetable Seeds, Lilies and other Bulbs.*

DOBIE AND MASON, 66, DEANSGATE, MANCHESTER.—*Reliable Seeds.*

Obituary.

RECENTLY, at his residence, 64, Canongate, Edinburgh, Mr. JOHN DUKE, nearly forty years in the employ of Messrs. Peter Lawson and Son (now the Lawson Seed and Nursery Company Limited), in his 78th year.

RECENTLY, at Bournemouth, Mr. ENOCH WHITE, nurseryman of that town, in his 59th year.

Markets.

COVENT GARDEN.

FRUIT.

Apples.....per ½-sieve	2s. 0d.	to	7s. 0d.
Apples, American, pr. brl.	10s. 0d.	,,	21s. 0d.
Cobs.....per lb.	1s. 3d.	,,	1s. 9d.
Grapes.....per lb.	1s. 0d.	,,	6s. 0d.
Lemons .....per case	10s. 0d.	,,	20s. 0d.
Pine-apples, English, prlb.	1s. 0d.	,,	1s. 6d.
Pine-apples, St. Michael's each.....	2s. 6d.	,,	7s. 6d.

VEGETABLES.

Asparagus, Sprue, per bun.	1s. 3d.	to	1s. 6d.
Beans, French .....per lb.	0s. 8d.	,,	0s. 9d.
Beet .....per doz.	1s. 0d.	,,	2s. 0d.
Brussels spr'ts, pr ½ sieve	1s. 6d.	,,	2s. 6d.
Cabbages.....per doz.	1s. 0d.	,,	2s. 0d.
Carrots .....per bun.	0s. 4d.	,,	0s. 6d.
Cauliflowers .....per doz.	2s. 0d.	,,	4s. 0d.
Celery .....per bundle	1s. 6d.	,,	2s. 0d.
Coleworts, pr doz bunchs.	2s. 6d.	,,	3s. 0d.
Cucumbers .....each	1s. 0d.	,,	1s. 6d.
Endive.....per doz.	1s. 6d.	,,	2s. 0d.
Herbs .....per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish.....per bun.	3s. 0d.	,,	4s. 0d.
Leeks .....per bunch	0s. 3d.	,,	0s. 4d.
Lettuces .....per doz.	1s. 0d.	,,	2s. 0d.
Mushrooms ...per basket	1s. 0d.	,,	1s. 6d.
Onions.....per bushel	3s. 0d.	,,	4s. 0d.
Parsley .....per bun.	0s. 4d.	,,	0s. 6d.
Rhubarb .....per bun.	0s. 4d.	,,	0s. 6d.
Salsify .....per bundle	1s. 0d.	,,	1s. 6d.
Seakale .....per pun.	2s. 0d.	,,	2s. 6d.
Scorzonera ...per bundle	1s. 0d.	,,	1s. 6d.
Shallots .....per bun.	0s. 4d.	,,	0s. 6d.
Small Salading...per pun.	0s. 3d.	,,	0s. 4d.
Spinach .....per bushel	4s. 6d.	,,	5s. 0d.
Tomatos.....per lb.	0s. 9d.	,,	1s. 0d.
Turnips .....per bunch	0s. 4d.	,,	0s. 5d.

CUT FLOWERS.

Abutilons ...per doz. bun.	2s. 0d.	to	4s. 0d.
Azaleas, per doz. sprays	0s. 6d.	,,	1s. 6d.
Bouvardias.....per bunch	0s. 8d.	to	1s. 0d.
Callas .....per doz.	4s. 0d.	,,	8s. 0d.
Camellias .....per doz.	1s. 0d.	,,	3s. 0d.
Carnations, per doz. blms.	1s. 0d.	,,	2s. 0d.
Cyclamens, per doz. blms.	0s. 4d.	,,	0s. 8d.
Eucharis ...per doz. blms.	3s. 0d.	,,	5s. 0d.
Gardenias, per doz. blms.	9s. 0d.	,,	18s. 0d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Hyacinths, Roman, per doz. sprays.....	0s. 9d.	,,	1s. 6d.
Lilac, White, per bun. ...	4s. 6d.	,,	7s. 0d.
Lily of the Valley, per doz. sprays.....	0s. 9d.	,,	1s. 6d.
Maidenhair Fern, per doz. bun.....	3s. 0d.	,,	6s. 0d.
Marguerites, pr doz. bun.	3s. 0d.	,,	6s. 0d.
Mignonette, per doz. bun.	2s. 0d.	,,	4s. 0d.
Narciss, Paper White, per doz. buns.....	2s. 0d.	,,	5s. 0d.
Pelargoniums, per doz. trusses.....	0s. 9d.	,,	1s. 3d.
Primulas...per doz. sprays	1s. 0d.	,,	1s. 6d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	1s. 6d.
Spiræas, per doz. sprays	0s. 9d.	,,	1s. 0d.
Stephanotis, per doz. sp's	9s. 0d.	,,	12s. 0d.
Tuberoses, per doz. blms.	1s. 6d.	,,	2s. 0d.
Tulips ...per doz. blooms	0s. 9d.	,,	1s. 6d.
Violets, per doz. bun. ...	1s. 0d.	,,	1s. 6d.
Violets, Parme, per bun.	3s. 0d.	,,	4s. 0d.
Violets, French, per bun.	1s. 6d.	,,	3s. 0d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents .....per ton	45s.	to	85s.
Magnum Bonum .....per ton	40s.	,,	95s.
Beauty of Hebron .....per ton	50s.	,,	100s.
Early Rose .....per ton	40s.	,,	50s.
Imperator.....per ton	50s.	,,	70s.
White Elephant .....per ton	60s.	,,	65s.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
2	S	**Septuagesima Sunday.**	7 40	13 59	4 49	2 14	6 20	0 13	0 42	9 38	10 7	39·2
3	M	*Blasius.*	7 38	14 5	4 50	3 10	7 3	1 7	1 29	10 32	10 54	39·2
4	Tu	Fair on the Thames, 1814.	7 36	14 11	4 52	4 14	7 39	1 50	2 10	11 15	11 35	39·3
5	W	○ Full Moon.	7 34	14 16	4 54	5 20	8 8	2 27	2 43	11 52	—	39·3
6	Th	Charles II. died, 1685.	7 32	14 20	4 56	6 30	8 33	3 1	3 16	0 8	0 26	39·3
7	F	Baron Rothschild died, 1874.	7 30	14 23	4 57	7 40	8 52	3 31	3 47	0 41	0 56	39·3
8	S	Half-Quarter Day.	7 29	14 25	4 59	8 49	9 10	4 3	4 20	1 12	1 28	39·3

Day of Yr.	Orchids in Flower.	
1890		
33	Cypripedium calurum.....	Gard. hyb.
34	C. Leeanum superbum	Gard. hyb.
35	Grammatophyllum Ellisi ...	Madagascar.
36	Lælia elegans	Brazil.
37	Lælia anceps Dawsoni	Brazil.
38	Lælia anceps Hilli	Brazil.
39	Lycaste Deppi	Xalapa.

Exhibitions and Meetings for the Ensuing Week.

THURSDAY, FEB. 6TH.—LINNEAN SOCIETY.—General Meeting.
SATURDAY, FEB. 8.—ROYAL BOTANIC SOCIETY.—General Meeting.

Auction Sales for the Ensuing Week.

MONDAY, FEB. 3.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies and other Bulbs.
TUESDAY, FEB. 4.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids in Flower.
WEDNESDAY, FEB. 5.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilium auratum, Greenhouse Plants, &c.
WEDNESDAY, FEB. 5, AND SATURDAY, FEB. 8.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, and Bulbs.
THURSDAY, FEB. 6.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Nursery Stock from sample.
THURSDAY, FEB. 6.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Liliums from Japan, Pearl Tuberoses, &c.
FRIDAY, FEB. 7.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.
ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
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The Gardeners' Magazine.

SATURDAY, FEBRUARY 1, 1890.

RAILWAY CHARGES continue to occupy the attention of the Board of Trade, but the inquiry has entered a new phase demanding corresponding action on the part of producers and traders representing horticultural industry. As preliminary to this new phase, a meeting of representatives of commercial horticulture was convened by the Nursery and Seed Trade Association on the 20th ult., and the result was an important gathering at the Hotel Windsor. Mr. John Harrison, of Leicester, presided, with Mr. Goodchild, the secretary of the association, to state the general case, and a number of leading men of the trades represented to assist in the deliberations. It will be remembered that at a meeting held at the same place coincidently with the initiation of the inquiry, action was taken to place the horticultural trade somewhat on a level with other trades similarly circumstanced as regards the classification as a whole, and more especially in respect of the conveyance of perishable articles. There was then, as there is now, an apparent lack of interest in the matter on the part of many who have much to say on the "injustice" of railway tariffs, but carefully keep apart from manifesting any active sympathy with efforts organized with a view to their advantage. The inquiry has now taken a form that makes a distinct demand on all concerned for co-operation, not merely for reduction of rates, but for clear definitions, not only of goods and rates and distances, but of the relations of words to things; for in many instances maximum charges on paper do not agree with maximum charges current; and whatever the outcome of the inquiry, it does certainly seem desirable that the companies should be checked in the establishment between nominal and actual charges of a hiatus which they can manipulate at their own discretion. Fair terms are wanted, and with them a clear declaration. In many instances the terms appear fair, and probably would not be objected to; but the companies claim the power to augment the rates for certain goods up to a certain maximum, and this brings business into the region of caprice, and demands special consideration.

The case for the traders is now in process of being disclosed by direct statements and by evidence of witnesses. In aid of this the eminent services of Lord Balfour of Burleigh and Mr. Courtney Boyle have prepared the way by their admirable management of the inquiry, thus far much of the traders' case having been literally led up to in the questions that have been propounded and the general tenour of the inquiry. We do not imply by this that the inquiry has been officially tinged with any shadow of partizanship, for, in truth, there is not the breadth of a spider's thread on which to establish any such calumny. But the Parliamentary Secretary of the Board of Trade and the Assistant Secretary of the Railway Department are public servants, and are conscious of their responsibilities, and fully capable of sustaining them in this inquiry, which is instituted in the public interest and not in the special interest of either railway companies or their customers. Mr. Balfour Browne, Q.C., who represents the traders, has a firm grip of the general case, and the traders have entered on their innings with the advantage of having at command a liberal contribution of facts from the other side.

On behalf of the railway companies it must be said that they have not maintained the system of "mental reservation" that has made all previous inquiries futile, or nearly so, for broad public purposes. The managers have not simply answered questions with severe caution; they have been communicative, and have given many indications that the companies recognise an alliance of interest with candour, where, formerly, the main object was mystification. Mr. Findlay, of the London and North-Western, has the credit of establishing a precedent for communicativeness which has been pretty generally followed, and the mention of his name renders it necessary to mention also Mr. Oakley, of the Great Northern, who has thrown a lot of light upon the matter.

Producers and traders are not alone concerned in the issue of this inquiry, for the legislative action that will follow will in many instances affect market prices to advantage or disadvantage of consumers. We are, in fact, approaching an epoch of importance in our home trade and industries, and none can escape being finally influenced. Mr. Goodchild, in opening the proceedings at the recent meeting, pointed out that the classification is the backbone of the business now to be dealt with. It depends on the class in which an article is placed, what rate will be charged for it, and what regulations it will be subjected to that may delay delivery or deteriorate the quality. In the horticultural view, we have not only to deal with the carriage of fruits and flowers, vegetables and trees, but bricks, glass, lime, peat, loam, drain-pipes—the list is a long one that includes the requirements and products of the orchard, the nursery, and the garden. Mr. Oakley, in replies to Sir H. James, appeared reasonably cognizant of a class of traffic that the horticulturists are much interested in, and gave some useful particulars about sending goods by passenger trains, and the carriage of perishable articles. An extract from his evidence will show how distinctly there are two sides to the question, and on one side at least a difficulty is imposed by Nature, who makes it pleasant for men to travel at the very time when the garden contributes extra supplies of perishable commodities requiring to be carried by passenger trains. If all the farm and garden stuff would come in winter, leaving the trains free for passengers all the summer one very seriously difficulty would be abolished. But the *if* stops the way, and we must deal with facts in place of fancies. "Perishable goods," Mr. Oakley said, "were carried, as a rule, by passenger trains—especially fish and meat. It was necessary to provide for the punctuality of these special trains, and therefore it was impossible to overload them. It would therefore be necessary to provide for other trains when the supply was large. Wagons were picked up on the way to London, and added to the train with very little warning. The wagons were of a superior character in order that the running of the trains might be rendered as safe as pos-

sible. It was not obligatory upon the company to carry perishable articles by any particular train, and in the interests of the passenger trains generally the company took power to carry either by passenger or special train. In certain seasons of the year such a train as the Flying Dutchman would carry no perishable goods, but at other seasons they would be able to take three or four trucks. If six or more trucks were tendered it would be necessary to make provision for a special train. The present proposals were made with a view of protecting the passenger trains, and at the same time securing the accommodation of the public. The articles enumerated as perishable articles included eggs, milk, butter, poultry, game, meat, fruit, fish generally, with a second division for prawns, shrimps, lobsters, and oysters. Milk was carried in cans, each containing sixteen gallons, and the charge was per gallon. Fish of the coarser class, which formed the great bulk of the fish carried, was charged twenty-five per cent. less than other perishable articles. At the present moment the company were under no obligation to carry perishable goods by passenger trains. There were to be special rates for small parcels similar to those for parcels sent by the parcel post. The company had found it difficult, however, to put in any Act or schedule a scale that would be equally fair for short distances and for long. After a good deal of consideration they had practically adopted the penny-post system, and the charge would be twopence a pound all round for any distance. The advantage the railway companies had over the Post Office was that they had several deliveries per day, whereas the Post Office had one only, because they only despatched their parcels at night."

A serious difficulty, that our friends will have to grapple with, arises out of the two hundred and fourteen unenumerated articles, for these include subjects of importance to horticulturists. Another difficulty will arise out of the multiplicity of companies a parcel may need the care of in a journey, each company making a charge by weight, and the total amounting to more than the value of the parcel itself. The companies must adjust these matters, or lose much profitable business, for the public will carefully cast up the differences between Post Office rates and such compound railway rates, to discover, perhaps, that in many cases the railways were disadvantaged by the comparison. And having mentioned the Post Office, we will take occasion to remark that it would be a great point gained if, in the final settlement of charges, distance could be entirely ignored, as in all Post Office schemes; weight alone being the measure of charges throughout the length and breadth of the United Kingdom. This would necessitate the establishment of an elaborate system of correspondences between the companies that in the first instance would be like an impenetrable rock sheer in the way. But such a rock may be blasted by common sense, and the principle once accepted, and the Act of Parliament that must follow having duly absorbed it as an integral working rule, the Railway Clearing House would do the rest, and the gain would be great to all parties, the railways taking the first and largest share.

The special charges for terminals are anomalous; the rates may be fair or unfair in practice, but the proposed maxima are in many instances extravagant, and where they differ from *de facto* charges they import an element of uncertainty into a business that should not be at the jeopardy of caprice, temper, or accident. In the case of companies competing frantically or coalescing to run up prices—both of which undesirable events are within possibility—it might prove a very serious matter for a body of producers or traders to be operated upon by the margin between established charges and maxima stated in published tariffs.

These and other matters of not less importance demand practical attention, and the time for mere deliberation has gone by. The resolutions adopted at the meeting on motions proposed and supported by Mr. William Paul, Mr. G. Bunyard, Mr. W. C. Slocock, Mr. John Perkins, and Mr. Poupart, pledge the Association to represent the seed and nursery trades by counsel; and while this is being done expenses will accrue and may possibly prove inconvenient to the acting parties. It is of great importance the business should be carried through with spirit, for much in the future as to conditions and charges for carriage of horticultural material will depend on the points established by this inquiry. Our business is to urge upon the seed and nursery trades to support the Association, and to do so with promptitude and generosity. It should not be said hereafter that while the railway companies took good care of their own interests, the horticulturists made but little progress beyond grumbling, and in the end allowed their case to go by default. It surely will not be so; the traders will not be neglectful of their duty at this crisis.

MR. F. STOKES, for thirty-three years gardener to Sir Thomas Frost, Redcliffe, Chester, has retired on a pension.

COLLECTIONS OF PRESERVED VEGETABLES, prepared by a new process are now on view at Messrs. Carter and Co.'s seed stores, 237, High Holborn.

HULL CHRYSANTHEMUM SHOW will be held November 19 and 20.

MR. J. P. BOWER has been engaged as gardener at Kippax Park, Castleford, the residence of J. D. Bland, Esq.

MR. J. LEICESTER has been engaged as head gardener at Farnham House, county Cavan, Ireland, the seat of Lord Farnham.

WOLVERHAMPTON HORTICULTURAL SHOW AND FLORAL FETE, July 15, 16, 17.

WOOLTON GARDENERS' ASSOCIATION held its first annual meeting a few days since, when a highly satisfactory report was presented by the secretary. The members now number one hundred and twelve.

M. LUCIEN LINDEN was, a few days since, entertained at a banquet by the Brussels Chamber of Horticulture in recognition of the services he has rendered the institution.

THE SELBORNE SOCIETY is about to publish a monthly periodical under the title of *Nature Notes*, to be devoted to natural history. The editors will be Rev. Percy Myles and Mr. James Britten.

SEEDS SAVED IN 1889 IN THE PARIS GARDEN make a substantial list of about 2,500 species and varieties. Composites occupy a considerable space; Labiates are plentiful, Crucifers, Umbellifers, and Papilioners are in proportion, and there is no lack of novelties and subjects of special interest. The catalogue bears the usual signature of Professor Max Cornu, and is dated from the Museum, 27, Rue Cuvier.

PRIVATE GARDENS ON THE VICTORIA EMBANKMENT, west of the National Liberal Club as far as the Duke of Buccleuch's premises, have been held on lease from the Crown, and as the terms of the leases are nearly run out, endeavours will be made to recover the space so alienated from the public for an addition to the open public garden there. There is a danger of the leases being quietly renewed, and it is against this that public opinion should forthwith be brought to bear.

FATHER PETER MENYHART, the Hungarian Professor of Botany, has left Budapest for Portugal, whence he will sail for South Africa in order to found a mission station in the hitherto unexplored regions of the Upper Zambesi. The object of the mission, which is supported by the Vienna Geographical Society, is of a scientific nature, and several Austrian and Portuguese scientists will accompany Father Menyhart, who belongs to the Order of Jesus.

ASSESSMENT OF THE LONDON LIBRARY to the inhabited house duty has been the subject of appeal, and the question of liability has been argued in the Queen's Bench Division. Mr. Baron Pollock and Mr. Justice Hawkins pronounced for the legality of the assessment, and the appeal was dismissed. The matter is one of great importance, the chief point in the case being the residence on the premises of a caretaker. A hall for horticulture would be in a position similar to the London Library in respect of this particular tax.

THE ELECTRIC LIGHT IN THE BRITISH MUSEUM gives new life and greatly enlarges the usefulness of that venerable institution. The arrangements appear to give perfect satisfaction, for they were tested by the admission to the first general illumination on Tuesday last of 3,000 persons, including representatives of art and science and general culture, whose judgment of the matter may be relied upon as sound. Many of the sculptures appear to singular advantage under the light, and in all the galleries lighted the objects are advantageously displayed, while there is less trial for the eyes than commonly occurs where both arc and glow lamps are used, as they are in this case.

ENGLISHMEN DECORATED BY THE PRESIDENT OF THE FRENCH REPUBLIC, in recognition of services rendered to the recent Paris Exhibition were entertained at the Mansion House by Sir Polydore De Keyser on Saturday last. The French Ambassador, M. Waddington, distributed the insignia, diplomas, &c., to the following gentlemen, who are classified under the heads of the honours bestowed:—

LEGION OF HONOUR.

Grand Officier.—Sir William Thomson, F.R.S.

Commandeurs.—Lord Brassey, K.C.B., Alderman Sir Polydore De Keyser, Alderman Sir James Whitehead, Sir Colville Barclay, C.M.G., Sir Frederic Leighton, P.R.A., Sir Francis Dillon Bell, K.C.M.G., C.B., Sir Graham Berry, K.C.M.G.

Officiers.—Sir Douglas Galton, K.C.B., F.R.S., Sir George Barclay Bruce (late President Inst.C.E.), Sir Henry E. Roscoe, M.P., F.R.S., Mr. Henry Chapman, C.E., Mr. J. Hunter Donaldson, Mr. James Dredge, Mr. W. H. Preece, F.R.S., Mr. H. Trueman Wood, M.A., Mr. J. Aylmer, C.E., Mr. C. S. Galloway, Mr. T. Pilter, Mr. T. Nordenfelt, Mr. H. Herkomer, R.A., Mr. Hislop (New Zealand).

Chevaliers.—Sir George Hayter Chubb, Professor Francis Elgar, Mr. George Findlay, Mr. William Forbes, Mr. J. Tripplin, Professor W. Chandler-Roberts-Austen, F.R.S., Mr. William J. Soulsby, Mr. Henry Oakley, Mr. Joseph Leigh, Mr. Edward Crossley, M.P., Mr. Percy C. Gilchrist, Mr. George Hodgson, Mr. Sampson Fox, C.E., Mr. Arthur Paget, Mr. W. W. Ouless, R.A., Mr. Henry Moore, A.R.A., Mr. B. W. Leader, A.R.A., Mr. C. Le Neve Foster, Mr. Windsor (Rouen), Mr. E. Burne-Jones, A.R.A., Mr. J. M'Neill Whistler, Mr. Hodgson Pratt, Mr. Ernest Hart, Mr. Thomas Sutherland, M.P., Mr. Mallfroy (New Zealand), Mr. Reid (Victoria), Mr. D. Casella (Victoria), Mr. Aubrey Bowen (Victoria), Mr. Harry Seward (Victoria).

THE MERITE AGRICOLE ORDER.

Chevaliers.—Mr. James Josiah Smyth, Mr. Henry F. Moore, Mr. Ernest Clarke, Professor Jamieson (Aberdeen), Mr. E. J. Beale.

OFFICIERS DE L'INSTRUCTION PUBLIQUE.

Sir Bradford Leslie, K.C.I.E., Mr. H. F. Ellicott, Mr. R. Bannister, Professor C. V. Boys, F.R.S., Mr. W. H. Massey, Mr. J. Woodall, Mr. D. Pidgeon, C.E., Mr. Conrad Cooke.

OFFICIERS D'ACADEMIE.

Mr. C. S. Loch, M.A., Mr. H. Vaslin, Mr. W. England, Mr. F. Cundall, Mr. A. Bowring, M.A.

It is worthy of remark that this is the first time that the "Order du Mérite Agricole" has been conferred on British subjects.

DIELYTRA SPECTABILIS.

By W. Bradbury.

Few of the occupants of the herbaceous border that flower during May surpass in beauty Dielytra spectabilis when placed under favourable conditions. It is also certain that the number of hardy plants adapted for forcing is extremely small that presents such an attractive appearance in the conservatory during the spring months, as does this fine old plant. By many cultivators its chief value is supposed to consist in its usefulness for forcing into bloom early in the year; but after a long experience in its cultivation, I am strongly of the opinion that it is equally desirable for flowering under glass and in the open.

In commencing the culture of the dielytra in the border, it is necessary to bear in mind that it is not quite so hardy as some other of the perennials. It will pass through a severe winter unhurt, with no more protection than that afforded by a shovelful of ashes, or a few handfuls of cocoanut fibre refuse laid over the crowns. It is not the cold of winter that is injurious, but the frosts of spring which sometimes do much mischief. When the tender growths are cut back to with a few inches of the surface of the soil, the plants will break again, but the second growth seldom equals in strength that produced when the plants do not receive any check, and as a matter of course the season's flowers are lost. To protect the plants from late spring frosts is in many cases out of the question, and the best course is to select the most sheltered positions the border affords. It is especially important to plant them where they will not be exposed to the easterly winds.

The dielytras are not particular as to the character of the soil, provided it is well drained, moderately rich, and fairly friable. A cold tenacious clay is the least favourable, but good results in dealing with heavy soils can be obtained by removing at each station a few shovelfuls of the staple, and replacing with a mixture of loam, coarse grit, and manure or leafmould. In planting on ordinary soils, it will suffice to dig in at each station a rather liberal quantity of manure, such as that from an old hotbed. Where the border in which they have to be planted is much exposed, especially to east winds, a few branches of spruce fir or some evergreen stuck round the stools in spring, will afford material protection to the young shoots, without presenting an unsightly appearance. After the clumps have occupied the same position two or three years, it is a good practice to annually cover them with a good layer of half-rotted manure. This serves as a protection during the winter, and assists in promoting a vigorous growth during the spring and summer. There is no necessity for removing the manure from immediately over the crowns in the spring, as the shoots will readily push through it.

In the cultivation of the dielytra for forcing a bed in the kitchen garden or reserve ground should be devoted to the preparation of the stock. A continuous succession of young plants is essential, and it may therefore be useful to state that propagation can be readily effected by division of the stools. They should as a rule be divided into portions, with about two crowns each, and the best time for performing that operation is towards the end of the winter or early in the spring. The stools can be cut to pieces after new growth has commenced, but according to my experience the best results are obtained when it is done before they have resumed activity. The bed in which they are planted should be prepared by liberal manuring and deep digging, and if the stirring of the soil and the application of the manure have attention in the autumn or very early in the winter it will be a decided advantage. The distances allowed should in some degree be determined by the size of the portions of the roots, but those having two or three crowns each should be put eighteen inches apart in rows with two feet space between them. During the summer they will require no attention beyond what is necessary to keep the weeds down. On naturally dry soils a mulch of short manure will be highly beneficial, and in dry and hot summers a few liberal waterings will be of great assistance. The plants will be of a suitable size for forcing in the winter following, but if large examples are required they should be allowed to remain in the bed two years. Plants of all sizes are extremely beautiful, but for the decoration of the conservatory the most useful are perhaps those just large enough to occupy pots eight inches in diameter.

Although the dielytra can be readily had in the best possible condition under glass, it is a quite common occurrence to meet with examples both in gardens and at exhibitions in a very unsatisfactory condition. The plants in many cases present a thin appearance and have flowers so pale in colour as to fail to give an adequate idea of their beauty when the colouring is fully developed. The causes of spindling growth and pale colouring are overcrowding and insufficiency of light, and those who are careful to place the plants within a short distance of the glass and to give them sufficient space will have buxom bushes, elegant in appearance and well flowered. The stools may be lifted immediately after the leaves have died down, or they may remain in the beds until within a short time of their being required for starting. But it is a good rule to lift them soon after they have passed into the resting stage. In potting them up use a rich compost, and pots just large enough to receive them. Another necessity is to press the soil firmly round the ball to prevent the water passing away without having previously moistened the whole of the ball of soil. A cold frame will be the most suitable place for them after they are potted; but if frame room cannot be spared for them stand the pots on coal ashes on a hard surface out of doors, and cover them with any loose material of a suitable description that may be available as a protection from frost.

They may be started at any time after the beginning of December, but, generally speaking, it is not advisable to place them in heat until quite the end of January. They will respond readily to the influence of artificial heat in December, and grow freely during that month and January, but owing to the deficiency of light in these months there is some difficulty in obtaining such a sturdy growth and highly-coloured flowers as could be desired. A temperature of about 65 deg. is the best throughout, but when they are required in bloom at the earliest possible moment it may be allowed to rise a few degrees higher. If a hot-bed is available, the pots may be plunged to one-half their depth. Here they can remain until the new growth is three or four inches high, when they must be placed within a short distance of the glass. Sufficient room will be required to allow the foliage to attain its full size, and to economize space they may be placed on inverted pots amongst dwarf-growing plants. Rather liberal supplies of water at the roots, with but little atmospheric humidity, will be required.

After they have flowered they should be hardened off, and be planted in the kitchen garden. If required for the increase of stock, they can be lifted and divided in the autumn, or they can remain undisturbed until the end of the second year, when they will be in capital condition for the forcing-pit.

THE WEATHER PLANT.

Abrus precatorius.

I was interested in the figure of the weather plant which appeared in the Gardeners' Magazine of December 21, for I raised a good number of plants from seed sown early in the spring, as I had a wish to learn something of its appearance and character. But I must say here that I am more interested in its cultural requirements than in its capacity to indicate any change in the conditions of the weather. Of its value in this respect I know nothing, as I have made no attempt to study its behaviour, without which it would be manifestly unfair to form an opinion. At the same time, there will be no harm in saying that from casual observations I have seen nothing in its behaviour that would lead me to set any value on it as a weather indicator. What it may be able to do in this respect ought not long to remain unknown, seeing that the plants are offered at a cheap rate, and that any one having a greenhouse from which frost is excluded may easily grow it. Indeed, I shall not be surprised if it turns out to be hardy, as I have some plants that have been exposed to 4 deg. of frost, and they are none the worse for it. Its appearance so far indicates that it is an accommodating plant, growing well without any specially prepared soil, and as happy in a warm temperature as in a cool one.

The figure presented to the readers of the G. M. gave a correct idea of the growth and bearing of the plant, the growth being wiry, thickly set with shiny bright-green leaves. I ought perhaps to mention that it is a tuberous rooted plant. There are about the same number of tubers as we find on a strong-grown ranunculus plant at the end of the season, and about the same size. To raise a stock of plants from seed is easy enough; mine were raised in a cool greenhouse in the spring. Later on about half the stock was placed in the open air, and except that the latter did not grow so fast they did not appear to dislike it. The plant is not as yet much known, and no doubt your statement that the specimen from which your figure was taken was growing in a warm structure will not increase the number of cultivators. But it will be gathered from what I have already written that artificial heat is not necessary for people who will be satisfied with a moderate rate of growth.

J. C. Clarke.

STOVE AND GREENHOUSE PLANTS.

Linum trigynum, which has been in some gardens put into the new genus *Reinwardtia*, has been useful in the show house for fully two months past, and is now finishing its course. We have two distinct forms of this useful plant, one with rich orange-yellow flowers, the other with flowers of a pale yellow colour. When staged in groups they bring out other colours well, and have a quite cheerful appearance when used as table plants. We used to see this "yellow flax" largely grown thirty years ago, but rarely meet with it now, although, as regards merit, usefulness, and the simplicity of treatment it requires, it certainly has not been superseded.

Hæmanthus albiflos is singularly beautiful now as its milky white inflorescence rises. What noble plants these are even when not in flower, and how well deserving a place in every good collection. The list of species is a long one, and not many gardens need them all, even were they all obtainable. Amongst the best are the good old *H. coccineus*, *H. carneus*, and *H. sangineus*, which are all satisfied with greenhouse treatment.

Freesia refracta makes a pretty show on a side stage in the greenhouse at Kew, where it suits well for the lumping system that prevails there. Amongst some thirty or forty pots all in fresh and creditable condition, there is one distinguished by greater size and more abundant bloom than the rest. Now this particular clump has not been rested like the rest, and it seems to open a new chapter in the cultivation of this Freesia. That it occupies a larger pot than the rest suggests that its more free growth has justified a shift on without disturbance of the roots. It is, in fact, an extra fine specimen, and will at least start a few cultivators on the path of experiment to determine whether Freesias should be dried off or kept going.

Rhododendron Duchess of Connaught is one of the many fine hybrids of the *H. Javanicum* group, and noticeable amongst them for the bold style and fine form of the flowers, the colour of which is a strong deep red. In a collection of these beautiful hybrids this variety is conspicuous for its fine character, and this note will suggest to many not only that the variety is a thing to be desired, but that a selection of these hybrids should have place in every good collection of stove and greenhouse plants.

Chorozema cordata is a gay remainder and reminder of the time when chorozemas and correas, and other "New Holland" plants were freely grown where they are now unknown, in gardens where heaths also were admired and understood. The times are changed, but not all for the worse, for some of our fashionable plants are worthy of the admiration that is bestowed upon them.

Veltheimia viridifolia is one of the lily-worts that Herbert gave his mind to, and a quite interesting subject to give a diversity from customary forms. These Cape bulbs require only cool culture in a house that does not go below

40 deg. in winter, and as for the rest the usual treatment of a greenhouse bulb suffices. The flowers of this plant are pleasingly tinted purplish red and green, and are very distinct in their peculiar beauty.

Justicia speciosa, otherwise catalogued as *Peristrophe speciosa*, is an old friend of great value, not much known except in market gardens and in places where plants are grown for market. It has never been better done as a market plant than by the late Mr. Robert Oubridge, of Stoke Newington, who used to send it with *Thrysacanthus rutilans* to Covent Garden in grand style at this season. Both have been described by him, with ample cultural directions, in the G. M., greatly to the advantage of cultivators unaccustomed to such plants.

Strobilanthes isophyllus is an interesting and peculiar acanthad, forming a neat shrub with narrowish dark green leaves and bell shaped flowers of a curious cold lilac colour. A group of these makes a sudden change in the colouring of a stage on which such things as deutzias, hyacinths, primulas, azaleas, and other early flowering subjects display their gay flowers, and it is singularly useful for such a purpose. All the species of strobilanthes need the heat of a cool stove, but while in flower the warm greenhouse suits them perfectly.

Eriostemon cuspidatus used to appear amongst the elephants with dracophyllums, hedaromas, genetyllis, and the like; but we are now content to see plants of useful size, and they are quite worth the moderate amount of care they require. A good companion plant is *E. buxifolius*. If another pair be wanted, take *E. linearifolius* and *E. neriifolius*, and you will have all the best of the genus. More than these are not wanted in any collection unless some special object is in view.

Senecio macroglossa, with its ivy leaves and marigold flowers, is a choice though not showy subject for a rafter in an intermediate house, though hardy enough for the greenhouse, and requiring a dry warmth. It is a plant of some importance as a senecio and makes a good figure in the succulent house at Kew.

Prunus sinensis, now showing its exquisite little white rosettes, will remind readers of the nice family of peaches, plums, cherries, and quinces available as forced plants for the greenhouse from this time until March. They have the advantage of perfect adaptability to the business, for they may be forced annually, and get used to it, one reason being that they can make and finish their growth in the open air, while as to the forcing it is but little they require to coax them into holiday attire.

Other good things serviceable now in warm show houses are poinsettias, arum lilies, the smaller kinds of azaleas, epacris, hyacinths, primulas, scillas, eupatoriums, bouvardias, and many hardy herbaceous plants, even primroses and hepaticas being available for cool places that more tender plants would not be safe in.

FRUIT CULTIVATION IN ENGLAND.

THE annual livery dinner of the Fruiterers' Company was held on Monday night at the Albion Tavern, Aldersgate Street, Alderman Sir James Whitehead (the Master) presiding, to meet the Lord Mayor, Alderman and Sheriff Knill, and Mr. Sheriff Harris.

The usual loyal and patriotic toasts having been honoured,

The Master proposed "The Royal Agricultural Society." The toast he was proposing, though unusual at their assemblies, was, he considered, very appropriate, inasmuch as agriculture and horticulture, as it seemed to him, in these days, at any rate, went hand in hand, and whatever affected one affected more or less the other. He believed the desire of the Fruiterers' Company was to act upon the same lines as those of the Royal Agricultural Society, and to promote, as far as their means would permit, the cultivation of fruit in our homesteads and our agricultural cottage gardens throughout the country. He wished the public at large would place in the hands of the company, say, £10,000, so that with the interest of that sum they might follow the action of the Royal Agricultural Society, and give encouragement to the various districts of the kingdom for the cultivation of such fruit as we had the capacity for growing, and growing as well as any country in the world, within our own limits. There ought to be classes in this country where the elements of agriculture and the elements of horticulture might be taught in a practical manner. The object of the Fruiterers' Company would be not so much to stimulate those who were already engaged in fruit-growing as a business, as to encourage the farmers and the cottagers to grow fruit, not as the make-profits of their land, but as an adjunct to the profits they derived from the soil.

Colonel Sir R. N. Kingscote assured them, on behalf of the Royal Agricultural Society, that they would be happy to go hand and glove with the Fruiterers' Company in promoting the cultivation of fruit in every way. They had already shown their interest in the question. They did not want anything to come from a foreign country which they could produce in their own country. Let the landlords help their present and future tenants by planting trees, and then the tenants must take pains in pruning them and in looking after them generally. The tenants would also have to take more care in the way they sent the fruit to market.

Mr. Faunce de Laune referred to the letters which had recently appeared in the *Times*, and expressed regret that many writers, in discussing the question of what was the best apple to grow, had advocated new kinds. He, however, would plead for some of the old kinds. He was sure that the more agriculture was taught in our Board schools the better it would be for the country, and he was enabled to say, as a member of the Education Committee of the Council of the Royal Agricultural Society that this question was being taken into very serious consideration.

The Lord Mayor, in proposing "The Health of the Master," incidentally observed that his father was the first man who introduced foreign fruit into England. He afterwards gave instances of the great cheapness with which his firm had brought plums and oranges from abroad to London, and held that the home grower could not compete with such prices. He would say, let the cottage gardener grow as much fruit as he could. It was food for him, and if he had too much he might send the rest to market, but he urged them not to run away with what he feared might be somewhat of a delusion.

The Master, in reply, observed that he was aware that there was much to be said from the Lord Mayor's point of view in regard to the growing of fruit in this country. A friend who was present, however, had just informed him that he never received less than from 8s. to 10s. a bushel for his plums; and he himself was aware that English-grown Wellington apples could not be bought at less than 5d. a pound. Of course, there were difficulties in the way, but Englishmen did not give in under difficulties.

PICTURES OF CONTINENTAL CITIES.

IN Mr. McLean's Gallery, 7, Haymarket, there is open for public inspection a series of a hundred views of "Cathedral Towns and Picturesque Places in Germany and Italy," from the pencil of Mr. Edward H. Bearne, who by these tokens advises us of his happy facility in the employment of water colours. They are worthy of attention for several reasons. In the first place they form an attractive exhibition of a somewhat richer kind than the average of such things; Mr. Bearne being a colourist of the cheerful school with a clear eye both for the appreciation and truthful delineation of architectural masses, while there is somewhat of novelty in his method which, we confess, we cannot always approve, but which never offends even when it fails to satisfy us. He likes positive effects, he is no imitator; but his work often challenges comparisons. Often we would not have the work other than it is; recalling, perhaps, familiar scenes, or revealing beauties new to us, and always enabling us to understand his meaning, and when we have his work other than it is we have no quarrel with the subject, or the point of view, or the general design and perspective, but the colouring is occasionally a trifle too fanciful, and out of proportion to the dimensions of the pictures: in fact Mr. Bearne appears to have caught some of the vices of the French School, and it need hardly be said that water colours from the other side of the Channel are not of great account in this country.

Cathedrals, ancient houses, a stork's nest, markets, groups of municipal buildings, a stretch of river or sea enlivened by commerce or festivity, a palace, a prison, a pile of rocks, a range of mountains, are amongst the subjects that obtain the special attention of Mr. Bearne, and very pleasingly he sets the salient points before us. His love of colour tells advantageously in the fine group of "The Executioner's Tower, Nuremberg" (11), in which we have red roofs, a grim square tower, three pyramid poplars, a delightful harmony, and in every sense a picture. No. 18 illustrates the artist's love of architectural form, and is one of the gems of the series. In 22 we see the Rialto as it is not often represented, with a wealth of colour that drops into "variegation," especially in the reflections from the windows. "Venice" (25) will challenge comparisons, especially with the solemn literalness of Canaletto, but though a light water colour may not properly be so compared, the comparison will rather enhance the value of this beautiful drawing, in which the famous frontages are displayed in full light and in praiseworthy modesty of colour.

One of the best things after the Executioner's Tower at Nuremberg is the "Market-place, Ratisbon" (31), a fine contrast of grey towers, with steep, red roofs of old houses around, and the gaiety and bustle of the market below. Here we see the complete success of Mr. Bearne's method. "The Rialto" appears again in 32, with a French tone, but very effective and lively. "Padua" (34) gives a bit of noble architecture; and we get back to Venice with the "Palace of the Doges" (40), a thoroughly harmonious work, a little cold in colour, but pure, dignified, and pleasing. A rich old bit is "House of Albert Durer" (41); and at this point we are attracted by the colouring of the "Afterglow of the Lagoons" (43), the tone of which is truly delicious, and rich without exaggeration or disproportion. "Rome" (51) occupies the place of honour in the gallery, and although the familiar view from the Tiber commanding the great tower and the magnificent cathedral is presented, the handling is masterly, and the several masses harmonize with dramatic force, while the colour is wisely subordinate to the grandeur of the grey masses. Particularly good are the "Spanish Houses, Ghent" (55), with the muddy canal seen at its best in a good light, which also brings out the frontages superbly, and we are enabled to note the texture of the material with the aid of the artist's penetrating eye. Perhaps the most truthful—where all are truthful in a way, but deviate in minor touches—is the "Cathedral of Ratisbon from the Danube" (73), and the calm repose is suitable to the scene. "The Lake of Halstatt" (82) may be compared with the "Shadow of the Dolomites" (88), in elucidation of Mr. Bearne's method. In the first he runs away to secure an effect, and the result is less than pleasing. In the second the truth asserts itself as wanting no aid from the fancies of the studio; the grandeur of the grey mountains needs no help from colour; they speak for themselves sublimely. "The Temples of Pæstum" (92) take us far in thought from the towers of Nuremberg and Padua; the drawing is in a sketchy state, but has the happy touch upon it that Mr. Bearne cannot fail to impart when a subject of this kind is presented. The temples appear in the dusk as though complete and suitable for use, so perfect, in a general way, are their outlines. But the wild herbage that riots around and within them tells of desolation long completed, and the roses—most famous of all roses—diffuse their odour in "the desert air" like mere memories that speak of the past only as though the present were not. Any one who would renew reminiscences of Continental travel may do well to devote an hour to this gallery.

FRUITERERS' COMPANY FUND, for promotion of fruit culture, progresses but slowly, the amount subscribed to this time being only £1,600. Mr. Mason asked for £5,000, the new master, Sir J. Whitehead, Bart., asks, or rather hopes, for £10,000. One impediment to progress, we think, may be found in the uncertainty that prevails as to the disposal of the fund. This, perhaps, should have been determined ere subscriptions were solicited. The air is full of proposals, but the promoters appear to have no definite programme.

MEGASEAS ARE FLOWERING FREELY at Kew; but those fully exposed have stems so short that they are of little use for cutting. Those under hand lights have lengthened out in a profitable manner. We do not remember having at any time previously had megaseas in flower in January near London. These flowers are better known as large-leaved saxifragas, but the generic distinction now generally recognized has the double advantage of technical accuracy and convenience.

THE WEATHER is acquiring peculiar interest, for there is a general conviction that after so long a run of spring-like temperature changing suddenly to storm and flood, a touch of real winter may be expected. The indications are certainly in that direction. As the agitations that strewed the coasts with wrecks passed away, the wind settled in a cold quarter, and the accumulation of pressure in the far north suggests a term of northerly veering to easterly winds—in other words, we seem likely to have such weather as commonly occurs at this season. But severe and prolonged frost does not at present appear among the probabilities, but just a taste of light frost with a little snow.

SEEDLING HOLLYHOCKS.

It is well to have decided views on a subject when the command of facts is sufficient to justify conclusions. But many well-intentioned persons err through undue haste in forming views which as further experiences accumulate they find it necessary to modify, sometimes even to repudiate. Mr. George Steel, of Heathershaw, has had much experience of hollyhocks, but is probably unfamiliar with the position of his favourite in thousands of country gardens in the southern parts of Britain, where, in the later days of summer, its stately spires clothed with gay flowers and healthy green leaves may be seen to the fullest advantage because perfectly natural in all its characters. And the same worthy contributor of a most interesting paper to the G. M. may not distinctly remember having seen the propagation of hollyhocks by grafting on seedling roots in a temperature of 75 Fahr., a common occurrence thirty years ago. Indeed, Mr. Steel may not have seen this, and therefore it would be idle to ask him to recall remembrances. But there are amongst us yet not a few who were familiar with the practice, and have long been convinced that it had much to do with the eclipse of the flower when the disease took possession of it. These will testify that the "mode of propagation" *has* much to do with the disease, although Mr. Steel will not admit it. And the mode of propagation has much to do with the future behaviour of any plant, and the less it is exposed to unnatural influences the greater will be the probability of success in the after treatment, no matter what the plant may be.

What is said about the fungus is really superfluous. We are told that "where the germs of the fungus do not exist, no possible combination of circumstances can cause such fungus to spring up into life and development." This may appear to the writer as a sensible and seasonable remark, but really it is damaging to the whole purport of his letter, because it is simply too true to have any sense in it. He might with as much reason tell us peas and beans will not spring out of the ground unless there are seeds in the ground to originate them; but it is at all events consistent with the injudicious statement to the effect that the mode of propagation has nothing to do with the disease. A forcing method debilitates the plants, and renders them liable to attacks of fungus, and as to when and where the germs of the fungus are present we know nothing, and therefore on that point may with advantage say nothing, for we cannot talk wisely on matters of which we are ignorant.

But the writer in some part cuts the ground from beneath his feet in acknowledging that "some varieties are more susceptible to the disease than others. Those with a thick epidermis are often found nearly disease proof." Yes; our experience in connection with hollyhock disease corresponds in some degree to experiences with potato disease, for from time to time we discover varieties that resist the attacks of fungus, and we proclaim them "disease proof," although they are not absolutely so but only relatively. And how do we secure such? It is by raising seedlings and making selection of such as, having good quality to justify keeping them, prove to be the least affected when disease makes havoc in the family. Seedling hollyhocks are, when taken collectively, in the first instance as liable to disease as the named varieties, as Mr. Steel asserts. But there is something more to be said. Those who raise seedlings save many in a bad season because a certain proportion are thicker skinned than others, and in many country gardens the selection of disease-proof sorts goes on unconsciously, for the disease kills the weak and spares the strong, and often we see a fine display of seedlings that for scenic uses, or say for the decoration of the garden, are of sufficiently good quality, though not up to the mark of the named varieties. When it is said that seedlings come true to the sorts they are raised from there is a slight exaggeration. A very considerable proportion do certainly reproduce the flowers of the parents *nearly*, and a few of them give better flowers and prove to be worth naming. For such clumps of hollyhocks as the figure published Jan. 11 suggests, seedlings answer perfectly well, and they are not everywhere so liable to disease as Mr. Steel imagines.

The best lot of hollyhocks near London now is in the nursery of Mr. James Blundell, Martell Road, West Dulwich. Considering the damp season they look remarkably well, and are absolutely free from disease. But Mr. Blundell has not always enjoyed immunity. I have seen the baleful marks of the enemy on the plants in his ground, and as one who grew the hollyhock when Chater, Rooke, Bragg, and Turner were doing it well, I am of the same opinion as Mr. Blundell—that the mode of propagation has much, perhaps even all, to do with the disease. One thing is certain, that Mr. Blundell has never in recent years subjected his plants to artificial heat, and he would expect to incur heavy loss were he to renew the practices that prevailed even so late as 1850, when I saw a houseful of cuttings and grafts steaming away in a moist heat 80 deg. Fahr., and I never inquired what became of them.

As many persons will be planting hollyhocks this season, I wish to warn them of two weak points in the practice that prevails: one is to select large plants for putting out, consequently those who have to sell are tempted to subject the plants to artificial heat to make a show of green top growth that is simply deceptive to begin with, and that will augment liability to disease as the season advances. Another weak point is in taking plants that are growing freely, without regard to the nature of the growth, for when it springs from a stem above ground it is never so good as when it comes direct from the root. When there are two growths on a small plant (a rare event) one being from the root and the other from the stem, the stem should be cut back so as to throw the whole vigour into the shoot from the root, for that will make a better plant than the shoot from the stem above ground. But the matter of chief importance is to have a body of healthy roots, no matter about the size of the head, provided that it is healthy and has not been forced in heat. Make sure of a foundation, and Nature will build upon it for you in her generous way. As for seedlings, they should be raised every year where hollyhocks are required for scenic purposes, and the natural development should be favoured to ensure the true expression of the beauty of the plant.

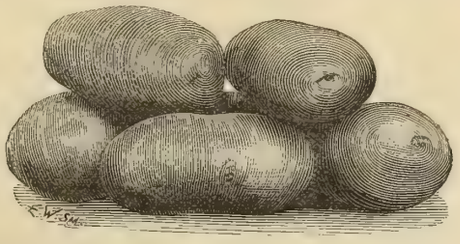
The named varieties are so grand in quality that one can never tire of them, and there are no flowers of the same season that can surpass them on the show table. Spikes do not show well, but single flowers are sumptuously beautiful, and one can tolerate the shortening of the spike to obtain them. Nor have we done with named hollyhocks, for give us but a healthy growth in this year 1890 and the new varieties that will be shown will sufficiently vindicate the florist's standard of perfection.

The Writer of the Article on *The Beauty of the Hollyhock.*

POTATO "VICTORIOUS."

We have noted this *Victorious* as a valuable addition to the list of profitable varieties suitable for universal culture, and as fit for a place on the exhibition table as any of the productive class to which it belongs. It was secured by Mr. Thomas Laxton, of Bedford, as the result of crossing Myatt's upon white Beauty of Hebron. It was much admired at the Vegetable Conference, and obtained the distinction of a Certificate of Merit, which it will amply justify when established in cultivation.

It is classed as a kidney-shaped variety, but is properly in the "half-long" class, the form flattish-oval, even, and handsome, eyes few and shallow, and when ripe, a little rough in the skin, which is considered a good market character. On the table it is mealy and



POTATO *Victorious*, raised by Thomas Laxton, Bedford.

well flavoured, with a slight tinge of yellow, but under gaslight of the purest white. It surpasses Beauty of Hebron in quality, and ripens as a second early.

EARLY PEAS.

Having to deal with a soil that is naturally cold and somewhat tenacious, I have long since abandoned the practice which obtains in many gardens of sowing peas in November, and for many years past have made my first sowing early in the year. On heavy soils there is so much difficulty in obtaining a good plant from November sowings as to cause much anxiety. Not only is there a risk of the peas being eaten by mice, and of their tops being nibbled off by the sparrows, but the roots become so impaired by the excess of moisture about them that the plants fail to make so vigorous a growth as could be desired. By making the sowing early in the year, preferably at the beginning of February, the time and attention that has to be devoted during December and January to the crop sown in November is saved. This is not all, or, indeed, the most important point. When sown in February the peas germinate quickly and grow very vigorously from the first. In my earlier days I had a garden under my charge, of which the soil was rather light, and I then obtained excellent results from the November sowings made in accordance with the teaching of the man under whom I had served. But I am now of the opinion that I should have obtained results equally satisfactory from February sowings. From carefully-conducted experiments that I have made since entering upon my present charge I have proved that I am able to gather from the February sowing quite as early as from that made in November, and, as a rule, the crop is heavier. I would therefore advise the first sowing to be made in the first week of February, or as soon after as the condition of the soil will permit.

As a matter of course a warm sheltered position is selected for the earliest crop of peas, and we invariably devote a portion of one of the south borders to it. The soil is dug over in the autumn and left in a rather rough condition on the surface, but in not so rough a state as would be advisable in the case of quarters to be cropped at the end of February or during March. The border set apart for peas is devoted exclusively to them, and the rows for varieties about twelve inches in height are twenty-four inches apart, and those for varieties rising from two and a-half to three feet have four feet spaces between them. By adopting these distances the border is occupied to its fullest extent without overcrowding. On heavy soils it is not always an easy matter to obtain thus early soil from the border in a suitable condition for covering seeds even of so large a size as peas. Accordingly we reserve for filling in the drills a supply of old soil from the potting shed and add a moderate quantity of well decomposed vegetable refuse in a moderately dry state before using it. The advantage of filling in the drills with a mixture of this description cannot be over estimated. The drills are driven to a depth of two inches, the peas are sown rather thickly and then covered with the prepared mixture, care being taken in performing the several operations to tread upon the border no more than is absolutely necessary. A sharp look out is kept for

the appearance of the plant, and as soon as it makes its appearance soot or lime is scattered alongside the rows, and strings of various colours are stretched over them to protect the tender tops as far as possible from the sparrows and other marauders. To draw a little soil about them at a very early stage is a point of some importance, and to stick short branches of spruce along the east side will be highly advantageous. The varieties requiring support should have sticks put to them before they have made sufficient growth to be in danger of falling over.

A sowing of the second earlies should be made about the middle of February in the open quarters, and if the area is to be devoted exclusively to them the rows should be about the same distances apart as advised for the first earlies. But if it is proposed to adopt mixed cropping in the case of those two feet and upwards in height, allow a distance of eight feet between the rows, and crop the intervening spaces with vegetables of low growth. We proceed on exactly the same lines as indicated above, and fill in the rows with a light sandy mixture to protect them from the several enemies with which the peas are likely to be attacked, and put the sticks to them before they have made much progress. The soil should be made rather richer for the second earlies than is absolutely necessary for the first crop.

But few varieties are required for any garden, and instead of recommending one of the several varieties in cultivation as absolutely best, I will say that of those attaining a height of twelve inches, Chelsea Gem and American Wonder are two excellent varieties for the first supply, and that from those ranging between two and three feet high Carter's Lightning and Sutton's Improved Ringleader may be selected as two of the best for early crop. The second earlies that have proved highly satisfactory with me are Bijou, Wordsley Wonder, and William I., all of which are thoroughly good. W. J.

PROFITABLE PEAS.

Without a doubt a plentiful supply of fresh green peas five months out of the twelve is the finest treat the kitchen garden affords. Peas are suitable to all tastes, I should say. This vegetable finds more admirers and fewer objectors than any other crop in existence. Given reasonable space and other conveniences, there is no just cause and little impediment why they should not be had daily for four, if not the five months.

In some gardens they are not so easily obtained in the month of June. The nature of the soil and the position of the garden make a considerable difference in the time when the first crop can be gathered. Soil which is heavy in character is consequently cold during the winter and early spring by reason of its retaining the moisture so long, on account of its retentive nature. Land which is inclined to be sandy loses its hold upon the moisture so much more readily than does the other kind, that for early crops it is much to be preferred. For crops of any sort, not only peas, it is a mistake to mix heavy, green cow manure with soil of the first-named kind; half-rotted stable manure, vegetable refuse, ashes, leaves, and, lastly, common sand are all much superior to cow manure. Thoroughly and deeply digging or trenching the land in the autumn, adding the manures or soils named at that time is a much better plan than adding a lot of green manure at planting time.

I used to dig deep trenches, and fill them up with manure at the time. The peas were sown on the top of the manure, just placing two or three inches of soil on the manure. But I found that for all seasons the plan previously named was much the best in practice. For the main and late crops drills are simply drawn out at sowing time, care being taken to have the soil well broken by digging previously twice if possible. Forks are always used here for digging; spades are of no use whatever for the purpose. The land must not be dug when it is wet, for then it runs together in lumps, and is most difficult to break asunder. In this state we consider it bad for any crop, and especially for peas. In the autumn it is turned over or trenched, adding the manure, and during dry weather in March it is again turned over, taking care to break the lumps while digging is being done. Small spits of soil are only lifted at a time; the work can be so much better done in that manner than any other. It is useless to sow peas in wet soil in the autumn; the soil retains so much moisture and the seeds absorb it so freely as to cause them to rot; especially is this the case if marrow peas—as, for instance, Stratagem—are sown too early out of doors.

It is a great mistake to sow the seed too thick in the rows; much better results are obtained by sowing thinly. Far better it is to have two thin rows than one thick one. Our first sown peas outside are American Wonder, which is much superior in point of flavour to any of the other sorts, such as William the First, Ringleader, or others of that class. These latter may bear a greater crop, but the peas themselves are so small and lack flavour so much, as compared to the American Wonder, that for several years this pea has found most favour here after having tried several together. About the first of February we sow on a south border a good batch of the sort named, covering the seed with leaf soil, and on the top of all we lay a covering of coal ashes, which prevents the slugs damaging the green stems just below the surface, as they do when not protected. Excellent crops of finely flavoured peas result from this sowing. The next sown peas are Duke of Albany, which I regard as one of the best kinds in existence for cropping quality and flavour. This sort is sown in small pots (three inches), five or six peas in each. A vinery just started suits them well. About the middle or end of February is a good time for these. When the plants are large enough, they are shifted into five and a-half inch pots, giving them cool treatment all through after they commence to grow. The warmest place in the garden is selected for this crop, which are planted out as soon as we cease to fear frost to injure them. A trench a foot deep is dug out, laying the soil on the sides to ward off cold winds, some light manure is laid at the bottom, a little soil over that, the peas are then planted ten inches or a foot apart, as they turn out of the pots in clumps. Stakes are placed to the peas at once, and protection is also given by sticking some fir-tree boughs on the north side of the row. From this sowing we get excellent produce quite early in July. The same variety and Fortyfold are also sown out of doors in drills early in March, following at intervals of ten days or a fortnight with more of those sorts named, such as Stratagem, Veitch's Perfection, Telephone, and Prodigy, finishing up with Ne Plus Ultra, which, without doubt, is the best of all late peas. Fortyfold is of the Champion of England type, I presume, and were I asked to name one pea for two purposes—crop and flavour—I should undoubtedly give the preference to Fortyfold. We have grown this sort with unvarying success for ten years, and I do not think it can be beaten yet. It averages six feet high, is of a capital constitution, and is little affected by variable weather. Peas here are grown purely for two purposes—cropping quality combined with flavour, two points which I consider of the first importance. As a rule, Veitch's Perfection gives satisfactory results; sometimes it is more addicted to mildew than others, but the flavour obtained from this variety well repays any trouble taken.

All peas should be staked early; it is wrong to allow the haulm to fall for want of support. The first tendrils formed should have the opportunity to cling to the stakes; they never recover the time lost, I think, when neglected in staking. Earthing them up early I believe in, as a support to the tender haulm. Mulching the surface of the soil on both sides of the row when dry weather is apprehended is good practice, and so is thorough soakings of water to the roots, occasionally using liquid manure where obtainable as preferable to clear water. It is much better to water the rows early than to wait until the haulm has turned yellow for two or three feet up the stems. In this case a serious check is given to the free growth that is so desirable, and which can never be regained, Where the rows can run north and south it is best to sow in this manner, as an equal amount of sunshine is obtained by all the plants. Where possible plenty of space should be allowed between the rows. Nothing is gained by overcrowding, but much is lost in the results.

It will be seen from the foregoing that I do not consider it at all necessary to have a great quantity of sorts. I rather believe in having plenty of those that have been proved suitable for the soil as giving results agreeable to the requirements. For ordinary family use it it a mistake to sow too many peas at a time, which often causes a glut, and afterwards a vacancy when the weather sets in very dry for a few weeks. Much better is it, I consider, to sow a few at a time and often, for in this way a supply of tender sweet peas can better be commanded than in any other way. E. Molyneux.

HOLLIES.

In the planting of shrubberies this evergreen generally plays a conspicuous part, and worthily so; the forms and colours are so variable as to produce a good effect when judiciously arranged. For town or small gardens hollies are especially valuable, as most of the kinds do not object to smoke, as do some other shrubs. Owing to their slow growth and natural compactness, by timely pruning they can be kept in shape and bounds for a number of years. Most of the sorts are all the better for annual pruning, which not only produces a thick, sturdy growth, but admits of the retention of more plants in the same space. The pyramidal form is that in which most of the varieties look the best, although some sorts, notably Waterer's, are better suited for a somewhat convex form, or what may be better termed a pyramid with a broad base and blunt top. Hodgins's variety is well adapted to this form of training. Many varieties of holly refuse absolutely to grow at all in some soils, especially that which is heavy and retentive, which is the worst to deal with for the growth of some hollies. Again, a soil in which chalk is mixed, not necessarily in quantity, hollies will not grow.

Thinking a few notes on the varieties that both will grow in heavy soil and those that refuse to succeed in soil of this character will be useful, I will name them. Soil of a sandy nature with which manure is freely mixed is the best for all varieties, but where this soil cannot be obtained naturally, the best available means must be adopted to prepare a compost sufficient for the purpose. In a heavy soil at planting time I find decayed leaves and vegetable refuse good for the encouragement of root action, this being the first point to consider. Shallow planting and heavy mulchings of decayed light manure assist in keeping the roots on the surface, a point to be remembered. The time of year at which hollies move best is not so important as many persons think. Where the plants have to be removed from one part of the garden to the other and a good ball of soil can be retained to each, any time from the end of September to the end of April will answer. The former date for preference, though, and especially is the early part of October to be desired if some distance has to be travelled before the plants reach their journey's end, and there is a fear of the roots becoming dry. Late planting in such a case as that is a mistake. The winds of March and April conjoined with hot sun seem to dry the life out of the plants. I once had experience of this; about a quarter of a mile of hedging had to be planted at the end of March, and owing to faulty packing the roots were thoroughly dried up, so that nearly all the plants died back, in spite of heavy waterings and mulchings, the following summer. Most of the plants had to be cut back very close to the ground, which was a considerable loss, not only in time but in value. Planted when the soil is yet warm, new roots are formed, the plants do not lose their leaves the following summer nearly so much—in most cases not at all. I was once told that if a

newly-planted holly did not lose its leaves it would not succeed, which was of course a mistake. It is wise to thoroughly well soak the soil about the roots if at all dry at planting time, and a thick mulching at the same time encourages root action in the following season of growth.

Pruning may be done any time during the winter months, preferably early in the autumn, using either a knife or hand shears, the latter for preference, making a clean cut of the branches without disfiguring the leaves, as is the case where hedge shears are employed. I never saw a greater scarcity of berries on the trees of all sorts than this year. Already the flower buds are thickly set on the branches for next season's crop of berries, if the fertilising of the blossoms is successful in the coming flowering season.

The following green-leaved varieties will grow well in a heavy soil: *Aquifolium* (common kind), best for hedges, as it grows close, and is easily kept in good form, as growth is freely made after cutting of the branches. *Hodginsi* is one of the best, the growth is clean and free, the leaves are nearly round, the colour a dark green, the spines very stout, unevenly disposed. *Tortuosa, Shepherdi,* the yellow-berried *Fructo-luteo,* and *Scotica* grow well in strong soil, and so does the *Hedgehog (Aquifolium ferox).*

The best kinds with variegated foliage for the soil are *Waterer's* variety, dull gold, *Golden Queen,* one of the best, a good grower; the colour being especially bright renders it a conspicuous object in the shrubbery during winter. *Silver Queen* will succeed fairly well, but does not grow so strongly as the golden variety.

It is useless to plant the following kinds in such a soil as that described: Perry's Weeping, an effective silver-leaved variety where it can be successfully cultivated; Opaca, Platyphyllum, Altaclarense, Argenteum latifolium, and Fœmina. All these require a deep sandy soil; on heavy land they do not prosper.

A.

THE BEST OF THE TEA-SCENTED ROSES.

There are differences of opinion as to which are the best of the tea-scented roses. I, therefore, do not expect to compile a list of varieties that will please everyone. At the same time I have every confidence that those which I shall recommend as the best will not disappoint anyone. But I shall only mention those I have seen to be doing well in the open air, and the reader must understand that my information has been obtained from gardens where the plants are growing in well prepared soil and otherwise well cared for. Without this it is very little use for anyone to attempt to grow these beautiful roses if they desire them in a condition fit to be placed on the exhibition stage.

The first I shall mention is *Luciole.* This is a comparatively new rose that is destined to take high rank either in the conservatory, the garden, or for exhibiting. The colour is a bright rosy crimson, overlaid with a shade of coppery yellow that is both peculiar and pleasing. The growth is vigorous, and the flower buds are long and tapering, a well expanded flower having a very striking character. Associated with these excellent qualities is a delightful fragrance in the flowers. As an allround variety I doubt if there another in the same section to surpass it.

Viscountess Folkstone is a fine rose in the open air, being particularly distinct for the noble carriage of its flowers, which is a sure indication that the growth is strong and sturdy. Growing amongst a large collection, as I saw it during the past summer, it was the most conspicuous out of a large number then in flower. There is a degree of freshness, as well as of sweetness, in the newly-opened blooms that is most enchanting. The colour of the flowers is a pleasing creamy pink, with a salmon-shaded centre.

Madame de Watteville.—Apart from its other good qualities, this variety is remarkable for the decided character of the flowers; each petal is distinctly bordered with bright rose, the primary colour being salmon-white. The buds are long, and when well open they are full and excellent in form. The habit of growth is vigorous.

Miss Ethel Brownlow.—The merits of this rose have not yet been fully recognized, but, as it becomes better known, I feel sure that there is a long future before it. All our experienced rosarians, who have abundant opportunities of knowing its behaviour, agree that for the open air it is an excellent rose, as the flowers open well, which is not the case of some of the varieties in this class. The blooms are also large and of good form; the colour is an agreeable salmon-pink.

Madame Eugene Verdier.—In its growth this rose partakes of the character of our old friend Gloire de Dijon, although not so vigorous. There are evident indications that the Gloire was one of its parents. In the open air, when about half expanded, the colour of the flowers is darker even than Safrano. I do not know of another rose in this section that possesses such a deep shade of chamois yellow as this one; yet it does not appear to have been largely planted as yet. Apart from the distinct colour of the flowers, the growth is all that can be desired, the foliage having a clear bronzy colour that is a strong contrast to many others.

Etoile de Lyon.—In the character of its growth this is more like Gloire de Dijon than the last-mentioned. It is a pity that we have not more of the same vigorous habit, we might then find less hesitation in the public to plant tea-scented roses. Any way, Etoile de Lyon will disappoint no one, as it not only grows vigorously, but produces a profusion of sulphur-coloured flowers that are both large and full of petals. I have grown this rose against a low south wall, and I found it made a good climber up to a height of six feet. I have also seen it doing admirably in the open in fairly sheltered positions. I have not mentioned a more suitable variety for the open air than this one.

Souvenir d'Elise Vardon.—Much that I have said with regard to the last-named is applicable to this one as regards the character of its growth, as it is more vigorous than many of the Teas, as I saw it last year making splendid growth and flowering grandly in an open bed, I was much struck with its bold character, the blooms being large in size and perfect in form, and the lasting qualities of the flowers leaving nothing to be desired. The colour is a delicate creamy white, with just a tinge of soft yellow in the centre of the blooms. This variety should be included in the most select dozen.

Ma Capucine may be included in any moderate-size collection on account of the peculiar coppery colour of the flowers. In that respect it is useful, but it is one of the comparatively new sorts for which I have not any great affection, as it is hardly vigorous enough in the open air. Of its distinct character no one need doubt.

Madame Charles.—This is another of what I prefer to call apricot coloured roses, as there are several others very similar in that respect; but Madame Charles does better in an open bed than many of them. It is more vigorous, and consequently flowers freely.

Grace Darling is, I think, the best approach to a white rose for the open air in this section, as the constitution of the plant is fairly vigorous, and unless Tea Roses possess this character they are of but little use in the open. The one under notice is so far satisfactory that I prefer it to "The Bride," which is supposed by some to be the best. The colour, however, is not a pure white, as there is just a tinge of pink in the centre of the flower.

Madame Berard.—Although this is an old rose there is not another that surpasses it in the same line of colour or for constitutional vigour and freedom of flowering. The colour is a refreshing clear rose, that makes it a valuable addition to any collection. It may be safely planted where others are expected to do well.

Lady Mary Fitzwilliam gives a good change in the soft shades of colouring in which this section of roses is so rich. But I do not look upon it as rightly belonging to the teas. It has more of the character of the hybrid perpetuals in its growth and foliage. But as the catalogues assign it a position in the tea class, I suppose we must leave it there. Whatever doubt there may be about the class to which it belongs, there cannot be any about its useful character as a garden rose. The peculiar delicate flesh colour that characterises a well developed flower is something to see and remember.

My remaining space I must devote to the notice of a few of the older varieties, which although for the most part producing smaller flowers, do so in such numbers that they deserve to be grown wherever there is space for them. Moreover, they produce them both early and late in the season, which further enhances their value for cultivation in the open air. The sorts amongst these that I would recommend are *Perle des Jardins, Madame Falcot, Jean Pernet, Anna Olivier,* and *Aline Sisley.* These are fairly vigorous in growth, and as hardy as the majority of those I have previously named.

I am aware that I have omitted to name some old favourites, such as Souvenir d'un Ami, Homere, Sombreuil, Safrano, and Devoniensis, not because I value them less than formerly, or that they have been surpassed in general usefulness, but because they are so well known that comments on their merits are uncalled for. My object has been to bring forward a few fine varieties that are not well known.

J. C. C.

BRITISH APPLES.

In illustration of recent discussions, Messrs. Turner, of Slough, have favoured us with a few samples of apples from the many that are grown in their nurseries, of which, owing to the demand for first class fruit, the stocks are now running low.

Gravenstein is one of the varieties sent, and it is in excellent character, large and showy, boldly ribbed, the colours clear yellow with streaks of orange and crimson. The flesh is crisp, but very tender, sweet but refreshing, and slightly aromatic. The measurement of a fine sample was 4⅛ inches across, and 4 inches deep.

Rosemary Russet is of full medium size, narrowing abruptly to the eye, which is in a neat circular basin like the Scarlet Nonpareil. This is heavily clothed with russet with a brilliant red cheek. The samples measured 3⅞ inches in diameter, and 3¾ inches deep. An excellent dessert apple now in perfection.

Cornish Aromatic is a smallish showy apple, measuring 3⅜ inches in diameter, and the same in depth, the colour orange with much crimson in broad streaks and patches; the eye nearly even, or in a very shallow knobbed depression. This is entered in the books as good until Christmas, but the samples sent appear likely to be good for fully a month to come. As a dessert fruit it is quite to be desired, and the tree is one of the most fruitful.

Cox's Orange varies much in size, and is often undersize, so that first-class samples are somewhat scarce. The Rev. W. Wilks has occasionally presented at meetings of R.H.S. fine growths of this variety from his garden at Shirley, near Croydon. We have before us samples from the garden of F. Knighton, Esq., Mortlake Road, Kew, that admirably represent the variety. They measure 4 inches in diameter and 3½ inches deep, the weight of fruits this size being over 6 ounces, but we have not found a sample to turn the scale at 6¼ ounces. From Slough also we have Cox's Orange, the colour being of the most beautiful lemon yellow, with streaks of lively red, which is deepest on the side next the sun.

Blenheim, from Slough, has abundant colour, such as it never develops in gardens within a dozen miles of London. As a dessert apple it is somewhat overrated, but it is so good all points considered that it is a kind of heresy to recognize any point that may be counted against it.

We see people munching tasteless American apples and speaking of them as good, and the fact compels us to lament the deficiency of a taste that is satisfied with such things.

DESSERT APPLE, THE QUEEN.

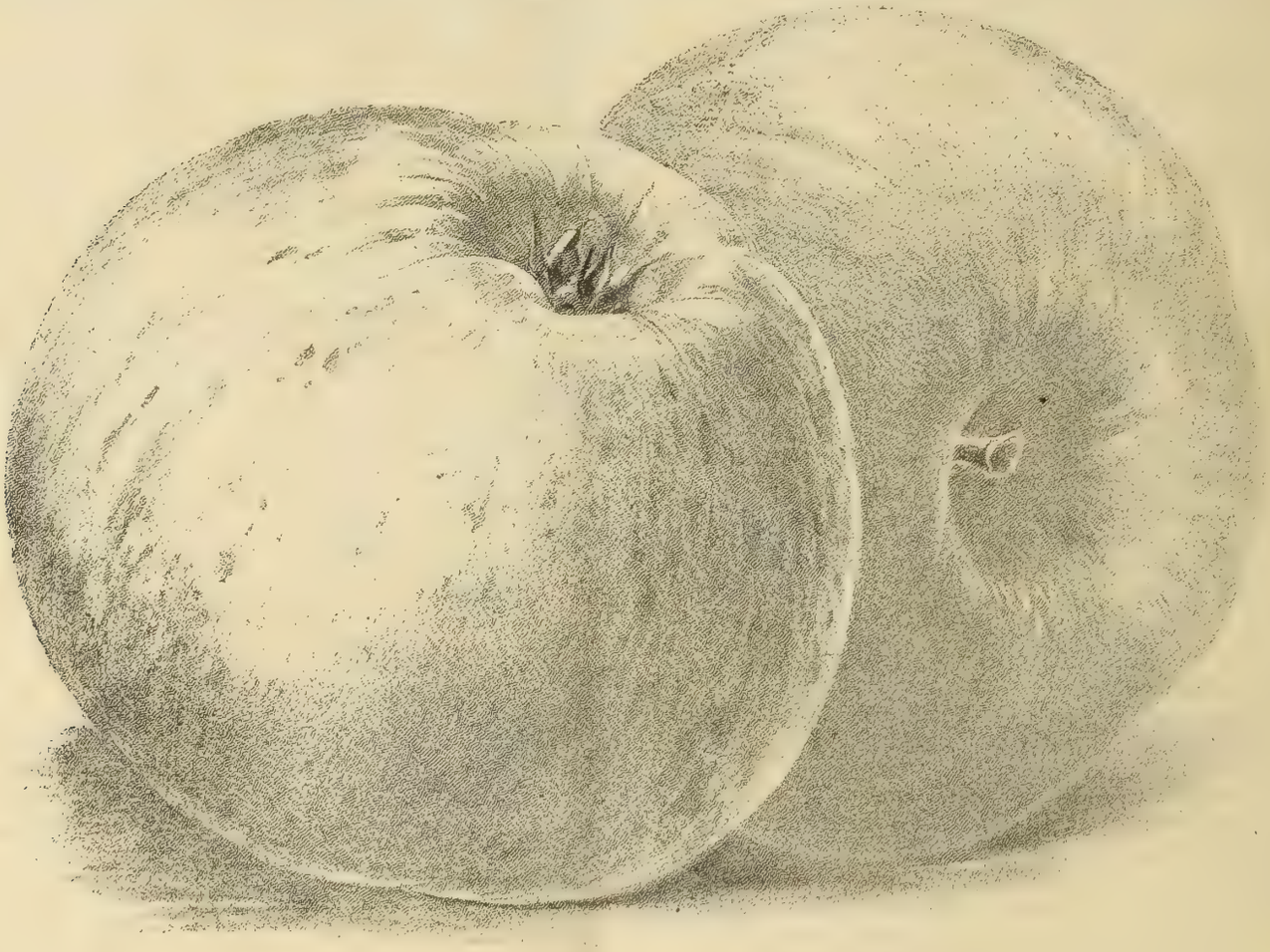
The figures of *The Queen* that accompany this were prepared by Mr. Arthur Slocombe, from samples presented by Messrs. Saltmarsh and Son, of Chelmsford, at the Apple and Pear Conference. This variety gives such promise of future importance that we felt it desirable to secure a few particulars of its history. As years pass, and men pass with them, many records are lost that would have been valuable had pains been taken to secure them while the witnesses of the events were at hand to supply them. Accordingly, we sought the assistance of Mr. T. J. Saltmarsh, and here follows his account of the origin of this apple:—

From information given me by the owner of the original tree of the Queen apple, "its birth was on this wise"—The owner's father, a small farmer, when attending Chelmsford market some thirty years ago was accompanied by his daughter, who called his attention to a very fine apple on a fruit stall. He bought it for her and she took it home. It contained four pips, which were duly sown, doubtless with the expectation of raising four trees to produce fruit like the one purchased. Four young trees were raised and planted in the father's orchard, which at his death came into possession of his son. Twelve years afterwards one of the said trees produced fruit, and continued to bear more or less nearly every year afterwards, whilst the others remained barren. That one is the one now known as "The Queen." When the tree was about twenty years old the owner brought me a basket of the fruit to ask me if I did not think it was worth notice, and also to ask me to graft some trees for him. I accepted his invitation to go and see the fruit on the trees, and I shall never forget the sight presented to me. It was a fine young healthy tree of spreading habit, laden all over with large handsome fruit, pale yellow, beautifully streaked with scarlet, crimson on the sunny side, and as regular in size and disposition as though they had all been selected and tied on in their places. The tree had some half-dozen props round the outer branches to help them to support the load they had to bear, the ends of the branches then nearly touching the ground. After making terms with the owner I exhibited some fruit at a committee meeting of the R.H.S., the result being a request to see it again later on. Accordingly, on November 16, 1880, it was again exhibited, and awarded a first-class certificate. I well remember the late Mr. Osborne, of Fulham (who was on the committee) telling me what a delicious apple he thought it, so much so that he ate nearly a whole one himself, and begged one of me after the meeting to take home.

You ask me whether it is likely to become a market apple? I say undoubtedly "it will." My salesman has so much faith in it that he purchased a large number of trees to send into Devonshire, where he has purchased some land for growing several varieties of large fruit for the London market, including Warner's King, Winter Hawthornden, Bardfield, Defiance, &c., &c.

The Queen must be a good paying variety from its large size, handsome appearance, and free-bearing habit, let alone the fact that it fills the basket quickly, so that at ordinary prices it pays better than a crop of medium-sized fruit. As to its keeping properties, we have kept it firm until April, and Mr. Ford, who is on the R.H.S. committee, told me he kept his first fruit until June. Strange to relate, the other three seedlings did not fruit until some years later, and were all worthless.

The Nurseries, Chelmsford. T. J. Saltmarsh.



NEW DESSERT APPLE, *The Queen* (Colour pale yellow streaked with scarlet crimson).

LÆLIA AMANDA.

The group of orchids known as natural hybrids has of late years been steadily on the increase. When first so-called natural hybrids appeared they were regarded more as vegetable curiosities than anything else, so well it seemed to be understood that the laws of nature were antagonistic to the theory of the flowers of one species being fertilized with pollen from another by means of insects; unless, indeed, the latter made some unaccountable mistake in seeking nectar in the recesses of flowers belonging to a species different from that to which attention had at first been directed. Should this supposition be reasonable, then these insects must have made a good many mistakes in recent years if we are to judge by the great number of so-called natural hybrids now in cultivation, and which are to be found chiefly among those genera which are imported in such large quantities, as Odontoglossum, Cattleya, Lælia, &c. An attempt to solve the mystery surrounding these natural hybrids may not be out of place here. Perhaps they are in the first place effected by some belated insects who may have partaken too freely of the saccharine juices of which they went in search in the earlier portion of the day. In such a condition, like human beings similarly affected, they could not be held quite responsible for their actions, and in mistake might easily call in to have "one drop more" at the flower of a strange species while on their homeward journey, and deposit the pollinia of one species on to the stigma of another by way of payment for their refreshments. But to the subject of this note.

Lælia amanda, otherwise known in gardens as Cattleya Rothschildiana, is of supposed hybrid origin, and was introduced from Brazil in 1882 by Mr. W. Bull, of Chelsea. It is a very beautiful and distinct plant, and may be recommended as well worth cultivation in every orchid collection. The plant from which the illustration was made flowered in Messrs. F. Sander and Co.'s nursery in August of last year, the blooms remaining in perfect condition for about five weeks. There were two or three more flowers on the plant than the figure represents, but these were unfortunately cut off before I found time to make a sketch of them. In shape they resemble Lælia elegans, and either L. crispa or L. lobata, and it is probable that the parentage of L. amanda is confined to some two of these species. The sepals and petals remind one of those of L. elegans, while the lip has more the character of L. crispa. As to colour, the sepals and petals are of



LÆLIA AMANDA. From specimen in Messrs. Sander and Co.'s Nurseries, St. Albans.

a beautiful pinky white, the lip is pale rose outside with deeper rose veins. The inner surface is rose-purple, handsomely decorated with radiating branched lines of darker purple, which gradually fade into the conspicuous narrow whitish border adorning the front lobe of the lip. The habit of Lælia amanda is almost identical with that of L. elegans. The stems, or pseudo bulbs are from nine to twelve inches high, cylindrical, tapering downwards, and bearing at the summit two dark green, ovate, oblong, leathery leaves.

This plant may receive the same treatment as Lælia elegans. During growth plenty of water may be given, and the compost of rough peat and chopped moss should be well drained so as not to become sodden. Drainage is of great importance in the cultivation of orchids, and should always be well attended to. Should the soil then become too wet occasionally, the air circulating through the lower portion of the pot will soon absorb the superfluous moisture.

St. Albans, Jan. 9, 1890. JOHN WEATHERS.

ORCHID NOTES.—REICHENBACHIA.

PART IX. of the second volume is now to hand, and fully maintains its reputation for artistic delineation of orchidaceous plants. There is in the first place an excellent representation of

CATTLEYA LABIATA TRIANÆ ALBA, a lovely white sub-variety of this old species. The most recent arrangement of orchidaceous plants is the excellent manual published by Messrs. Veitch and Sons, of Chelsea, and therein we find that many fine cattleyas hitherto supposed to be species are now classed as varieties under the old species *C. labiata*. Even the remarkably distinct C. Dowiana is now merely a form of this species, so also is C. eldorado, C. Percivaliana, C. Gaskelliana, C. Mendeli, C. Warneri, &c. Even our old friend C. Mossiæ is no longer a species, but a mere variety of C. labiata. It compels us to write larger labels, that is all. Here is a name I have culled from a contemporary, Cattleya labiata, var. Luddemanniana, sub-var. brilliantissima. The sub-varietal name might not pass muster before a classical scholar, but he might use one quite as awkward for an ordinary gardener to write and pronounce. We all know how useful the varieties of C. Trianæ are, even the ordinary forms coming into flower in the early spring months before the Mossiæ and Mendeli types push up through their sheaths. It is also one of the hardiest and most vigorous of cattleyas, and of easy culture. The main point is to withhold water as soon as the sheaths are formed, and keep the plants in a light, airy position. This treatment prevents their starting into growth a second time, which they are too apt to do. The white form is very beautiful, the crest of the lip being stained yellow. A few of the most celebrated forms are Baroness Schroder's, Baron Schroder's, Mr. Lee's, Mrs. Lee's, Mr. Dodgson's, Mr. Backhouse's, and Provost Russell's. Some of the above are very valuable and most beautiful as varieties, but none of them more so than the pure white form.

ODONTOGLOSSUM HUMEANUM is also figured; a characteristic specimen. This plant was first named and described by Dr. Reichenbach in *Gardeners' Chronicle* v. (1876), page 170. It has usually been considered to be a natural hybrid between O. Rossii and O. cordatum; but the editor here states that it has more of O. maculatum in the shape and structure of the flowers. In Messrs. Veitch's manual, already quoted, it is merely given as a variety of Rossii. The plant sometimes appears in importations of O. Rossii. British-raised hybrids are difficult to obtain. I have had large, fine, and well-ripened pods from O. Rossii crossed with O. Pescatorei, and also O. triumphans; and, although they were packed full of seeds, none of them germinated. O. Humeanum is a free-growing plant, and seems to do best in teak baskets, suspended near the roof of the odontoglossum house, or in pots rather more than half-full of drainage, and the pots placed in baskets. It also succeeds in the shallow pans now much used for all small-growing orchids.

CYPRIPEDIUM ARGUS; of this a handsomely spotted variety is figured. This is a very distinct cypripedium; it has tesselated foliage, and the warty eye-like spots on the lateral sepals are very distinct, but it has never become very popular. It was introduced in the first place by the Messrs. Veitch, through M. Gustav Wallis, in 1872, and flowered for the first time in Europe in their nursery in April, 1873. Being from the Philippine Islands, it requires to be grown in the warmest house. The usual compost of fibrous peat, sphagnum moss, and ample drainage are required.

ODONTOGLOSSUM LUTEO-PURPUREUM *var.* PRIONOPETALUM.—This seems to be a handsome variety of a distinct and useful species of odontoglossum. There are many varieties of this species; a goodly number have the petals rather narrow and not very brightly marked, but a large proportion have broad, heavily blotched sepals and petals, like the variety figured, and in that form are very effective in a collection of odontoglossums. O. hystrix, O. sceptrum, O. mulus, and numerous others are now classed as varieties of this species. O. luteo-purpureum was discovered by M. Linden so long ago as 1842 on the central cordillera of New Grenada at 8,000 feet elevation. Consequently it does not require much heat, and does very well indeed in the odontoglossum house. It grows very vigorously too. I flowered many varieties out of an importation of O. crispum, and it was easy to distinguish them even before they flowered by their much more vigorous growth. It evidently grows with O. crispum, and requires exactly the same treatment. J. DOUGLAS.

"A SIMPLE FACT ABOUT" KEATING'S COUGH LOZENGES. Ask throughout the world, in any country that can be named, you will find them largely sold. There is absolutely no remedy that is so speedy in giving relief, so certain to cure, and yet the most delicate can take them. One Lozenge gives ease. Sold in 13½d. tins.—[ADVT.]

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

CONSERVATORY AND GREENHOUSE PLANTS in bloom include Abutilon Boule de Neige, Acacia armata, A. grandis, Azaleas, Camellias, Chorozema varia nana, Cinerarias, Correa cardinalis, Genetyllis tulipifera, Erica gracilis vernalis, Epacris delicata, E. hyacinthiflora, E. Lady Panmure, Lachenalia tricolor, Lily of the Valley, Hyacinths, Polyanthus Narcissi, Primulas, Tropæolum Jarrati, Tulips, Violets.

THE HOUSE.

BIRDS in a robust state of health will be better able to withstand the injurious effects of injudicious exposure than those in a weakly condition; nevertheless, those who value the health of their pets will be careful to guard them against it. The birds should of course enjoy a breath of fresh air when advisable, the great point being to guard them from exposure to sharp draughts, which at this season of the year are more than usually injurious to them. A generous diet is essential to the welfare of cage birds, and it is important that the value of green food is not overlooked. Lettuce leaves and the tops of watercress will be the most suitable green food at the present time, and of these they may have rather liberal supplies.

CONSERVATORY AND GREENHOUSE.

AZALEAS to be started at intervals for succession, and always to be forced as gently as possible. Those in the forcing pit will now bear a heat of 60 deg. to 70 deg., and must have abundant moisture.

CONSERVATORY should now be attractive with Acacias, forced Azaleas, Amaryllis, Crown Imperials, Cinerarias, Crocuses, Hyacinths, Primulas, Tournesol and Rex Rubrorum tulips, Lily of the Valley, Snowdrops, Violets, and Tree Carnations.

FUCHSIAS FOR BEDS may be propagated to any extent from a few old plants, and a very moderate temperature will set them growing for this purpose. Take off the young shoots when about three inches long.

FORCING AND FRUIT HOUSES.

ASPARAGUS.—The beds should be lined if the heat is declining; the heat ought to be near 60 deg. to ensure a quick growth of eatable shoots. Quarters in which it is intended to form new beds in the spring should be liberally manured, trenched over, and the surface left in a rough state.

PEACH AND NECTARINE TREES when started must have the soil about their roots in a moist state, the wood clean, and all training complete. As the trees begin to push use the syringe freely, but discontinue the syringe when they begin to flower. In peach houses where a crop is set thinning will be an important matter. In the process of stoning the trees frequently thin themselves considerably; so the cultivator ought not to remove all surplus fruit at once. Where there is room for a hundred he may safely leave a hundred and fifty, and such of the extra fifty as pass through the stoning period must be removed afterwards.

STRAWBERRIES should, from the time they are placed in the forcing house until they have ripened their crop, have as much light and air as possible. When a certain number of fruits are set, so as to swell off nearly simultaneously, nip out the remaining bloom-buds, and be content with a moderate crop. Watering must be done with care, for the soil must not be allowed to become dust dry, neither ought it to be kept in a constant state of saturation.

VINERY. — Where the vines are breaking promote a moist state of the atmosphere, but those coming into bloom to be kept rather dry. If the inside border is at all dry, give it a good soaking with tepid water. See that all laterals are neatly trained; if any pruning is neglected attend to it at once. Avoid the usual error of employing too much heat. A temperature of 50 deg. is the highest allowable for vines beginning to grow. As soon as they have expanded their first leaves a little there may be an increase of 5 deg. to 10 deg. The temperature for vines on which the fruit is set to be 55 to 60 deg. by night, and 65 to 70 deg. by day.

FLOWER GARDEN AND PLEASURE GROUNDS.

ALPINE PLANTS frequently suffer at this time of year from damp, and the ventilation should be as liberal as circumstances will permit. The stock should now be looked over, labels re-written if required, and many of the kinds repotted, divided, or planted out, as the case may be. Keep the store plants in frames very clean, removing dead leaves, and admit as much air as possible. Generally, alpine plants, though very susceptible to the influence of damp, ought never to be dust dry; water must be given occasionally, even during winter.

AURICULAS should have the water gradually increased as they show signs of growth, and the pots top-dressed with cow-dung. Give plenty of air and beware of damp.

BEDDING PLANTS may be propagated rapidly by making a sweet hotbed to forward plants for cuttings, and to strike cuttings of such as are fit to cut from in the greenhouse. Cuttings already rooted to be potted off and helped on by a sweet moist heat. If any outbreak of mildew, increase the heat and promote a dry atmosphere; at the same time dust the plants with sulphur or fine peat dust.

BORDERS STOCKED WITH HARDY HERBACEOUS PLANTS must not be forked over unless the places are marked. If done now with no indication of the whereabouts of the plants, such things as pæonies and campanulas will be destroyed in a wholesale manner. As soon as they begin to peep through, make all clean and tidy. Herbaceous plants of all kinds may be planted, and if a little dry chippy manure is thrown over their crowns after planting, it will be a great assistance in case of severe weather. When they begin to grow they will push through it easily enough. Look over the rockeries, and take note of what deaths have occurred.

ROSES may still be planted. Those from which exhibition flowers are to be cut should be planted in firm loam, well manured with half-rotten dung. Dwarf-growing varieties of tender habit, which are useful for the front lines of roseries, require an admixture of sand and leaf-mould, or peat, to lighten the soil and promote the formation of an abundance of fibrous roots.

FRUIT GARDEN AND ORCHARD.

TREES AND BUSHES lifted with care and replanted quickly will carry their fruit pretty well hereafter, but it is too late for large trees in bearing to be moved with a prospect of their carrying a full crop this year; there is, however, still good time to plant fruit trees, because, even if they produce little this season they will gain a season's growth on the ground,

and that is so much gain. Let all pruning be completed quickly; mulch trees newly planted; prepare scions for grafting, and heel them in till wanted. Have protecting materials ready for wall trees that are likely to require it. Judicious protection will always pay for the trouble and outlay it occasions.

KITCHEN GARDEN AND FRAME GROUND.

CAULIFLOWERS to be sown in boxes and placed in gentle heat. It is quite worth while to pot them and give them good frame treatment, as with a well-prepared soil made rich with manure, in which to plant them, large handsome heads may be obtained early in the season, when they will be worth three times as much as those from sowings on warm borders.

CELERY must be sown for the first main crop. The seed will soon germinate if sown in pans and boxes, and put in some odd corner of the greenhouse or forcing pit.

LETTUCE.—To ensure an early supply of well-hearted plants, those now up in boxes must be planted out on a moderate hotbed, so as to keep them growing, and fit for planting out on sheltered borders in a month or six weeks' time. They will then lift with good balls, and if aided by a little shelter, and protected on frosty nights, will turn in when lettuces are valuable; but if the young plants are allowed to stifle each other, and become drawn in the seed boxes, they will never make fine plants.

POTATOS.—Whole potatos are preferable to cut sets for planting at this season of the year, and they always grow better and come to maturity sooner, if the sets are sprouted before planting, for when furnished with short, stout, hard green or purplish sprouts, with a frill of roots around them, they grow with vigour from the first.

RHUBARB may be forwarded by covering the stools with boxes, casks, and seakale pots, without fermenting material, but the latter will pay for its cost in an earlier supply, and the benefit of the crop by forking it in when the heat is spent.

VILLA FARM.

DURING the winter milch cows should be well looked after, for they require food that is nourishing, and at the same time not likely to impart a disagreeable flavour to the milk and its products. In all cases the food should be sufficient and no more, for it is poor economy to keep the animals on short commons, and it is wasteful to give more than they will eat with some degree of avidity. The stores should have roots, chaff, and cabbages in suitable proportions. Swedes, mangels, and turnips ought to be pulped or cut up into small pieces, and well mixed with the chaff, which may be either of hay or oat straw, the latter being the cheapest, and therefore best suited for animals that are not required to be brought along rapidly, for giving milk. The cabbages, which possess higher value for winter feeding than they have credit for, should be sliced up moderately, and in a general way be mixed with chaff. Milch cows require a little hay twice a day, and at the same and other times when fed moderate quantities of cabbage and pulped mangels mixed with chaff. They may have a small proportion of swedes and turnips, but if supplied with these roots in liberal quantities both milk and butter will have a very disagreeable flavour. Mangels, on the other hand, when given in quantities suitable to the maintenance of the animals in good condition, do not impart a flavour to milk that can be considered in the slightest degree objectionable. Brewers' grains should also be brought into requisition when they can be obtained at a reasonable rate, but as they have a tendency to promote the production of milk in large quantities, but poor in quality, the supplies must not be too liberal. The byres ought to be kept thoroughly clean and well ventilated, and all that is necessary to be done to promote the comfort of the animals should have due attention.

COOL CULTIVATION OF TROPICAL PLANTS.

ATTENTION has been directed in a brief note to Mr. Watson's report on the tropical plants grown in the Riviera, in the December number of the Kew *Bulletin of Miscellaneous Information*. The matter is of far too great importance to be disposed of in that way, for the report furnishes a body of information of the greatest horticultural value, and bears directly on the furnishing of gardens with tropical and sub-tropical plants. For the climate of the Riviera we must indeed go to the Riviera, but having noted the conditions that prevail there, so far as they may be assumed to influence vegetation, we may be enabled to turn the facts to account for our advantage in selecting plants for various purposes, and more especially for plant houses at all seasons and for open ground cultivation during the summer months. We already make room in our stoves and greenhouses for palms, and dracænas, and other tropical and sub-tropical plants, and a certain number of interesting subjects of the class are commonly employed in the embellishment of the summer garden. But Mr. Watson's extensive record will suggest considerable enlargement of the lists in use, and the possibilities of plant culture.

The Director of the Royal Gardens, Kew, prefaces the report with a note on the impossibility of determining the suitability of any plant for this or that mode of cultivation by the aid of botanical or physiological data alone. The conditions requisite to success "for the most part can only be found out by trial and experience." Consequently, we are dependent on observation for a knowledge of the routine of cultivation to which any particular plant should be submitted, and it is a common occurrence to discover that many plants are well able to endure a lower mean temperature as well as a lower minimum than, apart from observation, we should venture to submit them to. The northern border of the Mediterranean, from Hyeres to Genoa, is probably the most favoured spot in Europe for "real and varied sub-tropical gardening." The annual rainfall in this region is about the same as that of Greenwich, viz., 25 inches, and the whole of this, with the exception of an occasional thunderstorm in summer, falls between September and April. The mean winter temperature is about 47 Fahr. Occasionally the thermometer goes down to freezing point, and sometimes, though rarely, four or six degrees of frost are experienced. This occurred in Cannes last year, when some of the more delicate plants were injured by the cold. Mr. Watson further adds on this part of the subject:—

In the gardens at Villa Valetta several palms, cycads, and ferns were pointed out as having been injured by the cold of last winter. These will be referred to again. The same amount of cold was felt at Nice, where, in the gardens of the Floricultural Society, many plants were damaged by the frost. In 1887 no less than 11 deg. of frost were experienced in this garden, when many plants, usually hardy there, were killed. Some interesting particulars in regard to the effects of a low temperature on various plants were communicated by the manager of these gardens; these will be given under the respective plants in the list which follows. In Mentone the thermometer rarely falls below freezing point. "Two or three times in the winter the thermometer goes down for a night or two to 38°, 36°, 34°, or even to 30° in exposed situations" (Bennett).

The same circumstances which make the winter temperature of the Riviera comparatively high have a like effect on the temperature in summer. Gardeners and others, who are there all through the summer, find the temperature often very trying. The fierce heat of the sun, untempered by wind, and the excessive drought, make good gardening very difficult. Many of the plants, large specimens as well as small, require daily drenching at the roots. It is impossible to keep a turf of any kind, the beautiful stretches of green grass which are to be seen in the winter being the results of annual sowings in autumn. At this time the ground intended for grass is dug over and trodden down very firmly, otherwise the heavy rains would wash it into disorder. The grass, I was told, is entirely rye-grass, and the best seed is reputedly Scotch. It is sown thickly and kept watered until the rains come. Some plants were pointed to as being crippled by the excessive sun-heat in summer. One of these was *Cycas revoluta*, the leaves of which were scorched. This is one of the commonest, in fact the only common species of cycad which we saw, and very few were healthy. The following tables, copied from Dr. Bennett's book, "Winter and Spring on the Shores of the Mediterranean," will afford some idea of what summer heat is like in some of the stations of the Riviera:—

	Mean Temperature of Seasons.			
	Winter.	Spring.	Summer.	Autumn.
Mentone	49·5	60·	73·	55·6
Toulon	43·30	53·70	74·30	59·
Genoa	44·57	58·69	75·03	62·94
Nice	47·82	56·23	72·26	61·63
*Ceylon (Hill districts)	69·30	70·78	69·54	71·29
*Madeira	60·60	62·36	69·56	67·30
*Port Jackson (N.S.W.)	54·62	63·45	70·93	64·03
Paris	38·43	50·40	64·47	52·30

*For comparison.

In attempting to account for the successful cultivation in the Riviera gardens of so many plants which have hitherto been believed to be distinctly tropical in their requirements, the extraordinary summer heat and sunshine experienced there must be considered as having a great deal to do with it. A plant which makes its growth under such favourable conditions is better able to withstand the trials of a low temperature than one which has been less favoured. This is a well-known fact in horticulture. Again, the length of the cold season is so very short, that little harm can come to plants which are so abundantly favoured in other respects. It is only actual frost that does permanent injury to vegetation. In England a tropical plant may be grown in a low temperature several years before it becomes severely injured, although exposure to a degree or two of frost would probably kill it.

Among the plants which have been introduced, the palms form by far the most prominent feature in the towns of the Riviera. The beauty of many of the gardens is largely due to the effect produced by groups or large specimens of palms of various kinds. In some of the towns and especially Hyères, the streets are planted with *Phœnix dactylifera*, the common Date, its tall straight stem, 30 or more feet high in some instances, crowned with a huge head of grey-green arching leaves. The effect produced is monotonous and rather depressing, but it could be easily improved by the addition of some such trees as Eucalyptus, Acacia, Evergreen Oak, or even Plane. Hyères might be named the town of Palms, so numerous are its date trees. In Bordighera this palm is extensively cultivated for the sake of its leaves, which are sold to Roman Catholics and Jews for the decoration of churches at Easter, and for the feast of Tabernacles. The whole of the head of leaves is tied up tightly in the autumn so that the inner leaves may bleach. At the time of my visit there was scarcely a date tree in the town that was not tied up in this way.

Almost as striking and as plentiful as the Date are *Phœnix canariensis* and *Washingtonia filifera* (Pritchardia filamentosa). The former is said to have been first introduced into the gardens of Baron Vigier at Nice about 20 years ago, where the two parents of all the plants of this palm now on the Riviera are still in existence. It is a palm of very rapid growth, of gigantic proportions and much more ornamental than the date palm, or indeed than any of the species of Phœnix grown there.

Equalling the Canarian Phœnix in its extensive use, in its proportions and in rapidity of growth, is the *Washingtonia*. The growth made by this palm on the Riviera is astonishing, and it appears to thrive equally well in all the stations. There must be hundreds of thousands of plants of it in the gardens and nurseries visited, and the prices asked show that there is a great demand for it.

After these, the palm which ranks next in popularity is *Chamærops humilis*, which is abundant in most of the gardens, and occurs sometimes as a street tree. It fruits when only a few feet high, producing annually very large bunches of bright orange fruits about the size of sloes. When writing in 1880 of the most important among the introduced plants on the Riviera, Professor Allman stated that, "It is remarkable, and not easily explained among the phenomena of distribution, that while the southern Date Palm grows here so freely, and even ascends to some height upon the hills above the coast-line, the *Chamærops humilis* (the truly indigenous palm of the European shores of the Mediterranean, and still abundant in the south of Spain and in Sicily) is nowhere to be met with.' Certainly I saw thousands of it, some of them old and almost worn out. They were, however, all cultivated plants, and although there were numerous seedlings near the specimens in fruit, I have no recollection of having met with a truly wild example of this palm. As most of my time, however, was devoted to gardens and not to the wild flora, my failing to see any wild plants of this palm does not count for much.

(To be continued.)

EXPERIENTIA STULTES DOCET.—Here is a parallel case to the New Zealand parrot. It is taken from Mr. H. A. Bryden's *Kloof and Karroo*, a book of Cape Colony natural history and sport: "Some years back some one baboon having come across the dead body of a milch goat, discovered and extracted the milk-bag, and, like Eve, 'saw that it was good.' His discovery must have been quickly imparted to his fellows, for the Karroo farmers began to find their milch goats ripped up by these brutes solely for the sweet and luscious milk. The baboons, too, becoming accustomed to butchering, presently turned their attention to the flesh, and will now destroy kids—and if they can manage it, goats—for their flesh alone." The case reminds us of the murder in the Rue Morgue, as related by Edgar Allan Poe.

Notes of Observation.

CUTTING DOWN CHRYSANTHEMUMS.

A FEW years since there was some discussion amongst chrysanthemum growers as to whom belonged the credit of first adopting the system of dwarfing the plants by cutting them down early in the summer. We know that Mr. C. Orchard, when at Coombe Leigh, Kingston Hill, contributed to the GARDENERS' MAGAZINE a singularly able paper explanatory of the cutting down system. We also know that he justified his practice by exhibiting at the Kingston shows groups of dwarfed plants of so high a degree of excellence as to place him at the top of the prize list in a keen competition. Subsequently it was stated that the cutting down was by no means new, as it had been adopted by growers between thirty and forty years before publicity was given to the practice adopted with so much success by Mr. Orchard. Doubts were expressed as to this having been the case. But I have not had any doubt in the matter, for I was assured by Mr. John Laing that when engaged in Scotland forty years ago in growing chrysanthemums for competitive purposes he adopted the practice. But as he chiefly exhibited cut blooms he did not then regard it with much favour. Dwarfing chrysanthemums by cutting them down during the summer was not new even then, as it was described fully fifteen years previously in the pages of the *Floricultural Cabinet*. In referring the other day to the third volume of that periodical, published in 1835, I found in the January part a contribution from Mr. John Martin, of Winchester, in which about sixty varieties are classified according to their colours, and descriptions given of some of the most important. With the list directions are given for their cultivation. In the course of the cultural remarks Mr. Martin states: "About June I repot them into thirty-two size pots, always taking care to keep them well watered. After I have repotted them I cut off the top of every plant according to the height I wish to bloom them. If I wish for tall plants I only just take off the extreme tops; but if I want dwarf plants (which I think are most desirable in pots) I cut them off very low down, always taking care to leave three or four joints below the cut." Mr. Martin then proceeds to say: "These tops, if put into a bed where there is a little heat, will easily strike root and make very handsome plants." I mention this as a contribution to the history of the cultivation of the chrysanthemum in this country, and likely to prove interesting to many growers. Notwithstanding the fact that cutting down in summer was practised at so early a period, to Mr. C. Orchard belongs the honour of having brought the practice into prominent notice, and secured for it the attention its importance demands. He may, indeed, credit himself with having rendered thereby a substantial service to chrysanthemum culture.

GEORGE GORDON.

CHRYSANTHEMUM ANNIE CLIBRAN.

Since writing a description of this variety (page 15), I have received blooms of the variety *J. R. Pearson* for comparison. I see that they are quite distinct. Messrs. Pearson, of Chilwell, Notts, inform me that the two varieties, Mdlle. Lacroix, and its offspring, Annie Clibran, are both of early flowering habit, but J. R. Pearson has for two seasons maintained its character of a late bloomer, coming into flower fully a month or five weeks later than Mdlle. Lacroix.

E. MOLYNEUX.

NEW CHRYSANTHEMUMS.

Under the above heading (page 15), Mr. Molyneux, in describing the new sport, John Doughty, rightly states that it is of better form than the old Bronze Queen. The latter I have grown the last three years, and although I have grown six plants each year, I have only been able once during that period to show a bloom: it is so liable to reflex when half expanded that it is not worth growing for exhibition purposes. The new sport above mentioned is a better thing; for I had twelve blooms this year and every bloom was perfect in form: in fact, of really better form than was its parent, Queen of England. But I agree with Mr. Molyneux in his advice not to show the two on the same board, for although distinct, they may, under some cultivators' treatment, become of a similar shade. Last September I visited one of the oldest and, I may safely say, one of the best growers in the south. When speaking of Bronze Queen, he said: "I am not growing it now, I have grown it three years and scarcely ever get a good bloom." That appears to be the experience of many good growers I have spoken to about it. Then I say why should we grow such a disappointing variety. Why not make room for something better? then we shall have no fear of being disqualified. As to the similar sport from Alfred Salter, called Mr. R. Mudie, why did not Mr. Molyneux exhibit it before the floral committee of the National Chrysanthemum Society? Then had his blooms been of a more promising character, they would, I feel sure, have received the honour of a certificate in preference to the John Doughty. I fail to see, myself, why a variety should be named and made public unless it has been recognised by some such high authority. If, as Mr. Molyneux states, Mr. R. Mudie is similar to John Doughty, and both are allowed to find place in any catalogue, it will be then that purchasers will be deceived and if not careful, disqualified. They will be on the same footing as Golden Queen and Emily Dale. Speaking of the latter two, I would advise all exhibitors to procure the Improved Emily Dale which is a sport from that beautiful variety Lord Alcester, retaining its form of petal, but resembling the old Emily Dale in shape and colour; I grew it last year and have a very high opinion of it. But I must say this variety has not obtained a certificate for the reason that it was not considered distinct enough from Emily Dale in colour, therefore was not shown. It is its form that recommends it; and I would say to others do as I have done, throw the old varieties away and grow the improved forms.

J. DOUGHTY,
Angley Park.

PLANTING LILIES AMONGST TREES.

I advise amateurs who wish to grow Lilium auratum and other lilies at the side of shrubberies or near trees, to sink casks with the bo toms out below the level of the soil, to fill these with good lily soil, and to plant the bulbs about six inches deep. In the GARDENERS' MAGAZINE of October 5, 1889, page 607, I mentioned having tried this with a paraffin cask. At the side of this were two lily beds, for which the soil had been taken out about five feet deep and lily soil filled in. On lately examining these beds, we found them, though the lilies had only been planted nine months, filled with roots from the shrubs, sufficient to impoverish and dry the soil. I have now sunk a number more casks, principally old linseed oil casks, being of greater diameter than paraffin casks, and will report results. I think gardeners are sometimes blamed for lilies failing where it is the tree roots that are in fault. One of the oldest and highest of the hardy plant authorities, on seeing the cask plan, paid it the compliment of adopting it.

Heatherbank, Weybridge. GEORGE F. WILSON.

WHICH IS THE EARLIEST INTRODUCED JAPANESE CHRYSANTHEMUM?

In asking which is the earliest Japanese chrysanthemum, I am not referring to the time of flowering, but to the period of introduction, and in submitting the question I would suggest that it is not wanting in importance. The general body of growers consider the varieties introduced by Mr. Fortune early in the sixties to be the first Japanese that made their appearance in this country; but to many it is well known that Triomphe du Nord, which has the principal characteristics of the Japanese varieties, was introduced from France many years before. But this variety can hardly claim precedence in time, for in a list of chrysanthemums contributed by Mr. John Martin, of Winchester, to the volume of the *Floricultural Cabinet* for 1835 (page 30), a variety under the name of the "Semi-double Small Brown-flowered Japan" is described. "This," observes Mr. Martin, "is one of the very dwarfest and smallest flowered varieties in the whole collection, sending up its small reddish-brown blossoms singly, not more than half double and some nearly single. It flowers in the middle season or later, and makes but a poor appearance. I conceive it to be a distinct species, owing to its very small leaves and flowers." From the description, which was evidently drawn up from actual specimens, the variety appears to be widely different from the race of Japanese now in cultivation, and to closely approach the pompons. The only point of interest in connection with it is the fact that it is one of the very first known to English cultivators with which Japan has been in any way linked.

GEORGE GORDON.

PROPAGATING CARNATIONS IN WINTER,

About four years since, I sent you some rooted cuttings of carnations, that were rooted and potted in twenty-one days. I now enclose a plant of an unbloomed seedling that was taken from the parent plant on December 9, to show that even at this time carnations may be freely rooted if desired, although preference should be given, in a general way, to the months of September and October, for the method of propagation I have adopted. When potted these make strong plants and become well established in the pots in the course of a few weeks, and make first-rate flowering plants the following season.

With the carnation I send a plant of sweet bay from a winter cutting which was rooted and potted in three weeks from the time it was inserted. My only object in submitting these is to show what may be done in an extreme case, and to meet an emergency with the aid of moderate bottom heat.

GEORGE FRY.

Lewisham, Dec. 31, 1889.

A more agreeable New Year's Gift we could scarcely desire, for it is in the nature of an expansion of horticultural practice in a most useful direction. It is too well known that many good things have been lost that might have been saved by Mr. Fry's mode of operation, to render any attempt on our part to justify the practice necessary. The rooted cuttings referred to were sent by Mr. Fry in October, 1886, with a paper on the subject of late propagation, which was published October 16, 1886. They are now strong plants that have produced annually, from the summer of 1887, a fine crop of yellow carnations, and we shall hope to see them repeat the performance for many years to come as memorial plants.

Here follows the article, which has been much inquired after:

LATE PROPAGATION OF CARNATIONS AND PICOTEES.

With the requisite convenience these may be rooted finely and in a condition to be potted off in about three weeks from the time the cuttings or pipings are put in. In fact, as I stated long since, treated as I have suggested, they root as if by magic, and produce equally good plants as those that are rooted by layering.

Cuttings may now be inserted on a gentle bottom-heat. For rooting purposes use well-decomposed cocoa-nut fibre refuse, with a good portion of silver sand. I have a small three-light propagating pit heated with a hot-water tank, and, as a rule, the cuttings are put in and ready for potting, with a mass of fibrous root-growth, in about twenty-one days. Cuttings may now be treated as stated with perfect safety, and strong flowering plants secured that will flower well next season. I am now rooting some very choice seedling yellow carnations, and some that were put in about three weeks ago are potted into sixty-sized pots, some of the plants possessing a handful of roots.

Those that have the convenience of a constant and genial bottom-heat can strike almost all the year round by the hundred or by the thousand with the best of results, and those who have neglected to layer at the proper season should, having the convenience, lose no time in adopting the plan suggested, although I have, in some seasons, layered the old Dutch clove as late as October, and had a fine lot of strong stuff for planting out in the following spring.

Lewisham, Oct. 11, 1889. GEORGE FRY.

Exhibitions and Meetings.

NATIONAL CHRYSANTHEMUM SOCIETY.

ANNUAL MEETING, JANUARY 27.

THE annual meeting of the National Chrysanthemum Society was held at Anderton's Hotel, Fleet Street, on Monday evening. Mr. E. Sanderson, one of the vice-presidents, in the chair. There was as usual a large attendance of members, which may be regarded as one of the best proofs of the interest taken in the work of the society. The minutes of the previous annual meeting having been read and signed,

The report and balance-sheet for the past year were read. The report, after congratulating the society on the great success which had attended the whole of the operations, described in detail the steps that had been taken early in the year in the reconstruction of the society, which had been rendered necessary by its enormous growth. The several exhibitions were properly described as great and unqualified successes. The September and January shows were in every way superior to those respectively held in these months in previous years, the greatest advance being perhaps in the January show, when the blooms were presented in such comparatively large numbers and fresh condition as to prove that the encouragement given to the production of late flowers by the institution of the mid-winter exhibition is having a highly beneficial influence upon this phase of chrysanthemum culture. The great metropolitan exhibition in November was in every respect a splendid success, and the provincial show at Hull was in every way worthy of the high reputation enjoyed by the National and Hull societies, the plants and blooms being staged in immense numbers, and in a condition that did credit to the cultural skill of the exhibitors, and the attendance of visitors was very large.

Three conferences had been held in the course of the financial year, two in London and one at Hull. The metropolitan conference in conjunction with the September show was devoted chiefly to early varieties, and that in January dealt almost exclusively with the production of mid-winter blooms, and both were well attended. The conference at Hull in connection with the provincial show was devoted to chrysanthemums generally, and resulted in one of the largest assemblages of chrysanthemum growers that has yet been held in the United Kingdom.

During the year a supplement to the society's catalogue of chrysanthemums had been published, and the committee had much satisfaction in stating that the catalogue was now generally accepted as the authority on all matters of classification and nomenclature not only throughout the United Kingdom, but also in Australia, Tasmania, and other distant parts of the world.

The Floral Committee had met regularly during the season, the meetings were well attended, and as the result of the care shown in dealing with novelties, the certificates awarded were accepted amongst the great body of cultivators as a proof of the high quality of the varieties on which they have been conferred. The annual dinner had proved in every way satisfactory, an excellent programme having been prepared, and the members and friends present being upwards of one hundred and seventy.

A special committee had been appointed to prepare a scheme for the centenary festival in November next; several meetings had been held, and it was hoped that in a very short time the Centenary Committee would be able to report to the General Committee as to the steps that should be taken to carry out the arrangements in a manner commensurate with the importance of the occasion.

The balance-sheet showed that the total income during the year amounted, with a balance of £33 15s. 3d. from 1888, to £871. Of this the sum of £226 19s. 5d. was received as subscriptions, £109 14s. as donations and special prizes, £217 2s. 11d. from the Royal Aquarium Company, £18 12s. 9d. from the Hull Society, £37 8s. 6d. for entry fees and rent of space, as compared with £30 3s. 6d. in 1888; £89 18s. from affiliated societies for fees, medals, certificates, as compared with £61 2s 6d. received from the same source in the previous year. The advertisements in schedule realized £40 3s., or an increase of nearly £15, and the sale of catalogues £21 0s. 11d. The chief items of expenditure were: £17 5s. 6d. for trophy, £16 9s. 8d. placed to reserve fund, £426 12s. for prizes, £59 10s. 6d. for medals, £35 cost of admission tickets, £17 10s. 2d. cartage and carriage of plants, £69 4s. 9d. for printing, and £39 1s. 3d. for postages, telegrams, cheques, &c. The balance is £19 0s. 9d., which, although apparently less by £14 14s. 5d. than in the previous year, is really £3 13s. 1d. more, as the trophy and box properly belonged to 1888.

The report and balance-sheet was, after a very brief discussion, carried unanimously. This having been done, the treasurer announced that the reserve fund now amounted to £100 19s. 9d., and hoped that the importance of materially augmenting it would not be overlooked by members and others interested in the welfare of the society. It was also announced that the donations to the Centenary Fund now amounted to £159 10s., to which Lord Brooke and the Royal Aquarium Company had each contributed £20, Veitch Memorial Trustees have also contributed £20, with four medals. A vote of thanks was passed to the auditors, Messrs. Drain and Crane, and this having been suitably acknowledged by Mr. Drain,

The election of officers and members of committee was proceeded with. As the result of the election of officers, Lord Brooke, M.P., President; Mr. J. R. Starling, Treasurer; Mr. R. Ballantine, Chairman of Committees; Mr. E. C. Jukes, Vice-Chairman of Committees; Mr. W. Holmes, Honorary Secretary; and Mr. C. Harman Payne, Foreign Corresponding Secretary, were unanimously re-elected. In proposing the re-election of Mr. Holmes as honorary secretary, Mr. Jukes referred to the marvellous ability he had brought to bear upon the business of the society, and expressed his opinion that to his ability, tact, and untiring efforts the high position the society now occupied was chiefly due. With the views expressed by Mr. Jukes there was an agreeable consensus of opinion.

The twelve members of committee retiring in accordance with the rules were: Messrs. W. E. Boyce, R. Dean, C. Gibson, H. Briscoe-Ironsides, G Gordon, J. H. Laing, J. Mardlin, E. Sanderson, G. Stevens, F. C. Wildman, J. Wright, and B. Wynne. Nineteen nominations were received for the twelve vacancies, and as the result Messrs. W. E. Boyce, R. Dean, C. Gibson, G. Gordon, J. H. Laing, J. Mardlin, E. Sanderson, G. Stevens, J. Wright, and B. Wynne were re-elected, and Mr. D. B. Crane and Mr. H. J. Jones were elected. Mr. Briscoe-Ironsides was unanimously elected to fill a vacancy in the section of the committee retiring in 1891. Mr. Crane and Mr. R. Cannell were elected auditors.

On the motion of Mr. Jukes, it was unanimously resolved that the sum of £10 be expended in the purchase of a present to Miss Holmes as a slight acknowledgment of the clerical assistance she has rendered in carrying on the work of the society. Also that the committee be empowered to expend such sum in payment of clerical assistance as may be considered necessary.

Two societies were received into affiliation, and several new members elected.

The proceedings terminated with the customary vote of thanks to the chairman.

HARDY PLANTS IN FLOWER.

IN all sheltered gardens in southern and western counties the softer kinds of vegetation that are addicted to early movements are now hurrying into spring costume, and it will be unfortunate for many rockery and border plants should severe frost occur to check their progress. Nor will the garden alone suffer in such a case, for the whole of the agricultural economy of the country will be considerably disturbed. In all forward districts autumn sown cereals are in a soft growing state, and wheat shows a brilliant green blade, that promises an early harvest, unless—but there comes the possible dreadfulness, and we almost forget the garden by the greater claims upon our sympathy of the more important products of the field. Yet we cannot well expect to have such weather as the present all through the months of February and March; we must face the horrors of an English spring, and so we can but enjoy what is now given us with as much complacency as we can command, and be prepared to do what little may be done to save our favourites when the trial shall come.

HELLEBORES of the best kinds in gardens near London may be said to have had their day. No; not all, for although the *Niger* section, with its superb flowers, is fully over, the pure white flowers of *H. orientalis* are in perfection of snowy whiteness, and the plants are as gay as usually occurs two months later. So also we have abundance of blooms on *H. colchicus*, *H. odorus*, and *H. abchasicus*, but in every case the flowers of these are in better condition than the leaves; in fact the plants present a dilapidated appearance as the consequence of the last frost, but the flowers are as fresh and bright as can be desired. Lent lilies in the middle of January are quite out of season and are scarcely to be desired, but for all that it is delightful to have them. Nor, as flowers are flowers, even if not showy, should we omit from the list *H. purpurascens* with its curious lurid colour coming near to *H. intermedius*, which is of the purple slaty class and really beautiful, though not in a way to acquire popularity.

NARCISSI are coming forward at a rapid rate, and the smallest of the trumpets, *N. p. minimus*, is flowering in the open rockery, the little *nanus* being nearly ready to keep it company. In frames the yellow *Corbularia* has been gay for weeks past, and the delicate white-flowered *monophyllum* is in flower.

Linum arboreum is a good thing in the alpine house now, for, like many other things, it is in advance of its season, and is turning winter into spring in a pleasant way. It is a quite woody plant, and will make a tree of several feet high, with neat, dark leafage, crowned as now with terminal clusters of flowers of neat salver-shaped form, and a pale clear, yellow colour. This good old plant was figured in *B. M.*, 1794, but the *B.M.* of 1890 is above such a thing as *Linum arboreum*.

PRIMULAS are not wanting in the present January garland, and on sheltered banks even Londoners have primroses, but not as in the west where the banks are now lively with them. *Primula obconica* is in flower of course, for it may be counted for every day in the year. But *P. farinosa* is also in flower in the the alpine house, and so also is *P. Fortunei*, which belongs to the P. denticulata series, and is neat and pleasing. The single lilac is the best garden variety of primrose in flower now near London, and it is usually the earliest.

Saxifraga Burseriana major is the best form of this beautiful early-flowering saxifrage. In all the good points of neat growth, free flowering, and exquisite beauty it agrees with the type and differs only in producing larger flowers. When planted on a bed of sandstone grit with peat soil added it makes a superb growth in the rockery, and it is also one of the best to grow in pots for the alpine house, the rosy or brownish hue of the unopened flower buds greatly enhancing the beauty of its milk-white flowers.

IRIS lacks not representatives in the January wreath. Our old friend *Iris reticulata* may now be regarded as the head of a group of early-flowering kinds that are of great importance both for the rockery and the alpine house. The varieties of it are not less desirable than the type, and Mr. Ware has a fine selection now in flower in the nurseries at Tottenham. We have just seen in the iris garden at Kew, two new and delightful species that have flowered finely under Mr. Dewar's care. One is *Iris Bakeri* of similar habit to I. reticulata, the flowers of a colour intermediate between pure azure blue and lavender; the falls are lined and mottled in this tone of blue on a grey ground, the standards are self-coloured and satiny. An iris like it was described some ten years since under the name *I. Danfordæ*, but as we cannot compare them we cannot say with precision where they agree, or in what they differ. Another and interesting novelty is *Iris Bornmulleri* in the same style of growth as I. reticulata, but full rich yellow with a few brown spots that do not soil or alter it from a proper yellow self. The value of a self-yellow of a showy kind in this group may, as the penny-a-liners say when they cannot accomplish a proper description, be more easily imagined than described.

Bulbocodium ruthenicum is a brilliant "spring meadow saffron," the flowers now showing freely are of the richest rosy violet, differing from all crocuses, and coming nearer to colchicum than to any other of our favourites. In the alpine house this is a gem, as it often suffers from weather in the rockery.

WALLFLOWERS are declaring their intentions near London, and in western gardens make "a field of cloth of gold." We are noting the order of flowering of a number of varieties, and see already that the double kinds will not be ready for some time to come. The earliest are the bright yellow *Belvoir Castle* and *Golden Tom Thumb*. Next will come the blood walls *Harbinger* and *Blood Red*. The *Cloth of Gold* follows closely, but is not quite so early as Belvoir Castle. Some of the unnamed single yellows are earlier than the named kinds, but they generally lack quality. Double Walls from seed are rather disappointing, but where there is a great demand for variety a few of these should be grown; perhaps the double yellow is the best of them.

SPRING FLOWERS.

THE following are now in bloom in Dickson's Nurseries, Chester: Bulbocodium vernum, Crocus biflorus argenteus, C. lunatus, C. Oliveri, C. Imperati, C. serotinus, C. Sieberi, C. reticulatus, Cyclamen Atkinsi roseum, C. Atkinsi rubrum, C. coum, Galanthus Elwesi, G. Imperati, G. plicatus, Hepatica angulosa, H. double red, Iris reticulata, Narcissus bulbocodium monophyllum, Leucojum vernum, Saxifraga Burseriana; primroses in variety.

Replies to Queries.

Constant Reader.—Heckfield Place, Winchfield, Hants.

Regular Subscriber.—The "blackthorn" is the sloe, Prunus spinosa. There is a pear known as Suffolk Thorn, and this probably is haunting your memory.

Pompon Chrysanthemums.—D. W. : The old plants from which you wish to propagate in March should be kept as hardy as possible. There is no better place for them until they have furnished a sufficient supply of cuttings than a pit or frame, from which the lights can be withdrawn in mild weather. Excepting in severe weather the frame should be freely ventilated, and in mild weather it will be an advantage to fully expose the plants.

Names of Fruits.—Tillingham : Your Golden Pippin is Powell's Russet, an excellent dessert apple. Your Red Pippin is Rymer, a good Yorkshire apple that does not generally keep beyond Christmas in the south of England. Your Page's Challenge we do not know; it comes near to Royal Russet, but is neither so good nor so handsome as that variety. The Blenheims are grand for colour, and in flavour perfect.—W. Harbridge: 1, Redleaf Russet; 2, Minier's Dumpling; 3, Hollandbury; 4, Sturmer Pippin.

Corn Marigold.—R.F. : The plant about which you inquire is the Corn Marigold, the Chrysanthemum segetum of the catalogues. As it can be readily raised from seed, there is no difficulty in obtaining a stock, but there is some risk of its becoming a weed when the conditions, as in the case of light soils, are especially favourable to its reproduction. Plants raised from seed sown in February will commence flowering early in the summer, and continue in bloom for a considerable period. The seed should be sown where the plants are to be grown, and the seedlings be thinned sufficiently to prevent overcrowding.

Early Carrots.—B. W. : To obtain a supply of young carrots in the shortest possible period, make up a bed of leaves, or of a mixture of leaves and stable manure in a frame or pit, cover to a depth of seven or eight inches with light rich soil, and sow rather thinly. If more convenient make a bed of sweet fermenting materials in the frame ground, and place a portable frame upon it. When the bed is made up in a pit, it is advisable to use sufficient material to raise the surface of the soil to within about six inches of the glass, and to press it firm to prevent excessive shrinkage. Improved Early Nantes and Scarlet Carentan are two of the best varieties for frame culture. The soil must be maintained in a moderately moist condition throughout, and the frame be freely ventilated on all favourable occasions after the carrots make their appearance above the surface.

Pruning Ixoras.—E. F. B. : Your specimen ixoras, of which the lower parts have become somewhat thin and bare, can be readily converted into dwarf bushes furnished with foliage to the rim of the pots, and this is the best season of the whole year in which to take them in hand. First, slightly reduce the supply of water to the roots, and then prune them rather hard back, as it is advisable to obtain new growth from near the base. When pruned turn them out of the pots, reduce the ball of soil by at least one third and repot, using pots two sizes smaller than those previously occupied. Place them at the warmest end of the stove, and if convenient give them the assistance of a brisk bottom heat; especially is bottom heat an advantage in the case of I. coccinea, I. salicifolia, and others that require a high temperature for their successful cultivation. For some time after their repotting, water rather sparingly at the roots, but syringe them daily, or every second day, according to the weather, to assist them to break vigorously. The balls of soil may be reduced by the simple process of chopping down the sides with a bill-hook or other sharp implement. Use fibrous peat, to which a rather liberal quantity of sand has been added, and be careful to ram the new soil firm with the aid of the potting stick.

Tomatos.—H. F. B. : It is not too early to raise plants for the production of an early crop under glass, and as you are desirous of obtaining fruit as soon as possible, it is necessary that you should begin at once. Perfection is one of the best varieties for indoor culture, the fruit being of good size, excellent colour, and high quality. Sow in pans and place the seed in a cucumber pit or other structure where it will have the assistance of a temperature of about 70 deg. Immediately the seedlings are of a suitable size pot them off separately, using three-inch pots and a light rich compost. Let them remain in the same structure until they have filled the pots with roots, and then remove to a house or pit in which a temperature ranging between 60 deg. and 65 deg. is maintained. A position near the glass is important, and they must be shifted on or be planted out as soon as more root space is required. For the production of the earliest supplies, plants grown in pots ten or twelve inches in diameter invariably prove satisfactory. There is no objection to their being planted out provided the surface of the border is within a moderate distance of the glass. Should you decide upon the latter course, shift the plants into six-inch pots and bed out when they require more root space. A temperature between 60 deg. and 65 deg., moderate supples of water at the roots during the earlier stages, free ventilation, and a rather dry and buoyant atmosphere are essential to success in the production of early crops of tomatos under glass.

Sulphate of Ammonia.—O. T. : Sulphate of ammonia is one of the most powerful manures we have, and should always be applied sparingly and be regularly distributed. It may be used with advantage in the cultivation of garden crops of all classes, with the exception, perhaps, of beans and peas, which, in common with leguminous plants, derive comparatively little benefit from nitrogenous manures. It may be employed independent of farm-yard manure, and when the supply of the latter is comparatively limited, in addition to it. An objection is sometimes urged against the use of the sulphate of ammonia alone on the ground of its being exhausting; but there is very little in it. Any fertilizer that contains but one constituent of vegetation will, if it is used continuously, prove exhausting. Therefore a similar objection might with equal force be urged against potash or phosphates. If, on the one hand, a nitrogenous manure enables the crop to take up supplies of potash and phosphates in the soil which would otherwise be lying idle, so, on the other, the phosphates and potash, by promoting a more vigorous growth, cause the plants to take up larger quantities of nitrogen. For garden crops generally, the best results will be obtained in the use of sulphate of ammonia, by mixing it with superphosphate of lime and kainit in the proportion of three parts (by weight) of kainit and four parts of superphosphate of lime, to every three parts of the sulphate of ammonia. The proportions may be reckoned in pounds, hundredweights, or tons. Sulphate of ammonia and mixtures containing any considerable proportions of it should be applied in the spring, especially if the soil is light in texture, because of the risk of a considerable proportion of the ammonia being carried into the drains by the winter rains.

Indian and Japanese Pink.—M. D. : Your failure last year to obtain a satisfactory display of bloom was probably due to your having sown the seed too late. To obtain plants strong enough to commence flowering within a short time of their being put out at the beginning of the summer, you must sow the seed early in the year. If it is sown before the end of January it will be an advantage; but the sowing ought certainly to be made before the middle of February. The best course of procedure is to sow in pans consisting of a mixture of loam, leaf-mould, and sand, and place them in a pit or house in which a brisk temperature is maintained. When the seedlings are large enough to handle, prick them off into sixties, putting three in each. All the varieties of both Dianthus chinensis and D. Heddewigi are more or less beautiful, and a collection of each will not be very costly.

Early Potatos.—N. C. : In the production of early crops of potatos in the open, it is essential to select a warm sheltered position and to have the sets nicely sprouted and the soil well prepared. The Ashleaf and Sharpe's Victor are two excellent kinds for first early supplies, and the best possible position is a border on the south side of a wall. The soil should be in a nicely pulverized condition, and in planting open out shallow trenches about two feet apart, spread a little partially-decayed stable manure and a small quantity of charred refuse if available. As the shaws make their appearance above the surface, draw a little soil over them to prevent the tender tops being injured by the frost, and earth up in due course. Previous to the last-named operation being performed, apply a rather liberal top-dressing and hoe it in. To have the sets in proper condition when the time arrives for planting, place them in single layers in shallow boxes and place in a light position where they will not be in any danger from frost.

CAVES AS SHELTERS FOR PLANTS.

THOSE of your readers who like out-of-the-way devices in gardening as I do may care to hear of the results from our little mound caves of which I wrote in the GARDENERS' MAGAZINE, December 18, 1886, page 769, and will, I hope, experiment in the same direction. The first caves were built with too small pieces of stone, so after showing that the greenhouse ferns, such as Adiantum cuneatum and Pteris serrulata, would stand the winter, the roof began to drop in; these were planted in February, 1885. We made a new series of mound caves, and planted them in October, 1887. These had one large stone for each side, back, and roof, they have stood well, and the greenhouse ferns in them are now green, and both have seedlings all along the sides of the stone, showing that they are quite at home.

In another set of caves Cyclamen macrophyllum is thriving, and a number of different varieties of Adiantum are planted, but have not yet had time to establish themselves.

I have tried a good many bulbs and tender primroses, but these failed, I suppose, from insufficient light. There must be, I think, many plants which would succeed as well as in a greenhouse. In very cold weather a slab or slate may be placed across the mouth of the caves.

GEORGE F. WILSON.

Heatherbank.

TRADE CATALOGUES.

WOOD AND INGRAM, HUNTINGDON.—*Seeds for Garden and Farm.*
BETTS, BARKER, AND CO., BURTON-ON-TRENT.—*Vegetable and Flower Seeds.*
JAMES YATES, UNDERBANK, STOCKPORT.—*Carnations, Picotees, Roses, &c.*
HOOPER AND CO., COVENT GARDEN AND MAIDA VALE.—*Seed Catalogue.*

Obituary.

ON the 25th ult., in London, Mr. JOHN M. BRAIDWOOD, of the Forest Department, Naini Fal, India, in his 50th year.

ON the 23rd ult., at Hastings, HENRY CLARKE WEBBER, of Covent Garden Market, aged 41, younger surviving son of the late Michael James and Margaret Webber.

Markets.

COVENT GARDEN.

FRUIT.

Apples	per ½-sieve	2s. 0d.	to 7s. 0d.
Apples, American, pr. brl.		10s. 0d.	„ 21s. 0d.
Cobs	per lb.	1s. 3d.	„ 1s. 9d.
Grapes	per lb.	1s. 0d.	„ 6s. 0d.
Lemons	per case	10s. 0d.	„ 15s. 0d.
Pine-apples, English, prlb.		1s. 0d.	„ 1s. 6d.
Pine-apples, St. Michael's each		2s. 6d.	„ 7s. 6d.

VEGETABLES.

Asparagus, Sprue, per bun.		1s. 0d.	to 1s. 6d.
Beans, French	per lb.	0s. 8d.	„ 0s. 9d.
Beet	per doz.	1s. 6d.	„ 2s. 0d.
Brussels spr'ts, pr ½ sieve		1s. 6d.	„ 2s. 6d.
Cabbages	per doz.	1s. 0d.	„ 2s. 0d.
Carrots	per bun.	0s. 4d.	„ 0s. 6d.
Cauliflowers	per doz.	2s. 0d.	„ 4s. 0d.
Celery	per bundle	1s. 6d.	„ 2s. 0d.
Coleworts, pr doz bunchs.		2s. 6d.	„ 3s. 0d.
Cucumbers	each	1s. 0d.	„ 1s. 6d.
Endive	per doz.	1s. 6d.	„ 2s. 0d.
Herbs	per bunch	0s. 3d.	„ 0s. 4d.
Horse-radish	per bun.	3s. 0d.	„ 4s. 0d.
Leeks	per bunch	0s. 3d.	„ 0s. 4d.
Lettuces	per doz.	1s. 0d.	„ 2s. 0d.
Mushrooms	per basket	1s. 0d.	„ 1s. 6d.
Onions	per bushel	3s. 0d.	„ 4s. 0d.
Parsley	per bun.	0s. 4d.	„ 0s. 6d.
Rhubarb	per bun.	0s. 3d.	„ 0s. 4d.
Salsify	per bundle	1s. 0d.	„ 1s. 6d.
Seakale	per pun.	1s. 0d.	„ 2s. 0d.
Scorzonera	per bundle	1s. 0d.	„ 2s. 0d.
Shallots	per bun.	0s. 4d.	„ 0s. 6d.
Small Salading	per pun.	0s. 3d.	„ 0s. 4d.
Spinach	per bushel	4s. 6d.	„ 5s. 0d.
Tomatos	per lb.	0s. 9d.	„ 1s. 0d.
Turnips	per bunch	0s. 4d.	„ 0s. 5d.

CUT FLOWERS.

Abutilons	per doz. bun.	1s. 6d.	to 4s. 0d.
Azaleas, per doz. sprays		0s. 6d.	„ 1s. 6d.
Bouvardias	per bunch	0s. 8d.	to 1s. 0d.
Callas	per doz.	4s. 0d.	„ 7s. 0d.
Camellias	per doz.	1s. 0d.	„ 3s. 0d.
Carnations, per doz. blms.		1s. 0d.	„ 2s. 0d.
Cyclamens, per doz. blms.		0s. 4d.	„ 0s. 8d.
Eucharis	per doz. blms.	3s. 0d.	„ 5s. 0d.
Gardenias, per doz. blms.		9s. 0d.	„ 18s. 0d.
Heliotropes, pr doz. sprys		0s. 6d.	„ 1s. 0d.
Hyacinths, Roman, per doz. sprays		0s. 9d.	„ 1s. 6d.
Lilac, White, per bun.		4s. 0d.	„ 6s. 0d.
Lily of the Valley, per doz. sprays		0s. 9d.	„ 1s. 6d.
Maidenhair Fern, per doz. bun.		3s. 0d.	„ 6s. 0d.
Marguerites, pr doz. bun.		3s. 0d.	„ 6s. 0d.
Mignonette, per doz. bun.		2s. 0d.	„ 4s. 0d.
Narciss, Paper White, per doz. buns.		2s. 0d.	„ 5s. 0d.
Pelargoniums, per doz. trusses		0s. 9d.	„ 1s. 3d.
Primulas	per doz. sprays	1s. 0d.	„ 1s. 6d.
Roses, Tea, per doz. blms.		0s. 6d.	„ 1s. 6d.
Spiræas, per doz. sprays		0s. 9d.	„ 1s. 0d.
Stephanotis, per doz. sp's		9s. 0d.	„ 10s. 0d.
Tuberoses, per doz. blms.		1s. 6d.	„ 2s. 0d.
Tulips	per doz. blooms	0s. 9d.	„ 1s. 6d.
Violets, per doz. bun.		1s. 0d.	„ 1s. 6d.
Violets, Parme, per bun.		2s. 0d.	„ 3s. 0d.
Violets, French, per bun.		1s. 6d.	„ 2s. 6d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents	per ton	45s.	to 90s.
Magnum Bonum	per ton	40s.	„ 95s.
Beauty of Hebron	per ton	50s.	„ 100s.
Imperator	per ton	50s.	„ 70s.
Scotch Champions	per ton	45s.	„ 55s.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
9	S	Nevil Maskelyne died, 1811.	7 27	14 27	5 0	10 0	9 28	4 36	4 53	1 45	2 1	39·2
10	M	Queen Victoria married, 1840.	7 25	14 28	5 2	11 13	9 46	5 10	5 26	2 18	2 35	39·2
11	Tu	London University founded, 1826.	7 24	14 28	5 4	Morn.	10 4	5 44	6 2	2 51	3 9	39·1
12	W	☾ Last Quarter.	7 22	14 27	5 6	0 29	10 25	6 22	6 45	3 27	3 47	39·1
13	Th	Massacre of Glencoe, 1691.	7 20	14 26	5 8	1 46	10 51	7 8	7 36	4 10	4 33	39·0
14	F	*St. Valentine.*	7 18	14 23	5 10	3 5	11 26	8 5	8 39	5 1	5 30	39·0
15	S	Bishop Atterbury died, 1732.	7 16	14 21	5 12	4 21	After.	9 18	10 2	6 4	6 43	39·0

Orchids in Flower.		Day of Yr.
Dendrobium Wardianum.....	India.	180
Lycaste Skinneri alba	Guatemala.	40
Masdevallia ignea Massangeana	N. Grenada.	41
Odontoglossum maculatum...	Guatemala.	42
" membranaceum	"	43
" pulchellum	"	44
" triumphans	"	45
		46

THE TAUNTON DEANE TWENTY-THIRD ANNUAL FLOWER SHOW will be held at Taunton, on THURSDAY, AUGUST 14, 1890.
£250 IN PRIZES.
SCHEDULES OF THE HON. SECS.
Early application is invited for Advertisement Spaces in the Prize Schedules, of which 750 Copies are printed. Charge, 10s. per page.

WOLVERHAMPTON HORTICULTURAL SHOW AND FLORAL FETE,
JULY 15, 16, and 17, 1890.
Open Classes for Plants, Cut-flowers, and Roses. Schedules on application to
W. A. GREEN, Jun., Hon. Sec.,
Corporation Street, Wolverhampton.

Exhibitions and Meetings for the Ensuing Week.

MONDAY, FEB. 10.—UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—Annual Meeting.
TUESDAY, FEB. 11.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral, Fruit and Scientific Committees.—Annual Meeting.

Auction Sales for the Ensuing Week.

MONDAY, FEB. 10.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilium auratum and Hardy Bulbs.
TUESDAY, FEB. 11.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38, Gracechurch Street; Roses, Greenhouse Plants, &c.
TUESDAY, FEB. 11.—Messrs. Protheroe and Morris, at The Nurseries, Wandsworth Common; Nursery Stock.
WEDNESDAY, FEB. 12.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Hardy Bulbs, Greenhouse Plants, &c.
WEDNESDAY, FEB. 12.—Messrs. Protheroe and Morris, at the Woodlands Nursery, Maresfield, Near Uckfield; Nursery Stock. (Two days.)
WEDNESDAY, FEB. 12, AND SATURDAY, FEB. 15.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, and Bulbs.
THURSDAY, FEB. 13.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Liliums from Japan, Pearl Tuberoses from America, Orchids, &c.
FRIDAY, FEB. 14.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, FEBRUARY 8, 1890.

INSTITUTIONS THAT ARE SUPPORTED BY VOLUNTARY CONTRIBUTIONS should be managed on principles easy of comprehension by the public at large, and only for the most urgent occasion or convincing reason should any attempt be made to depart from first principles, or to vary the system of management. A council or committee conscious of power may do this or that, and be satisfied. But those that follow them in the management will have to endure some or all of the consequences, and may discover too late that mistakes have been made, that are not only irrevocable, but scarcely perhaps admitting of palliation. These remarks are intended for general consideration. A case has not arisen for their direct application; or at all events we have no such case in mind. But we learn from letters that have recently appeared in the *Gardeners' Chronicle* that certain friends of the Gardeners' Orphan Fund are already discussing the policy of administering donations and subscriptions by one and the same rule. The argument in favour of the change is the very specious one that a certain sum of money bestowed upon orphans will do more than the interest of that same sum while it remains in reserve. The argument is sound to this extent, that capital will always do more than interest on capital so long as the capital lasts. A prodigal may spread a bigger feast by expending a thousand pounds upon it than by devoting to it the comparative small amount derived from one year's interest on the same capital sum when invested in (say) three per cents. But when the feast is eaten the capital is gone, whereas by a more prudent course the interest would provide thirty pounds per annum for a feast in perpetuity, a fact that should influence the prodigal to change his course, and by observing a reasonable economy, ensure for himself perpetuity of enjoyment.

We gather from Mr. Deal's letter that the prosperity of the cause is operating as a kind of intoxicant in certain quarters; but if those who suddenly yearn for a radical change will but exercise a little self-control, they will become accustomed to prosperity and will learn to be just to all parties and to their own vows inclusive. It is dangerous at this early stage to tamper with fundamental rules of administration: the rule requiring investment of donations has operated advantageously, for without such a rule it is not likely the donations would have reached any such amount as we now find invested to the advantage of *present and future* orphans. The interest is theirs: the capital remains both to fructify for them and to form a substantial centre of operations and to confer respectability on a thing that would be reduced to something like vagrancy without it. There is, however, one argument paramount to all that may be derived from considerations of policy. The donations have been secured on the basis of the rule that prescribes investment. To alter that rule will be a breach of faith, and the donors will have the right to object, and even to ask if such a course is legal. We shall hope to hear nothing more of this matter. When necessity arises will be time enough to entertain what is now an ill-timed and unfortunate proposal.

THE REPORT OF THE COUNCIL OF THE R.H.S. was placed in the hands of the Fellows ten days in advance of the date of the annual meeting. A year of activity is represented by the report, and the general results are encouraging; but the increase in the number of Fellows is certainly less than might have been expected under the circumstances. The society needs a London house, and until that is found it cannot sufficiently assert itself to command extensive sympathy. But as the case stands we are bound to say that great things have been accomplished. The meetings of committees have been continuously interesting, the conferences and exhibitions have been especially attractive, and as represented in the society's *Journal*, they have certainly been rich in usefulness, for the papers contributed will rank as important integers in the literature of the horticulture of this century.

MR. HIBBERD'S SECOND LETTER ON FRUIT CULTURE appeared in the 'Garden' last week. In the comments added by Mr. Robinson, he is unjust to one of his friends in the statement made about "hanging bricks on a fruit-tree." The only person known to be so courageous in the pursuit of knowledge was "S. W.," a contributor to the 'Garden,' and his report on the performance appeared in that paper May 4, 1876, p. 221.

READING HORTICULTURAL SOCIETY will hold its exhibitions June 4 and August 27.

LEE AND BLACKHEATH HORTICULTURAL SOCIETY will hold its annual exhibition July 2 and 3.

BRIGHTON AND HOVE CHRYSANTHEMUM SHOW, November 4 and 5.

SCHEDULE OF WOLVERHAMPTON EXHIBITION, July 15, 16, 17, has been issued. It is on the same liberal plan as last year, and Mr. W. A. Green adds a special series of prizes for zonal pelargoniums.

NARCISSUS BULBOCODIUM MONOPHYLLUS began to flower in the garden of Mr. Oscar Thompson, Bushey Heath, Herts, on January 20. The bulbs are planted out on grass turf, and have had no shelter.

TRUMPET DAFFODILS are now flowering in Mr. Hibberd's collection at Kew. This is earlier than any record since the collection was commenced in the year 1869. There are at least a dozen varieties in flower.

GEOLOGY OF LONDON.—Professor H. G. Seeley, F.R.S., will deliver a course of four lectures on "The Tertiary Rocks on which London Stands" at Gresham College, Basinghall Street, February 15 and three following Saturdays, at four p.m. Tickets for the course may be obtained of J. Herbert Hodd, 30, Hatton Garden, E.C., price 5s. each.

ROYAL METEOROLOGICAL SOCIETY will hold at 25, Great George Street, Westminster, on March 18 and three following days, an exhibition of instruments and photographs illustrating the application of photography to meteorology.

BERLIN INTERNATIONAL HORTICULTURAL EXHIBITION will be held from April 25 to May 5, and entries close on March 1. The Emperor offers the large state gold medal for the most meritorious horticultural production in the exhibition. Schedules may be obtained from the General Secretary, Invalidenstrasse 42, Berlin.

DAFFODILS IN SCILLY are flowering remarkably well this season, and are much earlier than usual. Immense quantities of flowers have been already despatched to London and other large centres. Amongst other narcissi in full bloom are Ard Righ, Obvallaris, Paper White, Soleil d'Or, and Scilly White.

THAME HORTICULTURAL SOCIETY.—At the annual meeting of subscribers, held recently, it transpired that the income of the society for the past year was £21 15s. 3d. less than the payments. The day of show proved wet and stormy—hence the deficit. It was arranged to hold a chrysanthemum and fruit show next November on a date not clashing with Aylesbury or Oxford.

HARVESTING ON NEW YEAR'S DAY is a novel event in the northern hemisphere, but it took place on the farm of Mr. Walter A. Wood, maker of harvesting machines, at Hoosick Falls, New York. A mild autumn brought up a free growth of grass, and this was cut and harvested in good condition on New Year's Day.

THE SOUTH POLAR REGIONS will be visited next year by Baron Nordenskjöld and Baron Oscar Dickson. The Australian colonies will contribute to the cost, and the Swedish Academy of Sciences will keep up communications with the expedition so far as that may be possible.

VEITCH MEMORIAL TRUSTEES have decided to give four prizes, each consisting of a bronze medal and £5, for competition at the centenary festival of the National Chrysanthemum Society in November next; also to present a special silver medal to Mr. Bruce Findlay and to Mr. David Thomson, of Drumlanrig, in recognition of their valuable services to British horticulture.

TUESDAY NEXT WILL BE A BUSY DAY for horticultural people. R.H.S. committee will meet as usual at twelve noon; the annual general meeting will be held at three. At five the adjourned meeting on railway charges will be held in the rooms of Horticultural Club, Windsor Hotel. At the same place at six will be the annual dinner of the Horticultural Club, at which Mr. John Lee will preside. And in honour of these several events Parliament will meet the same day.

A CESSATION OF THE EARTH'S FERTILITY is threatened by Mr. H. Kains Jackson, as inevitable in the course of a million years or so. His letter published in the *Times* of Feb. 3 is full of interest, and is of some practical value when rightly interpreted, although as he puts the case, he appears to be wanting in seriousness. This is the vital point of the argument, that more is taken from the land everywhere than is returned to it, and the waste is already telling on the prosperity of nations.

THE HIGH TEMPERATURE prevailing through the greater part of the month of January, 1890, appears to be without precedent, so far as recorded facts have been appealed to for evidence. The highest minimum registered occurred on the night of January 6-7, when the minimum in England generally, and in some parts of the West Coast of Scotland, was above 50, and in places as high as 53 Fahr. In the course of the past five-and-twenty years the highest minimum night temperatures in January have occurred—January 30, 1872; January 14, 1873; January 1, 1880. On each occasion the minimum observed at stations in England was generally above 50 Fahr.

THE PROPOSAL FOR A HALL FOR HORTICULTURE is being mangled by anonymous writers who appear to operate in concealment only that they may work mischief without being held responsible. It is assumed by such people that there is a party desirous of converting the R.H.S. into a trading concern. Not one word has been said in any serious proposal tending in that direction. It would be absurd to make a trading concern of the R.H.S., and happily it is impossible. It is for commercial men to manage commercial business, and to take all they can make as the result of doing justice to themselves and their clients.

MR. SAMUEL BARLOW reports having received at Stakehill, from his beautiful garden near Llandudno, on the 18th of January, 300 blooms of snowdrops, 300 bunches of sweet violets, 100 tea-scented roses, with heaps of winter aconites, mignonette, wallflowers, anemones, stocks, oxlips, cowslips, primroses, polyanthuses, German scabious, antirrhinums, pear blossoms, and other odd flowers. He remarks, "Such a collection, so plentiful in quantity, so fine in condition, and so varied in class to be cut from the open part of one's garden on the 17th of January, is unprecedented in my experience. The tea-scented roses with their buds and foliage, were especially beautiful."

SHAKESPEAREAN GARDENS were discoursed upon by Mr. George Gordon at the meeting of the Lee and Blackheath Horticultural Society, held on the 31st ult., and the descriptions of the gardens and the practices which obtained in them, during the Shakespearean age, proved highly interesting to the large audience. In the course of the discussion which followed, Mr. T. W. Sanders made a vigorous protest against using the pruning knife too freely in the fruit garden, and declared that Mr. Shirley Hibberd had by his crusade in 1876 against the practice of severe pruning—then so generally held necessary by all classes of cultivators—effected a revolution in fruit culture, the importance of which could not well be over-estimated.

MR. J. PINDER BOWER has been engaged as head gardener to J. D. Bland, Esq., Kippax Park, Castleford, Yorkshire.

FRUIT FARMING FOR PROFIT was dealt with by Mr. McKinnon, of the Scone Palace Gardens, in a paper read at a recent meeting of the Perthshire Horticultural Society. Mr. McKinnon submitted that although soft fruits, which are not materially affected by foreign competition, could to a moderate extent and under favourable circumstances be grown with profit, to plant apple and pear orchards was exceedingly risky. In the discussion which followed exception was taken to some of the views expressed by Mr. McKinnon, and it was pointed out that home-grown apples invariably commanded higher prices than apples of foreign growth.

THE BRITISH MUSEUM, BLOOMSBURY, is now open to the public in the evenings of every week-day from eight to ten, the Exhibition galleries being illuminated by the electric light. On MONDAYS, WEDNESDAYS, and FRIDAYS the galleries lighted are those of the Library, Ethnology, Glass and Porcelain, Prints and Drawings, and Artistic and Mediæval collections. On TUESDAYS, THURSDAYS, and SATURDAYS the Galleries of Sculpture and Antiquities. The action of the trustees in this matter deserves the most generous recognition, for there has been no pressure from without to compel the concession; it is the result of a movement by a few large-minded leaders of opinion aided by the action of the House of Commons.

A JUVENILE MUMMER does not escape honours in this searching century. In the Kent County show last year, Master Charlie Davis, of 23, Denmark Street, Camberwell, secured a second prize for a group of chrysanthemums, having, as a matter of course, to compete with experienced cultivators. Being only ten years of age, the event attracted attention, and we are gratified to see in *Amateur Gardening* of February 1 a portrait of Master Charlie, in which he appears to advantage for good looks and intelligence. We shall hope he will not be made giddy by the praises he has earned, and will remember that the world expects us all to "go on unto perfection," thinking little of ourselves and much of our work.

THE TIME OF THE FLOWERING OF APPLES was discoursed upon by Mr. John Watkins in our issue for January 25. The object of the communication was to illustrate the proposition—now widely entertained—that late flowering varieties are much wanted *because* those that flower latest are *de facto* the surest croppers. Mr. Watkins reported on the facts, which differ greatly from current representations of them. The latest to flower, he says, are not the surest to fruit; and he backs this assertion with a record of observations of a most instructive character. It happens that in our publication of the letter from Mr. Watkins the word "more" was substituted for the word "none," a blunder we cannot blame the printer for, seeing that we allowed it to pass in reading the proof. But now we are to read the text on the authority of Mr. Watkins, thus—

NONE OF OUR VERY HEAVY CROPPERS BLOOM LATE.

We are bound to add that many eminent fruitists who have kept records of their observations long since arrived at the same conclusion. Our own experience in this matter was placed before our readers long since, and we have anxiously looked for what our esteemed friend, Mr. E. W. Badger, might be enabled to report as the result of the inquiry he started some two years since. In the list of 51 sorts of which the dates of flowering are given by Mr. Watkins, we note the following fruitful varieties flowering early: Betty Geeson, May 17; Dumelow's (Wellington), May 18; Ecklinville, May 18; Early Julian, May 15; Jennet Moyle, May 13; Jolly Beggar, May 19; King of the Pippins, May 19; Keswick Codlin, May 15; Lord Suffield, May 16; Lane's Prince Albert, May 19; Mank's Codlin, May 16; New Hawthornden, May 18; Stirling Castle, May 16; Schoolmaster, May 18; Warner's King, May 17. To strike the line between early and late we take May 20 as a suitable date. The latest to flower was Court Pendu Plat, May 29, a poor cropper; Emperor Alexander, May 21, is not a heavy cropper; Herefordshire Beefing is an agreeable exception, as it bears abundantly, and the date of flowering in the register is May 23. The following will tell their own tale: Bramley's Seedling, May 20, medium; Cellini, May 20, good; Cornish Gilliflower, May 20, poor; Cox's Pomona, May 21, poor; Cox's Orange, May 21, medium; Frogmore Prolific, May 20, good; Grenadier, May 20, heavy; Hambledon Deux Ans, May 20, medium; Lord Derby, May 22, medium; Mr. Gladstone, May 21, medium; Peasgood's Nonsuch, May 21, medium; Pott's Seedling, May 20, heavy; Reinette du Canada, May 21, medium; St. Albans, May 21, poor; Striped Beefing, May 21, good; Wyken Pippin, May 22, medium. Thus it will be seen that no rule can be deduced as the result of observation.

CHRYSANTHEMUM CULTURE IN JAPAN.

DR. HADJIME WATANABE, an official of the Japanese Agricultural Service, delivered an interesting address on the chrysanthemum at the recent celebration in Berlin of the centennial of the plant's introduction into European cultivation.

According to the report published in *Gartenflora*, the Japanese divide chrysanthemums into two groups—"Nogiku" or wild single, and "Niwagiku" or double cultivated flowers; and the latter are subdivided into four kinds—the ordinary autumn-blooming sorts, the summer-blooming, the winter-blooming, and those which bear flowers at all four seasons. The single flower is not neglected by the horticulturist, but is prized for its very simplicity, and is usually planted at the foot of rocks, intermingled with grasses, to give a landscape design a naturalistic air. In treating the double-flowered plant when it is desired to produce individual flowers of the largest possible size, then all the branches but one are gradually removed, and on

this one only an isolated blossom is allowed to mature. On the other hand, when as many flowers as possible are sought without regard to conspicuous size, the main stem is brought to the greatest possible development, and all its branches are preserved, until the blooming season arrives, when, if some show no buds, they are cut away. The sturdiest possible plants are chosen for this purpose, and the speaker referred to some upon which more than three hundred flowers had been counted. Two forms are in favour for these many-flowers Kikus, one of which gets its name from its resemblance to a thick broom, while the other is a more artificial, fan-like shape.

A Japanese proverb says "it is easy to grow the flowers of the Kiku, but difficult to grow its leaves," and the speaker declared that the plants are judged from this standpoint. The amateur's chrysanthemums are usually "very poor and faulty in foliage, although they may bear fine flowers; but those which one sees at an 'art-gardener's' are clothed from top to bottom with leaves regularly disposed and of a beautiful fresh colour." The most common method of propagating the plant is by root-division, but several others are employed. In one, a single leaf with a bud at its base is plucked, lightly covered with earth and laid in a shady place, where it eventually takes root. Gardeners who own rare] varieties therefore forbid the visitor a near approach to their plants, as it would be easy to pick a leaf of the proper kind and conceal it in the pocket for future planting.

ROYAL HORTICULTURAL SOCIETY.

Report of the Council for the Year 1889.

The work of the Royal Horticultural Society cannot be said to have stood still during the year 1889. Three most useful conferences have taken place at Chiswick, viz.: On roses, on July 2 and 3; on vegetables, on September 24, 25, and 26; and on chrysanthemums, on November 5 and 6; and the excellent results thus obtained, together with the most valuable statistics and returns sent in by the kindness of correspondents all over the United Kingdom, with a few from foreign horticulturists, will, as recorded in the society's *Journal*, form an authoritative standard of reference on the subjects concerned for some years to come.

Sixteen fruit and floral meetings have been held in the Drill Hall, every one of which has been productive of good results to one or other of the different branches of practical horticulture. The number of awards has been as follows: On the recommendation of the Floral Committee, 54 first class certificates, 84 awards of merit, 4 botanical certificates, and 3 commendations. On the recommendation of the Fruit and Vegetable Committee, 7 first class certificates, and 3 awards of merit. On the recommendation of the Orchid Committee, 27 first class certificates, 7 awards of merit, and 12 botanical certificates.

The society's great show, held (by the renewed kindness of the Treasurer and Benchers) in the Inner Temple Gardens, was even more magnificent than in the preceding year, the collection of orchids, in particular, having probably surpassed any collection ever before gathered into one place. The best thanks of the society are due to all those (and especially to the amateurs) who so generously lent their plants for exhibition.

Nor has the Scientific Committee been idle, and the notes of their meetings, as given in the society's *Journal*, will be found full of interesting and valuable information to all horticulturists.

Meantime, the society's general work of scientific experiment and investigation, and of the practical trial of various plants, has been going on steadily at Chiswick, under the superintendence of Mr. Barron. Trial has been made of 104 varieties of potatos; 50 vars. of broccoli; 108 vars. of vegetable marrows, pumpkins, and gourds; 30 vars. of onions; 30 vars. of Brussels sprouts; and 41 vars. of peas. Amongst flowers, trial has been made of 270 varieties of garden annuals, 66 vars. of china asters, 20 vars. of stocks, 190 vars. of dahlias, besides zonal and other pelargoniums; Lemoine's new hybrid gladioli, penstemons, heliotropes, iris, &c. Ivies, of which the society possesses a very fine collection, have been specially examined and classified. Reports on these trials will appear in the *Journal*. Of chrysanthemums, 800 varieties were grown, and these not only added very materially to the display at the Chrysanthemum Centenary Conference, but, from not being so severely disbudded, as is usually the case in producing the show blooms, the plants themselves, as well as the blossoms, were greatly admired. A large sum of money has this year been spent on the gardens. Extensive repairs have been done to the glasshouses, and the general keeping-up of the gardens greatly improved. The breaking-down of two of the largest boilers threatened a great addition to outlay, but the liberal gift from Messrs. Foster and Pearson of one of their patent Chilwell boilers greatly reduced the expenditure under this head. A new hybrid tomato, considered to be one of the best in cultivation, has been raised by Mr. Barron, and the seed distributed amongst the Fellows. The experiment of opening the gardens on Sundays has not met with such success as the Council had hoped, but they have decided to continue it—at least, for the present year; and then, if the privilege should not prove to be more highly valued, it may have to be abandoned, as, besides the additional work thrown on the officers on their one rest day in the week, it also entails considerable expense on the society. The meetings held at Chiswick during the year, though successful in all else, have not been quite so successful in point of numbers as the Council had hoped; and they venture to think that in the year now commencing those Fellows who were so strongly in favour of meetings at Chiswick should make it their business by every means in their power, privately or through the Press, to increase the numbers attending.

But perhaps the chief event of the year has been the revival of the society's *Journal*, by means of which Fellows at a distance are enabled to enter more fully into and reap the benefits of the study and work of those more actively engaged at the centre. Four volumes, containing about 750 pages, have been issued during the twelvemonths, and the Council have the gratification of knowing, from numerous letters received, that these volumes have been highly appreciated, not only in this country, but by correspondents all over the world.*

The invaluable work of 376 pages, on "British Apples," which Mr. Barron was able to produce as the outcome of the "Apple Conference, 1888," is now being re-issued by the society in a cheap and popular edition, at the price of eighteenpence only. It may be as well to point out that unless this issue should command a very large circulation, it will entail a great loss to the society; but the Council have felt, in face of the widespreading interest taken in British fruit culture, and of the fact that this book is a standard work upon apples, that it was their duty to encounter this risk, hoping that individual Fellows would endeavour to promote its sale amongst their neighbours and friends.

All these conferences and meetings, and especially the work and maintenance of the Chiswick gardens and the publication of the *Journal*, have involved the society in a very large outlay, and the Council take this opportunity of endeavouring to impress upon Fellows the absolute necessity there is for them all individually (as many as have the society's welfare at heart) to endeavour to secure new Fellows to the society if its work is not only to be continued at its present standard, but still more so if the ever-opening and extending opportunities of usefulness are to be embraced and accepted. The adoption of £1 1s. as one rate of subscription was, no doubt, a popular movement, but the Council desire to remind the Fellows that such a low rate of fellowship can only be self-supporting if it draws into the society a very large number (far larger than at present exists) of additional Fellows. The Council, therefore, venture to express the hope that every Fellow of the society will make an endeavour to obtain at least one new Fellow during this present year. A statement of the privileges of Fellows and of the aims and objects of the society, together with a form of nomination to fellowship, is for this purpose enclosed with this report.

The revival of lectures at the afternoon meetings has been another good feature in the year's work, and the Council hope that as the fact of these lectures and their value become more generally known, through their publication in the *Journal*, that the attendance of Fellows to hear them, and to take part in the discussions, will gradually increase. The Council cannot but think that many of the Fellows are unaware of the immense interest and value of these regular bi-monthly meetings and the lectures so kindly delivered thereat; and they beg to express, in their own name and in that of all Fellows of the society, their very best thanks to all those gentlemen who have so kindly contributed, either by the exhibition of plants, fruits, flowers, or vegetables, or by the reading of papers, to the success of these meetings.

[Here follows a list of lectures delivered in the past year.]

The hearty thanks of the society are due to the Chiswick Board and to all the members of the standing committees—viz., the Scientific, the Fruit and Vegetable, the Floral, the Orchid, and the Narcissus Committees, for the most kind and patient attention which they have severally given to their departments; to the exhibitors and members of the special committees also, who have contributed to so great an extent to produce the magnificent results of the Rose, Vegetable, and Chrysanthemum Conferences. And herein the Council cannot refrain from thanking especially the Very Rev. the Dean of Rochester, Mr. Harry J. Veitch, Mr. Shirley Hibberd, Mr. Molyneux, and Mr. Mawley, together with all the officers of the National Rose Society, who so cordially, and with such kindly feeling, co-operated in the society's labours.

In conjunction with the Lindley Library trustees, the society's library has received considerable attention. Several defective series (notably the *Botanical Magazine*, now complete from its commencement) have been made good up to date, and a large number of untidy but valuable volumes have been bound.

The best thanks of the society are due to all those who, either at home or abroad, have so kindly and liberally presented books to the library or plants or seeds to the gardens. Special thanks are due to those gentlemen who have so kindly contributed carnations, in view of the conference in July. A list of the donors has been prepared, and will appear in the next number of the *Journal*.

The Council recognize as fully as anyone can the great desirability of securing more suitable premises than the present Drill Hall affords, and they are now anxiously engaged in considering [a scheme for erecting a suitable building on the Thames Embankment, which, if ever accomplished, would, they hope, not only afford ample facilities for our own society, but also, in time, form a centre for all kindred horticultural associations. But they must remind Fellows that the adoption of this scheme is purely a matter of funds, and would entail a very large outlay, and until they can see their way to provide this, they fear that no better place than the Drill Hall can, under the circumstances, be readily found.

The Council have the sad duty of recording the death of forty of the Fellows of the Society during the past year. Amongst them they regret to find the names, Reichenbach, Boscawen, and Berkeley.

Besides the losses from death, the Council deeply grieve to have to record the loss of thirty-nine Fellows by resignation. The society has been struggling bravely for the last two years in the face of many adverse circumstances, and with the burden, financially speaking, of a large number of Life Fellows—from whom it derives no income whatever—bequeathed to it by a former generation; and the Council had hoped that, with the evidence which even this report gives of renewed life and vigour and usefulness, the society would have retained the goodwill and support, and, for a time, the forbearance of all who had joined it. They have, however, the pleasure of adding that a greater number have joined the society than have left it. Still, as they said in another paragraph, they wish to impress very strongly the fact that the society needs a large augmentation before it will be financially possible to embrace the many opportunities of usefulness opening before it. The following tabular statement will show the relations of increase and decrease during the year, both in the number of Fellows and the income arising therefrom:—

Deaths in 1889.

			£	s.	d.
Life Fellows	22	....	0	0	0
4 Guineas	3	....	12	12	0
2 ,,	9	....	18	18	0
1 ,,	9	....	9	9	0
	43		£40	19	0

Resignations in 1889.

			£	s.	d.
4 Guineas	4	....	16	16	0
2 ,,	22	....	46	4	0
1 ,,	23	....	24	3	0
	49		£87	3	0
Total	92		£128	2	0

Fellows Elected in 1889.

			£	s.	d.
2 Guineas	61	....	128	2	0
1 ,,	202	....	212	2	0
Associates	2	....	1	1	0
New Fellows	265		£341	5	0
Deduct	128		2	0	
Total increase in income		....	£213	3	0

265 New Fellows.
92 to deduct.

Total Increase in Numbers 173

*A few remaining copies of Vol. xi., Parts i., ii., and iii., may now be purchased at half price, *i.e.*, Part i., 6d.; Part ii., 2s. 6d.; Part iii., 2s. 6d.

Annual Revenue Account for the Year ending December 31, 1889.

Dr.	£ s. d.	£ s. d.
To Establishment Expenses—		
Salaries and Wages	347 19 8	
Rent of Offices	120 0 0	
Printing and Stationery	99 13 1	
Publications—Journal, &c.	498 17 8	
Postage	142 3 0	
Coal, Gas, and Water	11 1 3	
Miscellaneous	47 14 11	
Furniture and Fittings	16 17 0	
Library—Books and Binding	22 5 6	
		1,306 12 1
To Chiswick Gardens—		
Rents, Rates, Taxes, and Insurance	278 9 10	
Superintendent's Salary	225 0 0	
Labour	722 14 2	
Implements, &c.	122 19 7	
Coal and Coke	243 16 8	
Repairs	148 9 11	
Water and Gas	25 2 7	
Miscellaneous	77 19 0	
		1,844 11 9
,, Shows, Meetings, and Conferences—		
Rent of Drill Hall and Cleaning	94 9 0	
Special Show—Temple	431 13 10	
Advertising	57 11 9	
Prizes and Medals	18 1 4	
Floral Meetings and Conferences—Printing, &c.	80 0 8	
Floral Meetings and Conferences—Labour	55 15 1	
Superintendent of Flower Shows	50 0 0	
Grants in Aid	20 0 0	
Miscellaneous	2 8 11	
		810 0 7
,, Donations, &c.—		
Amount transferred		13 2 6
		£3,974 6 11

Cr.	£ s. d.	£ s. d.
By Annual Subscriptions		2,136 19 0
,, Show—Temple		408 15 6
,, Meetings and Conferences		29 5 6
,, Advertisements		122 5 6
,, Miscellaneous		28 3 6
,, Dividends—Davis Bequest and Parry Legacy		59 10 0
,, Chiswick Gardens—		
Produce sold	678 2 8	
Admission and Members' Tickets	15 16 9	
Miscellaneous	8 10 0	
Chiswick Horticultural Society— £ s. d.		
Balance of 1888 3 10 0		
Subscription 40 0 0		
43 10 0		
Less Expenses 10 3 7		
	33 6 5	
		735 15 10
		£3,520 14 10
Balance to General Revenue Account		453 12 1
		£3,974 6 11

We have examined the above Accounts with the Books and Vouchers, and find the same correct.

(Signed) George Deal, Harry Turner, Henry Williams, *Auditors.*

January 24, 1890.

Balance Sheet, December 31, 1889.

Dr.	£ s. d.	£ s. d.
To Sundry Creditors		772 4 11
,, Donations Received—		
Balance of Account		400 0 0
,, General Revenue Account—		
Balance at credit of that Account, Jan. 1, 1889	2,103 5 3	
Less Balance for the year 1889	453 12 1	
		1,649 13 2
		£2,821 18 1

Cr.	£ s. d.	£ s. d.
By Debtors, viz.—		
Annual Subscriptions outstanding	27 6 0	
Garden Produce	61 11 11	
Journal—Macmillan and Co.	0 5 5	
Chiswick Horticultural Society	36 0 0	
		125 3 4
,, Investments—2¾ per Cent. Consols, £2,122 8s. 9d., cost (£2,022 8s. 9d. of this sum is held by the Society, subject to the provisions of the Will of the late J. Davis, Esq.)		1,892 11 3
,, Balance as per Cash Book		400 6 3
,, London and County Bank—		
Donation Account		400 0 0
,, Petty Cash in hand		3 17 3
		£2,821 18 1

We have examined the above Accounts with the Books and Vouchers, and find the same correct.

(Signed) George Deal, Harry Turner, Henry Williams, *Auditors.*

January 24, 1890.

WILTS HORTICULTURAL SOCIETY.

The annual general meeting of the above society was held in the Council Chambers, Salisbury, on Friday last. Mr. W. H. Williams, hon. sec., presented his report, which unfortunately shows a deficit of nearly £19; this was attributed to the unfavourable weather at the summer show, as at the autumn show of chrysanthemum and fruit, the society was enabled to carry a few pounds forward. The report was adopted, and the hon. sec. was warmly thanked by Mr. Griffin for his valued service. It was decided to hold shows both in summer near about the date of last (the exact date to be fixed hereafter), and the chrysanthemum show in November.

GRAPE GROWING GENERALLY.

In the Gardeners' Magazine for January 25, p. 45, Mr. C. Warden offers some criticisms on a communication of mine in a recent number of the same paper. The writer appears to think that I have rather underrated the merits of some sorts of grapes which he mentions. To a certain extent he may, perhaps, be right, for I might with advantage omit some points, as I think I stated at the time that I had not in my mind such large establishments as Mr. Warden so ably manages. I wrote chiefly for the guidance of those who are not so well able to select for themselves the best-flavoured and most easily-managed sorts of grapes.

But the question as to which is the best grape to grow always has been, and I suppose always will be a difficult one to answer. Very properly to a great extent it is settled by the proprietor of the garden in respect of which the question is raised. Against this practice I have not a word to say, for, as a rule, those with the best flavour are the sorts selected, and amongst these the supposed "best" is to be found. But that is not always the rule to be followed, as the experience of Mr. Warden proves. He says he had to get rid of both Muscat Hamburgh, and Mr. Pince's Muscat, two sorts of grapes that are not in point of flavour surpassed by any, although there are none more difficult to grow to secure them in a presentable condition. This instance is, however, another proof that gardeners must not expect always to grow what they like, a point I have always advocated, especially in gardens where the room for vines is restricted. The late Dr. Lindley once wrote that a good crop of grapes made up for some of the shortcomings of the gardener in other respects. No doubt there is much of truth in that remark. But the man who goes in for planting a lot of different sorts in one house is not likely to figure long as a skilful grower. The experience of the writer just referred to proves this, in his having to remove two sorts from amongst others. That has been my experience through life. If one wants to see good examples of grape growing, it must be by visiting those places where the Black Hamburgh and Muscat of Alexandria are grown in houses by themselves. It is not difficult, perhaps, to find single instances where there are houses of mixed sorts doing very well; but I am speaking of the general behaviour of the sorts, after looking back over many years and in a variety of places. I am glad to read of Mr. Warden's success with the Madresfield Court Muscat, but I think he will agree with me that such a measure of success is not general throughout the country. Until that is so it is certainly not to be regarded as one of the grapes of the future.

With regard to Alnwick Seedling there is a very general belief amongst those who have grown it that it will never become popular on account of its bad setting quality. The remarks of Mr. Warden on the Muscat of Alexandria will, I doubt not, be read and discussed by many growers, as there are numbers of cultivators who are not so successful with this sort when grown in the same house as Black Hamburghs. For this reason some growers will regard the statement with suspicion, without looking into all the facts of the case, as stated in the communication referred to. If they will read again carefully they will find that the Hamburghs were ripe in August, which means that the vines had more or less fire heat through the early part of the season. Such treatment was just what the Muscats required, as by the time the Hamburghs were ripe the Muscats had for the most part completed their growth, which still left them a space of six weeks of usually favourable weather to ripen. At the same time it is not my experience that these two grapes do well together as a rule.

J. C. C.

FUNERAL OF MR. WILDSMITH.

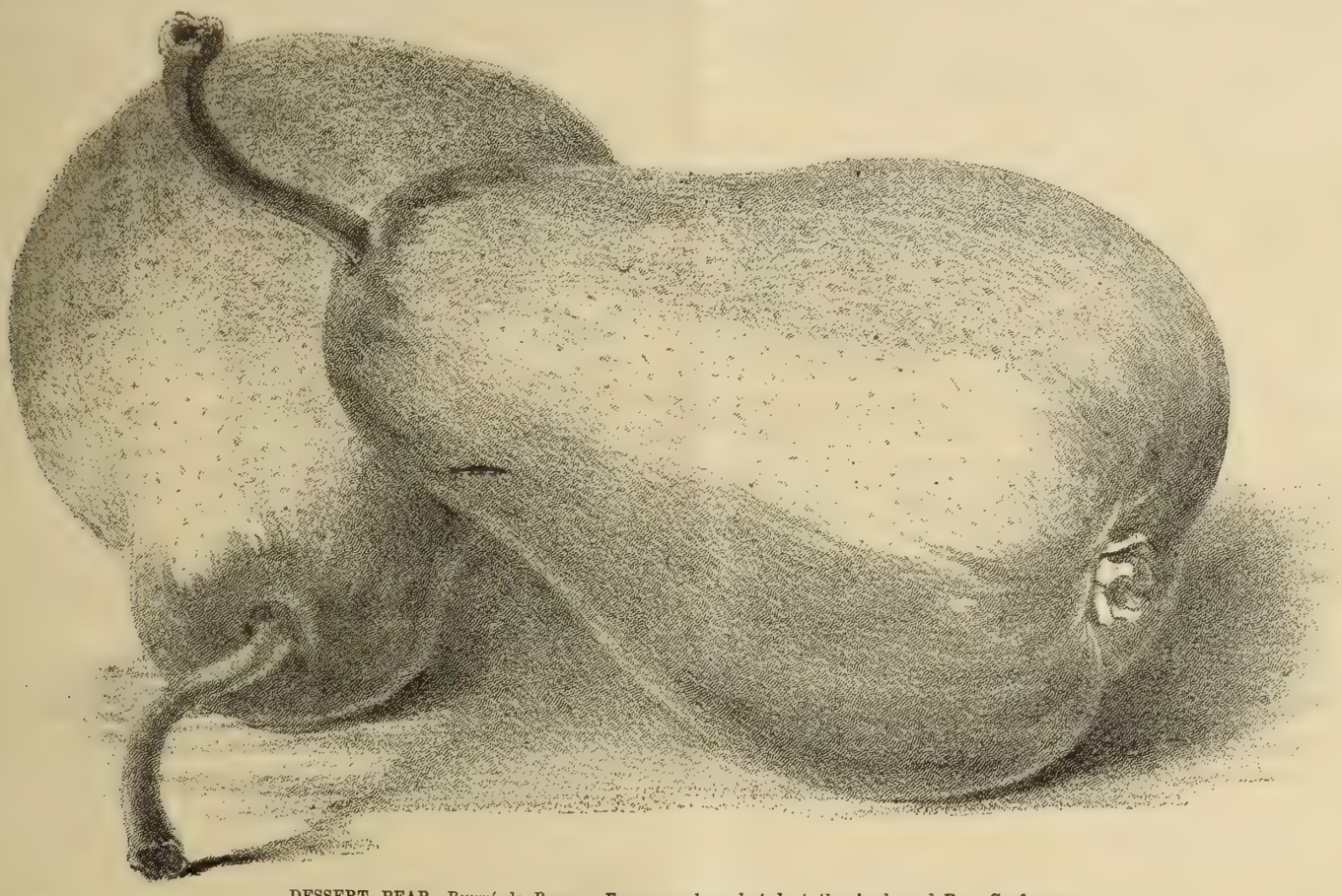
On February 4, at the parish church of Heckfield, in the presence of over 200 persons, the mortal remains of the late Mr. Wildsmith were laid at rest. The great number of his brother horticulturists present at the last sad rites testified to the great respect in which he was held, not only as a prominent worker in the horticultural interest, but as a man socially. Many beautiful wreaths were deposited as mementos of respect, and the talk of all present was of his amiable character and the suddenness of his loss, after but a short illness. Noticeable among the wreaths were those from the Hon. Miss Shaw Lefevre, Heckfield Place; Mr. W. T. Palmer, Reading; the Reading Gardeners' Association; the Birmingham Gardeners' Association; Messrs. Sutton and Sons; Mr. Turton, Maiden Erleigh; Mr. A. Dean, Bedfont; Mr. Lees, The Wilderness, Reading; Mr. Crump, Madresfield Court; Mr. J. Allen, Swallowfield Park, Reading; Mr. E. Molyneux, Swanmore Park; Mr. Heath, Hampton-in-Arden, Birmingham; Mr. Trinder, Dogmersfield Park; Mr. Profit and Mr. Tubb, both from Minley; Mr. Rose, Lockinge; Mr. Stanton, Park Place, Henley-on-Thames; Mr. J. Clayton, Grimston Park, Yorkshire; and Mr. J. Crook, Ford Abbey, Chard. Amongst the many friends present some of whom are named above, we also noticed: Mr. Coleman, Eastnor Castle; Mr. J. Martin (Messrs. Sutton's), Mr. Tegg, Bearwood; Mr. J. Pound, jun., Reading; Mr. Davidson, Highfield; Mr. Bell, Strathfieldsaye; Mr. T. Weaver, Oakley Park, Basingstoke; Mr. Bowerman, Hackwood Park; Mr. Kneller, Malshanger Park; Mr. Jones, Elvetham Park; Mr. Robert Fenn, Sulhamstead, Mr. Basket, Reading; Mr. Allen, jun., Swallowfield Park; Mr. Coombes, Inglefield; Mr. Maxim, foreman at Heckfield (and who is to succeed to the charge of the gardens); and Mr. Phipps, formerly of Bowood.

The committee of the Reading Gardeners' Association are making arrangements for the formation of a fund to institute in connection with the Gardeners' Orphan Fund, a "Wildsmith Memorial," with the object of placing one child on the list, this orphan to be called "The Wildsmith Orphan." It is suggested that this scheme would be a fitting opportunity to show the appreciation of the late Mr. Wildsmith's endeavours on behalf of this fund, to which he devoted much of his earnest kindly endeavour. We do not doubt the proposal will meet with favour amongst the friends of the late "model gardener," as well as the supporters of the Gardeners' Orphan Fund.

DESSERT PEAR, BEURRE RANCE.

This pear is well known to fruitists by reason of its fine quality and late ripening—for it is now coming into use, and is a noble pear of its season. To the general public it may be said to be unknown, for the general public does not eat first-class dessert pears in the month of February, but is well content with Cox's Orange Pippin, with imported oranges, and raisins and sugared plums. Where Beurré Rance pear is a familiar friend at this season we shall in due time probably see also the showy Forelle, the delicious Josephine, and Winter Nelis, and that bonne bouche the Easter Beurré in condition to gratify a critical palate. As Beurré Rance is occasionally seen in fairly good state as late as June, though seldom worth eating after the early days of April, it must be allowed the merit of a long season, which is a matter of great importance considering its fine quality.

The history of this pear covers considerable space, and as a matter of course much of it consists of allegations and rectifications, so that having made a circuit the items of the record return nearly to the point they started from. Much of this is attributable to the name. It is a "butter" pear, but is the butter rancid? We have here nothing whatever to do with rancidity, and Leroy's list of synonyms gives the key to the truth of the matter. This fruit is variously known as Beurré Hardenpont de Printemps, Beurré de Rans, Beurré de Pentecote, Beurré Rose, and Beurré du Rhyn. Beurre Rance was raised by Abbe Hardenpont, of Mons, about from 1758 to 1762. According to Hogg it is the Rhine or "Rhynsche" pear of the Flemish, for although Mons



DESSERT PEAR, *Beurré de Rance*. From samples selected at the Apple and Pear Conference.

is in Hainhault, the valley of the Rhine opens immediately east of the Meuse, and the greater river gives name and character to many things that do not directly belong to it. Hogg quotes from Gilbert's *Les Fruits Belges* for the Walloon or Flemish appellation; Leroy mentions the village of Rance as the birthplace of this pear, and this explanation appeals to us more directly than any other.

The figures presented from samples selected at the Apple and Pear Conference, exceed the average size but are quite typical in form and proportions. The fruit is usually large, bluntly pyriform or oblong, shoulder-shaped at the crown, and only slightly tapering downwards, being rounded at the stalk which is inserted in a very slight depression. Leroy's figure corresponds closely with the one on the right in our engraving but has a shorter stalk, which Hogg describes as an inch-and-a-half long, ours being of that length nearly. The eye is open with short segments and is set in a shallow depression. Skin dark green with a bronzy tinge and with many dark russety spots. The flesh is greenish white, buttery, melting, juicy, rich, slightly astringent, and aromatic. The season may be described as from March to June, but usually we have this fine pear in February and March in perfect order and it does not usually last beyond the middle of April.

The tree is vigorous, hardy, and fruitful. As a standard on the pear it prospers in a good climate and bears abundantly. The finest fruit we have seen of this variety were grown in free bush form double-worked on the quince. It rarely has a good character from a wall, and in northern climates, where the aid of a wall is needed, it is scarcely to be trusted for profitable results.

THE BEST OF THE BORDER CARNATIONS.

By J. C. Clarke.

No doubt there is room for a difference of opinion as to the best carnations for growing in the ordinary border for garden decoration. Among the first requirements are large bold flowers, and a fairly vigorous constitution. It is sometimes said that all carnations of the border type are sufficiently hardy to stand through a hard winter in the open without any protection. But I have not found it so. The composition of the soil may have something to do with it, but until the soil and position have been well tried over a series of years, I would not like to risk the sorts which I shall mention to the mercies of a hard winter without some kind of protection. This is not saying that there are not such favourable places where the plants do not require such care. Those cultivators who are so happily situated should consider that so far as the growth of carnations is concerned, that their lines are cast in pleasant places. It is not quite correct perhaps to say that there are two classes of border carnations; yet there are in the sense in which I mean it. There are many varieties of these flowers of ordinary merit that will endure a hard winter in the open ground in fairly favourable soils, but as varieties of remarkable excellence they are far behind those the names of which I shall mention. In point of merit the better forms of border kinds are so superior that if they do require a little more care they are worthy of it.

W. P. Milner is in my opinion far and away before all others. The plant is fairly vigorous, with short flower stems, while the colour of the flowers is of the purest white, and the form excellent. This is a sort that is alike remarkable for its vigorous growth and the large size of the flowers. It is in fact almost as vigorous as Souvenir de la Malmaison, and the blooms are nearly as large. The colour is pure white.

Comte de Chambord.—In the character of its growth this is very like the last-mentioned sort, but the flowers have a faint tinge of blush or pinkish hue in the centre. It is a very desirable kind where three or four white sorts are wanted.

The Governor.—This has blush white flowers, which are perfect in form. The plant is a vigorous grower, and I think hardier than any I have mentioned, I find that it has many admirers, as the bold character of the blooms is very striking.

Old White Clove.—I mention this variety, because if any one can get it true, they will have a gem amongst what are known as clove carnations, but it is very scarce in the country. There are a lot of inferior sorts substituted for it. The original variety may be known by the hardy character of its growth, and its large pure white flowers, which are freely produced on stems about ten inches in height.

Yellow Varieties.

I think it will be generally admitted that amongst the sorts bearing yellow flowers associated with a vigorous growth, that the Pride of Penshurst is the best. The colour is a very pleasing soft yellow, and the blossoms of good average size. It is by no means perfect as a garden plant, the habit of growth is not compact enough, and the

flower stems are too weak and too long. Perhaps we shall reach my idea of a perfect border carnation some day, bearing yellow flowers, but until we get one of the same hardy character and short flower stems that characterizes the old crimson clove I shall not be satisfied.

GERMANIA. — This is a very desirable one to grow, the colour being a shade higher than the last-mentioned, the flowers also last longer, while the growth is better than we would expect from one with such well formed delicately toned flowers.

MRS. REYNOLDS HOLE.—This variety has apricot coloured flowers, which are very large and full of stout petals. It is a very desirable sort to grow on account of its new and distinct colour in this class of flowers. Moreover the plant is fairly hardy, and the growth vigorous. Its only fault is that the flower stems are too high.

KING OF CLOVES.—I do not think this one is widely known, as I do not often see it in large or small collections. I do not think that its comparative scarcity is a great loss, as except that it is a vigorous grower, it is not equal in other points to those I have mentioned. If placed in its proper class I believe it should be placed with those which flower in the winter.

RED AND CRIMSON VARIETIES.

There is a good number of sorts bearing different shades of red and crimson coloured flowers, a good many of which I have in my collection, I however do not advise that all of them should be selected where space is limited. One of the best is Cardinal; the flowers of this sort are rather small, but they are well formed, and the colour a charming cardinal-red.

ROYAL STANDARD.—The flowers of this variety are rather small, but they are so freely produced, and so continuously as well, that as a border kind it is invaluable. Out of the large number which I grow, I have no other that produces grass so freely as this one. I may remark that the colour of the blossoms is soft red.

FIRE EATER.—This sort is rightly named, as the colour is a bright fiery-red. It is fairly hardy, and therefore useful for the border. Amongst those bearing marone or purple-coloured flowers, I may mention Cara Roman and General Stewart, as being exceptionally good. There are some fine things amongst the rose and deep blush-coloured sorts, the one bearing the largest flowers is THE BABY. This is of strong vigorous growth, producing very large and delicately coloured pinkish blooms on short flower stems. The number of blossoms a single plant produces is not great, but their large size makes up for any deficiency in that respect.

CYNTHIA.—This is one of Mr. Dodwell's seedlings, and in its line of colour is not surpassed by any. The colour is a cheerful bright rose, the blooms being both large and full.

MARY MORRIS, well deserves the high place it has attained as a border kind. It is both vigorous in growth and free in flowering. The colour is a soft rosy pink.

BLUSH CLOVE.—This may be grown where variety is wanted, but with me it is inclined to be rather miffey in its behaviour. I find no fault with the size or the colour of its flowers, but the plant is rather too tender to please me.

COOL CULTIVATION OF TROPICAL PLANTS.

PALMS.

THE number of genera represented in the list of those noted amounted to 16. I was surprised not to find any plants of such genera as *Caryota*, *Astrocaryum*, *Geonoma*, *Oreodoxa*, and *Wallichia*. There does not appear to be any good reason why such plants should not thrive equally well with those already there. Probably, however, these and many other palms are unrepresented because no one has tried them.

Brahea.—The true Braheas are represented by only four species, all of them natives of Mexico. They are very similar to Thrinaxes in general appearance, and are related to them. The stems are smooth, about 30 feet high when mature, and the head is composed of short stalked palmate leaves, with a few short spines along the margins of the base of the petioles:—*B. lucida* (egregia), a fine plant in perfect health. *B. nitida*, with a stem 9 feet high, a noble head of leaves and drooping panicles, 8 feet long, of fruit and flowers; the inflorescence develops one year, the flowers open the next, and the seeds ripen the year following. Both these were in the gardens at Villa Valetta, Nice. *B. nobilis*, a fine specimen in the middle of a lawn at Monte Carlo. The blade of the leaf is 4 feet in diameter, and it is silvery on the under side. A plant at Nice, called *B. calcarea*, is evidently a species of *Erythea*, as also is the palm commonly known as *B. Roezlii*.

Bacularia.—A small genus of dwarf pinnate-leaved palms from Australia. *B. monostachya*, the walking-stick palm, was seen in the gardens of the Acclimation Society at Hyeres. It was placed under a large handlight, and looked unhappy. This plant is grown in a cool greenhouse in England.

Chamædorea.—Only one species, viz., *C. scandens*, was noted. It was at Nice, and apparently quite happy, trained up the stem of a Cocos on a lawn. *C. elatior* is large and healthy in a cold house at the Jardin des Plantes, Paris.

Chamærops humilis.—A common garden plant all along the Riviera. It fruits very freely, and some of the varieties are exceedingly ornamental when bearing their enormous collar-like whorl of rich orange fruits. In no palm have I noticed so much variety as in this *Chamærops*. In some the petiole is short and stout, in others long and attenuated; some petioles were armed with stout spines, half an inch long, others had short spines, and others were merely serrated. The leaf blade showed an equal amount of variation, some plants having stiff board-like leaves, others thin and drooping ones. They varied in hue from grey to deep green. In the fruit also there was variation in size, shape, and colour. It would be easy to select half a dozen plants with characters distinct enough to rank as good species. Something of the kind has been attempted, such names as *C. Biroo*, *C. Ghiesbreghtii*, and *C. tomentosa* being given to plants which are merely varieties of *C. humilis*, *C. Fortunei* (see *Trachycarpus*).

Chrysalidocarpus lutescens, generally known as *Areca lutescens*, has been tried out of doors at Nice, but it cannot be established owing to its not being able to bear the low winter temperature.

Cocos.—This genus is well represented; *C. flexuosa* being very abundant. In the garden of Villa Valetta there is a magnificent grove of it rising straight from the lawn to a height of 30 feet or more. In another place it and *Musa Ensete* were massed together. Fruiting trees were seen at Hyères, Nice, and Cannes. I was informed that this species is at least as hardy as the Date. The effect of its enormous plume-like leaves towering up above most of the other plants in the gardens may easily be imagined. The stem of one specimen measured at Cannes was 15 inches in diameter. Under the names *C. campestris*, *C. Yatai*, *C. Bonneti*, and *C. australis* are plants which apparently are closely related to each other, probably merely varieties of one species. According to Wendland and others there are distinct species to which these names belong, but so far as I could make out it is questionable if they exist in the gardens of the Riviera. We have these badly named plants at Kew, no doubt from the same source as those on the Riviera. The manager of the gardens of the Floricultural Society informed me that, in his opinion, *Cocos campestris*, *australis*, and *Bonneti* are certainly the same or seminal forms of one species; just as the plants distinguished in gardens under the names of *Kentia Fosteriana*, *K. Belmoreana*, and *K. australis* are obtained from seeds of the same tree.

Whatever their names, however, the Cocoses named as above in the gardens of the Riviera are very ornamental, their elegant arching pinnate leaves being almost silver white; they thrive, too, as well as any of the palms grown there. *C. Blumenavii*, apparently the right thing, is also represented by fine examples in several of the gardens visited. In a cold greenhouse at Paris *C. insignis* (*Glaziova*) is apparently quite happy. An example of it is also in the Temperate House at Kew.

Erythea.—This genus comprises two species of Californian palms, with fan-shaped rigid glaucous leaves. They have not been long in cultivation, but already one of them, commonly known as *Brahea Roezlii*, is plentifully represented on the Riviera. It is sometimes called the Silver Palm, healthy plants being almost white. At Hyères, Cannes, Nice, and Monte Carlo, are some very fine examples of it, all planted as single specimens on lawns. The largest seen was 8 feet high and 8 feet through, the stiff leaves forming a grand mass from the ground to the top. Another plant met with under the name of *Brahea calcarea* is either a form of *E. armata* (the correct name for *Brahea Roezlii*), or is the second species, viz., *E. edulis*.

Howea.—The two plants commonly known as *Kentia Fosteriana* and *K. Belmoreana* are now placed in the genus *Howea*. They are merely forms of one species, as is pointed out under t. 7018 of the "Botanical Magazine." Small plants of these and of *K. Lindeni*, and *K. Canterburyana* were noted under handlights in the garden at Hyères; also a large specimen of *H. Belmoreana* at Cannes, and quantities of young plants out of doors at Nice. So far, however, all efforts to establish them have failed, as they cannot endure the winter temperature. Our experience at Kew in the cultivation of all the Howeas is that they must have a tropical temperature at all times.

Jubæa spectabilis, the Coquito Palm of Chili.—Several fine examples were seen, notably one in the garden of the Villa Thuret, at Antibes. A magnificent specimen of this palm is a conspicuous object in the Kew Temperate House.

Livistona.—The common garden species of this popular genus are plentifully represented in the gardens visited. *L. australis* (*Corypha*) occurs in many places, and some of the specimens are very large trees, with stems as thick as that of the *Washingtonia*. A grove of many large plants of *L. sinensis* (*Latania borbonica*) formed a magnificent feature in the gardens of Villa Valetta. *L. mauritiana*, which is probably merely a variety *L. sinensis*, is also represented by large plants at Cannes. The most interesting plant of this genus, however, is a very fine example of the rare *L. inermis*, of R. Brown, in the gardens of Villa Valetta. It has a bare stem 6 feet high by 1½ feet in diameter at the base. The head is made up of a large number of shining green leaves, the petiole of which is 6 feet long and margined with spines at the base. The blade is divided almost to the base, and it has a distinct midrib which is curved so as to produce a very extraordinary effect. The form of the leaf may be called a combination of the pinnate and palmate characters. A plant of this rare palm is in the Kew collection; there is also a fine example of it in the collection at Blenheim. A large specimen was also noted in Baron Vigier's garden at Nice. Mr. Bull distributed plants of it some years ago under the name of *Corypha decora*.

Phœnix.—Of all palms the cultivated species of *Phœnix* are the most difficult to define. There is abundant evidence to show that a considerable number are of hybrid origin, or mungrels bred by accident in gardens. In some of the gardens of the Riviera, for instance, there are numerous kinds of *Phœnix* all growing together, and many of them flower and fruit annually. Being dicœcious, seeds are not produced unless the pollen is blown or carried by bees, etc. from the male to the female plant. Under these circumstances it appears to me next to impossible for the progeny of these cultivated palms to be pure. Besides this fact there is also that of the cross-breeding among Phœnixes practised by the gardeners of the Riviera. Count Kerchove, in his book "Les Palmiers" (1878), gives as an example of the wonderful fecundity of a *Phœnix* the case of a *P. reclinata* which at Nice has been fertilised with pollen from *P. tenuis reclinata*, and *pumila*, and produced 20,000 seeds! Several plants bearing seeds which were the result of crossing one kind with another were pointed out to us at Cannes and elsewhere. *P. canariensis* is the most useful of all. The largest specimens seen were a pair, male and female, in the garden of Baron Vigier, at Nice. They each have a clear stem 12 feet high and 4 feet in diameter. The leaves are very large, probably 20 feet long, gracefully arched, and bright green; they form a head 30 feet through. These two plants are said to be the progenitors of all the plants of *P. canariensis* in the Riviera. I was informed by the gardener that they were 20 years old, and that they had originally come from the nursery of Messrs. Verschaffelt, of Ghent. The rate of growth of this species is surprising. Here are the dimensions of a plant said to be not more than 10 years old:—Stem, 4 feet high, 3 feet in diameter at base; number of leaves, about a hundred, forming a magnificent head 25 feet across. Another specimen, about the same size, bore eight huge bunches of fruit, each bunch about half a hundredweight; the fruits, which contained fertile seeds, were about as large as sparrow's eggs; the seed is larger than that of any Phœnix known to me. It is said that this Phœnix bears cold better than *P. dactylifera*. The raising of these Palms from seeds is done on a large scale, and thousands of small plants, 2 or 3 feet high, are sent annually to Paris and other towns for use in the decoration of saloons. The seeds are sown in beds in the open; the seedlings are pricked off in shallow trenches in the same way as celery is planted here. This is done as a precaution against drought, as the trenches can be regularly flooded in summer.

P. rupicola had been tried at Cannes, but it perished in the winter temperature.

Rhopalostylis.—Both species are represented in several of the gardens visited. They are commonly known under the names of *Kentia* (or *Areca*) *sapida* and *Baueri*. The former was uninjured by 6 deg. of frost.

Sabal.—Some very fine specimens of several species of *Sabal* were noted. At Hyères, Cannes, Antibes, and Nice, *S. Blackburniana* (of which there is a noble specimen in the Palm House at Kew), is represented by large examples in perfect health. *S. Adamsoni*, *S. havanensis*, *S. Palmetto*, *S. umbraculifera*, and one called *S. Ghiesbreghtii*, were also noted. No doubt all the species of this noble genus could be established in the Riviera.

Seaforthia elegans.—A small plant under a handlight, at Hyères, and a beautiful specimen, 20 feet high, in perfect health, on one of the lawns at Villa Valetta. Considering the ornamental character of this palm, its popularity and its hardness, it is surprising that only these two examples of it were noted.

Trachycarpus (*Chamærops*) *Fortunei.*—A grove of large plants at Cannes, and a very fine specimen, 20 feet high, at Nice; this palm is quite hardy at Kew.

Trithrinax.—Under the name of *Thrinax Chuco*, several fine plants were met with. The manager of the Floricultural Society, at Nice, where a number of plants are grown, stated that the cold of 1887 (11 deg.) did not hurt this palm.

Washingtonia.—One of the glories of the Riviera. It is a native of California, where it is known as the Desert Palm. It was first brought to notice by Dr. C. C. Parry, who discovered it in 1849—50, but it does not appear to have been named until 1860, when it was called, *Brahea dulcis?*, Wendland afterwards placed it in *Pritchardia*, and finally founded the genus *Washingtonia* upon it. Apparently, it was not introduced into European gardens until 1875, and is, therefore, a comparatively new palm. Notwithstanding this, there are some very large specimens of it on the Riviera, where it is known by the name of *Brahea filifera*, or *Pritchardia filamentosa*. I could not see any characters in the plants pointed out as *W. robusta* to distinguish them from *W. filifera;* the reddish hue of the base of the petiole appears to be the principal difference.

At Villa Valetta, on a sloping lawn in front of the house, is a grove of about 60 magnificent specimens of this palm, to me a marvellous sight. Most of these plants had huge onion-shaped stems, 10 feet in circumference at the base, and about 10 feet high, some even higher. The crown of foliage was 20 feet through, and was composed of from 50 to 80 leaves, each with a stout armed petiole, 5 feet long, a blade 4½ feet across, and ornamented with numerous white drooping filaments, a foot in length. The general aspect of the largest was very similar to that of *Sabal Blackburniana*, in the Palm House at Kew. I was assured that the largest of these plants was not more than 12 years old, and from the date of the introduction of the species this cannot be far from correct. The rate of growth in this palm must, therefore, be astonishing. At Nice I saw a specimen the stem of which was 15 feet high. In exposed situations and within a few yards of the sea, this palm is perfectly healthy.

(To be continued.)

House, Garden, and Villa Farm

PLANTS IN FLOWER.

Stove Plants in bloom comprise Amaryllis, Anthurium Scherzerianum, Begonia fuchsioides, B. Roezli, B. semperflorens gigantea rosea, Carnations, Coronilla glauca, Eucharis Sanderi, Franciscea calycina major, Glonera jasminoides, Hymenocallis macrostephana, Sparmannia Africana, Thunbergia fragrans.

THE HOUSE.

Spring flowering bulbs suitable for the decoration of indoor apartments are now beginning to grow vigorously, and to ensure compact foliage and short and stout flower spikes they must have a light position, and enjoy a rather free circulation of air. Those required in bloom at an early date may be forced without difficulty in a heated frame, which must be placed, if possible, in a room having a south aspect, and near to and facing the window, to ensure the occupants enjoying a full share of light. A layer of cocoa-nut fibre refuse should then be spread over the bottom of the case and the pots stood upon it. To commence with a temperature of 55 deg. will suffice, but as the plants show signs of growing freely the warmth must be gradually increased until the temperature reaches 65 deg. Watering must be carefully attended to, and from the time the plants are placed in the case until they are sufficiently advanced to be removed to the ornamental receptacles tepid water must be employed. Lily of the Valley may also be forced in a small heated case, but it should have a rather higher temperature and a covering of the cocoa-nut fibre refuse over the pots until the flower spikes are pushing up freely.

THE GARDEN, CONSERVATORY, AND GREENHOUSE.

Conservatory should now be maintained in as attractive a condition as possible with forced bulbs and shrubs, and subjects that bloom naturally at this season of the year. It is desirable to rearrange the plants with which the structure is embellished at rather frequent intervals. Any stove plants brought into the conservatory must be guarded against a chill, and kept rather dry. The temperature of houses in which plants are growing may be increased shortly, for vegetation will soon be active.

Greenhouse.—This structure must be ventilated freely on all favourable occasions, and no more fire heat be employed than is necessary to keep out frost, and dry up superfluous moisture. If green fly makes its appearance upon pelargoniums or other soft-wooded plants, no time must be lost in resorting to some means (of which fumigation with tobacco, or tobacco paper, is one of the best) for imposing an effectual check upon this troublesome pest.

ORCHID HOUSE AND STOVE.

Begonias with ornamental leafage will require to be repotted and started into growth within the next few weeks. A nice friable mixture of loam, peat, and leaf-soil should be used, and the greater part of the old soil shaken away from about the roots.

Gloxinias may now be started in quantity for a summer bloom. Press the roots down into the soil, sprinkle a little fine stuff over them, and then put them into a moist heat at about 70 deg. When advanced a little pot them, and again give them a nice heat for a week, after which place them in an intermediate house where the temperature is about 60 deg.

Orchids will now want much attention; some must be repotted, reblocked, and otherwise assisted as the season of the new growth approaches. Those not to be shifted may perhaps be benefited by a little fresh peat or sphagnum. After any disturbance of the roots give them the aid of a little extra heat and atmospheric moisture, but do not water them much at the roots until they begin to make new growth.

FORCING AND FRUIT HOUSES.

Cherries are considered the most difficult of hardy fruits to force; and perhaps the cause of the difficulty is the fear of ventilating. Admit air freely in favourable weather, and there will be no difficulty in obtaining an abundance of fruit. Cherry trees in pots lately put in and just starting to be freely syringed.

Cucumbers in the fruiting beds must be kept moist above and below, to promote a free growth. Nip out any fruits that show before the plants are tolerably strong. By the time fruit may be allowed the hills will want earthing up; use nice light loamy stuff, vegetable fibre being preferable to animal manure, though a little thoroughly-decayed manure may be added to advantage. If there is a good heat in the bed give a little air all night, unless the weather is too severe for such a risk; indeed, a gentle circulation of air is at all times desirable.

Pines advancing in fruit must have liberal heat and moisture. The best liquid manure is a solution of soot and guano. Pot succession plants, and give the whole stock more room for circulation of air amongst them.

Strawberries for succession to be taken in. Avoid placing them in a high temperature at first, and prepare them, if possible, for the forcing pit by putting them into a cool house or pit for a short time previously.

FLOWER GARDEN AND PLEASURE GROUNDS.

Alpines that do not need repotting will be benefited by removing a little soil from the surface, and replacing it with fresh sandy peat or sandy loam. Plants that make offsets freely may be increased now by division, but it is not a good time to propagate any kind of alpines from cuttings.

Dahlias must be started at once in a brisk temperature where any quantity of stock is required. The cuttings are most easily managed. Take them off when three inches long, put them singly in small pots, and place in a good heat.

Deciduous Trees of all kinds not yet planted must be put in their places without delay. Should frost occur, planting will be delayed still further, and if no frost the trees will be so advanced in growth as to be greatly injured by the process of lifting.

Hardy Climbers planted now in well-prepared borders will have a good chance of making a free growth this season. Climbers doing badly may, if in a good soil and suitable position, be cut down close to the ground. If not doing well through the poverty of the soil, dress liberally with manure.

Roses.—Put a heavy mulch on plantations not yet dressed, and proceed with planting not yet finished, for it is quite time the trees were in their proper places.

KITCHEN GARDEN AND FRAME GROUND.

Asparagus to be kept going in the forcing pit for succession. Give air and light; for the grass should be stout, quickly grown, and purple at the top.

Beans must now be sown for main crops. For very small gardens Beck's Gem is invaluable; it is very dwarf, requires but little room, and is wonderfully productive. For general crop, where there is a good table, Green Windsor should be grown.

Cabbage.—During the next few weeks plant out considerable quantities of autumn-sown plants, and continue to thin out the seed-beds as occasions offer. It would be well to sow a few sorts of cabbage now, as, if they are not ultimately wanted for planting out, they may be drawn from the seed-bed for the kitchen.

Carrots.—Sow Early French Horn or Early Nantes on warm borders, and thin as soon as up.

Cauliflowers in seed pans to be thinned out, and potted singly in rich light soil, or planted out in beds in frames.

Celery.—Sow for the main crop. Early sowings to be pricked out on beds in frames.

Lettuces required as early as possible should be pricked out from the seed boxes into a bed of rich friable soil made up on a sweet and gentle hotbed. Sow again seed of the best Cos varieties.

Preparation of the vacant quarters for the early crops should have first attention at this moment. Ridges should be levelled, beds for onions, parsnips, and other root crops formed, and the remains of the crops of coleworts and similar subjects cleared off, and the ground manured and turned over.

VILLA FARM.

To maintain poultry in as healthy a state as possible when kept in enclosed yards the birds should have room enough for a fair amount of exercise. To afford as much space as they should have is not in very many instances practicable, but even on villa farms of the most limited dimensions, no matter how small may be the number of birds kept, the enclosure or yard for them to run in during the day should be not less than five feet by ten feet, for in less space than this there is not room enough for them to take sufficient exercise to ensure their remaining in that healthy state so essential to their proving a source of profit. The night quarters should be just large enough for the birds to roost in without being overcrowded, and watertight and fairly ventilated. The "run" should be enclosed with a fence formed with strong galvanized wire netting with a mesh of about two inches, and supported with uprights of wood or iron, and of a sufficient degree of strength to hold it securely in its place. The floor of the yard should be formed with gravel in which there are but few large stones, and this should be laid on from four to six inches in depth. For birds so closely confined as those occupying enclosures of the description here referred to, every scrap of green food should be utilized, and all the loose leaves from cabbages, broccolis, and similar things should be thrown into the yard whilst in a fresh state. As light and air are not less essential to the welfare of poultry than space for exercise and good food, a rather open and sunny position should be selected for the yard, instead of, as is generally the case, one so shaded by trees or high walls that the sun seldom shines upon it. The yard cannot well occupy a position that is too open, provided it has on the north and east side a hedge, fence, or wall to break the cold winds, and one or two rather large fruit or other deciduous trees on the south side to break the rays of the sun during the summer. To place poultry houses in a very conspicuous position may not be desirable, but when neatly constructed and well kept they are not such objectionable objects as to justify their being placed in such out of-the-way corners as those in which they are frequently found.

ANNUAL POPPIES.

Although somewhat ephemeral and not well suited for the decoration of indoor apartments because of their objectionable odour, the annual poppies have much to recommend them. Free in growth, profuse in flowering, and varied and attractive in colour, they produce a brilliant display in the garden during the summer, and the seed is so cheap that a large stock of any one of the forms may be obtained for an outlay of



WILLIAM WILDSMITH, 25 years Head Gardener at Heckfield Place. (*See page* 80.)

a few pence. Poppies are very generally supposed to be exceedingly short-lived, and when grown under the conditions which obtain in many gardens they undoubtedly remain in good condition a very short time, this is not the fault of the poppies, but invariably the result of over-crowding, it being too much the practice, as in the case of other annuals, to have half-a-dozen plants where there is room for one only. When over-crowded they come into bloom very quickly, produce a brilliant display, and are soon past their best. But under a more rational system of culture they bloom freely, produce finely developed flowers, and continue in flower for a considerable period. During the time they are at their best they will give a liberal supply of flowers for decorative purposes in a cut state. But they are not suited for either the dinner table or the drawing room, for the odour of the flowers is decidedly objectionable and in some instances may prove injurious.

Some notable additions have been made to the list of annual poppies during the past few years, and foremost amongst these is the Shirley strain which gives a wide range of colours of unsurpassing beauty. The Shirley poppies, have been obtained as the result of selection from the field poppy and are interesting as showing what can be done by well directed efforts. The flowers of the varieties forming this strain are rather larger than those of the type and they are also of finer form. The chief value of the Shirley poppies does not, however, rest in the size or the shape of the flowers but in the exquisite shades of colour they afford; these include blush, pink, rose, scarlet, cerise, and crimson. Edged flowers are also plentiful, those having light grounds being margined with bright rose or pink, and the margins of the dark coloured flowers range from white to bright pink. The strain shows a tendency to produce double flowers and this, by some, is regarded with unmistakeable signs of satisfaction. Double poppies are so wanting in elegance that any tendency to doubling in the strain may be rigorously repressed. There is not perhaps any great objection to a second row of petals, but more than two rows will, in my opinion, greatly reduce the value of the strain for garden embellishment.

The Danebrog is an excellent type perfectly distinct, the flowers are large and of a brilliant scarlet colour, each petal marked with a white blotch, the four blotches presenting much the appearance of a Maltese cross. The Persian poppy *(Papaver lævigatum)*, recently introduced to English gardens, is a strong growing form, attaining a height of about two feet and producing large brilliant scarlet flowers somewhat campanulate in shape and marked with a black blotch on each petal. The striped Japanese poppy, known as the *Mikado*, is remarkable more for its distinctive character and quaintness than for its beauty. Nevertheless, it should be well represented where these flowers obtain favour. The flowers are of medium size and the petals are white, with elegant scarlet fringe. The Peacock poppy (*P. pavonium*), introduced from Turkestan, is distinct in character and extremely beautiful, the average height is twenty inches, the foliage is elegantly cut, the flowers are of medium size, the colour bright scarlet, each petal marked with a black blotch surrounded by a narrow band of pure white. *P. umbrosum* still maintains a high position amongst the annual poppies and is perhaps one of the very best to sow in the autumn for the production of a bright display of colours early in the summer.

The double poppies are not wanting in effectiveness, but they are less elegant in appearance than those having single flowers. There are three distinct types, each of which give a great diversity of colouring; these are known as the Carnation Dwarf, French, and Pæony-flowered, and have flowers of comparatively large size.

To refer at any length to the cultural requirements of annuals, so easily grown as the poppies, is quite unnecessary. They may be sown in the beds and borders where the plants are to bloom, or may be sown in pans or boxes and the seedlings be pricked out. Sowing in the open will save considerable labour, and where the soil is sufficiently friable to enable the seed to be sown early that course should, as a rule, be followed. On heavy soils there is some advantage in raising the seedlings under glass and then planting them out. In sowing out of doors, distribute the seed thinly, and when of a suitable size thin to a distance of five or six inches apart. The end of February or early in March is the best time for sowing both in the open and under glass.

A HOMELY BIT OF APPLE BLOOM.

Although the English are famed for their love of rurality and have produced many famous books on natural history and country life, the French have so distinct and delicate an appreciation of the beauty of flowers that their pictorial and plastic representations of them have long since ranked with the most perfect artistic productions of that class. In Fantin's flower paintings, which often appear in metropolitan exhibitions, we have the true French touch and the best of teaching for the many British artists who profess to understand flowers, but sadly fail to justify their pretensions by their works. In the Salon of 1889 there were many good things from the floral world, a few of which I have secured copies of for your invaluable G. M. Here is a bit of apple bloom from a quiet corner of Normandy, and you will say these trees are not models, for a cultivator. No: but they have some purpose for an artist, and so the careless farmer does at least something for us in providing models, for your proper "grenadiers" that would pay the farmer better, would not so well compensate the artist for his patient search-



"POMMIERS FLEURIS," by G. P. Dieterle (Salon, 1889).

ing. But I will not praise this bit lest I should lower its value in the eyes of the few who will be warmed by its beauty.

Alphonse.

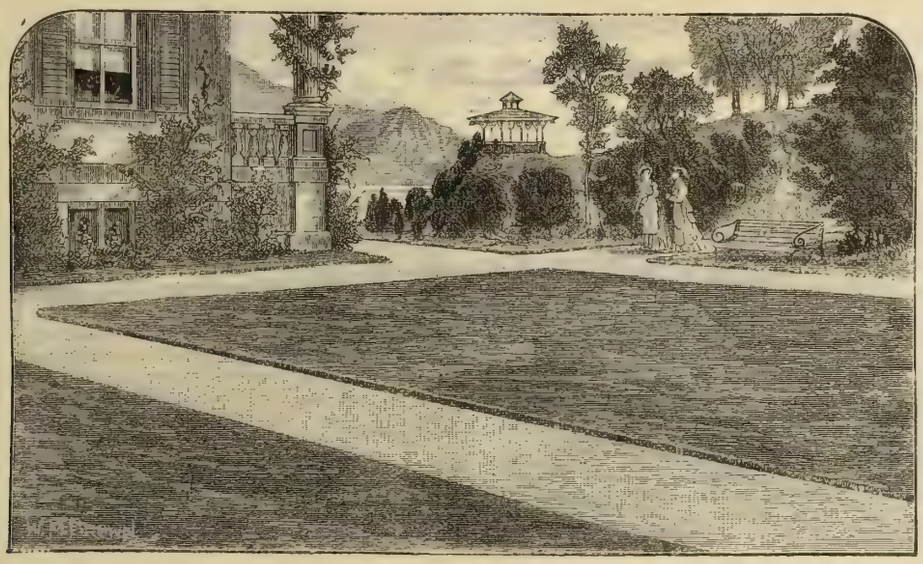
Function of the "Knees" of the Deciduous Cypress is discussed at some length in a recent issue of the *Garden and Forest*, and the writer submits that the most important of the functions of the "knees" is to stiffen and strengthen the roots in order that a great tree may anchor itself in a yielding material.

RENOVATION OF GRASS LAWNS.

At this time of year much may be done towards the enjoyment of summer in the garden by repairing and improving as may be needful the grass turf and its surroundings. Much may be said, as much has been said in praise of grass lawns that are embellished with marginal dots and clumps of flowers such as crocuses, snowdrops, daffodils, and the like, but to the end of time it will be true that an unbroken, perfectly smooth, and brilliantly green turf of fine texture is one of the best features of a garden, and is indispensable in many gardens where free movement on the grass is allowed and encouraged. In connection with half wild scenes and in breadths of turf that lie apart from the more formal promenade or play-place, the flowers are admissible, and where they are truly admissible they are also truly charming, provided only that they are managed with good taste. The great point is to attain to something like naturalness in the distribution: better too few than too many: better absence of all order than repetition of some fancied arrangement that may betray poverty of ideas. Nature scatters seeds from centres and from these they are variously dispersed: therefore, in a supposed natural arrangement of flowers on a lawn occasional crowds are admissible, and there should always be considerable blanks or the thing will be in danger of overdoing.

Where there are worn places on lawns two things are desirable; first and foremost, exclude traffic therefrom. If left untrodden for one season nature will probably fill up the blanks with suitable vegetation; grasses and clovers will appear. But better to help nature by digging up the blanks and either sowing seeds or laying turf to make quick work of the renewal. Often there is no need of any fertilizer, for, in small gardens especially, sparing the worn places from any more wearing until they are well renewed will be sufficient. But a general poverty of a lawn may be quickly remedied by a surface dressing. Where present appearances are of no consequence, the treatment bestowed on the hay-field will answer perfectly: clear the surface and spread a dressing of rotten stable dung, taking care to throw out any bricks or stones and birch brooms that have got into the mixen. But in most cases appearances are of great consequence, in which case a good manurial preparation should be spread in a thin coat and be left for the rain to wash it down. It is not unusual to see on old lawns that daisies and small-leaved plantains have almost entirely usurped the place of the grasses, but these last may be restored by the simple process of top dressing with some good fertilizer. The commercial articles now before the public are all good in their way and competition keeps them to a reasonable price. All such work carried out now will tell with effect hereafter in the growth and general character of the turf, which will only require careful keeping as the season progresses to fully justify any reasonable outlay at the present time.

In the trade catalogues we note many pretty suggestions for the laying out of lawns and their surroundings. One that has much in it of a proper gardenesque character occurs in the seed catalogue of Messrs. J. and R. Pearson, of Chilwell, Notts, and we transfer it to these pages in connection with this note as conveying a pleasing idea of an enjoyable grass lawn in an old English garden.



A GLIMPSE OF AN OLD GARDEN.

Twenty Tons of Violets are reported to be annually used in Cannes and Nice for the making of perfumes.

ORCHID NOTES—ORCHID ALBUM.

Lælia elegans Blenheimense.—A new and distinct looking form of the species is figured. The sepals are described as being of a pale rosy purple, darker towards the margin; the petals of an intense deep rosy purple colour; the lip deep magenta-purple. Lælia elegans seems to be a very variable species, and this, according to some authorities, is attributable to the plant being a natural hybrid. On this point the editor remarks that the plant is so widely spread over Southern Brazil that it does not appear possible to accept the statement of its presumed hybrid origin. On the other hand, it is stated in Messrs. Veitch's important "Manual of Orchidaceous Plants" that this hypothesis is supported by the following cogent reasons; (1) It is found growing in company with, or in close proximity to, the species from which it has been supposed to be derived; (2) the leaves, although generally in pairs, as in Cattleya intermedia and C. guttata, are sometimes solitary, as in Lælia purpurata; (3) the pollinia are always unequal, the upper series of four only being fully developed, while the lower series are much smaller and quite rudimentary. The stems and leaves sometimes approach Lælia purpurata and sometimes the more slender Cattleya intermedia and C. guttata Leopoldi. It is supposed that in each case L. purpurata is one of the parents, and that gigantea, Turneri, prasiata, &c., are from a C. guttata Leopoldi cross, and alba, irrorata, &c., are from C. intermedia. The varieties Turneri and Wolstenholmiæ have long been well known, and good plants of either have been eagerly purchased at high prices.

Lælia elegans and all its varieties like a warmer corner in the Cattleya house than the usual run of cattleyas. Pot culture suits them well, but after seeing the immense specimens growing in baskets in Messrs. Sander's houses at St. Albans, it is scarcely proper to say that it is not a good basket plant. These large specimens grow with great vigour, and no doubt all cattleyas would do better with the roots more freely exposed to the atmosphere of the house, for whenever we find any of our cattleyas difficult to grow in pots we try the basket system, and often succeed.

Pescatorea cerina is also figured; a distinct species, with straw-coloured sepals and petals, the lip yellow. Lindley described this plant as Huntleya cerina, and it is well described under that name in Bateman's "Second Century of Orchidaceous Plants." The pescatoreas are seldom seen in a healthy, free-growing condition for long together. Mr. Bateman, who flowered it in his garden at Knypersley, says the flowers are of long duration and that it succeeded with basket culture grown with the trichopilias. The editor says: "This plant is successfully cultivated by different growers in various ways, and in various temperatures; but hitherto they have not proved long-lived plants under cultivation." Basket culture is advised, with good drainage and elevating the plants above the rim of the basket. The warm end of the cattleya house is best for them. Those intending to cultivate this class of plants should purchase them either at the time they are imported or soon after.

Lælia monophylla.—Of this tiny species there is a characteristic specimen figured. It is not a plant that is likely to become popular, although it is certainly interesting as a botanical subject, especially as it is the only species of lælia found in a state of nature outside the

continent of America. It is found on trees at elevations of 3,000 to 5,000 feet in the island of Jamaica. Plants of it were sent to Kew in 1881 by Mr. D. Morris, and flowered there for the first time in England in October, 1882. It is also well figured in Bot. Mag., t. 6,683. Being such a small plant basket culture will suit it best, and it may be suspended near the roof glass of the odontoglossum house.

Dendrobium transparens is very nicely figured. It is a pretty deciduous species, with rosy-tinted flowers. Some of these small-flowered species are pretty enough, and, being easily grown, should find a place in all large collections. There is a poor figure of it in Bot. Mag., t. 4,663, but the editor states correctly that "the species flowers profusely during the summer months, and the flowers are copious on the stem." Under cultivation, this is merely a matter of treatment. Dendrobiums grow freely, as soon as their flowering period is over, in a temperature of the warmest house in the garden. They not only require a high temperature, but rather free exposure to light. A thin shading should be used merely to break the direct rays of the summer's sun at the hottest part of the day. When it is seen that growth is completed, the plants should be placed in a cooler and drier atmosphere, and as the autumn merges into winter water should be withheld altogether, thus giving the plants a season of complete rest. The result will be that the well-grown and well-ripened stems will be studded with fine flowers. J. Douglas.

NEW AND CHOICE SHOW AURICULAS.

The auricula time is near at hand; in a few weeks, and the period of awakening will commence. The autumn was generally so fine and warm, and the winter, with the exception of a brief period of sharp frost, so generally agreeable, that the auricula has seemed to be active through both these periods. At the present time, so far as my own plants are concerned, they are more advanced than I have known them for years past, though in a house on a north aspect, which has been constantly freely ventilated. In February the days have lengthened and there is more of solar heat to assist in the awakening. As the Rev. F. D. Horner says, in one of his pleasant, chatty papers, "Old leaves spring back, and the intense light green or snow white foliage soon clothes them with some of the distinctness of habit that belongs to each at the prime of its early life." This was the month for top-dressing the plants, a custom with the older class of florists, but one now largely discontinued by the present race of cultivators. Mr. Horner states that it is not well that any part of the neck of the plants should lie bare, because of the important fibres that break from it, and therefore, though he does not practise top-dressing with rich material, he yet in early spring adds enough of good potting compost as the plants are growing to cover the stems that have grown bare.

By March the plants become full of absorbing interest, as they are then in full and handsome growth! It is in March that the flower heads appear, and the grower can begin to estimate its probable value. The spring growth is so rapid and enjoyable that every day reveals some new feature of beauty and delight, and watching the plants through the graver progress of all the after seasons is something like the change one feels in travelling by a slow train on a branch line after a rapid journey by a main line express. Let us hope the fates will be propitious, and that every auricula grower may enjoy a good and satisfactory head of bloom.

Among the new and little-known auriculas I saw last season was one named Robert Lord. I think it was raised by the late Mr. Pohlman, of Halifax. It was very finely shown by Mr. Tom Lord at the Rochdale Auricula Show. It had a rich golden tube, full of life, a dense white paste, a narrow but symmetrical zone of black body colour, and a finely-formed pip with stout segments, and a bright green edge. Five of Mr. Horner's new varieties were shown, viz., Green Plover, Monarch, Dragon Fly, Neptune, and Hotspur, and as shown they appeared to be all very useful additions to a class by no means rich in good reliable greens. Whether either of or all of these will eventually be put into commerce, and will prove as useful as Simonite's Rev. F. D. Horner, remains to be seen. Another of Mr. Pohlman's raising is John Crossley, a taking flower as shown, and one I am told likely to prove a useful exhibition flower in the north. One named Richard Gorton, also a variety of good character, was also shown, but I do not know who raised it. Abbé Lizst and Verdure, raised by Mr. J. Douglas, were exhibited by him in good condition; and while both are acquisitions, I think I like Verdure the best of the two, as seen on the exhibition table, the green edge being so bright and striking. But it is hazardous to say too much about new auriculas, unless one has grown and had experience of them; therefore it is that I content myself with indicating, rather than critically examining, the varieties I name.

I saw in Mr. Samuel Barlow's collection at Stake Hill a highly promising smooth green edge which he named Hibernia. I shall look with some interest for the appearance of this next April. Another of Mr. Barlow's new green edges is President Royds, with large well-formed pip, and of a vigorous habit of growth. Mr. Barlow has a very high opinion of this flower, or he would not have named it after so distinguished an "auriculaist" as Mr. Royds, of Rochdale, the Resident of the Northern Section of the National Auricula Society.

Of white-edged flowers I name but three, viz., Horner's Magpie, Douglas's Elaine, and Mellor's Reliance, the latter not so new as the others. Reliance is generally seen to advantage at the Manchester Auricula Show, and it appears to be very useful and reliable. Magpie and Elaine are both full of promise; I like the former, because the snowy mealness of the edge contrasts so well with the black body colour, and I think it is happily named.

I made a note of double the number of grey-edged varieties, viz., Horner's Atalanta and Calliope; Douglas's Mabel, Marmion, and Dr. Kidd; and Simonite's Heather Bell. It may be that one or two of these could pass as white-edged varieties, although I have classed them with the greys. Faint white edged and heavily mealed grey edges sometimes run into and mingle one with the other, so that on the exhibition table they may sometimes appear to change places. There is ample room for good white edges, but raisers are doing their very best to give them to us. The grey section is a strong one, and it is now pretty full of good types. Still, Old George Lightbody at its best is hard to beat.

The Self section increases with great rapidity. Those who raise seedling auriculas are familiar with the fact that more self flowers come among seedlings than any other section. Of the new selfs shown by Mr. Horner last season, or by others, I may name Melaine, Dimple, Ebony, Daisy, Laura, and Firefly, the last a red variety of considerable promise, and a most acceptable addition to the section. It is scarcely necessary to say that all Mr. Horner's new flowers are very fine, and they are invariably shown by him in the best condition. I made a note of two shown by Mr. Douglas, viz., Sir William Hewett and Fanny Glass; the raiser generally shows the former in good condition. I greatly like Woodhead's Black Bess; it was shown in fine condition last year. Mr. T. E. Henwood, of Reading, presents it in excellent form. Barlow's Mrs. Potts is a very valuable addition to the blue selfs, smooth and refined, but it has the fault of producing a tall foot stalk. It is a good grower, and has a handsome mealed foliage. Mr. Barlow has had during the past three or four years a fine break in selfs, and on the occasion of the Rochdale Auricula show last year he had Mrs. Barlow and Mrs. Bentley very fine; the latter was almost perfection as a dark marone self, so finely formed, smooth, and striking. In addition, Mr. Barlow has Loveliness, a plum-purple self, good tube and paste, well formed pip; Carbuncle, crimson-claret; Brilliant, a promising red self; Imperial Blue, very promising, and a new shade of colour; and Viola, brilliant violet, fine in colour, good tube, but having that defect in not a few selfs—the paste being too narrow. Mr. Barlow appears bent upon producing new auriculas, and for that purpose he carefully fertilizes his best varieties. R. Dean.

THE FRUIT TREES AND THE BIRDS.

Only those who have had the unpleasant experience of having most of the blossom buds taken out of their fruit trees by birds, can realize the disappointment that one feels at the injury done to them, as well as the loss of the crop. The mischief done by birds in this direction is widespread, and the attempts to find an inexpensive and effectual remedy have been many. Unfortunately, a cheap and durable protector has not yet been found that will answer in all cases. Some cultivators say that they have found sprinkling the bushes of gooseberries and currants with whitewash has effectually kept the birds away; but where they are numerous I have not found the remedy to answer. I have seen in the case of others, as well as having tried myself, so many different attempts to preserve the buds from the birds, that I purpose to pass briefly under review a few of the plans adopted with more or less success.

The simplest and the least expensive plan that I have met with that has given very fair results has been practised by a friend for some years past. In this case the gooseberry trees are of sorts that have an erect habit of growth, like the Early Sulphur. As soon as all the leaves have fallen in the autumn the branches are gathered up and tied in a bundle. The red and black currants are dealt with in the same way. In this condition they remain until the buds are bursting in the spring, when they are untied and pruned if necessary. It is not contended that this plan saves all the buds, as the birds usually have a good share of those round the outside of the bundle, but they cannot get into the middle of the bundle of branches; in this way a portion of them are saved and a moderate crop of fruit is secured. Trees treated in this way cannot be expected to be handsome subjects, but what matters about the look of the trees. Better to have ugly trees and some fruit than well-shaped examples and no fruit.

In another garden with which I am well acquainted all the bush fruits have been brought together into a square piece of ground, round which a wood frame has been erected, and wires stretched across to form a framework, over which is placed ordinary fish-net. This plan answers very well to protect the fruit, but it is hardly proof against the small birds that do the mischief in winter.

The least expensive and most serviceable protector of a durable character which I have met with is that made of one-inch mesh galvanised wire netting. In this case the gooseberry and currant trees stand about four feet apart, in single lines. To form the protector two equal lengths of netting are securely joined together, and then placed in a half circle over each line of trees, with the sides pegged down to the ground, and the ends made secure with the same material. This is an effectual remedy against the birds, both in winter and summer. The only drawback to it is that the trees require rather hard cutting back to keep them within the limits of the wire. It is, however, simply a question of a moderate crop of fruit with protection, or none at all without it. I feel sure that there are many readers of the G.M. who have bird-infested gardens, who would be content with the crop of Warrington gooseberries that I saw under one of these wire protectors last season. It was not a full crop, but it was a respectable one, and looking at the durable character of the material used, and the fact that every year alike, since the protector has been in use, the quantity of fruit had been equal to what I saw, I am bound to speak well of the contrivance. There was every reason to be satisfied with the result of such a moderate outlay. The best sort of gooseberries to grow to be protected in this way are those with a pendulous growth, like the Warrington. J. C. C.

Correspondence.

HEATING SMALL GREENHOUSES.

The individual Mr. Clarke mentions in his letter on the above subject, I think, has been found, and also has found a way of heating both large and small greenhouses, which is most reliable, economical, effectual, and no danger to be feared from injurious fumes. I can truthfully say the labour is reduced to a minimum. I am certain that thousands of small cultivators who, our worthy friend states, are waiting for the invention of some means of heating small greenhouses, will find in this boiler which I wish to bring before their notice, that kind of boiler which ought to have been known years ago. In regard of the oil stoves mentioned by Mr. Clarke, I have had a little experience with them, but never found them satisfactory for heating greenhouses. Now with regard to this boiler, viz., Watson's Suspension Boiler, it is most rapid in action, very economical, and effectual, which I hope to prove to you further on. I wish the readers of this valuable paper to understand I am writing from experience, having two of these boilers now on my place. One of these cost me £1 6s., the other £2 2s. The first-mentioned heats a lean-to twenty-five feet long by eleven wide, a four-inch flow and return all round. I can get these pipes thoroughly hot in twenty minutes by using one pail of coke and one of good coal slack. The two guinea boiler heats a span roof forty feet long, fourteen feet wide, eleven feet high, four-inch flow and return all round, same as lean-to. I can get the pipes hot in this house in about the same time, with using same quantity of fuel. After the fires are nicely burnt up I put on another pail of slack and cinders mixed, and leave it. The question at once arises, how long do I leave it? Well, for twelve and sometimes fourteen hours; after that time I have found fires still burning, pipes warm, and temperature of houses 55 and 60 deg. I make it a rule to make the fires at night myself, generally about 6 p.m., and it is very seldom I trouble to look at them again before morning, unless the weather is very severe indeed; and in severe weather I can heat the two houses for five shillings a week. I burn no coke after once starting them, simply coal slack and siftings from two tubular boilers I have in use. This kind of boiler must indeed be very different to any Mr. Clarke has used. On January 21 I had to go for some distance to see a friend, expecting to be home very late. I made up my fires at 6.15 p.m., using a little more fuel than usual, and did not look at them again until 8.30 next morning, when I found fires still burning and houses at proper temperature. Now this ought to prove how reliable and economical they are. As to heating small greenhouses by the flue system, I say most decidedly I do not entertain the idea for one moment, until there is a vast improvement in the materials used and construction of the flue. The next question arises (a very important one to small cultivators) as to the cost of fuel and labour. I challenge Mr. Clarke to find a boiler or flue, suited for heating large or small greenhouses, that will answer in every respect so well as the above. I may say they have been in use some years in this neighbourhood, and have given every satisfaction. They are made in different sizes; one heating fourteen hundred feet of four-inch piping can be seen in use at St. Albans. These boilers have only to be known, and I feel confident both inventor and manufacturer will have their reward. I thank Mr. Clarke for his able letters to your paper, for I have found them useful in many ways, but on the above matter I respectfully beg to differ with him.

New Bushey. W. Healey, Florist.

CONDENSED FARMYARD MANURE.

Speaking of two things that in recent times have been considered parts of the catechism of market gardening and farming, a new organ of horticultural journalism makes a most extraordinary assertion. The peat-moss-litter manure and nitrate of soda are both most sweepingly condemned in one breath. "In our opinion, in spite of 'scientific testimonials,' the virtue that might once have existed in the moss litter has by now ceased to exist. We have no faith in it at all, and we condemn it as we did and do 'nitrate of soda,' confident that neither are of any use in the form of manure on a farm. As fertilizers they are both a fraud." So says the new authority.

It is enough to make one's hair stand on end to read such a statement, so widely different is it from all the views, opinions, and practices of every practical as well as every scientific cultivator. The organ in question is that of the "National Fruit Growers' League," at least so it asserts. Wherein the said League may otherwise exist it is hard to say, but one derives from their organ a strong suspicion that their editor is very much in evidence in favour of the Covent Garden salesmen. Now it is admitted on all sides that the one central market system, as it obtains in Covent Garden, is the one great curse of market gardening, affording as it does such daily opportunities of injustice to the producers of the articles sold there. I write from bitter personal experience. Mr. Bernard Dyer, analytical and consulting chemist of the N. F. G. League, cannot safely allow his name to be used as if in accordance with these views. Setting aside nitrate of soda, which, as every student of the vegetable kingdom knows, is the outcome of nitrogen and the very essence of plant life, we may find space in a short paper like this for a *resumé* of the use of "peat moss litter manure."

What is it, in the first place? What are its components, and what is there in it to frighten the fruit grower? To the latter part of the question, I say, absolutely nothing that can be considered dangerous to open air culture. It absorbs ammonia, it retains moisture, it lightens the soil, and it lasts a very long time. Such are a few of its general qualities. The writer of the statements we are questioning must be either poking fun at his readers, or depending on their credulity, or else seeking cheap notoriety by boldly asserting such ridiculous nonsense. When he refers to "the virtue that might once have existed in the moss litter" he at once shows his complete ignorance of the subject. Virtue—in the shape of nitrogen, carbon, potash, phosphate, silica, or what? What in? In dry moss! Simply dry sphagnum moss, nothing more! What could be more misleading? Spread the dry moss litter in the stalls, and under the feet of the horses in the stables; allow it to absorb all the urine and ammonia arising therefrom; give the horses' feet a chance of squashing and treading and pulverising it till it becomes a well soddened mass and then we have a most valuable manure: not before. The moss itself is so sweet, and so innocent of organic elements of decomposing nature that Cattleyas and other orchids will root freely into it. Orchid growers will say that this is ample proof of its freedom from inorganic elements as well. It is simply because the peat moss in its natural dry state is such a good absorbent of moisture that it can be so used. Orchids need to have their hydrogen supplied to them as pure and as free from decomposition as possible. I do not say that this moss is the beau ideal of an orchid rooting medium, far from that: it is too apt to become soddened, and there is often present in it traces of the iron-tainted bogwater from which it has been dug. Mr. Field's "Trepho" for orchids was of this nature; and, so far, probably there was danger in its use. Mr. Bickerstaff and other well-known orchid experts were nevertheless able to utilise it.

The urine in the stables, the softening, pounding, and fermenting in the stalls and in the dung heap, all help to counteract and dispel the oxide.

Now when it is remembered that wood charcoal will absorb ten times its own weight of ammonia, and that the dust of the peat moss litter is still more absorbent, we have a very strong case. Probably the users of the moss litter manure fail to utilize it to its fullest extent in neglecting to permanently fix the ammonia. As the manure comes fresh from the stables it is powerfully charged, and I have known a heap of it to lose the greater part of ammonia in two or three days owing to over fermentation. In its crude state, fresh from the stables, it should be at once got under ground and then users of it will gain the full benefit.

By permanently fixing the ammonia as it is generated with gypsum, lime, charcoal, &c.; by adding supplies of potash and other alkaline salts, and by throwing in a little phosphate there is in peat moss litter manure at once the cheapest and best "concentrated manure" that can be thought of. Simply treated, one ton of it will be equal to three or four tons of ordinary stable and farmyard dung. Scientifically handled that value will be more than doubled. So prepared it will keep good for a long time. Its lightness and portability are also features of importance, and being free from disagreeable smell makes it acceptable to all, even the most fastidious. This much in support of 'scientific testimonials' sneered at by the apostle of the "new journalism."

R. Beale.

Calls at Nurseries.

MESSRS. H. LOW AND CO.'S NURSERIES, UPPER CLAPTON.

Upper Clapton does not enjoy immunity from fogs, which are so disastrous in their effects upon the buds and flowers of the majority of orchids. Nevertheless there is no dearth of bloom in the principal structures devoted to orchids, and visitors will not have any cause to complain of their being wanting in attractiveness.

One of the most important of the many good things now flowering freely is unquestionably the comparatively new Vanda Amesiana, which has proved of exceptional value for contributing to the attractions of the orchid house during the winter months, for it is not only of easy culture and highly attractive, but it appears to be well able to resist the adverse influences to which orchids grown within the metropolitan area are exposed during the winter. The flowers developed during a period of foggy weather are not, perhaps, so bright in colour as those which expand when the atmosphere is clear, but the fog does not otherwise affect them. Messrs. Low and Co. have had an abundance of flowers since November, and there must be several hundred fully developed spikes at the present time. As previously stated in these pages, this species is comparatively dwarf in growth, has stout fleshy leaves, and produces erect spikes of medium-sized flowers, and is perfectly distinct in character from the other vandas with which the English cultivator is familiar. The flowers are comparatively small in size, the sepals and petals pure white, and the labellum varies from pure white to rich purple. A variety bearing flowers with white labellum has made its appearance, and is appreciated for its rarity, but the flowers with a coloured labellum are decidedly the most beautiful and effective. Angræcum sesquipedale is also in strong force, and in the large structure devoted to this singular and handsome species there are several hundred flowers notwithstanding the fact that the fogs at the beginning of the year rather severely thinned the buds at an early stage of development. A. hyaloides, a very dwarf-growing species differing from the long-tailed angræcum as widely as it well could be, is also blooming freely, and although not so striking in appearance well deserves attention. The plant nestles, so to speak, on the surface of the sphagnum, and the small snowy-white flowers are produced in dense racemes ranging from two to four inches in length. A. citratum will form a great feature of itself in a short time hence, for there is a complete forest of spikes in various stages of development.

The phalænopsis are amongst the first to suffer from the effects of fogs, and it was therefore somewhat surprising to find such beautiful displays of bloom in the two large structures devoted to them. Those in bloom comprised P. amabilis, P. amabilis aurea, distinguished by the rich golden markings on the labellum, and properly regarded as the finest of the several forms of this beautiful species. P. Sanderiana, a beautiful species, with rose-pink flowers; P. leucorrhoda, an attractive form, supposed to be a natural hybrid between P. amabilis and P. Schilleriana; the leaves are slightly mottled, and the flowers are comparatively large; the sepals are white, spotted with purple, the petals white, tinged with rose at the base, and the labellum is white, marked with purple; and P. denticulata, a distinct and interesting species, but wanting in the attractiveness of the other three kinds mentioned; the flowers are of medium size and coloured greenish-yellow and brown.

The cattleyas now flowering include C. Trianæ in variety, some of the forms being particularly fine, Lælia Dayana, a charming little species with rose and purple flowers, is also strongly represented. Very fine just now are Pilumna fragrans and P. nobilis, two of the most beautiful of winter flowering orchids. The first named has yellowish green and the others pure white flowers, those of P. nobilis being also delightfully fragrant. Dendrobiums include several good forms, and conspicuous amongst them was D. dominianum, one of the first hybrid dendrobiums raised and still one of the most beautiful. This had for its parents D. nobile and D. Linawianum, and is intermediate in character and colouring between the two. The oncidiums flowering included O. incurvum and O. varicosum, both of which are well known and justly esteemed for their beauty. In the cool houses those now flowering most freely are Odontoglossum crispum, represented by numerous excellent varieties, and Masdevallia Tovarensis, a charming little species producing a profusion of white flowers.

The lady's slippers constitute an important feature and prove to demonstration their great value for contributing to the attractions of the orchid house during the winter. Amongst those especially deserving of attention for their beauty are Cypripedium Hookeræ, the majority of the forms having flowers more richly coloured than the type as generally known in collections; C. calophyllum, one of the best examples of the hybridist's art; C. ciliolare, another good one; C. Lawrenceanum, not less remarkable for the handsome markings of the foliage than for the large size and attractive colouring of the

flowers; C. insigne Chantini, one of the many good forms of this old and useful species; C. Haynaldi, C. hirsutissimum, C. Harrisianum, C. villosum, C. Roezli, and C. Schlimi, all of which are so widely known that to describe them is quite unnecessary.

It may be mentioned that the cultivation of palms has undergone an enormous development at Upper Clapton during the past few years.

ORCHIDS.

By W. SWAN, Castle Hill Gardens, Englefield Green.
Read at Meeting of Chiswick Gardeners' Association.

ORCHIDS have perhaps received during the past thirty years a far larger share of attention than any other class of plants, and when their quaint forms, the rich colouring of their flowers, and the delicious perfume of many of the blooms are taken into consideration, this is not a matter for surprise. Great, however, as has been the interest in the past, I think it is likely to become greater still in the future, for a far larger number of persons are commencing their culture. Their requirements are better understood, and as it is found that so many species lend themselves very readily to the skill of the hybridist, an ever increasing pleasure is sure to be taken by those who cultivate, not only in the enjoyment of blooms, of which a knowledge has been obtained, but also in the careful tending of seedlings, which I am happy to know are now to be seen in many gardens of high repute.

In a work on Orchidaceous Plants, written by Francis Bauer, there is a lengthy and interesting introduction by the late Dr. Lindley, and from this I shall quote a few statements: "The natural order called Orchidacæ consists of plants entirely dissimilar in habits, appearance, and structure, but agreeing in being organised upon the type of endogens, in having gynandrous flowers, and an inferior polyspermous ovary. In habit they are terrestrial, or growers upon the earth, and epiphytal, or growers upon the surface of trees, rocks, stems, or other bodies, or apparently true parasites. The roots are of the following kinds: (1) Annual slender fibres, simple or branched, of a succulent nature, incapable of extension, and burrowing underground as in the genus orchis; (2) Annual fleshy tubercles, round or oblong, simple or divided, as in the various species of the same genus—tubercles of this kind always have a bud at the extremity, and may be considered the principal inferior prolongation of the axis; (3) Fleshy, simple, or branched perennial bodies; and (4) Perennial round shoots, simple or a little branched, capable of extension, protruded from the stem; adapted to, or adhering to other bodies, and formed of a woody and vascular axis, covered with cellular tissue, of which the subcutaneous layer is often green, and composed of large reticulated cells. The points of these roots are usually green, sometimes red and yellow."

In regard to the stems the following sentences also appear: "The stem is formed in its most simple state in the terrestrial Aphrydea, where it is only a growing point, surrounded by scales, and constituting a leaf bud when at rest, which eventually grows into a secondary stem or branch, on which leaves and flowers are developed. This kind of stem usually forms every year a lateral bud with a tubercle root at its lower end, and having unfolded its leaves and ripened its fruit, perishes, to be succeeded by the stem belonging to the lateral bud previously prepared; hence those species to which this kind of stem belongs have also a pair of tubercles, one shrivelling or in progress of exhaustion; the other swelling and in progress of completion.

In other cases the growing point thickens, is scarred with the remains of leaves which once grew upon it, and assumes the state of a short, round, or ovate perennial stem or pseudo-bulb. In such a case it commonly emits from its base a short shoot, which creeps along the ground, or over the surface of a branch, if the species is an epiphyte, and becomes a woody rhizoma covered with scales, which represent undeveloped leaves; after having advanced to a length which varies in different species, the rhizoma ceases to grow, and forms a new pseudo-bulb at its end. The latter subsequently produces a new horizontal rhizoma, which again terminates in a pseudo-bulb. In other cases the rhizoma, instead of having pseudo-bulbs, form short stems, which are terminated by one or more stout, fleshy leaves, as in Pleurothallis, Masdevallia, &c.; these differ from the pseudo-bulbous species only in the thickness and form of their axis. The formation of tubercles, and terminal buds, or of creeping rhizomata and pseudo-bulbs, is the most common tendency of the order, but not the only one. In Eulophia, Bletia, Calanthe, &c., the rhizoma assumes simply the form of an ordinary tuber, and in Vanilla, Vandas, Phalænopsis, and others of a similar nature, there is no rhizoma, but the stem lengthens as in common plants, from which there is nothing to distinguish it. Some of the Dendrobiums are remarkable for having the pseudo-bulbous form at one end of the stem, and the common state at the other, as in D. crumenatum.

The leaves are variable in many points of structure. Among the terrestrial species it is most common for them to be flat, and distinctly traversed with strong parallel veins proceeding at equal distances from the base to the apex, and sometimes giving them a ribbed appearance. But from this the variations are extremely great. In Brassavola leptotes, Scuticaria, and others, they roll up, and grow together in such a manner as to become terete. In all the epiphytal kinds they are distinctly articulated with the stem, from which they are thrown off when dead.

The inflorescence is in all cases terminal or axillary; but it often seems not to be so. Thus, in some of the dendrobiums, the flowers appear in racemes springing from the back of the leaves at their base, which is pressed so close to the stem that there is no room for the flowers to develop in the ordinary way. In other instances the flowers are described as radical. They are, however, in all such cases formed in the axil of a scale or leaf stationed near the root. When, as in cycnoches, catasetum sometimes, and others of a similar nature, the flowers spring from the naked stem, they are not the less axillary on that account, but merely appear after the fall of the leaves to which they belong. It is frequently the nature of these plants to direct their flower stems downwards. This arises from their being naturally inhabitants of the branches of trees, from which their flowers hang down freely in the air."

From the foregoing extracts it will be admitted that in many species there is a tendency to produce growing buds from apparently unlikely places. As an instance, take a bulb of Calanthe Veitchi. This may be cut up into several pieces, and if carefully managed will produce a new growth and bulb from each portion. In this case the old bulb or portion of bulb would seem to perform the function of the tubercle described under the second section of the roots, and the new growth in a short time becomes the true pseudo-bulb, until in its turn, may have to pass through the same ordeal. It is very seldom that a rhizome is formed in the Calanthe section, but if the bulbs are allowed to make long growths in the spring before they are repotted, especially if they are laid in pans or boxes, the cluster of roots push away from the further extremity; by which means a rhizome is formed between the bulbs. The same thing may be observed in many of the stout, fleshy species, such as those of mormodes, catasetum, cyclopodium, &c. From the top of several of the odontoglossums young plants will be formed occasionally. Oncidiums sometimes exhibit the same peculiarity, whilst among the large family of the dendrobiums numerous additions may be made to a collection by cutting off portions of unflowered bulbs, which, if laid on moss and occasionally moistened, soon produce young shoots and roots, and in due course make plants.

In Phalænopsis Luddemanniana young plants are produced at the end of the flower spikes. In this case the old flower stem becomes a rhizome, and a terminal bud being formed at the tip, it will start into leaf growth as soon as the flowers are taken off. If these points are pegged down young plants are quickly formed, which may be severed from the old plant, and so become independent specimens. When allowed to grow round the old parent they add to its value and importance, and at the flowering season a greater quantity of blooms can be ensured than would appear on a single specimen. After the young plants on the spikes are rooted they may be severed from the old spike, which will subsequently make short laterals on which flowers will again appear. Beside Phalænopsis Luddemanniana, others of these lovely moth orchids may be increased by young plants produced by the undeveloped eyes of the cut flower spikes. When specimens of P. amabilis, P. grandiflora, and P. Schilleriana have thrown up strong spikes of bloom and a portion with the flowers upon it is cut off whilst the blooms are very fresh and the lower part left, the probability is that the two first-named will produce some laterals on which a few flowers will again appear. If, however, this part is cut from the plant and laid on damp moss, or inserted in a vanda pot, or in the basket or pan whence it was taken, as just intimated, young examples will often appear, which, by careful tending, will grow into healthy flowering plants. A large number of orchids may easily be increased by division of the pseudo-bulbs. But before any such operation is performed it is well to be certain that each portion has a lead to it, so that growth can come away at its proper season, with every probability of forming a stout and healthy pseudo-bulb. When divisions are performed, and the back portion consists merely of old bulbs, with dormant eyes of several years' standing, the back portion often dies completely away, whilst the front piece is weakened for some considerable period. Still, among very rare plants the risk is worth the venture; for if success follows the gain is very great. No doubt the chances of success are greater now than formerly, for less heat is given, and with moisture and cooler treatment the portions do not shrivel so much in a well-arranged orchid-house as was the case when a high and dry temperature was given to almost everything that came from the tropics.

Perhaps that method of increase which gives the greatest pleasure and brings about the most satisfactory results is the raising of orchids from seed. I am pleased to see in recent numbers of the gardening papers that a very nice collection of seedling dendrobiums was exhibited by Sir Trevor Lawrence at the Royal Horticultural Society's meeting on January 14. It is not my purpose to describe these. You can all by reading the gardening papers see what they were. The parentage of several is given, and I think you with myself will heartily congratulate the enthusiastic exhibitor of these plants for the success he has already achieved, and hope too that he may have others in store that in the future may give him joy and delight. It was about the year 1853 that Mr. Dominy, acting on the suggestions and advice of Dr. Harris, of Exeter, commenced the fertilization and hybridization of orchids in the nursery of Messrs. Veitch. This labour has been carried on ever since by that firm to such a degree of success that some of the finest orchids grown to-day are the products of the patient and watchful care of the worthy successors of that Exeter establishment. What a number have appeared at Chelsea, and now that this branch has been removed to Slough, with its purer air and brighter sunshine, we may anticipate greater results than have yet been obtained. What orchid for winter blooming is more largely grown than Calanthe Veitchi, a hybrid, as you will all remember. I question much whether any English-raised orchid has been so universally admired, yet even this is now in a measure paling before some of very recent origin. Other English-raised hybrid Calanthes are now being grown, and exceedingly beautiful they are. Besides these which come up freely and are only a few years ere they produce their blossoms, there are others which take eight, ten, or twelve years from the sowing time to the perfect development of their flowers. Among these mention may be made of Cattleya Exoniensis, Lælia bella, Cattleya Veitchiana. As may be supposed, such slow-growing hybrids are rare, are likely to remain so, and when they grow freely, increase in value at a rapid rate. It is not my purpose to give you a list of orchids that have been raised from seed. I mean those which have flowered, and have been named; but whilst the firm just named must certainly have the honour of having raised and flowered the largest number of new forms, there are others equally enthusiastic who have been and still are engaged in this interesting occupation, and many important additions have resulted from such labour.

Bearing then in mind the successes that have attended a careful and persistent course of hybridization, it may perhaps be well to advise those who have an opportunity for engaging in such labour that there are yet many species that may be operated upon, and many new forms yet to appear. Even if two or three growers should succeed in raising hybrids exactly alike, the gain to each is almost as great as though a distinct form appeared separately. Let me then advise those who purpose engaging in this pleasant occupation to make themselves perfectly acquainted with the different portions of the flower, more especially the column, stigma, and pollen masses. Then select two of any genus having a close affinity, such, too, as are of sterling merit, and that in the natural order of things would be likely to produce good seedlings.

Then fertilize the one with the other, an operation rather difficult to describe, but very simple when the subjects are at hand. Carefully make a note of each operation on a label attached to the pot; also make a record in a pocket-book. On no account should the plant be interfered with. In a few days, more or less, the flowers will show signs of withering, and soon after the ovary will begin to increase in size. The blooms will not fall off; but in a dry state continue hanging on what ultimately becomes the seed pod. This in many cases will take from six to twelve months to ripen, the season of the year when the operation is performed having something to do with the length of the period.

When the seed is perfectly ripe the capsule will burst slightly, and as soon as this is observed it must be taken off and the seed shaken gently on the top of the pots or baskets of some of the plants in the same house. Choose as a seed bed those plants that will not require potting or top-dressing for some months. Mark the pots or pans that have any seed sown upon them, and do not despair should the seedlings not appear even at the end of twelve months. I have known a longer period than that to elapse ere the young plants have shown themselves. Even if the first attempt should be a failure then try and try again, and I doubt not you will meet with success and find in these young charges ever-increasing interest. Hitherto, the greatest number of hybrids have appeared among the cypripediums, the species from the old world being fertilized with those from their own country or those adjoining, such as Indian with Burmese, or Indian with Bornean, or each country with its own. Again, those of South or Central America have been crossed, species or hybrids lending themselves readily to such operation. So far as my knowledge, however, extends, there has not as yet been any cross that has flowered of any two plants of the old and new world, that is, of South American and Asiatic. I have myself raised seedlings of a cross between C. Pearcei (Peruvian) and C. Parishi (Burmese). These came on very slowly, are now some ten years old, and though now out of my charge, I have every reason to believe not one has yet flowered.

(To be continued.)

Exhibitions and Meetings.

BRITISH FRUIT GROWERS' ASSOCIATION.

AN adjourned annual general meeting of the British Fruit Growers' Association was held in the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, on the 30th ult., at 3 p.m., T. Francis Rivers, Esq., in the chair. The principal business, in addition to that of a routine character, was the consideration of a code of rules based on those originally drawn up, but which have been found to be inadequate for the purposes of the association. The minutes of the previous meeting having been duly read and signed, the following report was presented, and after a brief discussion, unanimously adopted:—

In presenting the first report of the British Fruit Growers' Association, the committee consider it desirable to review the circumstances which led to its formation. Early in 1888 it was proposed by Messrs. George Gordon and Lewis Castle that a conference of fruit growers might be held at the Crystal Palace, Sydenham, in conjunction with the September show of that year. The manager of the Crystal Palace cordially entertained the idea, promised to provide a suitable place for such a meeting, and to issue tickets to those specially interested in the subject. A representative Committee was formed, with Messrs. Castle and Earley as hon. secretaries, and a programme for a two-days' conference was ultimately issued. This took place on September 7 and 8, 1888, Mr. T. Francis Rivers presiding. There was an exceptionally large attendance, and the meeting proved an unqualified success. At the conclusion of the proceedings a resolution was proposed to the effect that it was desirable a society of fruit growers should be formed, and that the Executive Committee of the conference be entrusted with the formation of a scheme for carrying this into effect. This was duly seconded and unanimously adopted. The conference was also adjourned until October.

Before the second meeting was held a scheme had been devised for the institution of a society under the title of the British Fruit Growers' Association, and at the adjourned conference in October, 1888, this was announced and accepted. The first general meeting was held in the Crystal Palace, October 18, 1888, at six p.m., Mr. John Laing in the chair, when the society was duly organised, members, officers, and committee elected, and rules adopted. A general meeting was also held in the Royal Aquarium, Westminster, on November 8th, 1888, to discuss railway rates in relation to fruit transit, and much important information was evoked, but it was subsequently found that the funds of the association would not permit an adequate inquiry in the matter.

On October 10, 1889, a well-attended conference was held in the Crystal Palace, when Mr. T. F. Rivers presided, and papers were read by Mr. J. Wright and Mr. G. Gordon, followed by considerable discussion of an instructive character.

It is gratifying to the committee to announce that these conferences and meetings have been most freely reported in the daily and horticultural papers, and large numbers of letters have been received from many districts in Great Britain expressing hearty approval of the work of the association in diffusing reliable information in fruit culture. The committee also have abundant assurance that the conferences have assisted greatly in directing attention to fruit culture for profit in this country, and in helping to dispel the erroneous ideas, too freely circulated, respecting the enormous returns obtainable from a small capital employed in fruit cultivation. Much harm has been done by ill-informed advisers, for while fruit growing can be made to pay both for the labour required, the land occupied, and the capital expended, this cannot be accomplished without practical knowledge of the work and starting with a carefully considered scheme.

The association hopes to extend the sphere of its labours during the year 1890, and a programme is now under consideration. To enable this to be carried out satisfactorily, however, a material addition to the financial resources will be necessary. Owing to the low rate of subscriptions it is only by a great increase in the number of members and by donations from those interested in the association that its object, the extension of profitable fruit culture, can be accomplished. During the years 1888 and 1889 the total expenditure was £18, leaving a small balance in hand.

The committee also desire to state that the association is not intended to act in rivalry with any horticultural society or institution engaged in similar work, but rather to co-operate where possible, and to this end the support of provincial societies is invited.

As the result of the election of officers and members of committee, the executive for the ensuing year is constituted as follows: President, Lord Brooke, M.P.; vice-presidents, C. de Laune Faunce de Laune, Esq., Robert Hogg, Esq., LL.D., Philip Crowley, Esq., Charles Whitehead, Esq., and E. J. Bailie, Esq., F.L.S.; treasurer, A. H. Smee, Esq.; chairman of committees, T Francis Rivers, Esq.; vice-chairman, Mr. George Gordon; honorary secretary, Mr. Lewis Castle, Hotham House, Merton, Surrey; general committee, Rev. A. B. Morris, Messrs. J. Austen, Albert Bath, T. W. Beach, George Bunyard, E. Butts, J. Cheal, C. E. Clayton, G. W. Cummins, J. Dean, W. Earley, C. J. Goldsmith, G. Hammond, W. G. Head, W. Holmes, W. Iggulden, A. Wells Ingram, R. M. Ivatt, W. J. Jefferies, John Laing, H. Lister, J. McIndoe, J. Miller, E. Molyneux, G. Merritt, J. C. Mundell, R. Parker, A. H. Pearson, W. Roupell, J. Smith, R. Smith, C. Sclater, Brownlow R. O. Tower, W. Thomson, E. A. Trier, M.A., J. Udale, J. Watkins, J. Webber, A. C. Wilkin, and J. Wright.

The consideration of a number of letters containing propositions respecting the holding of meetings and conferences in the metropolis and the provinces occupied some time, and several members were elected. The working expenses of 1890 were estimated not to exceed £30, and this sum was voted in accordance with rule 7.

A vote of thanks to the Chairman and the Horticultural Club closed the business of the meeting.

MANCHESTER ROYAL BOTANICAL SOCIETY.

The annual meeting of this society was recently held in the Town Hall, Manchester, for the purpose of receiving the report, passing the accounts, and electing officers.

The annual report submitted to the proprietors revealed the unpleasant fact that the income from subscriptions was about £1,000 less than in the preceding year. This falling off had given the Council grave concern, and induced them to issue a circular in the autumn with a view of ascertaining the opinions of the public as to what extent they might depend upon future support, and of raising the sum of £6,000, to enable them to maintain the efficiency of the gardens and to carry on the work of the society in a manner becoming its importance. The Council based their appeal on the broad grounds of public service for the public welfare. The response to the appeal made to the citizens had been satisfactory, £2,400 having been promised up to the date of the meeting, and it is hoped that by a vigorous canvass the amount required will be raised in the course of the year.

With reference to the future operations the report stated that the horticultural features will be much the same as last year. There will be spring shows in March and April, great summer exhibition in May, rose show in July, and fruit and flower show in September. Lectures on botany will be given by Mr. Leo Grinden at the gardens every Tuesday evening during June, July, and August. The musical days will be Friday and Saturday in each week, and on other days the gardens will also be open to members and their friends. The price of the individual season ticket has been reduced from one guinea to fifteen shillings, and the Council suggest that the members should make it known as widely as possible that for an annual payment of two guineas the resident members of a family can participate in the privileges set forth in the programme of arrangements for the year.

After some little discussion the report and balance-sheet were unanimously adopted.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.

The annual meeting of the above society was held on Wednesday, 29th ult., when the report and balance-sheet for the past year was passed, and the officers and committee elected for the ensuing year. The balance-sheet showed that there was a profit of £8 15s. 7d. on the year's working of the society, and the total funds in the bank £238 10s. 4d. The report referred to the show in November last (which was held in conjunction with the second provincial show of the National Chrysanthemum Society) as an advance on previous exhibitions held in Hull, which a glance at the following comparative statement will show. At the exhibition held by the society in 1888, the total number of exhibits of all classes was 220, while at the show held in November last the number was 284, showing an increase of 64. The number of cut blooms at the last show was 569 in excess of the number shown in 1888, while the value of prizes actually awarded, exclusive of challenge cups, was correspondingly large, the amount in November last being £235 3s. 6d., as against £151 11s. 6d. in 1888, leaving a difference of £83 12s., a very large item. Mr. R. F. Jameson was unanimously re-elected chairman, and Messrs. Edward Harland and James Dixon, hon. secs. It was announced that the next show had been fixed for Wednesday and Thursday, November 19 and 20, and the judges would be Mr. J. Wright and Mr. George Gordon. Mr. George Bohn, C.E., one of the vice-presidents, presented a handsome silver challenge cup, value £20, to be competed for at the next show, and received the thanks of the members.

READING HORTICULTURAL SOCIETY.

The thirty-third annual meeting was held at the Town Hall Buildings, under the presidency of Mr. G. May. There were also present Messrs. R. D. Catchpool, G. Phippen, J. Bradbury, and W. H. Smith (hon. sec.). From the report submitted it appeared that in the past year the society had been much more successful than for several seasons past; the attendance at the Spring (May) Show was smaller, but at the Summer (August) Exhibition the number of visitors was unusually large. About £20 more had been awarded as prizes; and the £50 as special prizes, offered by the great seed firms and local nurserymen, had the effect of promoting a brisker competition in many classes, the cottagers' displays being regarded as displaying improved cultural skill. The receipts for the period were £508 7s. 8d.; and the payments (including prizes £258 19s. 6d.) £478 9s. 3d. There being so few present no change was made in the *personnel* of the executive.

WINCHESTER HORTICULTURAL SOCIETY.

The annual general meeting of the above society was held January 28, when the balance-sheet for the past year was submitted, showing a small deficit of £2. It was also reported that an agreement had been come to with the Royal Counties Agricultural Society for allowing the above society to hold the summer show on the grounds of the latter. A rule was also adopted to effect a strict correspondence of the prizes with the society's income.

KENT COUNTY CHRYSANTHEMUM SOCIETY.

The second annual general meeting of this society was held at the Rink, Blackheath, on Thursday evening, the 30th ult., S. S. Bryant, Esq., presiding. The report and balance-sheet for the past year having been submitted were unanimously adopted. The financial statement showed a balance of £20 in favour of the society. The committee and officers for the ensuing year having been duly elected, the dates of the exhibition were fixed for November 4 and 5. It was also decided to make an effort to offer a special "centenary" prize to commemorate the introduction of the chrysanthemum into England. The meeting terminated with votes of thanks to Mr. H. A. Needs (the honorary secretary) and to the chairman.

Replies to Queries.

H. T.—Gloxinias are not suitable for cultivation in rooms, but the Scarborough lily (*Vallota purpurea*), to which we understand you to refer, may be successfully grown indoors throughout the year. It requires a light sunny position at all times, and to be kept dry at the roots during the season of rest. For information on the cultivation of Dielytra spectabilis see page 55, where the subject is fully dealt with by a very successful grower.

Pruning Gooseberry Bushes.—G. J.: Unless you require fruit for exhibition purposes we would advise you to practice a much less severe system of pruning than is recommended in the books. It is not indeed necessary to do more than to shorten a few of the larger shoots of the previous year, and to slightly thin the bushes when overcrowded with wood. Not only are heavier crops produced in favourable seasons when the knife has been sparingly used, but in consequence of the fruit being more efficiently protected from the weather, the risk of the crop being destroyed by spring frosts is greatly reduced.

Cutting Daffodils.—Amateur: The flowers of the daffodils that you require to send to friends for the decoration of indoor apartments should be cut when in the bud state or when partially expanded. When cut before they are far advanced they can be sent long distances without being damaged, and moreover the flowers present a fresher appearance than those exposed to the weather during the whole process of development. The flowers that are required for house decoration should be placed with their stalks in water immediately they are taken indoors, and those that are sent by rail or post should, on reaching the end of their journey, have about half an inch of the base of the stalks cut off with a sharp knife and be then placed in water.

Budding Roses.—W. A. M., Torquay: Roses are budded during the summer months, when the growth is active, and July is the best month for the work. The most suitable shoots on which to enter the buds are those moderately stout, and from which the bark will readily part. Having selected the shoot, make near the base on the upper side an incision about one and a half inches in length. Then at the upper end of the incision make a cross cut extending nearly half way round the shoot, and just deep enough and no more to cut through the bark. When this has been done, raise the bark on either side of the incision with the handle of the budding knife, then insert the bud and make it secure by binding up the cut with bast. The buds should be taken from shoots of a medium size in which the sap is in active circulation. In preparing them, take each bud off with a shield shaped portion of the shoot, remove the wood and insert the bud as quickly as possible. When the buds are cut from a very soft shoot, as when the budding is done early in the summer or it is desired to take advantage of every bud obtainable from the shoots taken from the tree, they may be inserted without the wood being removed. In all cases the leaf attached to the bud should be cut off just below the lower pair of leaflets.

Renovating Camellias.—B. W.: Your camellias are evidently in a very unsatisfactory condition, and should be dealt with in rather a drastic manner. As they have become leggy, with but few leaves excepting at the top of the branches, they should be pruned rather hard to obtain new growth from the lower parts of the plants. On their being pruned, remove to a structure where they will have the assistance of a temperature ranging between 55 deg. and 60 deg. and enjoy a moderate degree of atmospheric humidity. Placed in a peach house or vinery just started, they will enjoy the conditions most favourable to their starting freely and making a vigorous growth, but considerable caution is necessary in taking camellias and other occupants of the conservatory to the fruit houses, and if there is the slightest trace of scale or other insect pests, they should be kept out of both the structures mentioned. When they have commenced to make new growth, and the shoots have attained a length ranging from one to two inches, turn them out of the pots, reduce the ball by one-third or one-half, according to the condition of the roots, and return them to pots of the same size or one size smaller. Use mellow fibrous loam, to which small proportions of peat and coarse sand have been added. After the repotting, return to the structure in which they are started, water rather sparingly for a short time, and syringe them overhead. Shade during brilliant sunlight, but at other times give them the fullest possible exposure.

Tuberous Begonias.—M. D.: Plants in their second or third year are preferable to seedlings for bedding and decoration of the flower garden generally. Not only do they bloom more profusely throughout the season, but when care is taken to select them during the flowering season according to their colours they can be arranged to produce a better effect. The tubers of unnamed varieties can be purchased at a very cheap rate, and as they can be sent when at at rest at a low cost for packing and carriage, the best selections are decidedly inexpensive. The purchase should be made during the next few weeks, and soon after they come to hand put them into shallow boxes, or plant in a bed of soil made up in a frame, the latter course being preferable when large numbers have to be started. In your case boxes will be the best, and they should, if practicable, be from four to five inches in depth, and of a length and breath convenient for moving about. In preparing them put an inch layer of medium sized crocks in the bottom, cover these with a layer of moss or turfy peat or cocoanut-fibre refuse, and then fill to within an inch of the upper edge with a compost of loam at once light and moderately rich. Upon this place the tubers at a distance of about two and a-half inches apart each way, and cover them to the depth of about half-an-inch with soil of a similar description to that with which the boxes are filled. The next step will be to place the tubers in a pit or frame, and, if upon a slight hotbed so much the better; but bottom-heat is by no means essential to success. Until the young plants make their appearance above the surface keep the frame close and subsequently ventilate rather freely. When in full growth supply rather freely with water, and sprinkle them overhead daily, preferably on the frame being closed for the night. It will not be necessary to screen the plants from the sun, but they must be protected from frosts by mats or other coverings. The plants should remain in the boxes until bedded out, as they can be transferred to the beds without the slightest check, provided ordinary care is taken.

"THERE IS UNQUESTIONABLY" no better remedy in the whole world for all cough and throat troubles than KEATING'S LOZENGES—any medical man will assure you of this fact. Relief is speedy; they contain no strong acting, but only simple drugs; the most delicate can take them. Sold everywhere in 13½d. tins.—[ADVT.]

Literature.

Zadkiel's Almanac for 1890 is on the model of many years past, and as full of wonders as any of its predecessors. As we do not make a serious study of astrology, we cannot pretend to appreciate Zadkiel; but politeness requires that we should acknowledge with thankfulness both the book itself and the entertainment it has afforded us. Amongst its various items of astrological information there is a "guide" for farmers and gardeners, and here is the guide for February, 1890: "For roots choose the 24th and 25th days, from 6h. 50m. to 7h. 45m. morning, when the sign *Pisces* ascends, the moon being in *Taurus* below the horizon. For other sowings choose the 19th and 20th, from 7 h. 10m. to 8h. morn, the sign *Pisces* rising with the moon therein; the 24th and 25th, from 8h. 36m. to 9h. 40m. morn, *Taurus* rising with the moon therein; and the 28th, from 11h. 16m. morn to 1 h. 45m. aft., *Cancer* rising with the moon therein."

Willingness to follow such directions appears insufficient for assuring success. We are to choose a certain time "for roots." For what roots, and for what purpose with roots? Say now that we want to plant ten acres of potatos, must all the work be done in one hour in the morning of the 24th and one hour on the 25th? For if that is to be understood we fear we shall not get our people out of bed in time for the business. But we can, at all events, plant a few with our own hands in the happy hour allowed before breakfast on two days; and in the mornings of the 19th and 20th, when "other sowings" may be done, we might plant a few more and pretend that we are sowing seeds, for surely the stars cannot be quite sure of what one is doing in a field on a foggy, or perhaps snowy, or rainy morning in February. The ten acres, however, must stand idle until March, and then we find we may choose "for potatos and roots" "the 24th from 5 h. to 5 h. 50 m. morn, *Pisces* rising the moon in *Taurus* below the horizon; and the 28th and 29th from 6 h. 30 m. to 7 h. 30 m. morn., *Taurus* rising, and the moon in *Cancer* below the horizon." We are here allowed only 2½ hours for the work; and as we really cannot do it in the time even if we rouse our people early and stir their souls with strong coffee and cognac, we must give up the potatos or put Zadkiel out of sight and out of mind. But it is a book of wonders, and contains forecasts of the weather for the whole year round, and if the weather does not always agree with the forecast is no matter, for everybody knows the weather cannot behave decently.

Lippincott's Magazine for January, 1890, contains a complete tale by Julian Hawthorne, the title of which is "Millicent and Rosalind." It is made of the finest quality of concentrated sweetness, and will just suit the young people. Here is one of the many touches of tenderness that overflow in this story: "She gave him a deep, shining look, and retained his hand in hers as they drove away. Tom and Rosalind were married in November." But here comes in the old agony: the lady married the wrong man, for what has "Tom" to do with Oliver's property, and which way should the game run when hearts are trumps? We give up the conundrum, because in this *Lippincott* we find capital articles on the "Theatrical Renaissance of Shakespeare," "Prospects of the Imperial Institute," and the "English Church and Non-Episcopal Ordination," such serious matters being profitable for study and enlivening for discussion. The London agents for the popular *Lippincott* are Messrs. Ward and Lock.

TRADE CATALOGUES.

JAMES YATES, 29, LITTLE UNDERBANK, STOCKPORT.—*Vegetables and Flower Seeds.*

G. STEVENS, UPPER RICHMOND ROAD, PUTNEY.—*Chrysanthemums.*

JOHN SHARPE AND SON, BARDNEY, LINCOLN.—*Garden and Flower Seeds—Agricultural Seeds.*

"LUDA" WEED EXTERMINATOR WORKS, LOUTH, LINCOLNSHIRE.—*The "Luda" Weed Exterminator.*

KELWAY AND SONS, LANGPORT, SOMERSET.—*Flower, Vegetable, and Farm Seeds.*

Obituary.

ON the 29th ult., WILLIAM WILDSMITH, twenty-five years gardener at Heckfield Place, Winchfield, Hants. In the issue of G. M. for January 7, 1888, we gave some account of Heckfield, and of Mr. Wildsmith's work there during his long service, in the course of which he had brought the place to its present high position from a state of wild rurality, in which the free growth of trees gave promise of possible high development under suitable directing talent. He was a man of great mental breadth and very varied experience, and admirably adapted by his temper and extensive knowledge for aiding and improving the plans of his noble employer, the late Viscount Eversley.

In the course of his industrious career he had won no less than a hundred and fifty prizes, many of them firsts, and a considerable portion for grapes, although he was such an all-round man that he might be expected in any department of an exhibition in which high-class English gardening might be represented. It was his happy lot to secure, in the year 1881, the Fruiterers' Company prize of ten guineas for the highest aggregate number of prizes in the fruit classes; but in roots and vegetables he was great, and he was one of the more conspicuous heroes of the chrysanthemum, having taken some forty prizes for these flowers, a goodly proportion of these being of the first importance.

In his disposition and general acquirements he was all one could desire, whether as companionable acquaintance or intimate friend; a kindly, merry man; a generous man; one as far removed from vanity and sordidness as any we have known in our experience of humanity. He had the good fortune to share his lot with a partner who appreciated his *bonhommie*, and enhanced it by her own affectionate devotion to his welfare, more especially in recent years, when, in consequence of an accident, his health was much impaired. To Mrs. Wildsmith we tender our respectful considerations and sympathy on this sad occasion.

ON January 30, at Coldham Hall, near Wisbech, HERBERT JOHN LITTLE, J.P., Alderman of the Isle of Ely County Council, late Professor of Agriculture, Royal Agricultural College, Cirencester. Aged 54 years.

PLANTS NOW IN FLOWER in the nurseries of Dicksons, Chester, include: Chionodoxa Luciliæ, Chionodoxa sardensis, Galanthus Redoutei, and Narcissus minimus.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
16	S	Quinquagesima. Shrove Sunday.	7 14	14 17	5 14	5 29	1 14	10 46	11 30	7 27	8 11	39·0
17	M	Michael Angelo, painter, died, 1864.	7 12	14 13	5 16	6 24	2 29	—	0 9	8 55	9 34	39·1
18	Tu	Baron Von Biela, astron. died, 1856.	7 11	14 8	5 18	7 9	3 54	0 43	1 11	10 8	10 36	39·1
19	W	Ash Wednesday. ● New Moon.	7 9	14 2	5 19	7 41	5 19	1 39	2 6	11 4	11 31	39·2
20	Th		7 7	13 56	5 21	8 7	6 45	2 29	2 52	11 54	—	39·3
21	F	T. R. Newman born, 1801.	7 5	13 49	5 23	8 28	8 8	3 14	3 36	0 17	0 39	39·4
22	S	Sir Charles Lyell died, 1875.	7 3	13 41	5 25	8 47	9 27	3 57	4 18	1 1	1 22	39·6

Orchids in Flower.		Day of Yr.
Coelogyne cristata	Nepal.	1890
Cypripedium sedeni	Gard. hyb.	47
Dendrobium Pierardi	India.	48
Lælia anceps Barkeri	Mexico.	49
Masdevallia tovarensis	New Grenada.	50
Masdevallia Shuttleworthi..	New Grenada.	51
Phalænopsis Stuartiana nobilis	India.	52
		53

CRYSTAL PALACE.—FLOWER and FRUIT SHOWS.

FIXTURES FOR 1890.
SPRING EXHIBITION OF PLANTS, FLOWERS, &c., SATURDAY, MARCH 29th.
GREAT SUMMER EXHIBITION, SATURDAY, MAY 10th.
THE NATIONAL ROSE SOCIETY'S GRAND EXHIBITION OF ROSES, SATURDAY, JULY 5th.
THE FRUIT EXHIBITION, with THE NATIONAL DAHLIA SOCIETY'S GRAND SHOW, FRIDAY and SATURDAY, SEPTEMBER 5th and 6th.
GREAT AUTUMN FRUIT SHOW, OCTOBER 9th to 11th, inclusive.
GRAND CHRYSANTHEMUM EXHIBITION, FRIDAY and SATURDAY, NOVEMBER 7th and 8th.
Schedules post free on application to Mr. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

ROYAL AQUARIUM.—FLOWER SHOWS.

FIRST SPRING EXHIBITION, WEDNESDAY and THURSDAY, MARCH 12th and 13th.
Schedules for the whole series of Shows now ready, and may be had free on application.
WILLIAM HOLMES, Frampton Park Nurseries, Hackney, London.

WOLVERHAMPTON HORTICULTURAL SHOW AND FLORAL FETE,
JULY 15, 16, and 17, 1890.
Open Classes for Plants, Cut-flowers, and Roses. Schedules on application to
W. A. GREEN, Jun., Hon. Sec.,
Corporation Street, Wolverhampton.

Exhibitions and Meetings for the Ensuing Week.

THURSDAY, FEB. 20.—LINNEAN SOCIETY.—General Meeting.
SATURDAY, FEB. 22.—ROYAL BOTANIC SOCIETY.—General Meeting.

Auction Sales for the Ensuing Week.

MONDAY, FEB. 17.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilium auratum and Greenhouse Plants.
TUESDAY, FEB. 18.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38 and 39, Gracechurch Street; Roses, Greenhouse Plants, &c.
WEDNESDAY, FEB. 19.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Greenhouse Plants, Seeds, &c.
WEDNESDAY, FEB. 19.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, &c.
THURSDAY, FEB. 20.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Liliums, Orchids, &c.
THURSDAY, FEB. 20.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Nursery Stock from Sample.
FRIDAY, FEB. 21.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

TERMS OF SUBSCRIPTION.—Post free from the Office, 4, Ave Maria Lane, London, E.C. to any part of the United Kingdom, One Copy, 2½d.; 3 Months, 3s.; 6 Months, 6s. One Year, 11s. 6d. (including the Christmas Number). To America, Australia, Belgium, Canada, Denmark, France, Germany, Holland, India, Italy, Spain, Sweden, and Switzerland, 14s. per annum.

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The Gardeners' Magazine.

SATURDAY, FEBRUARY 15, 1890.

THE ANNUAL MEETING OF THE ROYAL HORTICULTURAL SOCIETY, on Tuesday last, had a cheerful appearance, and the tone of the oratory was confident and hopeful. The report, which we presented to our readers last week, contains few words but much matter, and contrasts amusingly with some of the lengthy reports of years gone by, when the Council, having nothing to say, were careful to say it at great length. The tables are turned, and the report is a record of work accomplished, with proposals for more work, all of it such as a horticultural society may with propriety engage in, and all of it suited to the circumstances of the society at the present time. The meetings and the lectures, and, in fact, the whole of the business for the past year may be reviewed with satisfaction by all except those few cynical horticulturists who see black spots in everything, and appear never to suspect that their own vision may be faulty. But there is room for criticism, and doubtless there ever will be; the impartial view, however, will compel the acknowledgment that since the society acquired independence, and became strictly a horticultural body, it has prospered in more than an ordinary manner, and has now a better prospect of advancement in usefulness than at any time in the experience of the present generation.

The strong points in the report are self-assertive, and the record of work is a grand feature. Amongst the weak points we note that Chiswick does not attract as it was expected to do. It should be observed, however, that as the society is tied to Chiswick for the present, and for some years to come, no reasonable effort should be spared to keep up and to augment the attractions there. We should much like, in the course of the present spring, to see new and legible labels provided for whatever is worth naming there, including the bush apple trees, the herbaceous plants, and the miscellaneous trees and shrubs. Although the visitors to Chiswick are fewer than were anticipated, the numbers certainly increase, and many of the new comers would be greatly benefited were the subjects that attract their attention so labelled that he who runs might read, without sending for the curator and the books to discover the name of a thing. As for the Sunday attendance, we are not prepared to say anything wise, save that whatever increases the interest and usefulness of the gardens on weekdays would tell with effect on Sundays, as, for example, the legible labels that we have so often urged as needful for such a place. We cannot propose either a musical performance or a short sermon as conducive to what may be termed "success" in the Sunday opening, but we can and do suggest that Fellows resident in and near the metropolis have not as yet firmly grasped the fact that the gardens are open for a few hours on Sunday, and, until that is generally known, Sunday visitors will be too few to justify the additional expense they occasion. We are quite glad the Council have resolved to continue the Sunday opening, and if a few of the Fellows who have a taste for social converse, and the promotion of the society's interest, would "drop in" at Chiswick on Sundays the enjoyment of the gardens on that day might be considerably advanced.

The actual progress in the past year as regards numbers of Fellows is clearly set forth, as will be seen on reference to page 69 of our last issue. The deaths of 43, and the resignations of 49, making a total loss of 92 Fellows, may be contrasted with the election of 235 new Fellows, a net gain of 173 to the constituency. We confess we had hoped for and expected a larger increase in such a year of activity, but it is so common for expectations to outrun performances that a calm content may properly be fostered, and need not prove antagonistic to a hopeful spirit that shall accomplish at least as much in the year that is before us. As regards the subscription list, we have the old tale of the third-class passengers and the figure they make in railway finance, or the newer tale of the potatos that swamp the orchids almost to extinguishment when the totals of moneys respectively moved by them are weighed and counted. The new two-guinea Fellows, 61 in number, contributed to income £128 2s.; the new one-guinea Fellows, 202 in number, contributed £212 2s.; and when losses of income by deaths and resignations are deducted, the net gain to income on the year in respect of new Fellows is £213 3s. We must beg of our readers not to imagine there is any virtue in subscribing one guinea in preference to two; for this old corporation resembles all other corporations, old and new, in being compelled to cut its coat according to its cloth, and our next paragraph will show that an accession of two and four-guinea Fellows is very much wanted.

And this next paragraph has for its task to say that the income did not balance the expenditure, the deficiency amounting to £453 12s. 1d. That same amount on the other side would have been pleasant, and was really wanted, for the expenditure ought to be considerably augmented to keep the society faithful to the course it has entered upon. The revenue account will show that the outlay in the year upon the gardens at Chiswick amounted to near upon two thousand pounds (£1,844 11s. 9d.), and the society's *Journal* cost £498 17s. 8d. Add the postage

and miscellaneous expenses attending publication, and we may safely say that six hundred pounds were expended in providing the Fellows with horticultural literature which for freshness of subject, originality of treatment, and sound scientific value will bring honour to the society now and hereafter. We believe a lighter printer's bill would have satisfied all parties; and that implies a belief that the Council has been too generous; but we will condone for the suggestion of a fault by directing attention to the balance-sheet, where it will be seen that the deficiency of the past year is met by balances in hand, and the finance is safe and sound so far.

In the general review there is abundant reason for satisfaction. The great changes effected consequent on the appointment of a committee of inquiry at the annual meeting in 1887 have operated with singular advantage. The free election to the Council that was so much feared and so steadfastly fought against, proves a source of new and healthy life, justifying a good old doctrine of practical politics that a necessary reform is the truest conservatism, for often it stands between continuance and dissolution. Nor if the general scheme has worked well and with less of friction than might have been predicated, has there been wanting individual devotion to the society's welfare. The President, the Treasurer, the Secretary, have given examples of fidelity through good report and through evil report the like of which will not be found in the annals of the society, albeit there has never been wanting to it, even in the darkest times, faithful workers who have been willing to sacrifice and endure in its behalf. We name the three chief officers in the order usually followed, but we are fully convinced that the first two would at any moment stand aside that the Rev. W. Wilks should have honours showered upon him in recognition of his immense industry, untiring zeal, and conspicuous tact and talent as the Honorary Secretary. Without him, Where should we have been?

The Proposed Hall for Horticulture made a conspicuous figure in the business of the annual meeting of R.H.S. Baron Schroder unfolded an ingenious scheme, which may be regarded as a compromise between the commercial and the eleemosynary proposals that have recently been before us. He estimates the amount required for establishing a suitable edifice in a leading position, as, for example, on the Thames Embankment, to be from thirty to forty thousand pounds. This he would raise by subscriptions, but these would not be as gifts, since the whole of the money would be represented by the property, and the debt could be redeemed by a series of instalments as means accumulated for the purpose. On completion of the necessary amount of capital, a portion would be invested to ensure payment of the ground rent, and another portion would be expended in building. The R.H.S. would pay a rent for its occupation, and other sources of income would be found in letting the hall for meetings and entertainments of a nature consistent with the primary purposes of the edifice. The Baron proposes to lead the way with a contribution of one thousand pounds, and the subscriptions promised to the present time amount to nearly three thousand pounds. The Baron laid stress upon the complete security the subscribers would have by reason of the investment of the money in property of a substantial nature, that is more likely to increase than decrease in value. On that point the case is clear; the money would be safe enough, no doubt; and in case of a desire on the part of a subscriber to recover the amount subscribed, it might prove to be too safe for practical operations. Against this disadvantage some privileges should be instituted, to give the shares a practical monetary value. For the sake of such privileges it might prove as desirable to buy as to sell, for where there is no dividend sought there should be an equivalent to render shares negotiable. It will remain with the seedsmen and nurserymen in great part now to determine if the thing shall be done, for they have a commercial interest in building up the R.H.S. which far transcends the interest that arises from mere enthusiasm in horticulture. If the trade do not show a bold liberality in connection with these proposals it is not likely they will succeed.

Croydon Chrysanthemum Show, November 12 and 13.

Northampton Chrysanthemum Show will be held November 12 and 13.

Mr. H. Dunkin has been engaged as head gardener at Porters Park, Barnet, the residence of J. Harris Sanders, Esq.

A Swarm of Bees is reported to have occurred at Tempsford, Bedfordshire, a week since. The swarm was hived by a young man of Woodbury, and was presented to a working man in the neighbourhood.

Haywards Heath Horticultural Society, formed about twelve months, achieved a high degree of success during the year as proved by the fact that the balance sheet presented to the members at the annual meeting the other day showed a balance of £41 2s. in favour of the year's work.

Mr. Thomas Plumb has been engaged as head gardener at Isenhurst Park, Cross-in-hand, Sussex, the residence of Lady Prescott.

Old Weston, in Northamptonshire, has started a fund for sparrow killing; the price is to be fourpence per dozen for old birds, and twopence per dozen for young birds.

Islington Parish, in the northern suburbs of the metropolis, has made another great move in planting trees. Several suitable roads have been prepared, and the trees will be planes for the most part.

Botanic Garden of St. Louis, Missouri, U.S., is advantaged by a bequest of from three to five million dollars left by Mr. H. Shaw. The trustees propose to improve the garden, and provide a fireproof house for the Engelmann herbarium.

Paris Horticultural Congress, promoted by the Société Nationale d'Horticulture de France, will meet at 84, Rue de Grenelle, May 22, 23, 24. The general horticultural exposition to which the congress is incidental, will be held May 21 to 26. The President of Congress is M. A. Hardy; the Secretary, M. Ernest Bergman.

Crystal Palace.—The horticultural exhibitions at the Crystal Palace during the current year will be held on the following dates: spring show, March 29; summer exhibition, May 10; rose show, July 5; co-operative flower show, August 16; fruit and dahlia show, September 5 and 6; hardy fruit show, October 9 to 11; and chrysanthemum exhibition, November 7 and 8.

National Auricula and National Carnation Societies are now ready for action, the reports and balance-sheets having been forwarded to subscribers, showing in each case a balance of cash in hand. All who need schedules may now obtain them from Mr. J. Douglas, hon. secretary, Ilford; or Mr. T. E. Henwood, hon. treasurer, Hamilton Road, Reading.

Orchid Peat is becoming a scarce article, although there is plenty in the country if one could but tap it. The traders appear to understand the tapping process, for Messrs. Wood and Son, of Wood Green, London, send us a capital sample of brown peat of a singularly tough, substantial nature, the very thing for such orchids as peat is recommended for.

Rabbit-proof Fences are reported to amount to a run of 887 miles in boundary lines of New South Wales and Queensland. One can but hope that some good will result from the enormous expenditure incurred, but the operations appear to the eyes of the untravelled Britisher too vast to be of any utility, for the rabbits taken in must be weighed against those shut out, and it is just possible they will increase as fast as they can be slaughtered.

The Belgian Frog is jumping into notoriety, for the farmers complain of the capture of frogs for the advantage of the insatiable gourmet, as being seriously injurious to agriculture. The frog is the natural enemy of slugs, wood-lice, and a thousand such enemies to vegetation, and is wanted to keep them in check. But so great is the consumption of frogs at dinner-tables, that the farmers fear they will soon be extirpated, and the land become the prey of innumerable destroyers.

Kew Bulletin for February contains reports on Manufacture of Quinine in India; on Magni berries (*Aristolelia Magni*) for Colouring Wine; Vine culture in Tunis; Botanical exploration of Cuba; and the Sugar production of the world. One lesson of the last-named report is that the outlook for cane sugar is a poor one, for although it still holds a place that is all it does, for the lands that produce it no longer attract capital for their improvement, and this practically means retrogression.

A Fragrant Fern has been reported on as one of the wonders of the Royal Botanic Gardens, Regent's Park. It has been spoken of in the daily papers as so highly odoriferous as to be of cultural importance on that account, and therefore a novelty of some value. The new wonder is our old friend *Drynaria Wildenovi*, syn. *Polypodium Wildenovi*, a near relative of *Polypodium propinquum* which is often P. Wildenovi. The fragrance of this fern is in no way remarkable; it does not surpass that of Cheilanthes fragrans, or our own Lastræa oreopteris. As a bold, free-growing stove fern the Drynaria has its place and is valued, but there can be no distinctive honour claimed for it in consideration of its fragrance.

Chinese Primulas of Distinct Strains grown for seed purposes by Messrs. James Veitch and Sons, King's Road, Chelsea, are a brilliant lot in fine form, and distinct in colours. *Chelsea Scarlet* is loaded with colour of a deep rich ruby-toned red, richer certainly and more gratifying than pure scarlet, and better harmonizing with other colours. *Double Rose* is a neat semi-double flower, with elegant plicate petals; the colour a delicate rosy pink shading to whitish flesh colour. *Double Red* is in the same order of colour as Chelsea Scarlet, the inner row of petals standing up like a frill within the salver-shaped form of the outer petals. *Swanley Gem* is conspicuous for grand form and purity; the *Blue* is good: all are beautiful.

The Colder Weather anticipated in our note published February 1, page 56, was experienced on the 2nd, when sharp frost occurred. From that date night frosts have alternated with bright days, conditions being generally agreeable, although occasionally varied by small snow showers and heavy fogs. On Tuesday last a heavy fog in London seriously affected horticultural business, compelling many who would have attended the meetings to keep safe within their homes. The present outlook is not marked by any striking portents, but a change to showery weather is likely, and there is, in fact, an arrear of rain due to us that we shall be benefited by obtaining shortly. It is probable that March will come in quietly, or with less of the unpleasant announcements that are traditionally associated with its advent.

Calls at Nurseries.

MESSRS. HOOPER AND CO.'S NURSERY, MAIDA VALE.

Although the comprehensive collections of plants for which the Pine Apple Nursery, Maida Vale, was for many years remarkable are no longer distinguishing features, the establishment is not less rich in attractions, and abundant interest may be derived from a walk through the numerous well-filled structures. As for some years past the magnificent winter garden which forms the principal entrance constitutes one of the most important and attractive features of the several features. Affording plenty of scope for the exercise of taste in the disposition of the plants with which it is so liberally furnished a somewhat natural style of arrangement has been adopted, and the effect is singularly picturesque and beautiful. To the right and left of the main entrance the stages are gay with forced and other flowers, comprising azaleas, hyacinths, lily of the valley, tulips, and other plants that may be had in bloom at this season of the year. With these are interspersed ornamental leaved plants in great variety, which form a pleasing relief to the bright colours of the flowers, and materially enhance the general effect. Beyond are bold groups of palms and other plants remarkable for stately aspect or graceful outline, and these are intersected by winding walks which afford a succession of beautiful effects.

From the winter garden, with its graceful palms, stately musas, and elegant dracænas, its rustic ferneries, and its pools and fountains is but a few steps. In passing through these it soon becomes evident that palms, ferns, and other plants specially suitable for the adornment of the house are in the ascendant. Messrs. Hooper, as so well known, have an extensive furnishing trade, and they have also to meet at their establishment in Covent Garden a large demand for plants, arranged in baskets or otherwise, that are well adapted for the embellishment of indoor apartments. Hence it is that in the Pine Apple Nursery whilst the requirements of the general body of cultivators are not overlooked, much attention is paid to palms, dracænas, aralias, ornamental asparagus, crotons, and ferns. The most popular of the palms appears to be Kentia Australis, K. Balmoreana, K. Fosteriana, a trio certainly unsurpassed for indoor culture. Latania borbonica still the most generally useful of the fan palms, Areca aurea highly appreciated for its elegant habit and distinct character, and Cocos Weddelliana, so useful for the dinner table and for rustic baskets and vases, now so frequently met with in the drawing-room. Many other kinds are to be met with, but as this is in no way an exhaustive report of the nursery it will suffice to indicate those best adapted for general decorations as a guide to those whose experience is not particularly extensive. Turning to the ferns, we find that although the number of kinds grown is rather large, a comparatively few kinds take the lead, and these, it may be added, are grown by the thousand. As a matter of course, Pteris cretica is grown in large quantities, for it is one of the best of the exotics for growing in rooms where plants are exposed to the adverse influence of dust, and an atmosphere more or less vitiated by gas. Polypodium aureum, valuable for its distinct character and bold appearance, and Asplenium bulbiferum, which will thrive where the majority of greenhouse ferns will hardly exist. Two distinct forms of Pteris serrulata were met with, and as they differ widely in character and are of great beauty they must not be overlooked. One of these is the Chiswick variety of P. serrulata cristata, and the other is P. serrulata Hendersoni. The first named of the two is distinguished by its bold erect habit, the fronds being large, and rising to a height of two feet, even in examples of medium size, and the tips of the pinnæ are elegantly crested. This is one of the best of the crested forms of this species for the dinner table. Henderson's variety is, on the other hand, dwarf in growth, the fronds rising to a height of a few inches only, and then drooping over the sides of the pots. The pinnæ terminate in rather large tassels, and well-developed examples have a charming appearance. One other fern must be mentioned, and that is Adiantum Collisi, which, although one of the most valuable of the many good maidenhairs, has as yet received but little attention from cultivators. It is vigorous in growth, and produces immense fronds, in outline not unlike those of A. cuneatum, but they are larger in all their parts, and much stouter in texture, and for associating with flowers in vases are of great value.

In other structures note is made of the Clivias, which are largely grown, and now coming into bloom; the crotons resplendent in colour, and the orchids. The latter consist chiefly of cool kinds, the odontoglossums and masdevallias predominating and requiring several houses for their accommodation. Cypripediums have also a full share of attention, and are, it is hardly necessary to say, very interesting. It may be mentioned as a point of some importance to those who have to meet a demand for cut flowers and foliage for indoor decoration, that Asparagus plumosus nanus is very largely grown to cut from. The sprays are unsurpassed in elegance and they retain their freshness when cut as to surpass the ferns in the length of time they remain in good condition.

The Trustees of the Veitch Memorial Fund offer for competition at the Centenary festival of the National Chrysanthemum Society £5 in cash and the Veitch Memorial medal as the first prize in each of the following classes: Eighteen blooms, incurved, distinct, with not less than nine inches of stem, and foliage as grown; eighteen Japanese blooms, under similar conditions; twelve bush-grown specimens, large-flowering varieties; and six standards, large-flowering varieties.

Société Francaise D'Horticulture.—A society of French gardeners in England was some time ago formed, with the object of establishing cordial relations between the gardeners in France and their English confrères. The results obtained up to the present are highly satisfactory, for young men have already been placed in both countries. Believing that many English gardeners are desirous of sending their sons to the Continent to learn different modes of culture, &c., and knowing that many French nurserymen are equally desirous to send their sons to England, it was decided at the last meeting to proceed by way of exchange. The society thus undertakes to place in France an English young man, provided that someone takes in exchange a young Frenchman. The office of the society is 27, Gerrard Street Shaftesbury Avenue, where all communications should be addressed.

ROYAL HORTICULTURAL SOCIETY, February 11.

Annual Meeting.

The annual meeting of the Royal Horticultural Society was held on Tuesday at 117, Victoria Street, Westminster, and the Fellows mustered in sufficient numbers to fill the Council-room. The chair was occupied by Sir Trevor Lawrence, Bart., M.P., who was supported by Sir Charles Strickland, Bart., Baron Schroder, T. B. Haywood, Esq., Sydney Courtald, Esq., Mr. J. Douglas, Mr. G. Paul, Mr. H. J. Pearson, Mr. T. Francis Rivers, members of council; D. Morris, Esq., treasurer; and the Rev. W. Wilks, secretary. The minutes of the previous annual meeting having been read and signed, the election of Fellows was proceeded with, when fifty-two new names were added to the list. Mr. Arthur Veitch and Mr. H. Williams were appointed scrutineers for conducting the ballot for officers and members of Council, and the report was, with the expressed wish of the meeting, taken as read.

The President, in moving the adoption of the report, said those who had read it carefully would agree with him that there was ample reason to believe that the society is in a progressive state, and that it had accomplished much useful work during the past year. But, having regard to the position and the history of the society, he felt bound to say that it deserved more support from horticulturists and the general public than it had yet received. As they would see by the report three conferences had been held during the year, the first dealing with roses, the second with vegetables, and the third with chrysanthemums. At all the conferences they had been successful in obtaining a large number of entries, notwithstanding the fact that no prizes had been offered. This was a point of considerable importance, as it showed the interest that was taken in the work of the society by a large body of cultivators. There was undoubtedly an adequate representation of roses, vegetables, and chrysanthemums at the respective conferences, and it was satisfactory to know that there had been a large attendance of horticulturists. The attendance of the general public had not been so large as they could have desired, or, indeed, might have reasonably expected, and this helped to prove that Chiswick is not, having regard to its geographical position, a convenient place for these meetings. If they could have had the conferences in a more central position there was no doubt whatever that the general public would have attended in larger numbers. With reference to the proposals that were made some time since for the meetings of the several committees to be held at Chiswick, he would like to say that had those proposals been carried into effect it was probable that the attendance of the members of committees would not have been so satisfactory as it had been. The trials at Chiswick had during the year comprised vegetables and flowering plants, and in referring to them it would be interesting to mention the fact that by the trials of tomatos in 1887 and 1888 the number of names had been reduced from 109 to 31, thereby eliminating a large number of names more or less perplexing to cultivators. There was yet another matter to which it would perhaps be interesting to allude. In 1887 the season was highly favourable to the outdoor culture of tomatos, but in 1888 the weather was so unfavourable that the outdoor crop was a failure, thus showing that there was much risk in the cultivation of outdoor fruit, and that growers were pretty much at the mercy of the climatic conditions that obtain.

With reference to the place of holding the meetings, the Council had, when they left South Kensington, been compelled to take the Drill Hall in which they had met from time to time. It was far from what they could wish, but they had not been able to find any place that was better on the whole. They had anxiously considered the matter with a view to providing a better place of meeting, and he hoped, as the result of their deliberations, that Baron Schroder would be able to present to them a practicable scheme for providing a horticultural hall. The meetings of the several committees had been most satisfactory, and at these meetings a series of lectures had been given by eminent scientific and practical men, to whom the society was greatly indebted. The Temple show proved a brilliant success, and it was hoped that the exhibition to be held in the Temple gardens in May next would be equally successful. The *Journal* had appeared at regular intervals, and contained an immense amount of valuable information, and the warmest thanks of the society were due to the secretary and treasurer, by whom it was edited. An effort had been made to bring the Chiswick gardens to the highest state of efficiency possible, and as shown by the report the amount expended upon the gardens was £400 in excess of the previous year. The report was one with which they had good cause to be gratified, and he appealed to the Fellows to assist the Council by bringing in new Fellows. On the President having formally moved the adoption of the report,

Baron Schroder proceeded to present an outline of his scheme for providing the society with a permanent home and London with a horticultural hall. He commenced his statement by remarking that when the society had to leave South Kensington the Council had to look out for a new home, and they were successful in obtaining one suitable for the time, but it was one in which it was impossible for them to remain permanently. The Council had considered the grave question of providing more suitable premises in London, and they had elected a small committee, of which he was a member, to deal with the matter. The committee had given the question their most careful consideration, and they had formulated a scheme by which it was believed the object they had in view could be attained. The two most important questions that had to be considered were, How can the money be raised? and Where can a suitable site be found? With reference to the second of the two questions he was in a position to tell them that if the society could induce their outside friends and the trade to assist them in raising £30,000 or £40,000, the site could be secured. He did not ask the Fellows and others to make the society a present of this large sum. It was not necessary to give the money. What it was proposed should be done was to raise the sum of, say £40,000 and with a moiety to erect the hall and offices. The other moiety would be invested in first-class securities, as a security for the ground rent, to the payment of which the interest would be devoted. The society now pays £200 annually as rent, but with better quarters the increased income would probably enable them to pay £500 annually for rent. They would also in all probability be able to let rooms in the building to some of the charitable institutions connected with horticulture, charging them a low rent. If the position was central it would be possible to let the large hall for meetings and high class entertainments in the evening, and at other times when not required for the use of the society. As the Council would have full power over the building they would be in a position to prevent its being used for any purpose to which the slightest objection could be raised. He was able to tell them that he knew of a site in every way suitable, but at present it was not prudent to say where. It was in one of the best positions in London, and the hall if erected upon it would be constantly under the notice of a

large proportion of the gentlemen who have business in the City. The light he would add, was all that could be desired. It was proposed to pay back the money raised for the erection of the buildings, and as security for the ground-rent by drawings of bonds at intervals, which would of necessity be regulated by the receipts in each year. He was fully persuaded that it would be possible to commence the drawings within two years of the completion of the erection of the buildings, and these drawings would be continued until the whole of the capital had been returned. It was not proposed to pay any interest, and the contributors would therefore lose the interest on their money, but the capital would be absolutely safe. Trustees would be appointed, and he was willing to act as one of the trustees if it was so desired. It was essential the society should have the hearty co-operation of the Fellows, the trade and the press, and unless they had that assistance, he was afraid that it would not be of any use to appeal to those outside the society for help. Without some such scheme being carried out, and a new home provided, he was afraid the society must linger on unable to take full advantage of its opportunities for usefulness. Although the sum was large, there should not be much difficulty in raising it, for if they obtained an average of £25 from the fifteen hundred Fellows, the thing would be done, and if it was not done, the failure would be a disgrace to them.

Dr. Hogg seconded the motion for the adoption of the report, and said that he had listened with much pleasure to the statement made by Baron Schroder, and thought they now saw their way to place the society in a home worthy of its position. He felt that something must be done, and that it would be better to strike whilst the iron is hot. He certainly would be glad to follow where Baron Schroder leads.

A brief discussion followed, in which the Lindley Library, the Chiswick gardens, and the affiliation of horticultural societies were touched upon; and in the course of the discussion, it was stated that the Council had under consideration an affiliation scheme, which would be announced as soon as the details are finally settled.

The motion for the adoption of the report was unanimously passed, and the President announced as the result of the ballot that Sir Trevor Lawrence, Bart., M.P., president, D. Morris, Esq., treasurer, the Rev. W. Wilks, secretary, and Messrs. G. Deal, W. Richards, and H. Turner, auditors, had been re-elected, and that E. A. Hambro, Esq., N. N. Sherwood, Esq., and Martin R. Smith had been elected members of Council to fill the vacancies caused by the retirement of A. H. Smee, Esq., Mr. J. R. Bourne, and Mr. W. Coleman.

Votes of thanks were passed to Rev. W. Wilks and Mr. D. Morris for their services during the year and to Sir Trevor Lawrence for presiding.

FLORAL COMMITTEE.

Present: William Marshall, Esq., in the chair; and Messrs. R. Dean, T. Baines, C. T. Drury, H. B. May, P. Blair, W. C. Leach, R. B. Lowe, B. Wynne, H. Turner, G. Paul, G. Nicholson, F. Ross, W. Holmes, E. Mawley, T. W. Girdlestone, W. H. Williams.

The contributions to the meeting of this committee were comparatively few, but they comprised several objects of much interest. One of the most important was the large and attractive collection of hardy evergreens from Messrs. Charles Lee and Son, Hammersmith, to whom the award of the silver Banksian medal was made. The collection evinced much taste in its arrangement, and included dwarf pyramidal and standard examples of green and variegated hollies, bush specimens of variegated euonymus, variegated ivies, aucubas bearing heavy crops of berries, and retinosporas in variety. The St. George's Nursery Company, Hanwell, staged an attractive collection of cyclamens, and were awarded the bronze Banksian medal. Messrs. Cannell and Sons, Swanley, contributed examples of Primula Cannell's Pink, a beautiful variety with large finely-formed flowers of a delicate pink hue, and were accorded a vote of thanks. Mr. W. C. Leach, Albury Park, Guildford, exhibited two boxes of cut flowers, comprising cinerarias and Neapolitan violets. Mr. J. James, Woodside, Farnham Royal, Slough, submitted an example of a good strain of primulas, with white flowers and fern-like foliage. Flowering specimens of Akebia quinata and Astrapea Wallichi were exhibited by Mr. F. Ross, gardener to Sir George Macleay, Pendell Court, Bletchingley, to whom a vote of thanks was accorded.

Hardy flowers were fairly well represented, chief amongst them being the Lent lilies, which are flowering earlier than usual. Messrs. Barr and Son, 12, King Street, Covent Garden, had an attractive collection of cut flowers, in which were conspicuous Anemone fulgens; Helleborus colchicus, one of the finest of the dark flowered kinds; H. colchicus punctatus, a well-marked and richly-coloured form; H. orientalis, in variety; Narcissus cyclamineus, N. corbularia monophylla, and N. pallidus præcox. Messrs. Paul and Son, Cheshunt, exhibited a beautiful collection of hardy plants, in which the Lent lilies were in strong force. Especially good were the examples of Helleborus colchicus; H. colchicus coccineus, a high coloured variety, on which an award of merit was conferred; H. orientalis, in variety, the most noteworthy of the several forms being perhaps W. Schmidt, Roseus, and Dr. Moore, all of which have flowers large in size and attractive in colour. The miscellaneous plants in the group comprised the Winter Aconite, resplendent in green and gold; the Spring Snowflake, Cyclamen coum, an attractive species, with rose-purple flowers; Anemone apennina blanda, an early and extremely beautiful variety; Elwes's Giant Snowdrop, Hepaticas in variety, and Saxifraga luteo-purpurea, an interesting species, moss-like in growth, and bearing pale yellow flowers. Mr. J. Douglas, Great Gearies, contributed a small but interesting collection of cut flowers of hellebores. A vote of thanks was accorded in each case.

ORCHID COMMITTEE.

Present: H. J. Veitch, Esq., in the chair; and Messrs. F. G. Tautz, F. Sander, F. Moore, L. Castle, J. Douglas, H. Williams, E. Hill, C. Pilcher, W. B. Latham, J. Dominy, H. Ballantine, H. M. Pollett, S. Courtauld, De B. Crawshay, J. O'Brien, and A. H. Smee.

Orchids were exhibited in comparatively large numbers, and included several interesting novelties. Mr. Owen Thomas, Chatsworth, sent six finely-developed racemes of the chaste Cœlogyne cristata. Mr. J. Simon, gardener to E. A. Roberts, Esq., Woodland House, Greenhithe, Kent, submitted several beautiful forms of Lycaste Skinneri and an example of Cymbidium eburneum, and was accorded a vote of thanks. Mr. Bond, gardener to E. L. Ingram, Elstead Place, Godalming, and Mr. H. Ballantine, gardener to Baron Schroder, The Dell, Englefield Green, presented examples of the beautiful hybrid lady's slipper Cypripedium Lathamianum, which on this occasion had a first-class certificate conferred upon it. Mr. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, staged a well-bloomed example of Cœlogyne cristata, and a finely-flowered specimen of this beautiful species came from Mr. Waltham, Streatham, who, it may be mentioned, supplies the plants rather more freely with water during the winter season than is generally considered advisable. The finest specimen exhibited was that of Cypripedium insigne, from Mr. Quarterman, Silvermere, Surrey, who deserved something more than a cultural commendation. The specimen was about four feet in diameter, splendidly flowered, and otherwise in a condition that did much credit to the cultural skill of the exhibitor.

From Messrs. J. Veitch and Sons, Chelsea, came a small but highly interesting collection of hybrid orchids, including Phalænopsis F. L. Ames, Cypripedium Lathamianum, C. Calypso, and C. Germinyanum, on which a first-class certificate was conferred. Mr. Vanner, Camden Wood, Chislehurst, sent a small group, comprising Cattleya Trianæ, C. Trianæ alba, Lycaste Skinneri alba, bearing ten well-developed flowers; Odontoglossum Jenningsianum superbum, and Dendrobium Cooksonianum. Mr. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallington, submitted Cattleya Trianæ Dayana, a superb variety, distinguished by the brilliant colouring of the labellum; Masdevallia leontoglossum, an interesting species, bearing on short stalks comparatively large flowers, freely spotted with purple on a greenish ground; and a variety of Odontoglossum ramosissimum, which received the distinction of a first-class certificate. Mr. Dollimore, gardener to Malcolm S. Cooke, Esq., Kingston Hill, had nicely-flowered examples of Cattleya Trianæ, C. amethystoglossa, Odontoglossum Humeanum, and Dendrobium Wardianum.

FRUIT COMMITTEE.

Present: Sir Charles Strickland, Bart., in the chair; Dr. Hogg, and Messrs. J. Lee, P. Crowley, Harrison Weir, R. D. Blackmore, J. Cheal, P. Barr, W. Bates, W. Denning, S. Ford, J. Wright, J. Smith, George Bunyard, G. W. Cummins, J. Hudson, W. Warren, F. Q. Lane, T. J. Saltmarsh, A. W. Sutton, and T. F. Rivers.

A large representative collection of apples of fine quality was contributed by Messrs. J. Cheal and Son, Crawley, Sussex, who were awarded the silver Banksian medal. The collection included exceptionally fine fruit of Yorkshire Greening, Wellington, Wormsley Pippin, Dutch Mignonne, Nanny, Blenheim Pippin, Lane's Prince Albert, Lemon Pippin, Adams' Pearmain, Gloria Mundi, Curltail, Bismarck, Golden Reinette, Lord Derby, Tower of Glammis, and Annie Elizabeth. Mr. W. C. Leach sent excellent leeks and tomatos.

NOVELTIES.

First-class certificates were granted as under:—

To Mr. Bond, Mr. Ballantine, Mr. F. G. Tautz, and Messrs. J. Veitch and Sons, for

Cypripedium Lathamianum.—A distinct and beautiful hybrid raised by Mr. Latham, curator of the Birmingham Botanic Gardens, from a cross effected between C. Spicerianum and C. villosum. It is of bold growth, with long dark green foliage, and comparatively large flowers borne on comparatively tall scapes; the dorsal sepal large, somewhat undulating, white, green at the base, and marked with a narrow band of rich purple passing down the centre; the petals greenish, shaded with chestnut brown, and the labellum pale green.

To Messrs. J. Veitch and Sons for

Cypripedium Germinyanum.—A handsome hybrid between C. hirsutissimum and C. villosum. The flowers rather large, the dorsal sepal green marked with bronze in the centre, and margined with white; the petals broad, the upper half bright rose, the lower half bronzy-green, and the labellum green shaded with rose.

To Mr. F. G. Tautz, Studley House, Hammersmith, for

Cypripedium porphyrochlamis.—A beautiful hybrid, of which the parents are C. barbatum Warneri and C. hirsutissimum. The flowers are of medium size, and possess much of the character of those of the last-named of the two parents; the dorsal sepal is bright purple with white margin, the petals bright rose, and the labellum deep purple; one of the most highly coloured of the lady's slippers yet raised.

To Mr. H. M. Pollett, Fernside, Bickley, for

Cypripedium Elliottianum.—An attractive form, although not equal in beauty to C. Rothschildianum, of which it appears to be a rather pale coloured variety. It belongs to the type represented by C. Stonei, and is bold in growth, and the flowers are borne on tall scapes, several on each, the labellum boat shaped and of a dull purple colour, the petals long, narrow and pointed, and spotted with marone on a pale greenish ground; the dorsal and anterior sepals greenish white, striped with marone.

To Mr. A. H. Smee for

Odontoglossum ramosissimum var.—A beautiful form, bearing large panicles of medium sized flowers with narrow sepals, and petals undulating at the margin, and freely spotted with rose on a white ground.

Awards of merit were made as follows:

To Messrs. Paul and Son, Cheshunt, for

Helleborus colchicus coccinea.—A handsome form of this well-known species with marone crimson flowers.

To Mr. W. Vanner for

Cypripedium cardinale var.—An ordinary good form of this beautiful hybrid.

To Mr. E. A. Roberts for

Lycaste Skinneri Reyina.—A variety with flowers of average size, the sepals pink, suffused with purple, the petals purple and the labellum crimson.

PRIMULA RUBY KING.

IN the conservatory at Hill Place, Bishop's Waltham, at the present time, is a capital lot of plants of this single primula fully in bloom. Messrs. Sutton and Sons by the introduction of this variety gave to primula lovers a real gem. The habit of growth is compact, the blooms are thrown well above the foliage. The intensity of colouring produced by this variety is especially noteworthy, being a true ruby colour, which is decidedly an acquisition at this time of the year, the flowers presenting quite a glow of colour both by day and night. E. M.

BROCKWELL PARK, a beautiful tract of 78 acres, at Herne Hill, in the south of London, has now been provisionally secured for public use and enjoyment, the sanction of Parliament being needed for the arrangements agreed to by the several public bodies and generous donors interested. The sum provided for the purpose is £122,050.

THE HOLLYHOCK.

By James Douglas.

I have been greatly interested in reading the remarks on the hollyhock at page 57. The writer of the article has come to the same conclusion as I have done. With him I can go back to rather more than thirty years. I shall ever remember how proud I was when ordered to take charge of the watering and training of a collection of hollyhocks, containing a fine batch of new varieties sent out from the nurseries of Messrs. Paul and Sons, of Cheshunt. It was, I think, in the year 1854, and some of the best varieties in the batch of new ones were Beauty of Cheshunt, a fine rosy crimson; Glory of Cheshunt, the best yellow up to that time; a fine white named White Globe, &c.

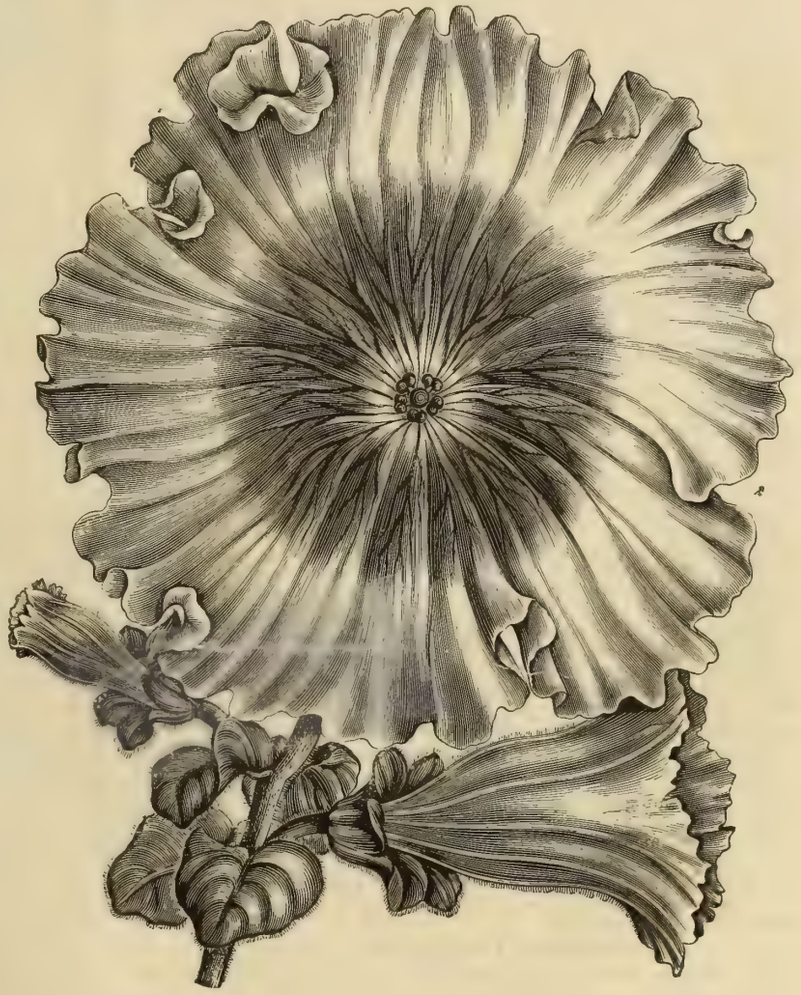
There were no signs of any disease in those days, but the demand for hollyhocks was great, and the stately autumn flower became more and more popular, Then it happened that the trade, eager to supply the demand, propagated every scrap they could get in season and out of season. Even before this time the hollyhock had been much improved. The Walden shoemaker, M. Charles Baron, had produced some very fine seedlings with flowers of small size but high perfect centres. This village worthy worked quietly on in his own way, and made himself a name which at that time was known in every county in Britain. It was well known in the county where my lot was cast, at any rate.

Our Scottish flowers about forty years ago were quite of a different type. They were of large size, with broad guard petals and small centres, resembling much the Tam O'Shanter national bonnet. At that time a clever gardener was in charge of Dysart House, the residence of Lord Rosslyn, and ever ready then, as he is now, "either to make a spoon or spoil a horn," he set to work earnestly to improve the holly-hock, and he did improve it quite as much as he has more recently improved the tuberous begonia in his now celebrated nursery at Stanstead Park, Forest Hill. Mr. Laing was too much of a florist to be pleased with the flat Scottish bonnet-looking things; nor could a true florist be satisfied with the English flowers, perfect in form, in comparison with their Scottish rivals, but small in size, not without pockets, and in some cases scarcely any guard petals. Mr. Laing was, I believe, the first to cross the two distinct types, and produced an intermediate type, robust in character, and with well-defined guard petals. Of course others were at work—Messrs. Paul, of Cheshunt; Chater, of Saffron Walden; Downie and Laird, of Edinburgh; and Bircham and Ward.

There was then no lack of distinct new varieties, but they are all gone now, and their names may as well be forgotten. It was not long before the plague came, and, like the flood in the days of old, swept them all away. How came the disease? may be an appropriate question to ask here; and it may be answered by another query—Why did it come? Long before I read the remarks at page 57 I had a strong suspicion that the disease was caused by over-propagation and stewing the plants in a high temperature during the process. I have fought the disease I believe successfully during the last few years. It came into our garden in the year 1883, and up to that time I had but little personal acquaintance with it. But a set of young plants came from the north of England from a nursery where no disease was supposed to exist. They were placed in a cold frame and grown on quite cool, being freely aired at all times. However, the disease appeared on several plants in the early spring months, and as it had not spread far, I removed all diseased leaves, dipping the plants overhead in a strong solution of soft, soapy water, in which flowers of sulphur had been pretty freely stirred. Some pains were taken to thoroughly wet the under surface of the leaves, as the closely set hairs prevent to a certain extent the water from reaching the surface where the germs of the disease might be resting before they start into active growth. The germs had been resting there; and perhaps the mixture did not reach them all, or perhaps was not potent enough, for it appeared again before it was time to set the plants out in the borders. It was again attacked in the same way, with the result that at last we were free from it. The hollyhocks flowered well, and no disease appeared all the summer; but I found it on one plant when they were passing out of bloom in the autumn. That plant was taken up at once, all the diseased leaves removed, the apparently clean ones well washed with the old mixture, the plant was placed in a pot by itself at a considerable distance from the others. We overcame all slight attacks in the same way until the pest disappeared.

But to obtain this desirable consummation the whole of the plants were left out in the open borders all the winter. The result was that a good many were lost; but those that survived have not shown any trace of disease for the last two seasons. Last autumn the old plants were taken up, and during the past week all the growths from the base of the old stems have been taken off excepting one. The cuttings have all been planted singly in small pots, and the pots containing them have been plunged in a gentle bottom heat, and in a house where the temperature is not more than a minimum of 50 deg. to 55 deg. The bottom heat may be about 80 deg.; we also cover them with hand glasses, but remove the tops daily to clean the glass and renew the air. Another point of some importance is that the cuttings should be planted in rather moist soil, because to water them before they form roots has a decided tendency to cause some to decay at the base. The plants propagated in the spring must either be raised from cuttings in that way, or by root-grafting. All the same, it is not easy to induce them to form roots unless the pots are plunged in a nice bottom heat; and a moderate heat in the atmosphere is better than a tropical climate. It is a good plan to propagate as many plants as possible during the summer months, and this can readily be done by taking all the eyes from the side growths that are not flower buds. The base of the lateral growths, at least those that are vigorous. There are usually two or three of these eyes, all the others being flower buds, so that to obtain the buds the flowers must be sacrificed. The smaller growths nearer the top of the spikes are usually all flowers. The eyes may be planted singly in small pots, and they will soon push through the ground and form roots if they are kept in frames or hand-lights, and shaded from the sun. And spare growths may also be propagated in this way if they are crowded too closely round the base of the stems.

Seedling hollyhocks should be raised in every garden. Good varieties will produce from seeds a large proportion of varieties as good as the parents. It does not require much labour to raise them; they require no protection under glass in winter, and produce spikes which are "sumptuously beautiful." The single blooms, too, are very grand. I would like to add that the finest single blooms of hollyhocks I ever saw were exhibited at the autumn show of the Newcastle-upon-Tyne Horticultural Society last autumn. They were grand as regards variety, and the cultural skill displayed in their production was worthy of the highest commendation.



NEW RACE OF PETUNIAS. The throat rayed on yellow ground as in salpiglossis.

YELLOW-THROATED PETUNIAS.

This group of petunias forms a distinct and beautiful class that Messrs. Sharpe, of Sleaford, have by careful selection brought to fine form and quality. The flowers are of large size, the petals smooth and regular, or with a few folds that enhance the effect of the general symmetry. The throat is broad, showing a rich centre of rayed colour on a yellow ground in the fashion of a salpiglossis. For bedding and general usefulness this race of petunias will prove of importance, and those who grow such flowers from seed would do well to give them a trial, for wherever they obtain a place they are likely to keep it.

W. B.

Mr. T. Trollope has been engaged as head gardener at Twyford Moors, Winchester.

The Rat Plague.—On one farm of 250 acres in Suffolk 1,800 rats have been killed since harvest, and on another of 180 acres 1,000 rats have been caught. The farmers cannot keep their wheat in consequence of the numbers in the stacks, and have to thresh and sell out. The half-cultivated holdings which are not permanently farmed is one cause of the trouble, and the destruction of all kinds of vermin that are the natural enemies of rats is another. When 1,000 rats can be killed on a farm of 180 acres it is not difficult to imagine how great must be the destruction which they cause.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

GARDEN FLOWERS are now steadily increasing, and amongst those now beautifying southern gadens are Bulbocodium vernum, Arabis albida, Chionodoxa Luciliæ, Cyclamen coum, Galanthes Elwesi, Iberis semperflorens, Daphne mezereum, Epimedium pinnatum elegans, Forsythia viridissima, Erica herbacea carnea, Corydalis Ledebouri, Helleborus Olympicus, H. orientalis, H. colchicus, H. purpurascens, Iris persica, I. reticulata, Megasea Stracheyi, Polygala chamæbuxus.

THE HOUSE.

CAGE BIRDS must have special attention to ensure their maintenance in a thoroughly healthy state. Cleanliness is at all times most necessary to the well being of cage birds; but at no season of the year is it more essential to keep the cages perfectly clean, and afford the birds opportunities for indulging in their bathing proclivities occasionally, than during the next six or eight weeks. Overmuch disturbance of the birds is not by any means conducive to their welfare unless they are very tame, and whatever may be necessary to maintain the cages in a sweet condition should be done in as quiet a manner as possible. A practice ought to be made of taking out the moveable bottom every morning or on alteruate days, and after it has been properly cleaned it should have a little fresh sand sprinkled over it. The perches will require washing at least once a week, but it will be better to wash them about every third day, and for this operation hot water is preferable to cold, for not only can impurities be more readily removed with it, but the perches become dry in a much shorter space of time. Cages of wood that are in the least infested with parasites must be well looked to, for these pests are now becoming very active, and unless kept well under they will do much mischief. It is indeed a good plan to thoroughly wash cages made partially of wood twice a year; the first washing to be given just before the commencement of the spring, and the other at the end of the summer. Every part must be well scrubbed with hot water and soap, and when dry all the crevices and joints should have a little spirits of wine well worked into them, done with a rather stiff pointed feather. Methylated spirits would be equally as destructive in its effects as the more expensive spirits of wine, but its unpleasant smell precludes its use for cages that cannot be put on one side until the odour has passed off. The feet of the birds should also have attention, and if they become dirty they ought to be bathed in tepid water, and whatever may be adhering be carefully removed. It is important to well soak the feet before any attempt is made to clean them, because of the great risk of injury when the dirt is removed before it has been softened with water. Feet that are at all sore, whether from being in a dirty state or otherwise, will also derive much benefit from an occasional fomentation with tepid water.

CONSERVATORY AND GREENHOUSE,

NEW HOLLAND PLANTS generally demand much attention now. Continue to shift such as require it, and any that are looking out of health turn out of their pots to see if the drainage is right and the stuff sweet and porous. In repotting use plenty of fibry peat in rough lumps, sifting out the fine dust if needful, which will be useful in propagating and to put young stuff in from the cutting pans.

SOFT-WOODED PLANTS for summer exhibitions and for decorative purposes ought to be growing freely now, to give time for stopping, so as to have fine round full heads before allowing them to run into bloom. Cinerarias required extra large may be potted on, and if trusses show nip them out. Pelargoniums will require another shift, as also will herbaceous calceolarias if they have not yet been shifted into the pots iuto which they are to bloom. A confined condition of the roots will throw plants into bloom quickly if they are in a suitable temperature; but stopping and shifting on will keep them growing larger and larger, and after the last shift a period of six or ten weeks will generally suffice to bring them into bloom, if the pots are full of roots and stopping is discontinued.

ORCHID HOUSE AND STOVE.

STOVE PLANTS need a general revision at this time of year. Those that have been blooming all winter require to be cut back and encouraged to break, then to be shifted to larger pots if needful, or have top-dressings. Where very large specimens are objectionable, the plants may be kept in bounds by the knife, and to obviate the use of larger pots turn them out as soon as they have commenced to make new growth; remove some of the soil from the outside of the balls, and repot them with fresh compost in pots of the same size as those previously occupied.

FORCING AND FRUIT HOUSES.

FIGS in the forcing house must have air, but cold draughts must be guarded against.

PEACHES AND NECTARINES to be thinned, and the shoots trained in by degrees; to thin out all the surplus fruit at once, or train in all the young shoots close, in one day, will be injurious.

PINES growing freely will require more liberal supplies of water at the root. Those in bloom or fruit must not be wetted overhead, and any beginning to colour to have as much air and light as possible.

VINERY.—Vines showing good bunches must have the shoulders carefully tied with worsted or matting. The air of the house where berries are swelling must be kept moist, and it will be well to make a special examination of the border, as this is sometimes wet enough upon the surface and quite dry a few inches down. In watering use water a few degrees warmer than the soil.

FRUIT GARDEN AND ORCHARD.

OUTDOOR GRAPES.—In the cultivation of grape-vines out of doors a moderately fertile sandy loam will be found the best adapted for securing a firm well ripened growth. Rich soils and fat manures are not at all desirable for the growth of outdoor grapes; and in a cold wet summer the vines on the poorest and driest borders will do better than those on moist well-manured borders. It must not be supposed, however, that the grape-vine can live upon nothing; indeed, it would be a folly to plant grape-vines on a worn-out, sour, or pasty loam on which nothing else could be grown satisfactorily. Should it be necessary to prepare a border for vines, two feet depth of prepared earth will be sufficient, and this should rest on a dry bottom; if on a stratum of stones or bricks all the better; but this is not needful.

STRAWBERRY BEDS formed last autumn must now be trodden to make the ground firm. A coat of manure may then be spread over the ground. Old beds must be cleared of dead leaves and weeds, and have a good coat of rotten dung laid on. If it buries the crowns no harm will be done; they will soon push through.

KITCHEN GARDEN AND FRAME GROUND.

ARTICHOKES will soon require to be dressed for the spring. If mild open weather continues, remove the protecting material, fork over the ground between the rows, and give a good dressing of rotten manure and wood-ashes.

CAULIFLOWERS in the seed pans should have a little dry earth or wood-ashes strewed amongst them occasionally to prevent their damping off. Autumn-sown plants in frames must have the lights drawn off in mild weather to keep them stocky and prevent their "buttoning." The most forward should be planted on sheltered borders or be placed under hand-glasses and ground vineries if the soil is in proper condition.

CUCUMBERS for ridge culture should be sown within a week or so. Sow also for frame culture to succeed plants now bearing, and maintain a supply during the summer season. It is preferable to sow in three-inch pots at the rate of two seeds in each, the strongest plant in each to be kept, to avoid damage to the roots by shifting, so as to have them strong and short for turning out.

ONIONS required to be very large may now be provided with a deep, well-manured bed in a rather dry position. Transplant into this bed from the seed bed of autumn sown stock, putting the bulbs nine inches apart; if only serviceable bulbs be required, put them six inches apart. After planting, strew wood-ashes or fine siftings of charred rubish over the bed.

PARSNIPS, although less popular than many other vegetables, should have good cultivation where grown. To produce large handsome roots, which alone are worth cooking, it is essential to sow the seed towards the end of the month, in liberally-manured and deeply-stirred soil, and thin out as soon as the plants are of sufficient size. The drills should be fifteen inches apart, and the plants thinned to nine inches apart in the rows.

PEAS and BEANS sown on strips of turf or in pots or boxes should be hardened by gradual exposure. After eight or ten days' exposure they may be planted, provided the weather is favourable.

VILLA FARM.

THE management of meadows and pastures on farms of all descriptions is year by year acquiring increased importance, and on none more so than those of a moderate size attached to country residences and in suburban districts. Until quite recently it was thought by a very large portion of the community that grass lands would yield satisfactory results with but very little attention, but the course taken by agricultural events within the last few years has aided in a material degree to bring out more prominently the value of pastures, and to show that they, like arable lands, require to be managed in a skilful manner to be really profitable. The exact time at which meadows should be closed depends entirely upon the character of the soil and the season, but it will be better to close them before any new growth has been made by the grass than to leave them open two or three weeks too long. When the cattle have been removed, a dressing of good farmyard manure at the rate of from twenty to thirty cartloads per acre, or of artificials at the rate of about three cwt. per acre, should be applied. The most suitable artificials are undoubtedly guano and superphosphate of lime in the proportion of one cwt. of the guano to every two cwt. of the superphosphate. Soils somewhat loose in texture will be benefited by a dressing of common salt at the rate of one cwt. to the acre, in addition to the other manure. Farmyard manure should be applied at as early a date as it can be conveniently done, but there is no immediate hurry for the artificials, as they will be equally as efficacious applied at the end of March as now. In the application of farmyard manure, care must be taken to spread it equally over the surface, and in a fortnight or so after this has been done the land should be bush harrowed thoroughly, and then have a heavy roller passed over it. But when artificial manures are employed the bush harrowing and rolling should be done shortly afterwards. It is, as a matter of course, preferable to do this work in dry weather.

If there is any routine work, in the way of clearing out ditches and waterways, and the mending of hedges, still on hand, it should be seen to as soon as convenient, for in a very short time work will press heavily, and those who have hardly enough strength for the proper management of the farm, will experience considerable difficulty in keeping pace with the many demands on the head and hands, if they allow the work to fall into arrears now. For the same reason, and to ensure the thorough pulverization of the surface soil, land required for potatos, turnips, cabbages, kohl rabi, tares, peas, and other crops to be sown or planted during March and the month following, should be manured and enriched with fertilizers from the farmyard, and be ploughed; so that, with no more preparation than applying a dressing of some artificial manure and passing the harrows over the surface, it may be made ready for the crop to be sown or planted. Considering how much depends upon getting in crops at the proper time, and the changeableness of the weather during the spring season, every effort should be made to have everything in an advanced state, to enable the cultivator to take advantage of favourable opportunities for the performance of important operations.

JAPANESE FLOWER FESTIVALS.—The "flower festivals" of the Japanese are often referred to without clear explanation of their number and character. Five are annually celebrated. At the New Year's Feast, on the first day of the first month, the chief plants used are bamboos, firs, Prunus Mume, and Adonis Amurensis. The first two are set by the house-door, and the others are displayed in the living-room. At the second, or "Girls' Festival," which is held on the third day of the third month, Prunus Persica is the favourite plant. At the third, or "Boys' Festival," on the fifth day of the fifth month, one sees chiefly the Shobu *(Iris lævigata)*; while at the fourth, or "Ladies' Festival," on the seventh day of the seventh month, no flowers are favoured, but songs are written on bits of paper fastened to leafy stalks of bamboo and set on high in the garden. The last feast occurs on the ninth day of the ninth month, and then the chrysanthemum is honoured by old and young alike. These various celebrations have always been held in accordance with the dates of the old national calendar; but now that the Gregorian calendar has been introduced, it is found difficult to procure the proper plants on the proper day. The great imperial feast in honour of the chrysanthemum has no special time set for it, but is held whenever the flowers in the Emperor's garden are in most perfect condition.—*Garden and Forest.*

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REVIEW OF CHRYSANTHEMUM AUDIT.

By Edwin Molyneux.

The audit of Chrysanthemums, both incurved and Japanese, so carefully compiled by Mr. Gordon, is most interesting reading to lovers of Chrysanthemums. Especially is it so to those who take an interest in exhibitions, whether they be materially interested in them or not—as exhibitors, judges, or otherwise. Taking the incurved section first, exactly the same number of varieties (seventy) are recorded in the two last years. In 1889 there were thirty-five points taken as against thirty-three of 1888; caused, perhaps, by there being two more exhibitions taken into consideration. There are twelve varieties named in the audit of 1889 which were not mentioned at all in that of the year before, and eleven sorts named in the audit of 1888 which do not find a mention in the audit of 1889. Some of them are old sorts, in fact, all belong to the section which is now fast declining in popularity with exhibitors, on account of their size and poor form as recognized by the standards of to-day. Take Yellow Globe, for instance, and Golden Beverley; both these are rough sorts as compared with Miss M. A. Haggas. No doubt this latter fine introduction has done much to drive out of the lists the two sorts named. Mrs. Nash, I see, is not named at all, it is difficult, indeed, to see the distinction between this and Mrs. G. Rundle. It is a much better plan for growers to drop one name in cases of this sort, when they are not positively distinct. They may grow them both if they choose, but less harm will be done by naming both alike, as on the spur of the moment both might get staged, and unpleasant circumstances would follow. I always think it is a pity that growers should sail so near the wind in cases of doubt; it is much better to be sure than sorry. If I have two names which I consider there is a doubt about, one is quickly discarded. Again, some old varieties have come to light which did not figure in winning stands in 1888, such as Duchess of Manchester, Queen of the Isles, Cassandra (introduced as far back as 1852), and Faust, showing that such varieties are not quite defunct, but with the introduction of a few more of the larger class of varieties and the present method of making the classes in prize schedules, it will be difficult indeed to find many of the older sorts of the small-flowered kinds, pretty as they may be in the eyes of some persons. There is scarcely anyone who will say "I should think that Miss M. A. Haggas is not an improvement on the two varieties" I named as having their existence crushed for this last year, at any rate, by this new sport.

If we get better sorts to take the place of others which are less popular I cannot see what difference the loss of older sorts can make. Take, for instance, Golden John Salter, as mentioned by Mr. Gordon. The colour is rich, I know, but depth or solidity of the blooms is much wanting. The petals are bold in appearance, but there are far too few of them to make a representative incurved bloom. Mrs. Norman Davis is the nearest approach in colour to this variety of any I know. In 1888 it was shown fifteen times, while in the last audit it is represented twenty-nine times, being a substantial increase for a variety of this type, which requires perhaps more skill to produce in good condition than some other types, as the season has much to do with the quality and number of blooms staged which belong to the "Teck" family.

I am not surprised to see the "Queen" family occupying the high position in the list, that five of them do, as they possess distinctive colours, excellence of form, and all the points which go to make a model incurved bloom. They are of more easy growth than such varieties as Princess of Wales, Miss M. A. Haggas, Princess of Teck, or Hero of Stoke Newington, hence their popularity. It is not difficult to account for the decline to third place of Empress of India, as this variety suffers to a greater extent than either of those which have displaced it by damping of the florets, and as the last was a notoriously bad season for this epidemic—if it can be so called one—the surprise is that so many blooms of this variety were saved that could be staged in good condition.

From the audit it will be seen that the first thirty-seven varieties are such as to place them in the category of the finest types of incurved blooms. It cannot be said that any of them do not possess the characteristics we desire to class them as the finest forms of the incurved section of the chrysanthemums. In the thirty-three remaining sorts there are a good many which do not come up to the exacting standard of a good incurved bloom. What many lack is the high character in their petals—a true incurved bloom should have all its petals aiming toward the centre, not in an upright manner as in the case of many of those in the last-numbered list. Therefore I say it is not to be wondered at that some have obtained so low a position in the audit. This fact, combined with the uncertainty of their developing good flowers of their respective kinds, renders them unpopular with growers of chrysanthemums for exhibition blooms.

The number of Japanese varieties in the audit of 1888, was one hundred and fourteen as against one hundred and nine in 1889. The difference is made up by including more which were staged once only during 1888, showing that more sorts were employed during that year than last. Twenty-eight varieties were mentioned in the 1888 audit, which do not find a place at all in 1889, many of them were staged once only, some few twice; while twenty-four are named in the audit of 1889, which were not noted in 1888, seeing the wide range of Japanese varieties there is to choose grown. Several new kinds have taken good positions which were not known or barely so in 1888. For instance, Mons. Bernard shown once in 1888, figured twenty-four times in a winning stand last season. This is a variety likely to maintain and improve its position in the future; the colour being new and telling, the growth also is dwarf, a good point in its favour. George Daniels with fourteen marks opposite its name, bids well for a new sort to rank well another season. I am not surprised to find that Val d'Andorre has dropped seventeen points; it is a variety which does not keep well, and is easily affected by damping, the lower florets quickly decay, then the colour is certainly dingy. In fact I consider that if this sort is not seen quite in first-rate condition, it has only a moderate appearance; it is of easy growth, which is dwarf, a good point.

If Edwin Molyneux does not occupy the leading position in the present audit, it has increased its previous position by seven points, which speaks well for it. As is well known the best blooms of this variety come very early and being rather an early season many good blooms were lost before the shows came on. Especially was this the case in the North of England; Many cultivators had it there in prime condition at the same time as we in the south could have shown it. The late fixtures of many northern exhibitions, therefore militated against its chance somewhat. Mr. Ralph Brocklebank and its parent Meg Merrilies owe their position somewhat to the fact that they are what is naturally termed late bloomers, and the last season being rather early just suited these two sorts. Many good blooms of Madame C. Audiguier were lost through the same reason as previously stated. Boule d'Or will I think maintain its position a long time; it is a variety which appears to be less affected by time, damp, or any of the ills and hindrances so destructive to some kinds. In the North of England especially good in quality was Japonais last season. Sunflower will, I predict, be many more times exhibited next season. It is without a doubt the finest yellow Japanese variety in cultivation, being a pure yellow. Stanstead White has taken me by surprise more than any variety I know. A year ago I discarded it thinking it was of no value; but, from the flowers I saw during the season of 1889, I came to the conclusion that it was not the variety that was at fault, but it was something else. I hope next season to be able to grow it as well as my friends did in the past year. Whether the constitution of Comte de Germiny has become weakened I know not, but seldom do we nowadays see a bloom with a good full centre; so many come void of florets in that part of the flower. Hence its decline. Elaine is being gradually ousted from favour by such as Avalanche, Mdlle. Lacroix, and Stanstead White; that its further decline as a show flower is merely a matter of time. I notice that as many as thirty-two varieties which but one and two points, without exception, I may say, belong to the class known as small or medium sized sorts. This shows very strongly that the craving for size is well founded on fact; exhibitors know this evidently, and act accordingly. Three or four of this number must be classed as new or nearly so; even these cannot rank high purely on account of their size. Take Mdlle. Louise Leroy as an example, this although new was only staged in winning stands twice. So far as beauty is concerned this sort is second to none, but it is a *little* beauty, and that will not do.

SHARPE'S MONARCH BROCCOLI.

A note on this fine broccoli will be useful to many of your readers, and especially those who grow for market or have to provide heavily in good vegetables at the season when such things are scarce. Your selections of broccolis have been admirable always, and for many years I have grown by your book. Now that I forward this note, I am hoping that in future selections *Sharpe's Monarch* will have a place, for it does for us what few broccolis will do. It is a good grower, hardy and constant; the leaves protect the crowns until the flower is ready, when



LATE BROCCOLI, *Sharpe's Monarch* (Season March and April).

they open and display it as a close white curd of the finest texture nine to twelve inches over as I grow it, but larger in some other gardens. The season of turning in is a great point in its favour, and the one that will ensure for it extensive popularity. It is ready with me early in March, and continues to supply beautiful heads until the end of April, or even to near the middle of May. I do not know of a broccoli that can equal it, all points considered, in its season, and, therefore, I feel confident I do right in sending this note. W. B.

ERANTHEMUM PULCHELLUM.

Plants one foot high with a single stem surmounted with a good truss of the lovely dark blue flowers at this time of the year are not only exceedingly showy in the stove arranged among other plants, but tell well in a mass by themselves. To have such plants as these, short stocky cuttings should be inserted singly in thumb pots in sandy soil, plunged in a brisk bottom heat under a hand light. They will quickly make roots, when they should be shifted into four-inch pots, using a compost of two parts loam, half a part each of peat and leafmould, with a fair sprinkling of sharp silver sand. Give the plants a light position near the glass in the stove for a time until new roots are formed, when they should occupy a light position in the greenhouse for a couple of months, afterwards returning them to the stove.

S.

Rose Stocks.—A correspondent of the *Journal des Roses* recently recounted an experiment he had made to test the influence of the stock on grafted roses. Two lots of roses, one grafted on Rosa canina and the other on R. polyantha, were forced under glass, both being treated in precisely the same manner. The varieties which stood on R. polyantha came into bloom two weeks earlier than the others, and yielded twice as many flowers.

DESSERT PEAR, JERSEY GRATIOLI.

The Jersey Gratioli is but little known on the continent of Europe, and has no place in the work of Leroy. It is not mentioned by George Lindley, but has a good place in Downing, who declares it better than Gansel's Bergamot. One thing may be said about it when the comparison is made, to the effect that the tree is better behaved than is Gansel's Bergamot, and may be more surely depended on to take care of itself and give, in a run of years, a fair return for the land it covers. Hogg says it must have been a considerable time in the country, as there is a tree growing in the garden of H. M. Bucknall, Esq., Bedminster Lodge, near Bristol, which he considers (1856) to be fifty-six years old. A confusion prevailed as to the name of this pear, which is the same as the summer Bon Chretien, which Lindley enters as "Gracioli," but this was disposed of by Mr. Robert Thompson, of Chiswick, who, because of the favour shown to this pear in Jersey, renamed it *Jersey Gratioli*.

The fruit is of medium size to large; in form obconic, or roundish pyriform, even, and quite Bergamot looking, the skin is rough, greenish, with shades of obscure yellow and brown or bronze, with large rough russety spots. The eye is smallish, open, in an uneven, shallow basin; the stalk stout, an inch or more in length, inserted in a slight cavity and sometimes set obliquely. The flesh is white, melting, with honied sweetness, sprightly and rich, and a little gritty at the core. The season is September and October. It lasts but a short time after acquiring perfect ripeness, and therefore it is not a safe pear to grow in quantity unless the means of appropriating the crop are clearly understood.

The tree is hardy, vigorous, and fruitful, forming an open-headed standard on the pear or a free bush on the quince. It is not adapted for the formation of a perfect pyramid.



DESSERT PEAR, *Jersey Gratioli*. From samples selected at the Apple and Pear Conference.

Croydon Gardeners and Amateurs' Mutual Improvement Society has been recently constituted with Stephenson Clarke, Esq., as president, and Mr. S. Bishop as secretary.

Passericide sounds well for sparrow killing and has the grandeur of criminal suggestion. At a meeting of the Wirral (Cheshire) Farmers' Club it was stated that during the past year 10,000 sparrows had been destroyed in the club's district, the price paid being from eightpence to sixpence per dozen. In the last five years the club had caused the destruction of over 70,000 of these birds. This means a dreadful waste of money and the demoralization of the children.

HEATING SMALL GREENHOUSES.

The contribution of your able and eminently practical coadjutor, Mr. J. C. Clarke, at page 37, on heating small greenhouses, has greatly interested me. It is a question of considerable importance to many of your readers, and I should like to say that I can fully endorse his remarks as to the inefficiency of some of the apparatus recommended for heating plant houses of small size. With reference to oil stoves, with which I have experimented, my opinion is much the same as that expressed by Mr. Clarke, that is to say, if the heat given off by the stoves is sufficient for the purpose required, the fumes from them are so disagreeable and injurious to health, that a man who really cares for his plants cannot fail to depreciate their value.

I have also had considerable experience with small boilers. I remember one in particular that I had charge of some years since. At the same time I had also charge of four large boilers, and I am fully persuaded that I am speaking well within the mark when I say that the small one gave more trouble than the four large ones combined. According to my experience small boilers are so fluctuating and require such careful attention, that the end obtained with one of them is hardly in proportion to the time and labour bestowed upon their management.

With due deference to Mr. Clarke, I must say that I do not agree with his suggestion as to an improved flue, because of the objections there are to flues for heating plant houses of all descriptions, and particularly those of small size. I should like to mention a little contrivance that I have here, which has been in use some time, and has answered my purpose very well indeed. It is fitted in a small house from which it is desired to exclude the frost, and it keeps everything safe with only an ordinary amount of attention. Thinking, perhaps, it might induce some of your readers to experiment further in the same direction. The piping is made to answer the purpose of a boiler also. There are two four-inch pipes, a flow and return, fixed along one side and one end of the house. At each end of the piping there is a bend connecting the two pipes, and at the furnace end the pipes are brought over the fire as far as the iron plate near the furnace door, and they rest on two iron bars fixed aslant across the top. The furnace is an ordinary one, and built with fire-brick and bars. Holes are drilled in the pipes for feeding cistern and air escape.

The management is very simple. When there is an appearance of frost the fire is lighted about 4 p.m., and allowed to burn freely until the water in the pipes is warm. Then about 5 p.m. the fire is backed up with ashes, and with a little more attention before going to bed the house is made frost proof for the night. I might add that if

more heat were wanted, extra pipes could well be brought along the sides of the furnace in front of the fire-brick. Then I believe the apparatus would be capable of heating a good-sized house at a small cost for fuel. J. Hilling.

Preston, Ightham, Kent.

AN UNPRUNED APPLE TREE.

In a report on Messrs. George Bunyard and Co.'s "Old" Nurseries, Maidstone, published in G.M., October 5, 1889, mention is made of the standard trees of Lord Derby Apple in the Summer Hill Nursery of the firm. Here is a figure of one of the serviceable beauties faithfully reproduced from a photo. It will be seen that it strikingly illustrates the system of long rod pruning that has been advocated and illustrated by Mr. Hibberd for many years past, and is now being generally



UNPRUNED TREE OF *Lord Derby* APPLE in the Summer Hill Nursery of Messrs. Bunyard and Co., Maidstone.

recognized as founded on nature and common sense. The leading rods are allowed to run their full length, and the pruning, which is always the least possible, has for its object to admit light and air to all parts of the tree, and consequently the lateral growth is occasionally a little reduced where it happens to interfere with the free play of the elements. How absurd it would be to reduce the crop to about a fourth of what nature gives with such ease in order to form the tree to a notion of something better than the free spread that is natural to it.

Turner Memorial Prizes will be offered during the year as follows: At the National Tulip Society's Exhibition at Manchester for rectified and breeder tulips; at Tibshelf for roses; and at the autumn exhibition of the Royal Caledonian Horticultural Society for show and fancy dahlias.

FLOWERS IN THE KITCHEN GARDEN.

I am a strong advocate for the decoration of the kitchen garden by the planting of flowers in suitable positions where they will not occupy space which could be devoted to a crop of vegetables. On each side of a central path is a broad space devoted to pyramid pears, between which are planted gooseberry trees. In front of these we grow a line of dwarf roses, then a row of Victoria asters, stocks, or it may be carnations, and between the gooseberry trees where space will admit, single dahlias, or pompon, and cactus kinds, whichever is thought to be the most suitable are planted. This season we have removed the whole of the gooseberry bushes and planted the space with a collection of Michaelmas daisies, the tall sorts at the back between the pear trees finishing up at the front with the low-growing aster amellus, from which we hope to have a bright display next autumn. In other parts of the garden we grow sweet peas on each side of the path and close to one of the entrance gates where their perfume is appreciated and the flowers are convenient to gather. In the parts close to the path edge we have double rows of carnations, old crimson clove, and even single dahlias are made room for. In fact, wherever there appears likely to be a vacancy close to the edges of the paths we plant flowers of some sort or other, confining ourselves to the kinds that are most likely to give us abundance of bloom for cutting from. There may be added to the consideration of usefulness in the growing of flowers in the kitchen garden that a much brighter appearance is given to this part of the garden at a time of the year—early autumn—when the regular occupants of the kitchen garden proper are beginning to present a faded appearance. I have seen in many kitchen gardens a space each side of the centre path devoted to the growth of herbaceous plants. Where this space can be set apart for the purpose named such treatment renders the

kitchen garden attractive, especially to the ladies who do not as a rule care much about the progress of the vegetable inhabitants of the garden as long as a plentiful supply is forthcoming at the right time.

E. MOLYNEUX.

ORCHIDS.

By W. SWAN, Castle Hill Gardens, Englefield Green.
Read at Meeting of Chiswick Gardeners' Association.

(Concluded from page 79.)

WHETHER we are among the fortunate raisers of seedlings, or are the growers of a collection of established plants, or should we have to deal with imported plants; one of the most essential elements of success is to be acquainted in some degree at least with the conditions in which they are found in their native habitats. I do not mean to say that it is necessary that we should implicitly follow all we may gather from such knowledge; but I do contend as I have written years ago, that a fair acquaintance of the climate, elevation, rainfall, whether epiphytal or terrestrial, whether upon rocks or trees, if the latter are as suitable as when winds or other causes have brought it to the ground, as when it is erect with its own sap coursing through its branches. Whether, again, the plants are gathered at the very extreme edge of the woods, and so receive a large amount of clear sunlight, or found some distance in the woods, and on lower portions of the giants of the forest, and so revel in a greater amount of shade, and, as a natural consequence, much denser humidity. All information of this description should be eagerly grasped, no matter whence it comes. Not only should it be read, but, if possible, secure the leaf or page on which it has appeared—it may be magazine, or monthly periodical, or those copious notices that are now published in our gardening papers. The latter are so full of interesting information that they should be all gathered and stored in a substantial scrap book. One of the most desirable works a gardener should have, and one that he should often consult, is, in my opinion, a treatise dealing in a clear and concise form with the climatic conditions, geographical aspects, atmospheric disturbances, humidity, force of wind, light, shade, and the many other details that go to make up the environment in which plants grow and flourish. Such a work should also give the maximum and minimum temperatures of the principal localities, both of the old and new world, where orchids are found, the rainfall for every month, the altitude at which they will flourish, a list of ferns, fine foliage, and flowering plants found in their immediate locality. If with the headings just enumerated extracts from the writings of such men as Humboldt, Wallich, Van Volxem, Hugh Low, Sir Joseph Hooker, Colonel Benson, Rev. C. S. Parish, Roxburgh, Linden, Pescatore, &c., were also given I venture to think such a work would be at once interesting and of great service. A careful perusal of its pages would always give fresh matter for thought and consideration, and so our knowledge would be increased and greater pleasure and success attained.

But even with all the information thus gathered that may have come under observation, there will be plenty of opportunity for carrying out our own practical conclusions, and steadily pursuing the course we have found successful with a portion one season, to apply the same, modified according to the individuals, through another year. We must carefully note, as we proceed, the success greater or smaller, and thus gradually yet surely become more proficient, more successful with most things. For instance, we often speak of the months of December, January, and February as the resting season, as though a cessation of growth had come over the whole or a portion of the collection. This I consider a great mistake. It is true a few plants appear to be dormant, but development is ever present, and progress in bud and blossom are most surely taking place, though the changes, being less rapid, do not impress us so forcibly as the more quickly-formed leaves and bulbs of the summer months Take dendrobiums for instance. There is no month in the year when this section can be said, as a whole to be at rest. If they are forming buds and developing flowers there is then a greater strain upon their energies than at any other season. Therefore, unless at this season careful treatment is given, many, as soon as the blooms have faded away, turn weak and sickly, and ultimately perish. Be careful, then, that during this period the plants do not suffer through a deficiency of water. At the same time, be ever on the alert that moisture is not given in excess. As just intimated, it will always be necessary to treat the plants somewhat individually, for though Dendrobium chrysanthum, D. nobile, and D. heterocarpum are each sent to us us from the same locality, it will be found that D. chrysanthum commences to grow in October and November, and continues advancing through the winter and spring, until in July and August the glorious clusters of gold and purple appear along a good portion of the newly-made growth; so in the case of this species the season of rest would seem to be during the months of September, October, and perhaps November. Notice also D. Cambridgeanum, coming to us from the same district. This starts into growth in the dull months of November and December. The advance at first is but slow, but during January and February the progress is much more rapid, so that in the month of March generally the short stout bulbs develop their large and showy flowers of yellow and purple. It will sometimes happen that the growth comes on even more quickly, and that the blooming will take place in February. Still, in almost all instances, but little root action will take place until the new bulbs are swollen; then new roots push from their base, and quickly ramify through the soil and over the basket in which the plant is growing, and gather food for the maturing of the growth, and laying by, as it were, a large store of vigour when the plant pushes into growth the following autumn. It will, I doubt not, have been noticed by many how little apparent activity takes place with this species during the summer.

It is known to most of you how accommodating a plant D. nobile is. Where a number of specimens are grown, the first may very easily be so managed that the months of November and December will be gay with its showy blossoms, and from that time onward until June, and even July, a succession of flowers may be secured by a careful and observant practitioner. In truth, it is possible to have blooms of dendrobiums always present, and where cut flowers are much in demand there is no class that will give such variety and beauty as a select and well-grown group of dendrobiums. To bring about this happy result care and attention are of course very essential. This genus might easily be divided into four or five groups, and if my remarks had simply been to give you cultural directions my time might have been occupied by first treating the class as a whole, then minutely describing the sections, and afterwards giving individual treatment necessary to the many that comprise such sections. Suffice it to say the first group would be the medium-sized bulbous evergreen species that flower on bulbs of two or three years' previous growth. Here we have D. densiflorum, D. thyrsiflorum, D. Farmeri, D. Schroderi, D. Guiberti, D. chrysotoxum, and D. suavissimum. Each of these produce pendulous racemes of bloom, from twenty to eighty flowers appearing on each. The second section will include D. Paxtoni, D. Gibsoni, D. fimbriatum, D. clavatum, and D. moschatum, such as have long reedy bulbs, some of which have leaves always upon them. These also produce drooping racemes from growths of two years old or even a longer period. This section does not retain its blooms quite so long as some of the first group. Still when large plants are in flower, they make objects of great attractiveness, and on an exhibition stage or in the orchid show house are always much admired. The third section is a very extensive one, and would include D. nobile, D. transparens, D. Wardianum, D. crassinode, D. Ainsworthi, D. Leechianum, D. splendidissimum, D. Devonianum, D. moniliforme, D. macrophyllum, in their many forms and intermediary varieties. Those grow during the spring and summer months, forming bulbs from one to three feet in length, and flowering in clusters of from two to five blooms along a good portion of the bulb. They invariably blossom during the early part of the year, generally on bulbs grown and matured during the previous summer and autumn. There are exceptions, however, even in this section, since D. nobile, D. heterocarpum, D. moniliforme, the three seedlings mentioned, beside several others, produce their blossoms on bulbs of two years' previous growth, from which the leaves have disappeared.

Before dismissing this group of dendrobiums, it may be worth while to turn our attention, if only for a sentence or two, to the subject of pruning (as it has been described). There are some who advocate the removal, as soon as the blooming stage has passed, of all bulbs, plump or shrivelled, that have already passed the flowering stage. They contend that such bulbs are an eyesore, are not necessary in any degree to the well-being of the plant, inasmuch as they obstruct light, interfere with the pushing up of the young growths, and that having performed their functions detract from the vigour rather than add to it. Now I do not intend to say a single word in opposition to those who have thus treated their plants and have achieved satisfactory results. If they find their plants are so exceptionally strong that they can bear that treatment without detriment so well and good. I have seen examples thus treated that have been wonderfully well grown and have flowered with remarkable freedom, but if such a method were adopted by those who have but a slight acquaintance with orchids the probability is that an ever-weakening constitution would be more likely to ensue than an increase of health and vigour. At the same time I do recommend the removal of such bulbs as are shrivelled and of several years' growth. This remark applies to cattleyas, odontoglossums, lælias, epidendrums, and many others of the stout pseudo-bulbous species.

Reverting again to dendrobiums, the fourth section would be composed mostly of the hirsute species, such as D. formosum, D. Lowi, D. eburneum, D. Jamesianum, and D. infundibulum. These have a light hairy covering over the bulbs, and develop their flowers mostly on the top of the previous season's growth in clusters of from three to six, D. formosum often bearing the latter number, whilst D. eburneum will occasionally produce from eight to ten. It is found with this section that D. formosum requires a far higher temperature than D. Jamesianum and D. infundibulum. This is to be accounted for by the fact that the former is found in Burmah very near the coast on trees on the plains revelling in abundance of heat and light.

Proceeding inland and ascending the hilly districts, the two latter are found growing on the trees on a much higher altitude, where a greater amount of rain invariably falls, and where there is more shade through the density of the forests. Colonel Benson writes thus respecting these species: "I have never observed D. formosum growing at any distance worthy of notice above the plains, or at a great distance from the sea. On ascending the mountains more inland we come across its co-species D. infundibulum, D. eburneum, and C. Jamesianum. The favourite habitat for D. formosum is on trees, as for instance Dipterocarpus lævis, and a species of Dillenia. It does not seek shady places in which to grow and establish itself; in fact, few orchids care for more shade than what is naturally given whilst the trees are in leaf. During the months of February, March, and April they must be exposed to a temperature of 110 deg. in the shade; this intense heat so causes the pseudo-bulbs to shrivel, that specimens gathered in February can scarcely be recognised as the same healthy plants observed in the previous November; the bulbs in that short space of time having decreased to at least half their natural and healthy dimensions." The same writer says that D. crassinode is found growing on large trees, the thermometer often falling to 46 deg. in the cold season. D. Farmerii aurea is also met with growing on large trees and in shady places, where the average temperature is 75 deg., and the annual rainfall is about 90 inches; whilst the white and rose-coloured varieties of D. Farmerii found on the plains near Moulmein flourish in a temperature which is considerably higher; the average temperature is from 80 deg. to 85 deg., and the annual rainfall from 200 to 250 inches. The following facts in regard to the rainfall of these countries may perhaps be of service to some of you. In May, 1870, 27 inches of rain fell at Rangoon; in June, 30 inches; in July, 26 inches fell; making a total of 83 inches for the three months. At Moulmein during the same period the rainfall recorded were May, 36 inches; June, 55; and July, 42; making a total of 133 inches. The heaviest fall on record up to that date occurred on August 30, 1865, when Moulmein was almost deluged with 15 inches of rain. In the same year 297 inches of rain are recorded as having fallen. In May 26 inches; June, 51; July, 68; August, 72; September, 38 inches are amongst the figures registered during that period.

Beside the Dendrobiums, to which reference has been made, there are the Australian and New Guinean species, such as D. Hillii, D. speciosum, D. Goldianum, D. superbiens, D. Phalænopsis, D. stratiotes, also the lovely form from Ceylon, D. McArthianum, the neat little form from Japan, the distinct D. chrysotis making bulbs four to five feet long, and flowering ere the growth has finished. Mention might also be made of D. Jenkinsii, D. senile, D. Falconerii, D. Kingianum, and D. breviflorum, such as can hardly be classed with either of the foregoing groups. Each of them, however, has beauty and peculiarities incidental to itself. If the habit is formed of treating each as separate individuals, taking an interest in each rather than as a whole, my object will have been gained by so lengthy a reference to the dendrobiums.

Perhaps the most showy group of orchids and those that can be cultivated with a fair success are the lælias and cattleyas. The forms are very diverse, and the treatment is as varied as the plants themselves. As very distinct types notice Cattleya Mossiæ and C. luteola, C. amethystoglossa and C. citrina, C. bicolor and C. pumila, C. Sanderiana and C. Harrisoni, Lælia monophylla and L. superbiens, or L. purpurata and L. anceps. Each is rich in colour, and distinct in the form and marking of the flowers, and presents great

individuality in its appearance and growth. Just so, the course of treatment recommended for the one will not always command success with the other. We shall not err, however, if we use pots for the tall kinds and pans or baskets for the dwarf growers, these being hung up near the glass. Such forms as C. gigas, C. Sanderiana, and D. Dowiana may also be grown in baskets with perfect safety. This section enjoys more heat than the majority of Cattleyas, they delight also in a stronger sunlight and a drier atmosphere. I should have been glad to have given you a similar description of many of the other genera, but time will not permit. My object has, however, not been so much to give you a hard and fast method of treatment, nor an exact course to be followed with any particular group. It has seemed to me that if I have opened up to you some sources whence you can gain further knowledge; if I have in any degree still further deepened the love you may have, the delight you take, in cultivating them, or if I have caused any to desire that you may commence the acquisition of such knowledge with a determination to put their learning to a practical test, I shall consider that my coming amongst you will not have been altogether useless. As a word of caution, do not take for granted anything that may be gratuitously offered. Gather every scrap of information you can, endeavour to see for yourselves how many of our best growers manage their plants. Use a fair amount of discretion in the obtaining of plants on which to commence culture, and so modify the treatment to the buildings you have, and the locality and conditions under which you must labour. If you do this I venture to say that with patience, perseverance, personal inspection, and a genuine love for the plants themselves, a large share of success will reward your labours; and you with your employers will often have the gratification and joy of possessing healthy specimens, brightening up the houses in which they are grown and filling the atmosphere with their delicious fragrance.

AMERICAN LETTER.

The leading characteristic of the weather in this part of the world has been its very unusual mildness during the latter months of the old year—mildness without sunshine. The late autumn and winter months, in the north-eastern states are usually cold and bright when compared with the same seasons in England. But, if we except the fog, the weather of the past few months has shown a strong inclination to imitate that dull, lifeless sort usually experienced about London during the same period. On several occasions during December the outside thermometer stood as high as 60 deg., without the remotest trace of sunshine throughout the entire day. Atmospherical conditions so abnormal undoubtedly have a most injurious effect upon outdoor vegetation. And the injury is not confined to plants outside, for, owing to the lack of sunshine, the flower markets were hardly as plentifully supplied with produce during the holiday season as in former years. The comparative scarcity of some flowers had the effect of raising the prices rather considerably. Roses are perhaps the most popular flowers during the winter months in this country, and mildew is one of the great pests that rose-growers have to contend with. The extreme difficulty of keeping it well under hand during such weather will be readily understood by most of your readers. For the past few days we have had regular winter weather, and it is very welcome, though it must have anything but a beneficial effect upon those hardy things that were compelled to resume active operations when they should have been securely at rest. Numerous instances of plants and trees bursting into premature growth have recently come under the writer's notice, and the Press, general as well as horticultural, has been flooded with notes on that subject.

Fortunately this state of affairs is not of frequent occurrence, and after all it may prove to horticulturists a sort of blessing in disguise by calling some of their latent energies into play. But we have now to notice another phase of the American climate, much more injurious, and of a more permanent character than that already noted. The atmospheric conditions that exist in the United States during the summer months are extremely favourable to the development of insect life, and some of these insects work considerable mischief in the vegetable kingdom. All sorts of devices are tried to check their ravages, and while a few are of partial utility, the majority fail completely to accomplish the work for which they are devised, or are too expensive to be of any practical benefit. The Agricultural Department of the United States Government has done good service in the interests of agriculture, horticulture, forestry, and matters that have a direct bearing upon those subjects. In no particular, however, has the usefulness of such an institution been more fully demonstrated than in the results that have attended experiments made with a view to check the ravages of an insect known as "Fluted" or "Cottony Cushion Scale." This is said to be a species of *Icerya*, but there has been some difficulty about the determination of the species. It is now pretty well settled, however, that it is *Purchasi*. This insect attacked the orange trees in the Southern States, and at one time it threatened to become as troublesome in orange groves as the *Phylloxera* has proved in vineyards, or *Peronospora infestans* in potato fields. Now—thanks to Professor Riley—the energetic head of the Entomological Division it is in a fair way of being wholly and bodily eradicated. Some may be inclined to consider this a matter of no importance to horticulturists in England, but the writer maintains that as the plan adopted for the annihilation of this pest points to a revolution of entomological science as applied to horticulture, it is a subject of the greatest import to all who are interested in the welfare of the latter. After numerous futile attempts to banish the *Icerya*, it was at last decided to try the effect of a parasitic insect from Australia, which had been reported as feeding freely on the pest in that country. Accordingly, an agent was despatched to study the habits of the parasite, and to convey, if possible, living specimens to the United States. This he succeeded in doing, and the Australian Ladybird (*Vedolia cardinalis*) is now performing its work of extermination in a most satisfactory manner. There are lots of other injurious insects in our gardens and greenhouses, and perhaps by turning on the search-light of science our entomologists may be able to eradicate some of them after the same fashion. For such investigations as will lead to the extinction of other injurious insect pests, it may be presumed that we will have to wait, at least, until the elation which follows the latest triumphs of the entomologists has died away. In imagination, at least, one may now behold a mournful procession of insecticides, brushes, sponges, &c., marching in deep file and significant silence toward the rubbish-heap. In supposition we sometimes find the germ of reality.

The difficulties of our reformers do not end with insects. Your readers are already familiar with some particulars of the war which is being waged by the scientific journals, against the reckless destruction of forest lands in this country and in Canada. The *Garden and Forest*, a New York weekly journal, ably conducted by Professor E. S. Sargent, of the Arnold Arboretum, stands foremost in this work of war. But a new phase of the difficulty has developed in Canada, to which attention is called in the current issue of the *Canadian Horticulturist*, by Mr. R. W. Phipps, Commissioner of Forestry for Ontario. The following extract—taken from another Canadian paper and used by Mr. Phipps in his article—explains the matter: "What about our cordwood? That is a very important matter, and every year it increases in importance, for the sources of our cordwood become fewer and more remote. There is not so much cordwood left in Canada as is commonly supposed. Of the thousands of miles of railway operated by the Grand Trunk Company, the Midland is the only division that runs through a cordwood country, and only a portion of that division can supply fuel in considerable quantities. The City of Montreal is even now suffering from a dearth of cordwood. Maple in Montreal is selling at eight dollars a cord, and birch and beech at seven dollars. A large dealer has publicly declared that there is no cordwood to be bought throughout the country. Toronto has for its chief sources of supply the Victoria branch of the Midland, and the district around Penetang. In two or three years the new extensions of the Northern Railway will make a great reduction in those sources of supply, and there will then be the same condition of affairs in Toronto that now exists in Montreal. There are several facts connected with the cordwood trade which deserve notice. The wood itself is of no value. It realises nothing, the man who cuts it giving the wood gratis. When the wood reaches Toronto it sells for five dollars a cord, the three dollars being consumed in freight and profit to the dealer. The wood difficulty is becoming serious." Commissioner Phipps adds: "It would be well if those who are selling their wood as above would consider this. We should be planting instead of cutting so much down without any replacement."

The above reference to *Garden and Forest* reminds me that the current issue of our other great American horticultural journal, the *American Garden*, appears in the form of an elegant magazine. It is a great improvement upon the old form. American horticulturists are now pretty well looked after in the matter of journals. The two papers just named deal with horticulture in general; and, while commercial men are attended to by the *American Florist*, Elias A. Long, in *Popular Gardening*, attends to the wants of amateurs, as well as professional gardeners.

As I am about to conclude these rambling notes, painful intelligence comes to hand of the death of Mr. Peter Henderson, the well-known nurseryman and seed merchant of New York. He died of pneumonia at his home in Jersey City on the 17th inst. The disease was a development of the prevalent influenza. He was sixty-six years of age, and was in the enjoyment of robust health until about a week before his death. He leaves a widow, a daughter, and two sons—who were his partners in business—to mourn his loss. The deceased gentleman was a native of Castlehead, Scotland. At the age of sixteen he was apprenticed to a gardener, and early developed considerable talent for the study of botany. Soon after entering upon his career as a gardener, he won a gold medal offered by the Botanical Society of Edinburgh for the best arranged and most complete herbarium. Coming to this country in 1843, he worked for market gardeners and florists until he had saved sufficient money to start in business for himself. That he did in 1847. Buying some land in Jersey City, he started as a market gardener on a small scale. Many stories are told of his struggles with poverty at this early period—it was a hard time for the young man. But he conquered all obstacles. Some time after commencing the market garden business he was enabled to add a florist department, and later the seed business. It is said that the glass department at Jersey city now covers about five acres. Mr. Henderson was undoubtedly the most conspicuous as well as the most popular merchant connected with the horticultural trade in ths United States. His name was known far and wide. He was a prolific author of works pertaining to practical horticulture. His first book, "Gardening for Profit," appeared in 1866, and was by far the most popular of all his works. No fewer than one hundred and twenty-five thousand copies of this book, the third edition of which appeared in 1886, have already been sold. In 1868, "Practical Floriculture" appeared, and "Gardening for Pleasure" in 1875. His "Handbook of Plants" was published in 1881, and his last work, "Garden and Farm Topics," appeared in 1884. Mr. Henderson was recognized as a standard authority on all matters bearing on American horticulture, and all his works have been widely read. As a contributor to the horticultural press, he was well and favourably known in this country, as well as in Europe. He always showed a strong desire to encourage a popular taste for horticulture and natural history. This was shown in substantial form last year by his offer of one hundred dollars, under certain conditions, for the best herbarium of American plants. The prize was awarded to a young gardener at the last convention of the Society of American Florists, held at Buffalo, New York. His generosity was proverbial and real, and he was known as a man of considerable wealth. To those who sought information or advice he was always kindly, courteous, practical, and sympathetic. There are, doubtless, hundreds of young men in the United States who owe their fortunate positions to the sensible advice they received from Mr. Henderson. The writer of these lines has frequently had occasion to seek his counsel, or draw from his vast fund of knowledge, and in no case has he done so without deriving considerable pleasure and profit from the intercourse which followed. By his removal from this sphere of unremitting toil, American horticulture loses a warm friend and an earnest worker. Like that estimable character of Goldsmith, he, horticulturally, "Allur'd to brighter worlds, and led the way."

Boston, Mass., January 18, 1890. Uncle Sam.

LOBELIA SPECIOSA.

Plants of this lobelia fully covered with bloom at this time of the year are useful for draping the front of the stages in the conservatory. The bright blue of the flowers is much appreciated, besides being very showy. Summer-struck cuttings are grown in pots out of doors keeping the bloom buds picked off. They are housed on a shelf close to the glass in a cool-house, where they get abundance of air. At the end of November they are put into a little warmth, and the flowers are produced in abundance for a couple of months, and with the aid of frequent doses of liquid manure a continuation of blooms will be produced. S.

Mr. T. Vagg has been engaged as head gardener to J. Theobald, Esq., M.P., The Bedfords, Havering-atte-Bower.

Law.

BOUQUETS AND BUTTON-HOLES FOR THE ITALIAN OPERA.

IN the Westminster County Court, Mr. Augustus Harris was the defendant in an action tried by His Honour Judge Bayley. The plaintiff, Mr. Marle, a flower dealer, of Regent Street, sought to recover the sum of £65 4s. 1d. for an alleged breach of a contract of the defendant to purchase from the plaintiff a number of bouquets and button-holes, to be used at a great floral display on the opening night of the Italian Opera at Covent Garden in May last. Mr. Henry Kisch, barrister, appeared for the plaintiff, and the defendant was represented by Mr. Bray. According to the plaintiff's case, in May last Mr. Harris was desirous of inaugurating the Italian Opera season at Covent Garden by presenting the audience with bouquets and button-holes. The arrangement was that there were to be two special bouquets for the Royal boxes, of the market value of a guinea and a-half, for which defendant was to pay 10s. 6d. each. The occupants of the upper tier of boxes were to have bouquets of the market value of 10s. 6d., Mr. Harris to pay 7s. 6d. each for them, and those in the second tier were to be of the market value of 7s. 6d., Mr. Harris paying 6s. for them. The button-holes were to be of the market value of from 1s. 6d. to 9d., Mr. Harris paying a much reduced price. The flowers were all prepared according to instructions, each bunch having tied to it with a ribbon a card bearing the words "With Augustus Harris's compliments." The defendant, however, when it was sought to deliver them, refused to take them in on the ground that they were not of the quality that the plaintiff had agreed to supply. The plaintiff, in his evidence, said when samples of the bouquets were shown to the defendant at his theatre he complained that they were not all worth a guinea and a-half each, and on being reminded of the terms of the contract, he got excited and said he would not have any of the flowers. Plaintiff told him he should deliver the order, and he sought to do so, but defendant would not take them in. The flowers were all English and of the choicest kind. They actually cost witness £42, and then there was the cost of labour upon them and the loss of profit. White lilac at this time was very expensive, because it had to be forced and bleached. Natural lilac was seldom in bloom in the middle of May, besides which it was of a dirty white colour, and not suitable for first-class bouquets. Mr. Bentley, plaintiff's traveller, proved taking the order, and said that the flowers were supplied in accordance with the order, but the defendant objected to the bouquets because they were not all of the value of 30s. each. and when witness attempted to reason with him he flew into a passion, stamped his feet, and used not the best of language. For the defence, it was alleged that the witness Bentley represented to Mr. Harris that he represented a syndicate of flower growers through whom every flower in the market was supplied, and that they were able to supply him with bouquets to the market value of a guinea and a-half each for 10s. 6d. He also said that the syndicate would be glad to supply them at a loss for the sake of the advertisement. It was upon this representation that he gave the order, and it was quite natural when he found that the sample bouquets were not nearly so good as Bentley had represented they would be, that he should refuse to receive the flowers. Mr. Harris gave evidence in support of the statement, and, in cross-examination, said he quite believed the statement that Bentley represented the growers, and that all the flowers came through them. He was surprised at the low prices, but quite believed the statement that these 7s. 6d. bouquets were to be worth a guinea and a-half. The Royal bouquets were to be the best ever seen in a theatre and would be worth quite £10 each, and he expected to get them for 7s. 6d. The bouquets which were used for the Shah's visit cost £1 each, and he should be willing to give two and a-half guineas each for them now. The flowers were all rubbish. Mr. Hoyle, the secretary to the Carl Rosa Company, in cross-examination said, although Mr. Harris ordered these flowers, the company were going to pay for them. His Honour said he believed Mr. Harris only ordered the flowers upon the representation of the plaintiff's traveller, and that the bouquets were not worth the value placed upon them. There would be a verdict for the defendant, with costs.

RAPHAEL TUCK AND SONS' EXHIBITION OF COMPETITIVE DRAWINGS.

WITHIN the past few days an interesting exhibition of drawings has been open to the public in the galleries of the Royal Institute of Painters, in Piccadilly. This firm has established an extensive business in "Studies," prepared expressly for amateurs to copy, and this exhibition has been produced by the customers of the firm attracted to it by the offer of five hundred guineas in prizes. The contributions sent in competition for the prizes number 2,602, and they completely fill the three galleries and the staircases, so that lovers of quantity in art work may be gratified by devoting an hour to a look round. The subjects comprise floral studies, landscapes, figures, monochromes, and a selection of well-known pictures. Such works as door panels, screens, and portfolio drawings appear in great profusion, and having said the quantity is great, we must add that the variety is great also. It was our intention to attempt a critical analysis of this interesting exhibition, but we could not at this busy time afford the space requisite to do anything like justice to it. And, indeed, there is a primary impediment to this endeavour, for it should be observed that from first to last these are copies only. Were there any instances afforded of direct appeal to nature we should be stirred by curiosity in a way very different to the mild stimulus of mere copying. To say that there is much good work here so far as copying goes is to imply that the studies are good of their kind, as they certainly are; and they have been followed with much faithfulness in many instances. A considerable proportion of the subjects presented have the flatness and tameness common to copies, and it is lamentable, we think, that so many who come near to perfection in copying appear content therewith. It does not follow, however, that because Messrs. Tuck assist art students by providing studies, that they should draw the line there in practice, for doubtless many of them go far beyond and find in the truth of nature better aids in pleasant work. The artists are ladies mostly, and on the occasion of our visit the rooms were thronged with fair critics, who appeared to find abundant entertainment in comparisons that we must believe were never "odious."

MR. PETER COCKBURN has been engaged as head gardener to Lord Blantyre, Erskine House, Glasgow.

Correspondence.

HEATING SMALL HOUSES.

THE communication of mine on this subject, which appeared in a recent number of the GARDENERS' MAGAZINE, has been the means of bringing me several letters relating to the subject, all of which agree that the small hot-water apparatus are more or less disappointing, while one friend makes the same complaint against the system of heating by a flue. The objection, it will be remembered, that I made against the small hot-water boilers, was that the furnace holds so little fuel that the fire quickly burns out. This appears to be generally the case, and, so far as I can see, without any possible chance of finding a remedy, as it is impossible to get more heat out of a given quantity of fuel than it contains. It is all very well to talk about keeping in the fire. That is not the point in contention; what is wanted is to keep up the temperature in the house the apparatus is intended to heat. In my small boiler I can keep the fire alight for eight hours without attention, but the fuel is consumed at such a slow rate that the flow pipe at four feet from the boiler is quite cold in the morning. One correspondent wishes to know if it would do any good if he took out his small boiler and put a larger one in its place. But there is danger in that plan; a larger boiler would boil over if left unattended for any length of time, owing to the limited piping, as even the small ones do sometimes if not well looked after.

With regard to the use of flues, it is certainly a retrogressive step, but it is justified by experience. What is wanted to make them more satisfactory, as I have already said, is a more speedy way of erecting them with a material that will stand heat without cracking. A furnace built with bricks is perhaps indispensable, but a brick flue is, I hope, a thing of the past, and with it all its disadvantages, such as the fumes of the fire getting through the joints. A portable flue in parts with as few joints as possible is what is wanted. The nearest approach to the kind of thing I mean has been erected by a friend of mine. There is an ordinary furnace built with bricks, but in the place of a brick-built flue, four-inch iron pipes are substituted. The arrangement answers fairly well, but the iron pipes get cold quicker than is desirable.

I must now deal with the inquiries which have been made respecting the management of flues. One correspondent objects to the dry heat which they give off. To a certain extent this can be obviated if saucers filled with water are placed on the flue. Another friend writes to say that his fire burns out in two hours after he has left it at night. A mistake in this case has been made for the want of a damper to shut off the draught when the fire is left for the night. Flues require regulating in this respect as much as hot-water boilers, and the nearer the damper is placed to the fire the better. When the damper is placed near the end of the flue, not only the heat, but the injurious fumes, if any, are confined, and, therefore, more likely to find a way into the house. But by placing the damper near the fire there is nothing confined in the flue, as when it is properly regulated the fire burns slowly, while at the same time there is sufficient heat given off from it and passing through the flue to keep the heating medium as warm as it was when the draught was partially shut off.

It would appear from the printed lists and other information which reaches me that I am likely to get into a hornet's nest over this question, as according to what I am asked to read and digest, there is no scarcity of oil stoves or small hot-water apparatus that are suitable for heating small houses, and they only want to be known to be appreciated. That may possibly be the case, but it is somewhat singular after what I have before written that those who have found it so do not come forward and say as much for the benefit of the public. I do not profess to have tried all the forms of either oil stoves or boilers, but I have tried some, and seen others in other places. Still, my opinion of their merits is unchanged.

To my knowledge many a house of plants has been seriously injured by the use of an oil stove, while there are men of good judgment and ability who regret they ever had a small boiler on their place. I should be more inclined to pardon the mistakes of manufacturers if they did not so persistently controvert facts by making it appear that a small fire is capable of keeping up the temperature as well as a large one. To me this appears like trying to make people believe that a small fire will make a kettle of water boil as quickly as a large one, or do equally well with a large one to roast an ox. A small hot-water apparatus is a convenient form of heating, I am willing to grant; but I pity the man who has to look after it on a frosty night.

J. C. CLARKE.

CUTTING DOWN CHRYSANTHEMUMS.

The note from Mr. George Gordon at page 64 on the cutting down of chrysanthemums is certainly very interesting and of great importance, and I thank him for it. More especially would I express my appreciation of his kindly remarks to myself. The note in question helps to prove the truth of the old adage that there is nothing new under the sun. But I doubt very much whether the extract from the *Floricultural Cabinet* would have seen the light but for the great interest taken now in the cutting down and dwarfing system. Mr. John Laing, the head of the well-known Forest Hill firm, told me a year or two ago that he adopted the practice in question in Scotland thirty years ago, and that he was perfectly correct I did not for a moment doubt. But it was evidently dead and buried, for it had fallen into complete disuse. Mr. Laing will I know give me the credit of having materially assisted him in his practice of the system of which he has shown some good examples. It is gratifying to myself to be able to say that some scores of other growers have also had excellent examples during the past two or three years chiefly as the result of my teaching.

When I was a little boy that good old florist, the late Mr. Adam Spary, of Up Park, Sussex, and afterwards of Ventnor, Isle of Wight, used to visit my father, and gardening matters received a full share of attention in the course of their conversations. Although very young at the time, I well recollect their discussing the practice of cutting down certain flowering plants that grew in the borders. I also recollect that my father then used to take off the tops of the pompons and others in July to make them bushy, and, as they used to say, to save stakes. Mr. Spary was a keen observer, and a careful reader of the floricultural and horticultural literature of his day, and I have not the least doubt now that the practice was being discussed in the papers, and the practice adopted by a few cultivators. But I had an idea that the discussion to which I have alluded referred more particularly to out-door border plants. I am referring to a period from thirty-five to forty years ago. During a subsequent apprenticeship with Mr. Spary, which extended over five years, I did not hear him mention the practice. Certainly the chrysanthemum was not

much in favour with him, for he was so engrossed with his dahlias, tulips, pinks, carnations, and hollyhocks, that he looked upon it as a border plant.

I had not read of the practice of cutting down chrysanthemums, or indeed heard of it. But rather it dawned upon me, and gradually grew until it took definite form in my mind, as the result of my boyhood recollections. It took me a few years to get into the full swing of the practice, and produce results which to my mind were probably satisfactory. These old extracts form a useful addition to the literature of the chrysanthemum, and it would be interesting also to know the mode of culture adopted at the same time, and also to have the names of the varieties then in favour.

Bembridge, Isle of Wight. C. Orchard.

Exhibitions and Meetings.

UNITED HORTICULTURAL PROVIDENT AND BENEFIT SOCIETY, February 10.

The twenty-fourth annual meeting of this excellent and flourishing society was held on Monday evening at the Caledonian Hotel, Adelphi, and, as usual, the report presented by the executive was of the most satisfactory character. The chair was occupied by Mr. J. Wright, and there was a large attendance of members, who evinced much interest in the proceedings. The minutes of the previous annual meeting having been duly read and signed,

The Secretary presented the report, and the Treasurer submitted his balance-sheet. The report and financial statement showed that remarkable progress had been made in the development of the society during the past year, and that it is in a flourishing condition. Forty new benefit members had joined during 1889, and eleven since the end of December, with the result that the total number of benefit members now on the books was three hundred and twelve. The amount disbursed in sick pay was £37 15s. 4½d., and this sum was disbursed amongst twenty members. One member had died during the year, and the amount to his credit in the Benevolent Fund had been handed to his widow. Both the Benefit and Benevolent Funds show considerable balances in favour of the society, and as the result the trustees had been able to purchase £650 worth of stock, bringing the total amount invested in Consols and Corporation Stock up to £5,250. The report justly described the annual dinner as a great success in every way, and fully acknowledged the assistance rendered by N. N. Sherwood, Esq., in presiding; by Messrs. B. S. Williams and Son and Messrs. J. Laing and Sons in contributing plants for the decoration of the room; and by Mr. J. R. Chard in decorating the tables. Chiefly as the result of the dinner there had been a considerable addition to the list of honorary members.

The Chairman, in moving the adoption of the report and balance sheet, after a few preliminary remarks said: About seven years ago I made myself better acquainted with this society than I had been before, by an examination of its books, and I have recently examined the books again, and the more I look into the constitution of the society and its working over a period of years the more I am satisfied as to its absolute safety and undoubted stability; its great excellence and wonderful comprehensiveness; the advantages it offers over general benefit societies; its careful, economical, and admirable management.

Now given those conditions—and I am thoroughly convinced they are embodied in this society—then I ask, What more can be expected or desired of a benefit and provident institution?

We have learnt from the report now presented for adoption, that the past year shows both the prosperity and usefulness of the society. The experience, however, of any one year does not adequately represent its character; yet if we take what may be called the worst year—the year in which the deductions for sickness were by far the greatest on record, and which may be fairly regarded as abnormal—we find the receipts exceeded the expenditure by no less than £263 13s. 7d. That was in 1887. Passing to 1889 we find the income exceeded the outlay by £421 6s. 8d.; or, in other words, a gain in receipts of £134 7s. 6d., and a reduction in sick disbursements of £43 5s. 7d. over 1887—a very marked improvement on both sides of the ledger. But a fairer test for ascertaining the true position of the society is to take an average of the last five years, and this shows a yearly addition to the benefit fund of £345 2s. 7d., and an average annual outlay of £32 3s., or a yearly gain for investment during the period of £312 19s. 7d. Multiply this by five, and we find that the sum acquired in as many years, and placed to the credit of the members, to be no less than £1,564 17s. 11d.

Is not that remarkable? I suspect it is unparalleled, and especially when the fact is remembered, for a fact it is, that there is not a farthing of expense as a set off against it, this being met by a small special fund provided by the far-seeing founders of this splendid institution. Further, when, as we find in the balance-sheet, that a sum exceeding £5,000 now stands to the credit of the society, surely not another word is needed on the question of its safety and stability.

Now we pass to the second claim—the great excellence and wonderful comprehensiveness of the society. One of its excellencies is common to all benefit societies—namely, the right of members to payment during sickness over a prescribed period. When the limit is reached—a year - and a member continues ill, there is a substantial benevolent fund to grant him further aid, of which he may more than ever be in need. No one knows till occasions unfortunately arrive what good this wisely-established fund may do. It has been of great service under sad circumstances in the past (the last occasion being a grant of £20 to four orphans, who lost both parents in three months), and may be, and probably will be, a perfect Godsend in the future to some poor aged and needy fellow mortals. Ordinary members only contribute one monthly annual contribution to the fund, its main support being by contributions of honorary members. Gardeners' friends who have the means and disposition to do so are thus afforded an opportunity of sharing in the good work of providing against unforeseen calamities, or for affording additional or supplementary relief to the sick payments in cases of emergency. It is most gratifying to note the great increase of honorary contributions during recent years since the character and scope of the society became better known. When I examined the books, seven years ago, there were only eight of these, but now there are forty. And it is to be further noted that should misfortune befall any of these members, even they, though honorary, are entitled to assistance from the fund which they have largely created and largely sustain for the benefit of others. We ought to be very proud of the men who formulated rules so comprehensive yet so precise, by which the greatest amount of good can be done and absolute security maintained.

Next to be referred to are the striking advantages the "United" offers over general benefit societies. Here we come to something that stands alone, distinct, and superior to anything that can be found, I believe, in connection with any other benefit society in the world—the investment of the surplus accumulated capital, excluding £1,416 14s .10d. of the Benevolent Fund, now amounting to £3,478 18s. 11½d., to the credit of the members. This is theirs, not only without any drawbacks, but with all accumulations, for the yearly interest on each member's share is added to his capital investment, for it is as surely his as if the money passed from his own hands into the Bank of England. Further, the exact amount banked for each member is made known to him every year. The sums are steadily accumulating, last year's increase being £400, and will do so as long as the subscriptions are paid; and even if they lapse the amount invested remains the property of the defaulting member, and is payable to him if he attains the age of sixty years, or at his death, whenever that may occur, to his nominee, whose name is entered on the books; but—and here is a little penalty which the shrewd authors of this grand scheme imposed. When a member ceases payment—ceases, in fact, to be a member, the interest earned by his share of invested capital is not added to it, but is transferred to the management fund; and at the present moment a sum of £339 16s. 4½d. stands to the credit of persons whose payments have lapsed. Before a member of ordinary societies can receive payment during sickness he must relinquish work entirely. This is not so in the "United." He can do some work, and thus keep his situation, and at the same time receive a proportion of sick pay on a doctor's certificate. This is a provision; but as if to help what may be called a half-pay man off the fund, there is a slight deduction from his payment, which goes to the benevolent fund. What astute men the framers of these rules must have been, and I think I am safe in saying their equals have not been found outside the gardening ranks.

The last of the four essentials that have occurred to me as such are the careful, economical, and admirable management of the society. There can be no waste of wealth, no fat salaries, no feasting out of the funds; the rules are too stringent for that. Every man who gets a penny out of the society for services rendered to it must earn twopence at the very least. The secretary's work in keeping three sets of books, making out an annual balance-sheet for every member, and writing between 400 and 500 letters is done for £20; the trustees' expenses during the year were 19s. 6d., and treasurer's, 10s. If the work were not a labour of love born of a desire to help their fellow men, the officials could not work so zealously as they do, always have done, and, I venture to say, always will do; for I am confident there will never be wanting in the gardening ranks bright-minded and large-hearted men who will honestly, earnestly, and gladly do the best they can for the community to which they are proud to belong; and I trust the time is not far distant when the cream of that community will be united under the banner of the United Horticultural, Benefit, and Provident Society, the twenty-fourth annual meeting of which is being held to-night.

The motion having been seconded by Mr. Richard Dean, was carried unanimously.

The election of officers and committee followed, and the treasurer, Mr. J. Hudson, and the secretary, Mr. W. Collins, were unanimously re-elected. The vacancies on the committee, caused by the retirement of four members, in accordance with the rules, were filled by the election of Mr. N. Cole, Mr. E. Berry, Mr. Dickens, and Mr. G. Kelf. The sum of £20 was voted to the secretary for his services during the past year, and 1,000 copies of the report and balance-sheet were ordered to be printed. It was also decided to accept the sum of £25, generously offered by Mr. Sherwood at the annual dinner, towards the formation of a convalescent fund, and to formulate a scheme for its management.

Votes of thanks were passed to the auditors, trustees, treasurer, and secretary for their services during the year, and to the chairman. The assistance rendered by the horticultural press was also duly acknowledged.

BRUSSELS AMATEUR ORCHID SOCIETY ("L'ORCHIDEENNE").

The monthly meeting of the Orchideenne was held on the 9th inst in the spacious Central Galleries of L'Horticulture Internationale, Park Leopold. In spite of the prevailing hard weather, the number of orchids exhibited exceeded any of the previous meetings. There was a large attendance of orchidists from all parts of the country. The following members of the committee were present: Messrs. J. Hye-Leysen, Wallaert, Messange de Louvrex, Lubbers, Lallemand, Miteau, and Rodiges. In the afternoon, during the hours the exhibition was open to the public, an enormous crowd availed themselves of the opportunity thus afforded, among them the English-speaking element being very predominant.

M. J. Hye-Leysen, one of the most successful of cultivators of cypripeds, submitted a splendid new variety of Lælia anceps alba, named Lindeni, which well merited the distinction gained; an extremely beautiful variety of Odontoglossum Wilckeanum album, Odontoglossum crispum guttatum, an exceedingly fine variety; also a splendid variety of Cattleya Trianæ, with dark rose handsome-shaped flower; a fine specimen of Cypripedium lævigatum platytænium, and a handsome dark variety of Odontoglossum mulus. The president of the society (M. Warocque) contributed as usual a large number of plants from his famous collection, among them being a unique specimen of a splendid dark variety of Lælia anceps, bearing over one hundred flowers; a new Cypripedium Warocqueanum, allied to the præstans type, the srape bore two well-shaped blooms. The colouring in the dorsal sepal reminds one of a combination of Cypripedium Rothschildianum and Elliottianum, the long gracefully-twisted petals being of a rich glossy marone colour, the staminode being very prominent, of a rich golden yellow, without doubt a natural hybrid, and certainly a splendid acquisition; a splendidly-flowered plant of Odontoglossum Pescatorei Lindeni, bearing three racemes; a chaste variety with beautiful purple-violet spots on the petals, accurately figured in Lindenia; Odontoglossum crispum sulphureum of very rich colour, also a fine variety of Cypripedium tonsum, and a well flowered specimen of Cœlogyne Lemoniana. M. G. Miteau staged an interesting group, which included a very fine variety of Cattleya Trianæ var. Baillauville, Cypripedium Boxalli atratum, also the beautiful hybrid Cypripedium barbato-Veitchii. M. Vervaet and Co., Ghent, presented several superb varieties of Cattleya Trianæ, of the dark type, also a fine plant of Cattleya Trianæ pallida, with large handsome well-shaped blooms. Cypripedium Godseffianum, seen for the first time in Belgium, certainly one of the best hybrids obtained as yet, and a fine variety of Cypripedium Barteti. M. Wallaert sent a fine specimen of Dendrochilum glumaceum validum, with fifteen flower spikes splendidly grown, a beautiful variety of Cypripedium villosum albo-marginatum, and a superb variety of Cattleya Trianæ. M. Lallemand staged cut blooms of Cattleya chocoensis. M. Van Imschoot, Ghent, contributed a well-flowered specimen of Cattleya speciosissima, and a flower of a lycaste, an unknown variety.

M. Linden contributed a large and interesting group. Foremost among them being Cattleya Trianæ Hyeana, a superb variety, the flowers being

of exceptional size, and very rich in colour; also a fine form of Cattleya Trianæ pallida, a well-flowered specimen of Maxillaria luteo alba, Odontoglossum Rossi maximum, a superb variety, similar to the one shown by Madame Gibez at the last meeting; several fine varieties of Odontoglossum crispum; a superb variety of Phalænopsis Schilleriana, Odontoglossum blandum, Oncidium Forbesi, and several excellent varieties of Cattleya Trianæ.

Awards were made as follows :—

DIPLOMAS OF HONOUR OF THE FIRST CLASS for new orchids to

Cypripedium Warocqueanum, from M. G. Warocque (unanimous).
Dendrochilum glumaceum validum, from M Wallaert (unanimous).
Lælia anceps Lindeni, from M. J. Hye-Leysen (unanimous).

CERTIFICATES OF MERIT OF THE FIRST CLASS.

Odontoglossum Pescatorei Lindeni, from M. G. Warocque (unanimous).
Odontoglossum Rossi maximum, from M. Linden (unanimous).
Odontoglossum Wilckeanum album, from M. J. Hye-Leysen (unanimous).
Dendrobium Wardianum giganteum, from M. Linden (unanimous).
Cattleya Trianæ Hyeana, from M. Linden (unanimous).
Cypripedium Godseffianum, from M. Vervaet (unanimous).
Cypripedium villosum alba-marginatum, from M. Wallaert (six votes to one).
Odontoglossum crispum guttatum, from M. J. Hye-Leysen (five votes to two).
Cattleya Trianæ var. Baillauville, from M. Miteau (six votes to one).
Cattleya Trianæ var., from M. Wallaert (five votes to two).
Cattleya Trianæ var., from M. J. Hye-Leysen (six votes to one).
Cattleya Trianæ var., from M. Vervaet (six votes to one).

CERTIFICATES OF MERIT OF THE SECOND CLASS.

Odontoglossum crispum Gohureum, from M. Warocque.
Odontoglossum mulus, from M. J. Hye-Leysen.
Odontoglossum crispum var., from M. Linden.
Cypripedium Barteti, from M. Vervaet.
Cypripedium barbato-Veitchi, from M. Miteau.
Cypripedium lævigatum platytænium, from M. J. Hye-Leysen.
Cattleya Trianæ pallida, from M. Linden.
Cattleya Trianæ var., from M. Vervaet.
Cœlogyne Lemoniana, from M. G. Warocque.

CERTIFICATES OF CULTURE OF FIRST CLASS.

Lælia anceps, from M. G. Warocque (unanimous).

CERTIFICATE OF CULTURE OF SECOND CLASS.

Cypripedium Boxalli, from M. Miteau.
Maxillaria luteo-alba, from M. Linden.

NATIONAL DAHLIA SOCIETY.

The annual meeting of the above society took place at the Horticultural Club, Hotel Windsor, on the 11th inst., Mr. E. Mawley, the chairman of the committee, presiding, among those present being Mr. J. Cheal, Mr. H. Turner, Mr. W. H. Williams, Mr. J. Walker, Mr. T. J. Saltmarsh, Mr. W. Holmes, Mr. J. T. West, Mr. Rawlings, Mr. Tranter, &c. The minutes of the last meeting having been read, the hon. secretary, Mr. T. W. Girdlestone, read the annual report and balance-sheet, which set forth that the society had a very satisfactory season: that the annual exhibition at the Crystal Palace on September 6th and 7th was a very fine one; the most striking feature being the centenary class, as it secured a thorough representative collection of dahlias of every form and type. The centenary conference was also well supported, and some excellent papers were read. The finances of the society were in an equally satisfactory condition, the receipts from all sources having amounted to £160 5s. 6d., which includes the £50 given by the Crystal Palace Company, and the expenditure £135 5s. 6d., leaving a balance of £25 to be carried forward. Of this sum £125 3s. was paid as prizes, the working expenses being remarkably low. The annual exhibition during the present year will take place on September 5th and 6th. Only subscribers to the society of ten shillings and upwards are now allowed to compete. Some discussion then arose as to the expedience of printing the papers read at the Centenary Conference, the report and balance-sheet, and eventually it was resolved to do so, it being stated the expense would be comparatively small, while the papers, and especially that by Mr. J. T. West, on the cultivation of the dahlia, would be found very acceptable to the members of the society. The name of Mr. John Lee was added to the list of patrons. The Rev. Charles Fellowes was re-elected president. Dr. Hogg, Dr. Masters, and Mr. W. H. Cullingford, Mr. H. Glasscock, Mr. J. Shirley Hibberd, and Mr. W. Keitch, vice-presidents, and the following were appointed a committee of management for the ensuing year: Mr. E. Mawley, chairman; Mr. W. H. Apthorpe, Mr. J. Burrell, Mr. H. Cannell, Mr. J. Cheal, Mr. J. Douglas, Mr. G. Gilbert, Mr. J. Henshaw, Mr. W. Holmes, Mr. G. Paul, Mr. A. Rawlings, Mr. T. J. Saltmarsh, Mr. J. Tranter, Mr. H. Turner, Mr. J. Walker, Mr. T. S. Ware, Mr. J. T. West, and Mr. W. H. Williams, with Mr. T. W. Girdlestone as hon. secretary and treasurer. A hearty vote of thanks was passed to Mr. T. W. Girdlestone for his services in these capacities during the past year. Mr. Girdlestone, in acknowledging the vote, said it was a great compliment paid to the society, that one of the vice-presidents, the hon. secretary, and a member of the committee have been invited to read papers at the Dahlia Conference to take place in connection with the Royal Horticultural Society at Chiswick in September next. The schedule of prizes which had been re-cast by the hon. secretary was then considered, and some modifications made. A proposal to continue the centenary class of last year was lost by a narrow majority. The schedule for the present year is one of a very comprehensive and satisfactory character, and should result in a highly successful exhibition in September next.

TRADE CATALOGUES.

HENDER AND SON, 63, OLD TOWER STREET, PLYMOUTH.—*Vegetable and Flower Seeds.*

WEBB AND SONS, WORDSLEY, STOURBRIDGE.—*Farm Seeds.*

W. PIERCY, 89, WEST ROAD, FOREST HILL.—*Summer and October Flowering Chrysanthemums.*

KELWAY AND SON, LANGPORT, SOMERSET.—*Flower, Vegetable, and Farm Seeds.*

B. WALLACE KNIGHT, BATTLE, SUSSEX.—*Vegetable and Flower Seeds.*

AGRICULTURAL AND HORTICULTURAL ASSOCIATION, 3, AGAR STREET, STRAND, W.C.—*Reliable Farm Seeds.*

COOL CULTIVATION OF TROPICAL PLANTS.

CYCADS.

THE fewness of the Cycads met with was disappointing. I believe that everyone of the African and most of the Australian species would thrive on the Riviera. Mons. Dognin, whose garden is the richest in beautiful and rare plants, and the most perfectly planned I have ever seen, arranged a group of Cycads against a large bank of stones, planting them with large Bromeliads, Aloes, Opuntias, Agaves, &c., and backed with large Magnolias, *Persea*, *Cocos* and tall massive Bamboos. All the Cycads are in good health, their names being as follow :—

C. siamensis; a large stemmed specimen with a fine head of leaves.
C. revoluta; healthy in shade.
Dion edule.
Encephalartos Altensteinii.
,, *horridus.*
,, *Lehmanni.*
,, *villosus.*
Macrozamia spiralis.
,, *Macleayi.*

In the same town, Cannes, there are also good healthy plants of *E. Caffer* (E. longifolius), and in Mr. Hanbury's garden at Mentone, there is a fine example of *E. horridus*, var., which bore three fine cones at the time of my visit. *Dion edule*, on the lawns at Monte Carlo, was in fine health, but *Cycas revoluta* was unhappy.

BAMBOOS.

After the Palms, the most tropical feature in the gardening of the Riviera is the Bamboos, which are largely used in the composition of the best gardens, both public and private. To a northern gardener the elegance and grandeur of some of these Bamboos constitute some of the chief charms of the Riviera. Some of the specimens are of very large dimensions, as for instance one of *B. vulgaris*, in Baron Vigier's garden at Nice, which measures 40 feet through in every direction and is 35 feet high. It contains hundreds of stems or canes, each 3 inches in diameter, and straight and smooth as a gun barrel. It is planted on one side of the lawn near the house. As fences, screens, and boundary lines the Bamboos are frequently used, and nothing could be better, as they are quick growers and evergreen. All the kinds noted were in splendid health, and from the manner in which they had taken possession of the ground, it was evident that their requirements were abundantly satisfied. The finest and healthiest examples are in wet ground, often on the edge of water. Most of them are heavily manured annually.

In England we have not hitherto made the most of this beautiful family of plants, many of which may be grown out of doors successfully in all the milder parts of the country, whilst in large conservatories, where they would get protection from cold in winter, a still greater number would be found to thrive. That they are much superior to many of the plants at present used for such positions must be evident to anyone acquainted with the extraordinary elegance and grace of a well-grown bamboo.

The Kew collection comprises over 50 named sorts, a few of which are tropical, whilst the bulk of them are either quite hardy or require only the temperate conditions supplied by the winter garden.

The names of Bamboos are as confusing as are those of garden palms. In one as in the other it is only very rarely that the plants flower under cultivation, so that many of the names, which are given by nurserymen, can only be problematical. For garden purposes this would not be of much consequence, the difficulty arising only when growers do not agree as to what names the plants shall bear.

Now that so many kinds of Bamboos are in cultivation under favoured conditions on the Riviera, it would be worth while to watch them, and as they flower, get them properly determined.

It is generally supposed that nearly every member of the Bamboo order perishes immediately after flowering. There are many recorded instances of this having occurred. But with regard to a considerable number of the species the exact flowering age has not been ascertained. Some are said to grow 40 years before flowering. Another remarkable fact is that all the plants of one generation flower at the same time, no matter how different may be the conditions in which they happen to be placed. I was told that all the plants of *Thamnocalamus Falconeri* (Bambusa gracilis) of the Riviera flowered and died last year. Numerous seedlings have since sprung up about the old stools, but the latter certainly all perished. This proved to be the case with a plant of *Arundinaria falcata*, which flowered at Kew in 1886

The following are the kinds noted. The names in brackets are what I consider to be the correct names, according to Munro, and others.

B. aurea, Sieb.—A Japanese species, now well known in gardens. It was in cultivation at Kew in 1886, and is here still. It is one of the most elegant of the hardy Bamboos. In the gardens of the Acclimatisation Society at Hyères there is a magnificent specimen with stems 25 feet high, and not more than 1½ inch in diameter. The nodes are prominent, and less than 4 inches apart on the lower part of the stem. When ripe the stems are of a rich greenish-yellow colour. The leaves are small, with a distinct petiole.

B. gigantea (Dendrocalamus giganteus, *Munro*).—The largest of all the Bamboos. The specimen in the Palm House at Kew produces stems 40 feet long and 12 inches in circumference, but wild plants have stems as much as 26 inches round. In the garden at Villa Valetta, Cannes, there is a very fine mass with stems 30 feet high and 4 inches in diameter. It is a native of India.

B. gracilis (Thamnocalamus Falconeri, *Hook. f.*).—A slender and somewhat fragile stemmed plant from the Himalayas. It is not uncommon in gardens as it makes an elegant pot plant. It was plentiful on the Riviera till last year, when all the plants flowered. There is a plant at Hyères called *B. gracilis rustica*, in which the leaves are narrow, with incurved margins.

B. mazelii, Hort.—A fine mass at Hyères and Cannes. The stems are 25 feet high, bright yellow when mature, the nodes prominent and close together at the base, the branches loose, and the leaves short and twisted on the petiole. It looks suspiciously like *B. aurea*.

B. Metake (Arundinaria japonica, *Sieb. & Zucc.*).—Much used in the Riviera, where it is as ornamental as it usually is in England. It is always strongest when grown near water, although it grows well in an ordinary border. At Kew there is a specimen 12 feet high. According to Munro it is known as *B. mitis* in the gardens of Paris.

B. mitis, Poir.—A magnificent specimen on the lawn at Villa Valetta, the stems 30 feet high and 3 inches in diameter at the base, becoming shining yellow with age. The nodes are prominent and about 9 inches apart, the

leaves short and not dense. There is a small plant of it at Kew, obtained last year from Lavallée's collection. It is said to be from Cochin China.

B. nigra (Phyllostachys nigra, *Munro*).—A clump of this, 20 yards through and rising to a height of 30 feet, in the garden of Baron Vigier at Nice, was one of the most striking objects seen on the Riviera; thousands of naked shining blackish purple stems rising from the lawns and losing themselves in the mass of green foliage above. This species is quite hardy in England, but it does not grow to its full height except when in a very sheltered situation, or under glass, as at Chatsworth, where in the large conservatory it is exceedingly handsome.

B. quadrangularis, Fenzi.—A very interesting species from China, with stems 15 feet high by 1 inch in diameter, and distinctly quadrangular; the nodes are armed with decurved teeth-like spines. These dimensions are of a clump 6 feet through on one of the lawns at Villa Valetta. There are plants at Kew, both outside and in the Temperate House. It is a handsome and distinct Bamboo. For an account of it, see an article in *Nature*, vol. xxxii. (1885), p. 391.

B. Quilloi.—I cannot find any information with regard to this plant. Carrière described a Bamboo in the *Revue Horticole*, under the name of *B. Duquilloi*, but Munro appears to have referred this to *Phyllostachys puberula*, included by him under *P. nigra*. The plant known under the above name is represented at Hyères by a large clump with stems 25 feet high, 1½ inch in diameter, bright yellow, with a faint tendency to become quadrangular. We have a plant of it at Kew. It is a most elegant Bamboo.

B. scriptoria, Hort. (B. nana, *Roxb.*).—I believe that *B. scriptoria* of the Riviera gardens is merely a form of the well-known Chinese *B. nana*. It has the same dense habit, thin green canes, and small leaves with the underside glaucous, which characterise *B. nana*. In some of the specimens seen the stems were 9 feet high. A variegated form called *B. scriptionis* is the same as is grown at Kew as *B. nana variegata*.

B. Simoni, Carr.—A beautiful Bamboo, and perfectly hardy in England, as is shown by the fine example in the Cambridge Botanic Garden, and by the plants at Kew. It is also very handsome at Hyères, where the canes are 15 feet high, quite smooth and cylindrical, less than an inch in diameter, and coloured deep olive green. This plant is worth the attention of English horticulturists on account of its elegance and hardiness, and its evergreen character.

B. sulphurea.—Apparently a garden name for a very handsome Bamboo, with stems 18 feet high, 1½ inch in diameter, the nodes 9 inches apart, and the internodes deeply furrowed on one side. When mature the stems are a rich orange-yellow colour. There is a fine mass of it at Villa Valetta. It is also in the Kew collection.

B. verticillata.—This is probably the "Male Bamboo" (Dendrocalamus strictus, *Nees*), a common Indian species, the stems of which, according to Munro, are universally used as lance-staves. The specimens seen were large clumps, the stems 20 feet high, 1 inch in diameter, the nodes at the base a foot apart, the upper ones bearing each a crowded cluster of short leafy branches. When old, the stem is bright yellow. It is a well-marked handsome Bamboo.

B. violescens, Carr.—A beautiful Chinese Bamboo, which was introduced into the Jardin d'Acclimatation in 1870, in the branch of which at Hyéres a fine clump was noted. The stems are 10 feet high, ¾ inch in diameter, much branched towards the top, the internodes somewhat flattened on one side, and striped with violet on a greenish yellow ground. The leaves are glaucous on the under side. Young plants of it are in the Kew collection.

B. viridi-glaucescens, Hort.—One of the handsomest of cultivated Bamboos. It is quite hardy in England, and in France it is one of the commonest. It grows very rapidly, has handsome foliage, transplants easily, and is a first-rate pot plant. It is frequently used in France for the embellishment of entrance halls, and is very effective. The stems of the Riviera plants were over 20 feet high, very slender, the nodes about a foot apart, dark green when young, bright yellow when mature.

B. vulgaris, Wendl. (B. Thouarsii).—Some astonishingly large healthy specimens of this well-known species were met with. Apparently it does not require tropical treatment such as it usually gets. At Hyères, Cannes, and Nice it is especially fine; in the last-named place measuring 40 feet through, and the canes 35 feet high. The plant in the Palm House at Kew must be 30 years old; it has not yet flowered.

Agaves and other Succulent Plants.

The excessive heat and drought of the summer, alternating with the moisture and mildness of the winter on the Riviera, afford exactly those conditions which are especially favourable to the majority of succulent plants. South Africa, Mexico, and the most southern of the States of North America are the homes of the greater portion of these plants, and the nature of the seasons there is very similar to what we meet with on the Riviera. Consequently we find such plants as *Agave*, *Aloe*, *Furcræa*, *Yucca*, *Beschorneria*, *Dasylirion*, *Opuntia*, and other kinds of Cacti, abundantly represented there, and thriving, at least, as well as they do in their native haunts. The cultivation of such plants must, therefore, be attended with infinitely less trouble and expense than of Palms, for instance, so many of which require to be frequently and heavily watered during the hot dry summer months. Agaves and Opuntias appear to have run wild in some parts, whilst those in gardens, where they receive a little care, attain often marvellous proportions, and are really magnificent objects. Opuntias are employed in the composition of the beautiful garden at Villa Valetta with the most admirable results. *O. maxima*, a huge specimen, 18 feet through and 12 feet high, its joints 20 inches long by 14 inches wide, coloured milk white with pure white spines, and bearing numerous large purple fruits. This was on a lawn of rich green, and had as a kind of frame work the deep green plumes of *Cocos plumosa* and elegant bamboos. *O. armata argentea*, here and also in Mr. Hanbury's garden at Mentone, is a cylindrical stemmed species, and forms a mass 6 feet through and a foot high, the stems so thickly covered with spines as to be completely hidden. And these spines, which are fully 2 inches long, are each enclosed in a sheath of the purest white. Lying on the top of a mass of stones, the effect produced by this plant is delightful. Those who have learnt to despise Cacti as ornamental plants should see them as they appear on the Riviera.

Agaves are equally grand. To see them fully developed, their huge leaves spreading in all directions and forming a gigantic rosette as large as a house, whilst from the centre rises a mast-like flower-spike, 30 feet high, and crowded with flowers, gives a very different impression from anything which can be effected with pot culture.

Dasylirions are grown very largely, both for indoor decoration—the smaller plants being lifted and sent to Paris, &c.—and for effect in the outdoor garden.

Agaves.

Commencing with the Agaves, the following were the most noteworthy of those seen in the various gardens inspected:—

A. Americana.—Frequent as large groups in gardens; naturalised in many places.

A. Franzosinii, Hort. Hanbury.—A very fine plant, as large as *A. Salmiana*, with glaucous leaves. It is probably new.

A. glaucescens, Hook.—Very healthy at Cannes. When well grown this is a handsome Agave. Its leaves are very soft and succulent, and are easily damaged.

A. Ixtli, Karw. (*A. rigida*, Mill).—Large specimens at Cannes and Mentone, the leaves about 5 feet long; they are, therefore, the variety called *A. elongata*, Jacobi.

A. Jacobiana, Salmdyck.—A handsome broad-leaved plant, in Mr. Hanbury's collection.

A. potatorum, Zucc.—Some grand plants at Cannes, almost double the size given in Mr. Baker's description.

A. Rumphii, Hassk.—Mr. Baker refers this to *A. vivipara*, but the plant under the former name in Mr. Hanbury's garden looks like a gigantic *A. rigida*. It is a very fine Agave, the leaves about 5 feet long and very numerous.

A. Salmiana, Otto.—In the gardens at Villa Thuret there is a magnificent specimen of this fully 10 feet high and wide. At Mentone it was in flower, the spike 30 feet high and a foot in diameter at the base. A variety called *latifolia*, also at Mentone, had a flower-spike several feet higher and thicker. The pair formed a magnificent spectacle in Mr. Hanbury's garden. I was told by the gardener at Villa Valetta that this species and *A. potatorum* when about to flower develops first short lateral flower-spikes and in the year following a terminal and final spike. A plant of *A. salmiana*, var. *variegata*, bore several of these lateral, almost basal, spikes at the time of my visit.

A. Scolymus, Karw.—Flowering at Mentone, the spike 25 feet high.

A. spectabilis, Tod.—Two plants met with under the name of *A. applanata* probably belong to this species. There were large specimens with leaves 5 feet long, very glaucous, with a large dark brown terminal spine. The species flowered for the first time at Palermo in 1879 and was named by Sigr. Todaro. The leaves of *A. applanata* seldom exceed a foot in length.

A. vivipara, Linn. (A. Cantula).—A distinct species more resembling a Furcræa. It has lately flowered at Mentone. W. Watson.

(To be continued.)

Replies to Queries.

B. W.—Cut the cane back to three or four eyes from the base.

Philip may spare himself the trouble of putting cuttings of soft wooded plants in the open ground at this time of year. They will simply rot, that is all that will happen to them. From June to August is the time for cuttings of soft stuff to make roots in the open ground.

Wallflowers.—Viva: It is not unusual for wallflowers to present a gay appearance in February, for they flower at all seasons, as weather permits, and the condition of the plants may be suitable. We have many both of the blood red and yellow in flower now, for the frost has not stopped them. It is too early to sow seed, and you will gain nothing by sowing in heat. Wait until May, and then make a good sowing.

Mimosa elegans.—Gard.: We do not identify the plant by your descriptions, but perhaps can settle the question by saying the Mimosa elegans known to us is the plant better known as Acacia lophantha. This is not strictly, as you suppose, a "leafy" acacia, for the so-called leaves are diluted petioles, the true compound leaf being produced only by the seedling plant. It is a warm greenhouse plant, impatient of cold, and when well grown flowers twice in the year.

Names of Plants.—M. H.: 1, Passiflora Kermesina; 2, Selaginella Brauni; 3, Nephrolepis tuberosa; 4, Phlebodium sporodocarpum; 5, Asplenium præmorsum.—R. K.: 1, Cheilanthes hirta Ellisiana: 2, Cyrtomium caryotideum; 3, Nephrolepis exaltata; 4, Davallia solida; 5, Davallia bullata; 6, Asplenium bulbiferum; 7, Polystichum angulare Wollastoni; 8, Lastrea filix mas cristata, 9, Polystichum aculeatum.—F. Curtis: 1, Helleborus orientalis; 2, H. odorus; 3, H. purpurascens; 4, H. Vernalis.—P. H. F. W.: 1, Morna nitida; 2, Odontoglossum grande, white lipped; 3, Oncidium cucullatum; 4, Lycaste cruenta.—Vexil: 1, Cheiranthus linifolius; 2, Bulbocodium vernum; 3, Narcissus cernuus, drawn out of character by excess of heat and distance from glass; 4, Erinus Hispanicus.

Starting Gloxinia Tubers.—B. H.: For economy of space in the forcing pit start the tubers in three-inch pots, and when they have made sufficient progress to require more space at the roots shift into six-inch pots, which will be quite large enough for them throughout the flowering season. Efficiently drain the pots and use a mixture consisting of two parts each of mellow loam and fibrous peat, and one part each of leaf-mould, well rotted manure, and silver sand. In potting the tubers fill the pots rather firmly with the mixture to within about one and a-half inch of the rim, then place the tuber in position and cover with soil to the depth of rather more than half an inch. As they are potted place them in the propagating pit or forcing house, or in a melon frame, or other structure in which they will have the advantage of a temperature of about 65 deg., and a rather humid atmosphere. You must be careful in repotting them to avoid injury to the leaves.

J. H. L.—No, we cannot approve of mixing the evergreens with the roses, and we would therefore advise you to devote the bed wholly to the latter. The following will form a good selection of roses, the majority of which may be obtained on their own roots: Hybrid Perpetuals—Abel Grand, Baroness Rothschild, Baronne Prevost, Beauty of Waltham, Camille Bernardin, Charles Lefebvre, Cheshunt Scarlet, Comtesse de Serenye, Coquette des Blanches, Countess of Oxford, Dr. Andry, Duke of Edinburgh, Edouard Moren, and Elizabeth Vigneron; E. Y. Teas—Francois Levet, Francois Michelon, Gloire de Margottin, John Hopper, Jules Margottin, La France, Lord Bacon, Madame Alice Dureau, Madame Clemence Joigneaux, Madame Isaac Pereire, Madame Scipion Cochet, Madame Norman Neruda, Madame Victor Verdier, Madame Eugene Verdier, Magna Charta, Perle des Blanches, Pride of Waltham, Queen of Queens, Red Dragon, Star of Waltham, Ulrich Brunner, and Victor Verdier; Teas—Gloire de Dijon, Madame Berard, Madame Eugene Verdier, Waltham Climber No. 2, Camoens, Countess of Pembroke, Etendard de Jeanne d'Arc, Goubault, Madame de Watteville, Mdlle. Cecile Berthod, Pierre Guillot, and Rubens; Bourbons—Baronne Gonnella, Boule de Neige, Louize Darzenes, and Michael Bonnet.

G. B.—In a case like yours, where the produce is too limited in quantity to be sent to distant markets, it is necessary in the production of fruits, flowers, or vegetables for profit to take into consideration local requirements, and grow those things that are likely to be in the greatest demand near home. It is probable that Marechal Niel rose trained over the roof would give a satisfactory return, but not knowing what facilities you have for the disposal of the flowers, we are unable to give a definite opinion as to the advisability of planting that, or, indeed, other of the roses. It is possible that tomatos started early enough in the year to yield supplies of ripe fruit at the beginning of the summer would be the most profitable. The fruit is usually at that season in good demand at remunerative rates, and the fruit not sold may be utilized in the house.

Early Potatos.—Phil: It is a question of temperature chiefly. In open quarters the earth does not acquire heat enough to favour the formation of tubers until the season is far advanced; and therefore in open quarters you cannot have so early a crop as by taking measures to augment the earth heat. Mild hotbeds are in request at this time of year for early potatos, but as you cannot command one you may secure a nice little crop of early tubers by planting close under a sunny south wall. Some compost should be prepared for the purpose consisting largely of the stuff from a heap of burnt rubbish with sandy loam and old manure, hotbed rich soil is not so much wanted as one light, dry, warm, and friable. Draw out a trench next the wall and fill with this stuff and plant, and the wall will ensure a gain in time of ten to fourteen days in the production of useful tubers.

J. H. L.—The following selection includes some of the finest of the hardy perennials. Alstrœneria aurea, Anemone alpina, A. apennina, A. japonica alba, A. fulgens, A. sylvestris, Aquilegia chrysantha, Aster amellus Bessarabicus, A. acris, A. formosissimus, A. longifolius formosus, Caltha palustris fl. pl., Campanula glomerata Dahurica, C. Hendersoni, C. persicifolia alba plena, Coreopsis lanceolata, Delphiniums in variety, Dielytra spectabilis, Dodecatheon splendidum, Doronicum plantagenium excelsum, Gaillardias in variety, Geranium armenium, Geum coccineum plenum, G. miniatum, Helenium pumilum, Hemerocallis fulva, Helianthus lætiflorus, H. rigidus, H. multiflorus plenum, Iberis corifolia, Inula glandulosa, Iris in variety, Lathyrus grandiflorus, L. grandiflorus albus, Lychnis chalcedonica fl. pl., L. Haageana, Mertensia virginica, Œnothera eximia, Œ. Youngi, Papaver nudicaule, P. orientale, Phloxes in variety, Polemonium Richardsoni, Pyrethrums in variety, Rudbeckia Newmani, Senecio pulcher, Scabiosa caucasica, Spiræa aruncus, S. astilboides, S. palmata, Trollius Fortunei plena, and Veronica longifolia sub-sessilis.

Potato Planting.—R. W. B.: Planting may now be commenced with safety but there is nothing gained by planting before the middle of March. The rule generally followed by experienced cultivators is to plant the late sorts first, and the early sorts lasts. By this arrangement damage by frost is avoided.

Planting Hellebores.—Amateur: The varieties of Helleborus niger may be successfully planted either in the spring or autumn, and generally speaking the last-named of the two seasons is the best for moving them. But as you have the positions ready for them, and are anxious that they should be established in them as quickly as possible, your best course will be to purchase the plants towarde the end of February or early in March, and plant them as quickly as possible. Obtain strong clumps as they can be depended upon to bloom satisfactorily in the winter following their being planted, provided the conditions under which they are placed are favourable to their becoming established.

Obituary.

EARLY in February, at the Gardens, Manor House, Aylesbury, of typhoid fever, Mr. EDWARD MAGGS, head gardener to C. Threlfall, Esq. He was well-known in the Buckinghamshire centre as a most successful cultivator of the popular chrysanthemum, his many boxes of blooms being always noticeable for size and freshness, while his free-grown convex bushes were admired as much for the healthy development of leafage with which they were furnished as for the immense heads of blooms they carried. In connection with the sad event of his death it may be stated that during the past four weeks his daughter and the caretaker's wife at the Manor House succumbed to the visitation, while on February 9, his son, aged 15, also fell a victim to the fever, which has been traced to defective manholes, air tainted with emanations of sewage, and water affecting the milk supply of the household. By the death of Mr. Maggs the committee of Aylesbury Chrysanthemum Society has lost an active and valuable officer, and society a robust, active, and most agreeable man.

ON February 4, Mr. JAMES MCINTOSH, who from 1839 to 1868 was head gardener to the Duke of Buccleuch at Drumlanrig, where he was succeeded by Mr. David Thomson. He was brother to the late Charles McIntosh, author of the "Book of the Garden." Mr. James McIntosh had attained the ripe age ninety-four years.

ON February 4, Mr. GEORGE W. YOUNG, for many years gardener to Viscount Barrington at Beckett House, Berks, and the Duke of Buckingham at Stowe. He was recently elected pensioner on the Gardeners' Royal Benevolent Institution. His age was sixty-two years.

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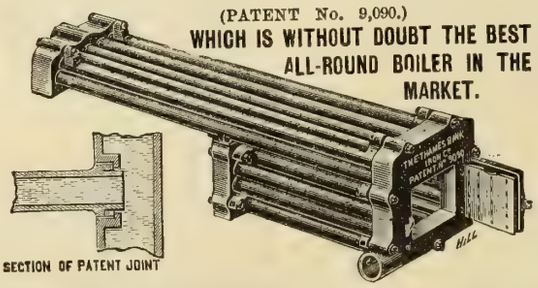
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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
23	S	**Quinquagesima.** 1st Sunday in Lent.	7 1	13 33	5 27	9 6	10 43	4 38	4 57	1 43	2 3	39·7	Cœlogyne cristata ..... Nepaul.	54
24	M	*St. Matthias.*	6 59	13 24	5 29	9 25	11 58	5 16	5 35	2 22	2 41	39·8	Brassavola glauca..... Mexico.	55
25	Tu	Sir C. Wren died, 1723.	6 56	13 15	5 30	9 47	Morn.	5 53	6 12	3 0	3 18	40·0	Cattleya Walkeriana ..... Brazil.	56
26	W	☽ First Quarter.	6 54	13 5	5 32	10 13	1 10	6 33	6 53	3 37	3 58	40·1	Ansellia Africana ..... Fernando.	57
27	Th	John Evelyn died, 1706.	6 52	12 54	5 34	10 44	2 17	7 16	7 43	4 18	4 41	40·2	A. gigantea..... ,,	58
28	F	Treaty of Amiens, 1802.	6 50	12 43	5 36	11 19	3 19	8 12	8 47	5 8	5 37	40·4	Dendrobium nobile..... India.	59
		MARCH.												
1	S	*St. David.*	6 48	12 31	5 37	0 8	4 14	9 31	10 17	6 12	6 56	40·6	D. macrophyllum giganteum Manilla.	60

THE SPRING SHOW of the RICHMOND HORTICULTURAL SOCIETY will be held in the CASTLE ROOMS, 18th and 19th MARCH, 1890. Entries close Wednesday, 12th March. For schedules, &c., please apply to Hon. Sec., J. H. FORD, 22, George Street, Richmond, Surrey.

Auction Sales for the Ensuing Week.

MONDAY, FEB. 24.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Roses, and Greenhouse Plants.

TUESDAY, FEB. 25.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38 and 39, Gracechurch Street; Roses, Greenhouse Plants, &c.

TUESDAY, FEB. 25.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids in Flower.

WEDNESDAY, FEB. 26.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Japanese Lilies, Roses, Plants in Pots, &c.

WEDNESDAY, FEB. 26.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Plants from Ghent, Roses, Fruit Trees, Shrubs, Border Plants, &c.

THURSDAY, FEB. 27.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Lilium auratum and other Bulbs from Japan, Tuberoses, Tigridias, &c.

FRIDAY, FEB. 28.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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The Gardeners' Magazine.

SATURDAY, FEBRUARY 22, 1890.

THE NATIONAL CHRYSANTHEMUM SOCIETY has become so well established as a prosperous institution that it may be considered beyond the experimental stage and one of the necessities of the time and the people. It has entered upon the seventh year of its existence, and as movement usually means going backward or going forward, the steady increase of the membership speaks for the forward movement as having been constant and still in progress. In the mode of reckoning commonly adopted in reports of societies the members would count for some 650, but in the strict method followed in this case, of which we heartily approve, the audit of members that have complied with all requirements is 615, which is a goodly muster of the friends of one particular flower operating in its behalf in one particular place. That within three years the number will run into four figures is a reasonable speculation, and much will turn for better or worse on the events of the present year, for now the Society is to be put to the test of a celebration of the Centenary of the Chrysanthemum. At present the prospect is altogether favourable to success, because the management is a kind of sure going machine, combining courage with caution, and the business method that keeps enthusiasm under control without unduly chilling it. A society that has accomplished great things and is yet in its infancy may be reckoned upon to overcome obstacles, embrace opportunities, make the best of circumstances, and score success with a margin over for continuation of the energy. The cash received and accounted for in the past year amounted to near upon a thousand pounds, of which, it may be observed, there is not much left in the way of balance; but the fountain of power is in full action; the amount required of each separate member is but a trifle; and the resources other than subscriptions appear to augment as success brings friends from various quarters. The report of the annual meeting we placed before our readers last week will afford many particulars illustrative of these points.

When the Society was projected as an expansion of a local organization, there were not wanting those who doubted the necessity and even the possibility of the thing. We could find some of those amongst the most active of the present friends of the affair, and the writer of this was one of the number. The logic of facts has settled several serious questions; we may look back now, perhaps, to find instruction on the difference between articles of faith as the outcome of items of knowledge, and those that appear equally true where knowledge is divorced from speculation. Had the project been represented by any average intelligence, the failure that was feared would, in all probability, have been realized. But the talent, the spirit, the perseverance, the temper requisite were all ready for the purpose, and the leader of the party made no mistake when he measured his strength for the work he had to do. For how long Mr. William Holmes, the originator and organizer, may be enabled to continue devoting so much of his time and energy to the work as it constantly demands it is not for us to form an estimate, but as societies that live by their usefulness have a way of living after their makers have parted from them, the future of the N.C.S is a matter of serious concern. It should continually grow and prosper; and henceforth needs only good management to do so, for the advantage of the cause and to the credit of all engaged in its service. It has made no mistakes as yet, and our hope is that it will keep and improve the distinction it has thus secured.

As imitation is (or at least is said to be) the sincerest form of flattery, the Society may be regarded as highly complimented by those who copy its rules and adopt its plans, and more especially act upon its decisions in respect of varieties and standards of merit, without acknowledging indebtedness or in any way contributing to its success. Not all that borrow its light do this; for a certain number of local societies have become "affiliated" with the central body, and make ample return in various ways for the advantages they derive from the association. Correspondence of action in societies representing closely related interests may be considered mutually beneficial as a rule; but divergence may be justified when there are separate schools of taste or thought concerned in the matter, for it is not to be expected that parties having different ends in view should be able to run together. But when the ends are identical, and the means differ only as difference of locality may render necessary, co-operation is much to be desired, and many societies that copy the general scheme and all the leading features of the National system would do better every way were they to throw in their lot with it so far as the recognized affiliation implies, which certainly does not militate against what is termed autonomy. Another small trouble the National might find, perhaps, is the carping criticism to which it is frequently subjected in the columns of the horticultural papers. It appears to be often apparent to writers in these prints that their proper mission is to invent impediments to horticultural progress; or it may be that personal rivalries and jealousies obtrude with too great force to permit of calm discussion with a view solely to advance the cause in which all profess to be interested. However we may explain the fact, a fact it is that this Society meets with less than justice in quarters where its aims should be fully understood, and its endeavours to accomplish those aims should command something like sympathy. It is probably not greatly prejudiced by the small fret of opposition it has to encounter. We remember the International Potato Exhibition was nagged at in a reckless, and often savage, manner; but for all that it attained to complete success and accomplished the object it had in view in the course of its twelve years' labours, leaving the world the richer for its devotion to the public welfare in the matter of raising, selecting, and cultivating one of the staple foods of the people. The National Chrysanthemum Society will probably suffer but little from misrepresentation and hypercriticism; and those who indulge in whims that lack the

principle of justice will probably prove to be the greatest losers in the end.

The pleasant view of the subject will in the end prove the most profitable. In this year 1890, we are invited to celebrate the centenary of the actual introduction to this country of the famous Purple Kiku that, *malgre* all miscellaneous chronology now stands forth as the first practical chrysanthemum. The celebrations of last year coincided with the hundredth year of the transference of the plant from China to Marseilles, and it was consistent with the facts for our own Royal Society to make a feast and for the continental societies to take their share in the excitement and rejoicings. We do not forget that certain members, who bear a burden of responsibility for the National were amongst the workers at Chiswick, and contributed in a conspicuous manner to the success of that interesting gathering. It will be no less than a duty, as we do not doubt it will prove no less than a pleasure for many of the representatives of the R.H.S. to lend their aid as may be seasonable and possible, to the event that is to give a special character to the centenary operations of the National Society.

Having glanced at the future, the place of meeting is forced upon our attention with the question, How long will it answer for the actual business and the complete gratification of the promoters? It cannot be rash to say that it will not last for ever. The proprietors of the Royal Aquarium have been so generous to the Society that a certain gratitude may be considered a necessary part of the general policy. But the fact remains that the edifice in which the Society's exhibitions are held is not ideally perfect for the purpose; for the daylight is defective, the mechanical arrangements awkward; the pictorial effect that should be secured is impossible, while a certain agitation of the atmosphere, consequent on other business that is usually in progress there simultaneously with the floral exhibition, disturbs the mind, and causes the flowers to appear not so much as an integral part of the scene but an intrusive element that is out of place amongst acrobats and forms of merriment that are distinguished less by wit than by noise. It is well sometimes to let well alone, but the well in this case is not well enough, and while it must be acknowledged that the arrangements subsisting thus far have been advantageous to all parties, the growth of the Society will necessitate a divorce, and will also ensure the means of accomplishing it. Every day now, as the season advances, will enlarge the argument for a meeting place in a central spot for horticulture, and the arts that naturally associate with it, and that are now, as regards local representation, injuriously affected and in a certain sense homeless. One earnest step taken towards the establishment of a central nest would, we cannot doubt, ensure a spontaneous movement of co-operation that would overcome obstacles and ensure success. And it does appear at this time, that if there is to be a movement of any kind that way, the burden is on the friends of the R.H.S. to attempt the initiation.

MR. WILLIAM SORLEY has been engaged as head gardener to Baron Schroder, the Rookery, Nantwich, Cheshire.

MR. R. WEST has been engaged as head gardener at Jennings Park, Hunton, Maidstone, the residence of J. B. White, Esq., M.P.

MR. H. IRELAND has been engaged as head gardener to Viscount Portman, Wentworth Lodge, Bournemouth.

MR. M. HARTWELL has been engaged as head gardener at North Hall, Wigan, the residence of Colonel Silvester.

RICHMOND HORTICULTURAL SOCIETY'S spring show, Castle Assembly Rooms, March 18 and 19. Summer show, June 25.

BERLIN INTERNATIONAL HORTICULTURAL EXHIBITION to be held from April 25 to May 5, will include illustrations of the geography of plants, under the superintendence of Professor Ascherson.

ANTWERP EXHIBITION OF GEOGRAPHICAL AND COMMERCIAL BOTANY announced to be held during the current year has been postponed till 1891.

APPLES IMPORTED during January amounted to 201,880 bushels as compared with 243,265 bushels in the corresponding month of last year.

MR. J. ELLAM has been appointed superintendent of the University Parks, Oxford, in succession to Mr. W. H. Baxter, who has retired on a pension.

IMPORTATION OF POTATOS in January show an immense falling off as compared with the corresponding month of last year, the quantities being 51,415 cwt. in 1889, and 15,722 cwt. in 1890.

ROYAL BOTANIC SOCIETY has issued schedule of prizes for the exhibitions of the forthcoming season. The dates of the shows are: March 26, April 23, May 14, June 11.

ONIONS IMPORTED in January amounted to 279,255 bushels, and in the corresponding month of 1889 to 340,762 bushels or a falling off of 61,507 bushels.

GHENT CHRYSANTHEMUM EXHIBITION will be held under the auspices of the Société Royale d'Agriculture et de Botanique, from November 16 to 19; the schedule contains upwards of fifty classes and these are open to foreigners as well as Belgians,

CENTENARY OF THE INTRODUCTION OF THE CHRYSANTHEMUM to Britain in the year 1790 is now fully provided for by the arrangements of the National Chrysanthemum Society.

EDINBURGH CHRYSANTHEMUM SHOW will be held under the auspices of the Scottish Horticultural Association, on November 20, 21, and 22. The schedule is comprehensive and liberal in character, the prizes amounting in the aggregate to about £300.

CHINESE PRIMULAS in Messrs. Carter and Co.'s nurseries, Forest Hill, are now in exhibition condition, and those who can make it convenient to call will find a pleasing display of these and other seasonable flowers.

SPRING ADVANCES SLOWLY, the east winds having established a successful opposition. In many parts of London thorns are in full leaf, and lilacs nearly so. Amongst the more conspicuous plants in flower are the winter aconite, Anemone blanda, Erica carnea, Scilla bifolia, snowdrops, crocuses, snowflakes, Saxifraga ligulata, S. sancta, and S. oppositifolia, Nuttalia cerasiformis, a few trumpet daffodils, wallflowers, and primroses.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—This society makes healthy progress, the members are steadily on the increase, and the meetings are well attended. On January 28 a paper on "Odontoglossoms" was read by Mr. H. Brown; and on February 11, one by Mr. W. M. Alexander, on "The Cultivation of Soils for Garden Crops." This paper was followed by a capital discussion, and was thoroughly enjoyed by the members present.

MISSOURI BOTANICAL GARDENS.—The first annual report of the director, 1889, has just reached us in the form of a neat octavo pamphlet. It is of great interest as a record of progress made in carrying out the will of Mr. Shaw, under which the trustees of the Garden act as such, a school of botany being one of the special features. Amongst other things accomplished we note the establishment of six scholarships for garden pupils of the Missouri Botanical Garden, to be available on and after April 1, 1890, such scholarships to be awarded by the director of the Garden on the results of competitive examination to young men between the ages of 14 and 20 years. The report is signed by William Trelease, director, St. Louis, Mo., January 14, 1890.

ROYAL AQUARIUM EXHIBITIONS, 1890, nine in number, are provided for in a series of prizes that are calculated to attract a lively competition. The dates are: March 12 and 13; April 29 and 30; May 21 and 22; June 27 and 28; July 29 and 30; September 10 and 11; October 15, 16, 17; and November 11 to 14. In 1891 the winter show of chrysanthemums is fixed for January 7 and 8. It is included in this list as virtually one of the 1890 series. The June show will include Roses and Pinks; the July show, Carnations and Begonias; the September show, Early Chrysanthemums, Dahlias, and Gladioli; and November 11 to 14 will be devoted to the Centenary of the Chrysanthemum, comprising competition, conference, and fete. To make things easy at the Centenary meeting, competition will be in action on two days only. Persons interested in these exhibitions may obtain schedules from the Royal Aquarium, Westminster; or from the Superintendent, Mr. William Holmes, Frampton Park Nurseries, Hackney.

ORCHID NOTES.—REICHENBACHIA.

THE tenth number of the second volume has been published; and maintains the reputation of those that have preceded it. The first plate is a very fine one of a white cattleya grown under the name of

CATTLEYA LABIATA WARSCEWICZII ROCHELLENSIS. It is a beautiful variety; the sepals, petals, and lip beautifully wavy and fringed. One is apt to get confused amongst the numerous types of C. labiata; but the true C. Warscewiczii has now been decided to be the forms grown in gardens under the name of C. gigas, C. imperialis, and C. Sanderiana. The pale forms of C. Trianæ have been distinguished as C. Warcewiczii. There are, of course, numerous white forms of C. Trianæ; but they produce their flowers in the winter or early spring months whereas the forms of the true C. Warscewiczii flower in June, July, and August. The beautiful variety figured is a form of the C. gigas tppe; and is in the possession of Mr. F. L. Ames, of North Easton, Mass., U.S.A. All the group are shy in producing their flowers unless they are grown in a light position near the roof-glass of the Cattleya house, and I have found that they flower most freely when on blocks; but, of course, in that state they require much more attention as regards watering, &c. Planted in the usual teak baskets they also flower fairly well, and some varieties flower more freely than others. The type is very vigorous in growth forming large leaves and pseudobulbs. All the shy flowering species require a good season of growth; and a decided period of rest with the temperature low and the plants well on the dry side at the roots.

ODONTOGLOSSUM TRIUMPHANS.—A fine dark form of this is figured. It is one of the most beautiful of the yellow-ground species of this large genus, and forms an excellent contrast to the white and pale rose ground of O. crispum and O. Pescatorei. Several amateurs have written to me at various times concerning this species, it having been found growing with Pescatore's species. It is often imported with that variety, and inadvertently sold for it. It is quite distinct from O. Halli and O. luteo purpureum, or indeed of any other species. Messrs. Veitch state in their "Orchid Manual" that they were informed by Mr. Kalbreyer that an odontoglossum very much like this, if not the same, is occasionally found with O. crispum in the Cordilleras east of Bogota. This is quite a cool house species, and succeeds admirably

grown in pots in the usual peat and sphagnum compost. One good grower uses nearly all fibrous peat for the roots to run into, using sphagnum only for the surface. He treated all his odontoglossums and masdevallias in the same way, and the result in each case has been very satisfactory.

Phalænopsis Casta is figured in the form of a good variety with broad petals. This is a valuable species and supposed to be a natural hybrid, between P. Schilleriana and P. amabilis. The flowers have the well-rounded form of P. amabilis, the leaves being spotted or blotched, and the flowers lightly flushed as in P. Schilleriana. In reference to the difficulty of growing the moth orchids in some gardens; the Editor states that "locality has much to do with the well-being of these plants, otherwise how can it be explained that, when treated in almost precisely the same way, they flourish in one part of the country and languish in another?" Probably there may be some truth in this, but a great deal of the success obtained by some cultivators has been owing to the method of culture pursued by them, and the great pains they have taken to give them the right treatment. Phalænopsids are as easily grown as any other orchids, if they can be kept in continued good health; but when they once receive a check they do not recover quickly. The winter temperature of the house should be about 65 deg., less or more according to the weather; it may fall at night to 60 deg. in cold weather without injury. The summer temperature 65 deg. to 70 deg. as a minimum. The atmosphere need not be very moist in winter; indeed Mr. Searing, who grew this class so well for the late Mr. Partington at Cheshunt, kept the atmosphere well on the dry side through the winter, and he shaded closely during hot sunshine in summer. It is not desirable to allow the spikes to remain on the plants too long, as this undoubtedly has a tendency to weaken the plants and acts disastrously by causing the back leaves to become yellow, and as a consequence they have to be removed. A very slight error in the cultural details seems to check the growth of the plants, and when this occurs it is a long time before they get into vigorous health again. If I had my choice I would rather purchase very recently imported plants than old established ones however healthy the latter might be. The recently imported plants grow larger and better daily, while such as may have attained to their full growth would enter into a state of decline, perhaps might even grow the wrong way, decreasing instead of increasing in size.

The true Oncidium tigrinum is well figured from Mr. Pollett's collection at Bickley. This species has become rather mixed with quite another and distinct species, O. splendidum. They are both grown in Mr. Pollett's collection, as I saw the true splendidum there the other day finely in flower. This is certainly the plant described by Lindley in the "Botanical Register," 1841, mis. 174, as "a fine species imported from Mexico by Mr. Barker. It has very large flowers of a clear but pale yellow on the lip, and rich brown spotted sepals and petals." He named it O. Barkerii. The true plant is also figured in "Orchid Album," tab. 137. Dr. Lindley remarked that it produced four or five flowers on a spike, whereas the editor of "Reichenbachia" says it has produced sixty, a fact which proves conclusively how much we have advanced in cultural skill during the last fifty years. I find it succeeds best kept quite cool during winter with the Mexican Lælia majalis and L. autumnalis; and we give only enough water to prevent the bulbs from shrinking. When they begin to grow we place them in a light position in the Cattleya house.

J. Douglas.

Literature.

The Origin of the Aryans. By Isaac Taylor (Walter Scott).—Many as are the obligations of the studious to Dr. Taylor for the elucidation by his learning and critical talent of many a knotty question, he has not at any time rendered a more conspicuous service to anthropology, in the larger sense of the term, than in this neat essay on the Aryans. It is an example of industry in marshalling facts, keenness in dissecting them, of synthesis in piling up definite results, and of caution against error and exaggeration. He sets before us all the leading proposals for the explanation of the relations of the Aryan races and languages, points out their strong and their weak points, and the blunders of authors who have trusted too much to evidence of a special kind while neglecting other evidence of equal or greater importance that might have saved them from damaging the inquiry and their own characters by their unwise partialities. But he is no destroyer for destruction sake; he builds upon the sepulchres of the fathers, and in the end we obtain a clear view of the beginnings and the progress of the European peoples and of their near relations—the peoples of India and Persia. Dr. Taylor arrives at his conclusions by the good Baconian method, and having secured them is ready to nail his colours to the mast and stand by his guns, no matter how fiercely the battle may be fought with him and around him. Professor Max Muller is not allowed to have it all his own way by this flint and steel philosopher. Here is an extract from page 309—it is a model of concentration: "The primitive Aryans were not, as was formerly supposed, a semi-civilized race who, in the bronze period, some fifteen centuries B.C., emigrated from Asia into Europe, but they were rather the lineal descendants of the neolithic people who had occupied Europe for unnumbered ages." In forty-five words all the learned disquisitions on migrations westward from Eastern Asia are knocked on the head and put out of sight. Whether it should be so we do not say, but we can properly refer to the book for the evidence, and as to the rest, should we live long enough to see the matter settled, we shall hope to agree with whatever settlement is arrived at.

Orchids; Their Cultivation and Management. By W. Watson and W. Bean (Upcott Gill).—This excellent book is near completion, and will be an important addition to the horticultural library. Parts 8 and 9 are devoted to Odontoglossum, Oncidium, Paphinia, Peristeria, Phalænopsis, and Plieone; the desciptions are drawn up with care, and the illustrations are plentiful and good.

AMERICAN NOTES.

Orchids for Cut Flowers.

Writing to the *Orchard and Garden*, Miss Taplin says: Orchids are being grown by the thousand for cut flowers, and it looks as if somebody's fingers would be burnt at this business. For in spite of their beauty, many admire them simply because they are rare and costly, and the market is not yet in a condition to stand the immense quantity of these flowers that is being grown.

Croton Alabamensis.

Croton Alabamensis is, says the *Garden and Forest*, now in flower in the propagating house at the Arnold Arboretum. The bright golden anthers of the male flowers make the inflorescence conspicuous and attractive. The great beauty of this plant consists, however, in the contrast between the brilliant green of the upper surface of the leaves and the snowy white colouring of their under surface and of the young branches.

Destroying the Codlin Moth.

At the annual meeting of the New Jersey State Horticultural Society, Professor J. B. Smith, Entomologist of the Experiment Station, read a paper on "Insects Injurious to Horticulture." He stated that of these enemies the codlin moth was the worst to pomaceous fruits. The trees should be sprayed before the larvæ entered the fruits immediately after the fall of the blossom, and repeated twice eight or ten days apart. One pound of Paris green to 500 gallons of water was sufficient. He recommends the Nixon nozzle as being especially good. The Cyclone nozzle was also good, but had but little force. Under no circumstances should a fruit tree of any kind be sprayed while in blossom.

Utilising Orange Blossoms.

A writer in the *Pacific Rural Press* proposes to use the blossoms of orange trees for perfume, and thus realize one more profit from the trees. Every orange tree, he argues, has at least ten times as many blossoms yearly as can or ought to bear fruit. At least three-fourths, if not seven-eighths, of the blossoms can be picked off and worked into perfumery without damage to the orange crop. There is a place on the Mediterranean called Grasse, lying near Genoa, where the manufacture of perfumery from orange blossoms is a specialty —the trees being cultivated for that purpose. Some of the perfumes are exceedingly expensive, one kind of oil made from the orange blossom selling at the rate of 300 dollars per gallon.

Hastening the Ripening of Grapes.

At the suggestion of Professor Maynard, of the Massachusetts Agricultural College, Dr. Jabez Fisher, of Fitchburg, has, says the *Garden and Forest*, girdled one of the two bearing arms of each of sixty Concord grape vines on July 5th last, taking out a ring of bark half an inch long near the trunk of the vine. As a result the grapes on these arms showed color six days before those on the opposite half. They were fit for market September 20th, or some ten days in advance of the others, and the berries were much larger and sweeter. The gain in earliness makes a great difference in the price of the fruit, and later varieties could be grown when thus treated, which would not ripen if left to themselves. The grapes are larger and more attractive, and this would counterbalance the softness of the berries, a condition which the girdling seems to cause.

Destruction of Wild Flowers.

In reference to the destruction of wild flowers, which is engaging considerable attention in America, Professor Bailey, of Brown University, writes to the *Garden and Forest* that it is not uncommon to see large baskets of *Arethusa bulbosa* for sale on the streets of Providence in May. Water lilies are peddled all summer. From their habit and situation they are in less danger of extermination, but these rather rare and local orchids cannot long endure such onslaughts.

Grafting Cucumbers.

A correspondent of the *American Agriculturist* points out some ways in which the grafting of annuals and other herbaceous plants can be made available for special purposes. Cucumbers, for example, may be grown on a high trellis, or around the upper story windows of any building, by training either *Sicyos angulatus* (the Single-seeded Star Cucumber vine), or the Echinocystis (Wild Balsam-apple)—either of which will grow to the desired height. Cucumber seed may then be sown in a flower pot, and when the plant is six or eight inches high it may be joined to one of these wild vines at the desired height. Merely scraping the bark of the two plants and tying them firmly together with any soft material is sufficient. They will unite in about ten or twelve days, or sooner, and produce fruits at a height to which the garden cucumber could never attain.

THE NEW CYPRIPEDIUMS FROM THE EASTERN ARCHIPELAGO.

The simultaneous introduction of Cypripedium Rothschildianum and C. Elliottianum, the one from Papua, the other from the Philippines, is an event of considerable interest as suggesting that in the great island group, extending, as it does, from 20 N. lat. to 10 S. lat., a range of thirty degrees, there must be many more such treasures waiting for the explorer who shall have the good fortune to light upon them. Accepting Mr. Rolfe's decision that the two are but forms of one and the same species, it is important to note that they lie far apart in geographical location. Cypripeds are scattered over the islands and adjoining coasts of the main land, and again in the tropical regions of central and southern America, dotting the western coast as far down as 18 S. lat., that they appear to represent a lost continent of which the Polynesian islands are the still visible peaks. All the Malay, Bornean, and Papuan regions are like virgin soil for the botanical explorer, and promise more than the heart of Africa, by reason of the maritime influences that are so much concerned in the modifications of the vegetable kingdom.

A French Exhibition is being organized to occupy the site of the Italian and Spanish Exhibitions at Earl's Court. The projected Belgian Exhibition is abandoned. The new idea of a French Exhibition appears to find much favour, and will probably be carried out,

Notes of Observation.

STRIKING CHRYSANTHEMUM CUTTINGS.

THE practice of cultivators differs a good deal in the way in which they treat their stock of plants. Some commence taking cuttings in November and December, while others delay doing so until the month of January and the early part of February. A few growers continue the practice of rooting the cuttings in cold pits or frames, but I think the majority prefer to strike them under hand-lights in houses in which sufficient fire-heat is used to keep out frost. Looking at the diversity of the means adopted to secure the same ends, one would expect to find as great a difference in the results. But it is not so, as I have had many opportunities of knowing. I go about a good deal amongst growers for exhibition as well as for private displays, and in the end I have not found so marked a difference as might be expected. When cut blooms are required for exhibition, the success or otherwise appears to depend more on the cultivator being familiar with the behaviour of the different varieties, and on the time of taking the buds, than on any part of the management previous to that time. That the plants must be healthy and strong goes without saying, but that is not sufficient to secure success.

To return to the different appliances used in the propagation of the plants, I may mention that the number of cultivators who patronize the cold pit is diminishing. This is no more than might be expected. The cold pit does well if the weather is mild, but if cold cuttings take a long time to make roots. The most promising lots of cuttings and young plants that I have seen this season are those which occupy temporary frames in houses from which frost is excluded. Those who increase their stock in this way pay the cuttings every attention. On a bright day at the end of January I found the stock carefully shaded from the sun in one garden which I visited. With regard to the time of taking the cuttings, I have amongst my acquaintance several skilful men who are successful exhibitors at the London and provincial shows, and I find for the most part they are quite satisfied if the majority of the cuttings are taken by the first week in February. Where several hundred plants are required, of course some will be rooted by that time; but not many commence taking cuttings in earnest before the middle of January, and seeing what my friends have accomplished in taking prizes in previous years, the plan they follow cannot be far wrong. No doubt there is a good deal of truth in a remark made to me by one of them, when he said if one cannot get a strong cutting early in January it is better to wait a month longer, as a strong cutting put in a month or six weeks later will make a better plant at the end of the season than a weak one that requires a lot of care and attention to get it to form roots earlier in the season.

With regard to the use of bottom heat for striking the cuttings, some growers will tell you that they do not agree with it. But I find that in the case of a scarcity of any particular sorts that they do not forget to avail themselves of it if they find the season of propagation is passing away, and from what I have seen and heard bottom heat is not so objectionable after all. The truth of the matter is, no one can lay down a hard and fast rule in this matter. At some time or other most of us are glad to make a departure in our practice, and so it is with striking chrysanthemum cuttings. Circumstances occur which could not be prevented that make it necessary to secure late cuttings, and for the purpose of making good any loss of time no one need hesitate to employ bottom heat to get them rooted. That, however, is the opinion given by more than one skilful grower I have lately visited. OBSERVER.

GRAPE WEST'S ST. PETER'S.

This fine old grape is well grown at Crowcombe Court, near Taunton. I mention this fact because it is a sort that one rarely meets with, which is much to be regretted, as it is not a difficult grape to manage. It is an excellent cropper and good in flavour, and, what is more, it is a good keeper. When grown for producing late supplies it may be kept sound and fresh until April. Those who find it difficult to prevent the berries of Lady Downes from scalding may with advantage substitute West's St. Peter's. By doing so they will get rid of all anxiety respecting the berries scalding and at the same time get a variety that keeps as well, and but little inferior in flavour. As a late keeping black grape it certainly deserves better treatment than to be altogether lost to our gardens. The crop of fruit which I saw on one vine in the garden just mentioned was sufficient to convince any one that as regards the bearing capacity of the sort it leaves nothing to be desired; yet this particular vine is considerably more than twenty years old. J. C. C.

A GOOD KEEPING ONION.

There may perhaps be differences of opinion as to which is the best onion to sow for keeping, but in my own mind I have not any doubt whatever that the Giant Zittau is the best. I have not arrived at this conclusion after one trial but many, as this sort has been my sheet anchor for late supplies for many years past, and the longer I grow it the better I like it. Sometimes I sow the seed in August and sometimes in the spring. From the earlier sowing I have kept the bulbs sound until the second spring following. My practice is to allow the crop to get well matured in the ground before I disturb them. Any that show indications of being insufficiently ripened at taking-in time I reject for winter and spring storing. Such bulbs are set aside for present use. When a wet day comes I set the men to tie the keepers in ropes, when they are suspended in a shed where plenty of air circulates, but into which severe frost cannot enter. In this position I can keep the sort I refer to quite sound until the month of May and sometimes later. J. M.

LENTEN ROSES.

The Lenten roses, of which we have a rather large collection, are blooming remarkably well this season, and whilst contributing materially to the attractions of the borders in which they have a place, they are yielding a liberal supply of flowers for indoor decorations. Although the flowers of the hellebores now in bloom are not so bright in colour as are those of many of the plants flowering under glass, they are much appreciated for the decoration of the drawing-room and other of the indoor apartments. They are found especially useful for specimen glasses, in which two or three blooms with the accompanying foliage present an extremely elegant and pleasing appearance. This season I flowered several of the kinds in the conservatory, and although they suffered somewhat from their association with the azaleas and other subjects bearing brightly-coloured flowers, I am well satisfied with the results. We lifted good clumps late in the autumn and placed them in an unheated pit, where they remained until they were coming into bloom, when they were removed to a cool part of the conservatory. I do not propose to give directions for their cultivation, but I would mention the fact that they do best when grown in a rather shady position, and in soil with which a liberal proportion of vegetable matter, such as leaf-mould, has been incorporated. The only objection I have to urge against the Lenten roses is the want of distinctness in many of the varieties, some being so nearly alike that it is a difficult matter to distinguish them. Assuredly some of the names that have a place in catalogues might be suppressed with advantage. The following comprise the best of those we have, and with reference to them I would say that they are all perfectly distinct, and very beautiful, namely: Helleborus Colchicus, bright plum colour; H. Commerzieurath Benary, white, freely spotted with crimson, very attractive when growing in a sheltered position or bloomed under glass, but sometimes when occupying an exposed position the flowers assume a greenish appearance, and are not then particularly attractive; H. Hofgarten-Inspector Hartwig, claret purple, spotted with marone; H. punctatus, purple, freely spotted with marone; H. roseus, rose purple; H. roseus punctatus, rose purple, with deep purple markings; and H. ruberissimus, bright purple, one of the most attractive of the several forms. The bright red form of H. colchicus, which received an award of merit at Westminster, is a decided acquisition, and I shall certainly add it at once to my collection.

W. B.

DRAINAGE OF ORCHID POTS.

In the course of the discussion which followed the excellent paper on orchids, read by Mr. Swan at a recent meeting of the Chiswick Gardeners' Association, reference was made to the drainage of the pots in which these plants are grown. In reply to a question upon this matter, Mr. Swan pointed out the results which usually follow a defect in the drainage, and then proceeded to describe the way in which it should be arranged. He said that when the pots are of large size, it is a capital plan to invert other pots of suitable sizes in them. But instead of the inverted pots being put on the bottom of the larger pots in accordance with the practice which generally obtains, he suggested that two or three pieces of crock should be first put in the bottom for the pot to rest upon. This was suggested because it frequently happens that when the rim rests upon the flat; or nearly flat surface, the finer particles of peat or other material washed down when the plants are watered are unable to escape, and in consequence form a sediment, which greatly interferes with the passage of the superfluous water. But by raising the pots on pieces of crock, all risk of the escape of the water being interfered with is avoided. Mr. Swan also strongly recommended the crocks being arranged more or less vertically, instead of in a horizontal direction, as when so placed, greater facilities are afforded for the passage of the roots downwards, as well as for the escape of the superfluous moisture. G.

SNOWDROPS.

In the autumn of 1887 I removed from a certain orchard in Somerset a quantity of snowdrop bulbs to a garden about three miles distant. In the orchard referred to there are large breadths of snowdrops which I had known for many years which every season flowered abundantly. Last year those that I transferred to another home flowered fairly fairly well, but I noticed that the foliage was weak. I was, however, in hopes they would recover from that another year. The reader may judge of my surprise when I say that out of more than three hundred bulbs not one is now alive. Finding that there was no appearance of either growth or blossoms I examined the ground where they were planted, but not a vestige of a bulb could I find. I have been disappointed before in having snowdrops gradually diminish in numbers when planted in fresh positions. But I never before had such a sudden collapse of the whole plantation. J. C. CLARKE.

A CHAIN PUMP FOR EMPTYING CESSPITS.

I daresay that other owners of gardens have been bothered as I have been in getting cesspools or manure tanks emptied to the bottom. A short time back I was in the garden of an experienced friend when he showed me a chain pump he had bought at the Auxiliary Stores, and had found to answer its purpose perfectly. I bought one for Oakwood Garden. My people there at first sight seemed not much taken with it, but now that it is in operation, speak very highly of it. It is simple in construction, and seems to pump everything up. It was new to me, so perhaps it may be so to others. I suppose that it can be had from any horticultural implement manufacturer. The rats and mice ate our flowers in the wild garden, we had therefore to wage war against them, and since October 9 have caught 66 rats and 321 mice. GEORGE F. WILSON.

Heatherbank, Weybridge Heath.

WORK FOR THE BEE-KEEPER.

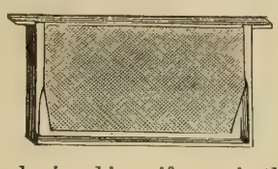
It may appear early to address the gardening class of bee keepers who may read these notes on the necessity of getting all appliances in order for the present year, as each month brings additional work, until it reaches its highest point in the latter part of June and the beginning of July. The very first opportunity should be taken advantage of to overhaul empty hives, spare bars, section crates, or any other bee furniture not now in use. Hives claim first attention, and it is always well to have a spare one or two about during the winter months that may be brought under cover and thoroughly painted both inside and out. Should there be a scarcity of hives, it is not well to delay the purchasing of the same until the bees begin to swarm, as this would add greatly to the labour of the busy season. Should the bee-keeper entertain any thought of making his own hives, it would be well to have a hive by him of the pattern he wished to follow. It is not necessary to have one protected by a patent, as there are plenty of good hives without infringing patents. But good hives can now be bought as cheap as they can be made from houses that make hives and bee furniture their whole study, and keep abreast of the times. Nevertheless it is necessary that all bee-keepers should make themselves useful, and turn their hands to many little jobs if they intend to make it profitable.

When honeycomb has been in use in the body of a hive for five or six years it becomes black, and reduced somewhat in the size of its cells, from the repeated hatchings of brood and the spinning of their cocoons, so that it becomes entirely unfitted for the purpose. If any of these old combs should be on hand they should be cut out of the frames and melted down for wax, and the bars thoroughly cleaned and be refitted with new guide-comb. The kind of bars or frames in use must determine the manner of fixing the comb. The split-top frames are very good; the greatest objection to them is that the groove at the top of the bar forms a ready access to the larvæ of the wax moth to the middle of the combs, and the bees have very little chance of getting to them as they pass in between the quilt, and never expose themselves to the bees. But this objection can easily be got over by shaving the wax down a little in the groove, and puttying up the space which is left, which can be done very quickly, and answers the purpose perfectly.

Bee-keepers who stick to the golden rule of keeping all their stocks strong need never fear any losses from wax moth. As I have before stated, all depends upon the kind of bar in use to the manner of fixing. Some bars have simply a groove or hollow on the under side, which receives one edge of the guide-comb, and is filled up on either side with melted wax by means of a small brush or a spoon doubled up like the accompanying illustration.



The best manner of keeping the wax in the right condition for use is to have it in a glue-pot, and it must be kept quite hot or much waste will result. Every year brings out some improvement in existing methods of using and fixing the furniture, and the method adopted by my friend, Mr. J. H. Howard, of the Model Apiary, Peterborough, which is here shown, is well worthy of being widely known, and I cannot do better than allow the inventor to speak for himself in regard to the same, as given in his catalogue: "For fixing foundation in frame the bottom bar is removed, and the foundation slipped into side and top grooves, and secured with molten wax. The foundation, thus firmly stayed and fixed, is more reliable than any other method; and, by cutting the foundation as shown, drone cells are built in the open space, and a natural (but limited) instinct in bee life is provided for."



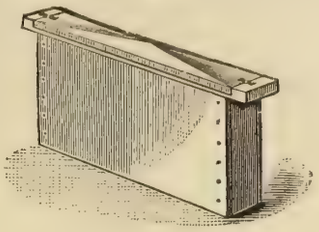
It is well when purchasing hives, if none in the apiary are adapted for doubling, to provide for it, as a hive or two of this pattern is very useful where extracted honey is appreciated. In the height of the honey season when bees are much disposed to swarming, it is very useful to double a hive or two. The operation consists in placing all the best combs in the top part of another hive, and all, or mostly all, the brood combs in the bottom. As soon as what brood is left in the top combs are hatched out honey will be stored in the top combs, from which it may readily be extracted without interfering with the brood chamber. If hives are got in readiness for the different plans all will go well at the busy season.

Seasonable Notes.

If proper care was taken to feed liberally in the autumn and sufficiently soon to allow of its becoming sealed over there is little to be done now except to see that no damp gains access to the quilts and covers which surround them. The golden rule now is to avoid all unnecessary disturbance. But should quilts become damp they should be removed and dried at once, and the cause of the same removed, for damp is a greater enemy than cold. Under proper management feeding should not be necessary for weeks to come, except where bees are known to be really badly off for store, and the best way of testing this matter is to lift the hive. But if all necessary precautions were taken in the autumn there will be no need for this disturbance now. One of the newest ideas in feeding is that of the Howard Comb Filler here illustrated, and here again I cannot do better than allow the inventor to speak for himself in regard to the same.

The only perfect method of filling worked-out combs with liquid stores, which will enable the bee master in a natural manner and for a small outlay to dispense with every other feeder in apiaries, large or small.

The illustration shows a syrup tight box, into which the combs, worked in standard frames, are placed. The syrup is warmed to ten or fifteen degrees above the surrounding temperature, and the box kept filled within one inch of the frame top bar, the lid placed, and with buttons made secure. By some half-dozen (or less) up and down jerky



motions the comb is stored with three to four pounds of stores, according to its capacity; the warmth having expanded the cell-bound air, it most readily escapes, the syrup perforce taking its place. After hanging in a comb-box to drain the frame may be wiped more dry with a sponge, and any syrup taken up, squeezed into the filler or syrup can. If the outside combs of any colony are thus stored when empty, the bees will not starve, and in the spring stimulation is in the most certain and natural manner caused. It may need to advise, *Don't use the syrup cold or too hot*, and any combs not well attached to the frames should be supported as in transferring, or in the last jerk the weight of syrup stored may bring down the comb. When needed, pea or wheat flour dredged upon a stored comb will be found helpful.

Apiarist.

THE WINTER HELIOTROPE.

Petasites fragrans.

The two most obvious characteristics of this plant are, from a gardener's point of view, as diametrically opposite to one another as is conceivable. Its delicious vanilla-like perfume is more than counterbalanced by the rapidity with which it develops into an obnoxious weed when introduced into an orderly garden. And yet its peculiarly grateful fragrance, and flowering as it does in the very depth of the winter, are in themselves features too important to justify the general "tabooing" which the winter heliotrope has undergone. There are very many damp spots, river banks, and shrubberies where it might prove a source not only of pleasure but also of considerable profit.

It is not admitted by botanists to be a true British plant, but the remarkable frequency with which it occurs and its abundance in the southern counties of England, would at first sight induce one to question its alien position in our Flora. *Petasites fragrans*, Presl., is figured in Reichenbach's Icon. Fl. Germ. et Helv. (vol. xvi, tab. 896.), and it appears under the name of Nardosmia fragrans in at least two well-known books (Reich. Fl. Excurs., p. 280), and De Candolle's Prod. v, p. 250., and it is ranked by some writers with the genus Tussilago, but the authors of the "Genera Plantarum" have wisely insisted upon the two genera being kept distinct. The plate in Symes' "English Botany" (last edition, t. 781), appears to me to have been drawn from a very poor specimen, as the scape is represented as only producing eight heads of florets. In warm sunny spots I have seen it producing double that quantity and finer in proportion. The Cornish plants produce their scapes almost as densely packed as the typical Petasites vulgaris. The scapes are usually from six to eight inches long which, however, they sometimes exceed by several inches. The pretty pale green, deeply cordate-shaped leaves are evergreen, and are, in some parts, utilized, after being dried, by ambitious and precocious schoolboys as a "stepping-stone to higher things" in the way of tobacco. The writer can, from experience, vouch for this fact. The leaves are not unfrequently eight inches in diameter. The Winter Heliotrope or, as it is sometimes called, the Sweet-scented Coltsfoot, is completely naturalised in the Isle of Wight, Upper Deal, Kent, Surrey, Middlesex, and in several parts of Scotland. It is generally distinguished from the common Butterbur, Petasites vulgaris, by its flowers appearing simultaneously with, or after, its leaves, in the female flowers being shortly ligulate, and in the plant having a somewhat less robust habit.

According to Bentham and Hooker "Genera Plantarum" there are twelve species belonging to the genus Petasites which are distributed over Europe, Asia, and North America. In England we have three species, native or naturalised. The common one, P. vulgaris, is frequently met with throughout England and in the south of Scotland, but is rare north of the Forth and Clyde. It flowers in spring before the leaves appear. This plant was formerly used medicinally, and was called the "plague flower" on account of its real or supposed efficacy in the time of that calamity. Very like this species, but smaller, with more deeply scolloped leaves and white or cream-coloured florets is P. albus, which is found in various parts of England and Scotland.

Under certain restrictions, these three fine wild plants might be very usefully employed, but the superiority of P. fragrans over its two congeners is beyond a doubt. It seems a very extraordinary fact that it has never been pressed into the services of the floral decorator who in mid-winter is only too glad to get flowers with even only a miserable apology for fragrance. Half a dozen spikes of the Winter Heliotrope

will scent a large room, and will remain in full beauty for at least a fortnight, if the bottoms of the scapes are occasionally shortened by about a quarter of an inch, and the water changed every day.

As a plant for market purposes it is difficult to say how much may be done. It would, however, be a wise experiment—involving no outlay—if a few boxes of roots were placed in a very slightly heated greenhouse in November or very early in December. It is highly improbable that the plant would do well forced to any considerable degree; nor, indeed, is any such course desirable. Bunches of these flowers would assuredly command high prices at Covent Garden and other markets during December and January. It will grow almost anywhere and is readily propagated by division. W. ROBERTS.

[There is a mass of this plant on a shelf of rough rock on the road to the St. Ives railway station that we have seen flowering freely on Christmas Day. The odour is perceptible at a distance of fifty yards from the spot. We have found it thrive on clay land under large trees where its coarse summer growth was useful rather than otherwise. It is figured B. M., t. 1388, with a richer glow of rosy colour than we have ever seen in England.]

THE PHLOX.

By JAMES DOUGLAS.

WHO wants to know about the cultivation of phloxes? A remark of this kind one may expect from some ardent young gardener or amateur; and yet I am convinced there is room for a few practical remarks on this subject.

The phlox is one of the easiest of all our garden plants to cultivate, and just because it is easy it is not so well cared for as it ought to be. I was walking round the garden of one of the old northern florists some time ago with a friend, chatting on various subjects, when all at once he stopped opposite a plant of an old variety of the phlox. It was evidently a venerable specimen, and my friend remarked that he had known the garden for twenty years, and ever since he knew it that same old phlox had grown there. Others plant them in beds or borders. They are excellent planted amongst other herbaceous plants in mixed borders, or even as well-placed isolated specimens; but when allowed to go on increasing in extent year by year the blooms and spikes become smaller. The case is altered when the gardener takes the plants in hand. He digs them up, and with a spade he divides and quarters the clumps, burning some and planting some. This method of propagation is too primitive for a man who cares to see his plants in perfect strength and beauty.

I called upon the Rev. F. D. Horner last autumn when his phloxes were in flower; and, like all he undertakes, his phloxes were magnificent. The air was laden with their perfume; the size, symmetry, of the spikes and form of the flowers were admirable. It is easy to see they were not propagated on the chopping up system; and the ground must have been well manured and deeply cultivated.

Phloxes are propagated in several ways, and almost at any season; but one season and two methods of propagation are enough for our purpose. An easy way to get up a large stock of distinct and beautiful varieties, is by sowing seeds saved from the best varieties early in February. The seeds should be sown in pots or pans in any ordinary potting soil; the pans to be plunged up to the rims in a gentle bottom heat. The seeds do not take long to vegetate; nor must the plants remain long in the seed pans. When they have grown a little, prick them out in boxes three or four inches apart; place them in cold frames as soon as they are established, and when they are inured to the open air plant them out in beds a foot apart. The soil may be deep, and have plenty of rich manure worked into it. I do not know any garden flowers, not even the hollyhock, which appreciate rich feeding so much as our herbaceous garden phloxes.

The early sowing of the seeds, and careful treatment of the plants afterwards, will not be labour lost, as nearly the whole of them will produce spikes of flowers by the month of September. They will nearly all be of good quality if the parentage is good; but I learned a good lesson in the raising of seedling phloxes nearly twenty years ago. We had a collection of the best varieties in cultivation; and one fine warm season seeds were abundant, so I sowed plenty, and raised plants enough to plant a large quarter in the kitchen garden. They flowered well, treated as I have advised, but not one of them was distinct enough to name and send out, although none of them were really wanting in quality. I mentioned to Mr. Robert Parker, then at Tooting, that we had a fine lot of seedling phloxes, and he remarked at once that I would find out that it was easy to raise scores about as good as the parents, but very few distinct and superior to them. I did find this out; and also that it was easy to get a good show of bloom from seeds at little cost.

Named varieties are propagated by cuttings, taken as soon as the young spring growths have increased to a length of about two or three inches, and these are very valuable indeed if planted in small pots singly, and rooted in a hot bed. They are valuable as pot plants, because each of them will produce a good flowering spike the same season, and at the time they are in flower they add greatly to the interest and attractiveness of the greenhouse or conservatory. Their culture is very simple; merely pot them off singly in five or six inch pots, and grow them out of doors as soon as they are well established. The following season they may be planted out in the open ground, in beds two feet apart, and the magnificence of the spikes produced on these two-year-old plants will well repay the cultivator for the pains taken to do them well. If the seedlings are grown a second year, they also must be replanted two feet apart, as such vigorous-growing subjects must not be crowded up too closely together. A few ought to be propagated annually, so that a succession of young plants is kept. The old plants ought to be destroyed after the third year.

THE RHUS OR SUMACH.

THE natural order Anacardiaceæ, comprehends many examples of hardy deciduous trees and shrubs, totally distinct from other forms of vegetation. Growing with great freedom when planted in mixed shrubberies and otherwise in Britain, and being exceedingly ornamental, the wonder is they are not universally planted. Yet, notwithstanding the fact that some dozen species or varieties are constantly held in stock by nurserymen, seldom are any seen, and then only the old, best known Stag's Horn, *Rhus typhina*. The genus may be divided into two groups, as regards both structural peculiarity and general contour of the species named *Rhus cotinus*, by contrast with all others, *R. venenata*, the American poison wood or Swamp Sumach alone excepted, sometimes catalogued as *R. vernix*.

R. cotinus, when well-grown and flowered, is, however, second to no known hardy deciduous shrub, if, indeed, any plant or tree for chaste beauty. Its leaves, borne in whorls around the young shoots, obovate in form, have the merit of changing from deep green to yellow and red in the late autumn months, and with their long stalks adhere to the trees almost up to midwinter, thereby becoming a semi-evergreen in merit. The flowers are, however, most beautiful and remarkable, being disposed in large loose panicles abundantly, comprising masses of elongated hairy pedicels of a pale purplish or flesh colour, changing to a bright pink. These hairy floral plumes originate peculiarly. The flowers, being hermaphrodite, are mostly abortive, few seeds or drupes forming only; hence the pedicels after flowering lengthen in irregular hairy formation. Owing to this peculiar floral display, the French call the plant Arbre aux Peruques, or Sumach Fustet, and the Germans Perüchen Sumach.

Rhus cotinus seems to have derived its specific name from a tree with red wood named by King Cotinus, supposed to grow in the Apennines. It is known in English as "Venus" Sumach but more properly the Venetian Sumach. Probably from the latter is derived its supposed South Europe origin. Said to exist from Spain to Caucasus, and according to Gray and Torrey, in North America, though it certainly does not occur in Gillett's list of American native shrubs, &c. Another very appropriate name for this species is Wild Olive, given no doubt, owing to its slow growth, fine wood, and lucid green leaves. Probably owing to these facts also, fine examples are seldom met with in this country, which explains why it is not more generally planted. Nevertheless, fine examples when in full bloom, are worth a journey to visit and examine them. The two finest examples I know are a strong rambling plant in the Yew "Vineyard," in Hatfield Park, Herts, and a fine bushy specimen, at Earl Darnley's seat, Cobham Hall, Kent, which grows alone on the lawn, on the eastern side of the mansion.

Turning to Sumachs, as better known, I may say the name is derived from Simag, the Arabic name. Probably one of the most stately of the group is *Rhus copallina*, having entire lanceolate glabrous leaves, which are used as tobacco by the Indians of Mississipi and Missouri. This has also long branched spikes of yellow and green flowers. As the Gum Copal Rhus, or Mastic-leaved Sumach, this species deserves more attention, though it is doubtful whether it is kept in stock by the trade in this country. I turn definitely to such species as are included in our nurserymen's catalogues.

R. typhina.—Stag's Horn Sumach, or Fever Rhus; sometimes known as Virginian Sumach. As suggested, this is the species commonly met with in English gardens. Its branches and petioles are very hairy, the leaves being impari-pinnate in shape, and generally assume warm yellow or red tints as they ripen in early autumn. The flowers are generally clustered together, irregular in form, owing to abortive attempts at fertilization, and, having a velvety appearance, have been considered to resemble the young or velvety stage of the growth of stag's horns. *R. t. arborescens*, *R. t. frutescens*, and *R. t. viridiflora* are distinct varieties of this species.

R. glabra, the Glabrous Rhus, or Scarlet Sumach, may be described as a smaller form similar to R. typhina, but without its hairy appearance. The leaves are more spreading and the leaflets wider, being deep green above and glaucous underneath.

R. glabra laciniata is the fern-leaved Sumach of English gardens, and a variety which probably originated in this country, and is one of the most elegantly cut-leaved ornamental plants. Though De Candolle has enumerated three varieties or sports, he did not include this amongst them.

R. Toxicodendron, the Poison Ivy, catalogued by nurserymen, is a distinct species, at once a low, rambling, or semi-climbing shrub. The leaves are simply trifoliate only, and the flowers quite insignificant, proceeding from the axils of the leaves, beneath which they are mostly hidden from view.

R. Osbeckii, in possession of Messrs. James Veitch and Sons, appears as a new variety which I have no knowledge of.

The propagation of these plants is easily effected by means of layers, young shoots, and seeds. They are prone to propagate themselves, however, by pushing up young shoots from the ground around their base, and at great distances from the parent. This is effected by the long, strong roots, which ramble a long way just beneath the surface of the ground, and which are laden with eyes, or buds, ever ready to form young growths. Indeed, the name Rhus, though variously translated, is imagined to be derived from rheo, or I run, in reference to this peculiarity of root growth. The plants thrive best in light, sandy loams. WILLIAM EARLEY.

THE LATE PROFESSOR MC NAB, of Dublin, left a widow and five children, and an influential committee has been formed to raise a fund for their benefit, with Mr. G. Pim, Euston Lodge, Monkstown, Co. Dublin, as secretary.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

ORCHIDS in bloom include Angræcum falcatum; Ansellia africana; Brassavola glauca; Cattleya Walkeriana; Cœlogyne cristata; Dendrobium nobile, D. splendidissimum; Lælia anceps; Lycaste Deppei, L. Skinneri, L. Skinneri superbum; Odontoglossum maculatum, O. pulchellum, O. triumphans; Oncidium Barkeri, O. Cavendishi; Phajus grandifolius; Sophronites cernua, S. grandiflora.

THE HOUSE.

WELL-FURNISHED fern cases form such pleasing objects in the dwelling house that they should have whatever attention may be necessary to keep them in proper order. Within the next few weeks cases of all descriptions should be carefully examined, and those that appear to require rearranging or replanting have the needful attention very shortly afterwards. Previous to disturbing the ferns prepare a supply of suitable soil and clean crocks, for when the cases are replanted both drainage and soil should be entirely renewed. To provide for the ready escape of superfluous moisture is essential, and the crocks ought to be quite clean, but if there is any difficulty in providing a fresh supply those removed from a case can be very quickly cleaned by throwing them into a pail of water and then scrubbing them with a birch broom. The majority of ferns suitable for cases can be grown most successfully in good fibrous peat to which a liberal quantity of coarse silver sand has been added, and the strong-growing kinds succeed admirably in a mixture of peat and turfy loam in equal proportions with sand; but as a rule the safest course for cultivators who have not much experience will be to exclusively employ peat and sand.

CONSERVATORY AND GREENHOUSE,

CONSERVATORY should begin to assume a gay appearance, for a large number of plants are now coming into bloom, such, for example, as Chorozema flava, scandens, varia, and spectabilis; Acacia armata, spectabilis, rotundifolia, dealbata; Boronia pinnata, latifolia; Hovea purpurea; Callistemon rigidum; speciosum, semperflorens; Bossiæa ovata, tenuicaulis, cordifolia; double-flowering Plum, Peach, and Cherry; Camellias, Azaleas, Hibbertia flexuosa, Cytisus of various kinds; also Primulas, Cinerarias, Cyclamens, and Pelargoniums in variety.

GREENHOUSE PLANTS of all descriptions require increased ventilation as the days lengthen and the temperature rises. But exposure to keen draughts must as far as practicable be avoided. Increase the water supply according to requirements.

FORCING AND FRUIT HOUSES.

CHERRIES in the forcing house are very subject to the attacks of black or green fly, and the black fly will sometimes obtain a firm hold before it is suspected, and when at last, by the curling of leaves and other signs, the cultivator discovers the enemy, it is too late to save the crop. A dry heat will always fill cherry trees with fly; therefore syringe freely except when they are in bloom, and give air in plenty at all reasonable and seasonable opportunities. Hand-picking is the only way to deal with caterpillars; every curled leaf should be examined, and the worm removed and killed without injury to the leaf.

PEACH AND NECTARINE TREES in the early house will now need training in and disbudding. Secure wood where wanted, and suppress that which is superfluous. Keep the borders moderately moist only until stoning is completed, and then commence to thin the crop by degrees.

PINES.—If dealt with as advised a few weeks back, the succession plants will now be in the mood to grow freely. Fruiting plants will require a liberal top heat and plenty of water, and as much air as can be given safely to assist the colouring.

STRAWBERRIES swelling their fruit must be liberally supplied with liquid manure. Fruit showing colour will now acquire an admirable flavour with the aid of sunshine, and the more so if they have plenty of air. Keep them as near the glass as possible, and take care that they are well fed. If they get quite dry at the roots the crop will be anything but satisfactory.

VINERY.—Vines that are in a poor condition should be allowed to carry nearly all the wood they make, or at least only those laterals should be removed that have no chance of a due share of daylight. Cultivators often forget that when a tree is allowed to make a free head it will at the same time make a free root; and, on the other hand, if we check the growth above ground by pruning and pinching, the growth below ground will be equally retarded and restrained. Vines with swelling bunches must have every needful care, and especially as to the thinning of the berries—a matter in which every grape grower should seek to become dexterous. For these the day heat may be 70 to 85 deg., night 55 to 60 deg.

CUCUMBER PLANTS in a fruiting state to be kept well fed, and the temperature steady. If any need for linings, let there be no delay in applying them, for if the roots are a few degrees too cold to sustain the demands upon them the fruit will be lost. Always supply the roots with tepid water. The simplest way of obtaining it is to keep a can in the frame and fill it as needful. If any sun heat shut up at 80 deg. or 85 deg.

FLOWER GARDEN AND PLEASURE GROUNDS.

BEDDING PLANTS may be multiplied to any extent with the help of a good hotbed and the necessary plants to begin with. To secure a supply of cuttings, place the plants from which they are to be obtained in a genial and rather moist atmosphere—say, in a frame placed upon a bed of fermenting materials, in a nice sweet condition, or if placed in the coolest part of the stove they will soon throw out a number of small shoots. When these shoots are an inch long they may be slipped off with what is termed a "heel"—that is, removed by separating them at the point where they are articulated to the stem, or they may be cut through with a sharp knife. These soft shoots only require to have one or two leaves removed, so as to make a bare space sufficient to allow of their being planted firmly, and they are ready for insertion. The simplest and surest way of dealing with them is to dibble them firmly into pans filled with silver sand, placing them close together, and then place the pans on the hotbed, and shut them up close. If the heat is about 60 deg., and never exceeds 70 deg., every one of these little cuttings will make roots. When the points of the cuttings assume a lively green hue you may be sure they have formed their roots and are about to grow. Let them grow a short time before disturbing them, and then remove them carefully so as not to injure the delicate roots, and put them singly into thumb-pots, or pot them three or four together in six-inch pots, using for the purpose fine, light, rich soil. A mixture of equal parts mellow loam, very old hotbed manure, leaf-mould, and silver sand, well mixed together, will do admirably for nearly every kind of greenhouse plant at the first potting—certainly for all kinds of bedders.

KITCHEN GARDEN AND FRAME GROUND.

GOURDS are occasionally grown in collections, and add very much to the interest of the kitchen garden, while a few of the smaller-growing kinds are invaluable for decorating trellises, arbours, summer houses, &c. As to the use of gourds, it is well known that most of them may be boiled when young in the same way as the common vegetable marrow. The common pumpkin of the cottage gardens, cut when as large as a good sized turnip and boiled, is exceedingly good, although not equal to the small fruit of the best vegetable marrows. If the seeds are sown in the open ground on small hillocks on the 1st of May a good crop of fruit may be expected; in fact, all the gourds may be grown by this simple method. But it is much better to sow on a gentle hotbed about the 10th of March, and have all the plants potted in good time, and plant out early in May in beds prepared for the purpose and raised a little above the general level, both to catch the earliest rays of the sun and to throw off excess of water during heavy rains.

Routine work of all descriptions should be pushed on as far as possible when the weather is open, so as to have the ground in readiness for the reception of the general main crops of vegetables, which will have to be sown or planted early next month. Ground laid up in ridges in the autumn should soon be levelled down. As ample notes on outdoor work have been given during the past few weeks references may be made to them, and arrears must be made good by extra activity.

VILLA FARM.

A CAREFUL examination of the hives will soon enable the apiarian to determine whether or not the stores are running short, and assistance is necessary to prevent starvation, and also what measures should be taken. The winter feeding differs considerably from the course that must be taken in supplying artificial food at other seasons of the year, and careful attention to the smallest detail is essential. Bees that are suffering from a want of food in the winter, or, to put it more plainly, from hunger and cold, become so inactive as to be quite unable to take food given them in the ordinary way, and the first step will be to restore in some degree their wonted activity. This may be done by first taking them to a warm room or a glass structure in which a moderate temperature is maintained, and in a few minutes pour a small quantity of syrup made in the usual way, and moderately warm, amongst the combs. The bees will soon take to this, and be sufficiently revived to consume further supplies. To give them much liquid food at the present moment would be most injurious, for it would materially increase the moisture in the hives, and probably bring on a bad attack of dysentery, from which a large proportion of the bees would perish, and moreover the food must not be sufficient to induce them to begin storing it. Barley sugar is now generally acknowledged to be the best form in which to administer nourishment in winter, and that prepared at home by dissolving loaf sugar in water and a small proportion of vinegar, and then boiling it slowly until thick enough to become hard when cold, is considered preferable to that purchased of the grocers and confectioners. The addition of about one part of flour to about every five or six parts of sugar is by some of the highest authorities considered a great improvement, inasmuch as the flour renders the food more substantial than when consisting, so to speak, exclusively of saccharine matter. The barley sugar, whether home-made or not, should be broken up into rather small pieces and placed in the hive where it can be readily reached by the occupants. It must, of course, be replenished as often as the consumption renders it necessary, but a large quantity must not be placed in the hive at any time. It remains to be said that when the bees taken indoors have been revived, and have had an opportunity for regaling themselves with the barley sugar, they must be taken out of doors, and to prevent the change of temperature being felt to an appreciable extent wrap some old woollen material about the hive. In most cases the best course will be to take the hives under cover early in the morning, and leave them until the evening.

GRAPE GROWING.

I HAVE but very little to add to J. C. C's remarks on grape growing generally; only to say that he does right in making note of the time of the year in which the grapes ripened, when Muscat of Alexandria, and Black Hambro succeeded well together. Without the additional five or six weeks fine weather after the Hamburghs were ripe the Muscats would be a failure. But this does not alter the fact that success can be attained without the stewing heat to which the Muscat of Alexandria is generally subjected. I am of opinion that better results follow a long season for the Muscat of Alexandria than from an excessively high temperature for a comparatively short season. After the grapes have completed their growth light is of equal importance to heat for the perfect ripening of this best-of-all grapes—the Muscat of Alexandria. I would not have anyone suppose I underrate the value of having either this, or for that matter, any other variety in a house or compartment without admixture; for when that can be done it gives one a great advantage of giving the right treatment at the right time. But J. C. C. is well aware that this is often impracticable, and it may not always be the gardener's fault that several kinds are introduced into one compartment although in many instances it may be. I know of one large establishment where vineries may be counted by the half-dozen where no other kinds but Black Hamburgh, Muscat of Alexandria, and Gros Colmar are allowed a place by the noble owner, and at others equally large almost all known kinds are expected to have a place, in which case mixed houses must be the result. With regard to my success with Madresfield Court Muscat, I do not feel that I stand isolated; as there are many instances of success to be met with, and I am of opinion that as time goes on that these instances will become still more general.

C. WARDEN.

ROSE HEDGES.—About ten years ago the Austro-Hungarian Government planted the sides of a very exposed stretch of railroad, nearly a mile and a-half in length, with hedges of the Provence Rose. The hedges have since reached a height of about six and a-half feet and a breadth of half as much, for it is a peculiarity of the Provence Rose to interlock its branches and twigs. A living wall has thus been formed which effectively protects the track from snow-drifts, while a neighbouring stretch, where the rose could not be planted, is so deeply buried at every snow fall that it costs much labour to clear it. The first cost was very small, and it is believed the hedges will live for thirty or forty years.

PREPARING AND PLANTING GLADIOLI.

MANY amateurs have less success than they desire with gladioli through want of thought in good time of their requirements. Our summer is not quite long enough and is occasionally not quite warm enough, but these defects of the climate we correct by management. In warm sandy soils, and the best climates of these isles gladioli may be planted in the open ground in March and April, and will flower grandly and ripen off well. But in the average climates they want help. This is accomplished by starting them under glass, and the first step thereto is to put the bulbs separately in thumb pots in sandy peat or mellow sandy loam with just enough moisture to coax the roots out and keep them close and warm until the green spears come through. By "warm"—I do not mean hot; the warmth of the greenhouse is sufficient. As the growth advances, keep near the glass, keep well aired and supply sufficient water, but do this gradually so that there is not much given at first, while the wants of the roots are but inconsiderable. In the course of time they are transferred to a frame and hardened for planting; and they are put out in May, advantage being taken of mild weather, and all the better if dull and showery. They are turned out of the little pots without breaking the ball, putting them as deep as may be without burying the green spear, and over each its own pot is placed to protect for a few days, after which the pots can be removed and the ground touched over with a rake to make it tidy, care being taken not to break any of the rising spears.

As for the planting, a rich deep light soil is required, and it should be well broken up and improved so far as may be needful by the addition of half rotted turf and old hot-bed soil: new rank manure should never be employed except as a top dressing for gladioli, and for that purpose it is useful when the plants are well forward in June both to supply food and to keep the roots moist to reduce as far as may be the labour of watering. But water must be given liberally in prolonged drought or the bloom will be a poor one.

Messrs. J. R. Pearson and Sons of Nottingham, illustrate in a pleasing manner the effect of a good plantation of gladioli with a background of trees and shrubs. They want solid accompaniments to compensate for their meagre foliage and to ensure by suitable contrast the full glow and sparkle of their splendid flowers. There is no first-class subject of high floral interest to surpass the gladiolus as we now have it in superb-named varieties. W. B.



BORDER OF HYBRID GLADIOLI, with trees and shrubs for background.

ATMOSPHERIC DUST.

AT the last annual meeting of the Meteorological Society, the retiring president, Dr. Marcet, delivered an address "On Atmospheric Dust," which he divided into organic or combustible, and mineral or incombustible. The dust scattered everywhere about in the atmosphere, and which is lighted up in a sunbeam or ray from an electric lamp, is of an organic nature. It is seen to consist of countless motes, rising, falling, or gyrating, although it is impossible to follow any of them with the eye for longer than the fraction of a second. It is difficult to say how much of the dust present in the air may become a source of disease and how much is innocuous. Many of the motes belong to the class of micro-organisms which are frequently the means of spreading infectious diseases. Many trades, owing to their dusty nature, are most unhealthy. Dust when mixed with air is inflammable and liable to explode. After giving several instances of explosions due to fine dust in flour mills and coal mines, Dr. Marcet referred to inorganic or mineral dust, and gave an account of dust storms and dust pillars in India. He then proceeded to describe volcanic dust, which consists mainly of powdered vitrified substances produced by the action of intense heat. The so-called ashes or scoriæ shot out in a volcanic eruption are mostly pounded pumice, but they also originate from stones and fragments of rock which, striking against each other, are reduced into powder or dust. Volcanic dust has a whitish-grey colour. Dr. Marcet concluded with an account of the great eruption of Krakatoa in August, 1883.

CYPRIPEDIUM ROTHSCHILDIANUM.

So very few really new and beautiful orchids find their way into cultivation now-a-days, that when such an event does take place, it causes much interest among all those who delight in observing the peculiarities of this wonderful family of plants. Considering the large number of collectors who for so many years past have been travelling over all the likely and unlikely places in the tropics and sub-tropics in search of new orchids, and sending them home to their patrons as fast as they found them, it is by no means surprising when we recognise the fact that but few new orchids are now to be found, unless indeed they exist in the heart of Africa, or in the very interior of South America, and a few other places still untrodden by the foot of the white man's collector. It is the chance of some unknown treasures being met with in hitherto unexplored regions which still stimulates enterprising firms to send out their collectors as constantly as ever, and some of the latter are occasionally lucky enough to "strike oil" in the shape of some handsome species. This was the case with the remarkable and handsome Cypripedium Rothschildianum, of which a life-size representation is here given. It is a native of the Papuan Islands, whence it was imported in 1888 by Messrs. F. Sander and Co. of St. Albans, at whose request it was appropriately dedicated by Professor Reichenbach to Baron Ferdinand de Rothschild, of Waddesdon Manor, Aylesbury.

This species is characterised by its strong, deep, green, leathery leaves, one-and-a-half to two feet long, and two to three inches wide, with a sharp and prominent median keel beneath. The stout dark purple scape produces its large and very attractive flowers in twos and threes during the spring and summer months, and they remain in bloom generally from six to eight weeks without showing signs of deterioration. At the base of each pedicel is a large boat-shaped bract, almost as long as the ovary; it is of a pale greenish yellow colour, ornamented with dark purple parallel stripes on the inner and outer surfaces. Both upper and lower sepals—the latter being somewhat smaller than the former, are creamy or pale yellow, longitudinally traversed by broad bands of dark—almost black shining purple which give them a unique and beautiful appearance. The hairy tapering petals have irregularly shaped blotches of dark purple disposed in lines on the creamy surface of the lower wavy-edged portion, while the anterior half is traversed by fine parallel purplish lines which vanish in the slightly dilated hairy tips. The lip is large and projecting, and very much resembles that of C. Stonei in shape, having like it, a deep furrow beneath—a character which I think is not to be found in any other species yet known beside these two. The colour is reddish brown, passing into pale yellow under the front edge of the opening and into ivory-white at the base of the inflexed lobes and underneath. One of the most distinctive characters of this species is the peculiarly shaped staminode which bears no resemblance in shape to that of other known species or hybrids. The staminode which we are accustomed to see generally consists of a flat, more or less forcipate disc (which is really a metamorphosed anther) in front of the column. But in C. Rothschildianum this disc is absent, having in its place a narrow beak-like body fringed with glandular hairs at the sides and more or less cleft at the apex. The basal of this organ is also remarkable. It is very much swollen, and densely covered with dark purple hairs, the tips of which are furnished with whitish glands. The illustration which I was enabled to make from one of many plants which flowered in Messrs. Sander's nursery, shows the natural size and shape of the plants well enough to render description on these points unnecessary here.

C. Rothschildianum grows very freely, and one may soon expect to see it in every collection of orchids. Its elegant flowers will afford a splendid opportunity to test the hybridist's skill, and it is probable that in a few years the orchidaceous world will be astonished when

they behold a remarkable hybrid which has been raised through the instrumentality of this species. It will be most interesting to note what alterations can be effected in the peculiar shape of the staminode, as hitherto all species crossed with each other have not had this organ conforming to one general principle. "*Qui vivra verra*," as Professor Reichenbach used to say.

St. Albans, 11th February, 1890. JOHN WEATHERS.

BUNYARD'S EXHIBITION BROAD BEAN.

THIS is without doubt the finest broad bean for exhibition that has yet been introduced. The pods are not only long and well filled, but they are decidedly handsome. There is no long neck or handle to the pods, nor is there any irregularity in the form from end to end. The number of beans in them is also greater than in any other sort. I had three new kinds under trial last season, but the one under notice was



ROTHSCHILD'S LADY'S SLIPPER, *Cypripedium Rothschildianum* (Divisions striped purplish, labellum purplish-red).

far and away the best in every particular. Those who intend to grow broad beans for exhibition should give the plants plenty of room. They are often too much crowded. It is best to grow them in a single line and the plants eighteen inches apart. One cannot always fix on the exact time of sowing the seed to produce young examples on a given date, as the crop is more or less influenced by the weather. It is therefore a good plan to make two sowings. The best time for doing so when they are wanted in August is the beginning and middle of April, and earlier when the show takes place in July. When I was engaged in exhibiting vegetables I used to depend more on the management of the plants than on the time of sowing. Under any circumstances I reduced the number of pods in each cluster to one, and when I found that the first formed pods were too early, I cut them off, and relied on those further up the stem, as I always found that young samples were more in favour than old ones, even if they were not quite so large. Thoroughly well-grown broad beans cannot be produced suitable for exhibition without care from first to last, any more than any other vegetable. The better the land is prepared early in the winter, and the more attention given the plants while they are young, the better for the crop. About the middle of May they should have a thick mulch of manure laid on the surface over the roots, and in dry weather the mulch should be drawn on one side, and the ground well soaked with liquid manure. If manure water is not available clear water must be given, as the plants must have plenty of moisture. Once the pods cease to lengthen the beans stop swelling, whereas this ought not to be the case until the pods have developed to their utmost length. J. C. C.

HEATING WITH A FLUE.

In answer to J. C. Clarke's inquiry respecting the above: I wrote an article for the G. M. which was published in it about twenty years ago respecting the heating of small greenhouses by a flue. This way of heating I consider the best for small houses, but it went out of fashion about that date, owing, I think, principally to the improper way that the flues were constructed. I have seen many of them that after a few years would not heat the house at all, which was simply because the flues were wrongly constructed. They were in those days generally erected by an ordinary bricklayer who had no idea of its requirements. These men, as a rule, thought that if they constructed a flue, which was generally covered over with an ordinary 9-inch quarry with two courses of brick on edge sides, that this was sufficient to heat the house. But that is not so. About that time I erected a greenhouse 16 feet long and I treated it with a flue which went all around it, and it heated it to my satisfaction. Firstly, the door of the house should be, if possible, at the north end, and the side east, the fire bars of the furnace were on a level with the garden walk, for this simple reason, that there is at all times a current of air moving along the surface of the ground. That being so, if the bars of the furnace are level with that surface, the current of air moving along causes the fire to burn briskly, which is by far better than sinking the fire bars below the level of the ground, for doing so checks the draught. In this house of 16 feet the rise of the bottom of the flue was 9 inches from end to end, which rise caused an extra draught for the fire, and that extra draught also cleared out the soot, for, in taking off one of the quarries for the purpose of ascertaining if the soot was cleared out I found it was comparatively clear of soot. The sides of my flue were two courses of brick on edge, and the top covered over with 12-inch quarries, and not by a 9-inch as was the former fashion. In consequence of this differenee I had the flue 3 inches wider inside and out. I got, therefore, a much larger heating surface, and, moreover, the 12-inch quarries I had made 2 inches thick instead of 1½ inches which the 9-inch were, and they of course retained a much larger heat. It might be asked where these 12-inch quarries may be purchased, the answer to this is: get a carpenter to make a quarry mould for you for 12-inch quarries 2 inches thick, and ask your nearest brickmaker to make for you the quantity you require, and he will willingly do so, and so that difficulty is overcome.

Now to return to the construction of the fire hole, there should be an ordinary 12-inch furnace door and frame, and inside of the fire-hole constructed with fire bricks to prevent its burning away upon the covering over of the fire-hole which should be upon bars. Place two courses of brickwork upon this, get a strong rough galvanized iron pan made 24 by 16 inches and 4 inches deep. Upon it place some thick 24 by 12 Duchess slates, upon these place a course of 2½-inch turves placed with the grass sides downwards. Upon these place 9 inches thick, a mixture of striking soil consisting of equal parts of rotted turf soil, cocoanut-fibre, and silver sand, from the pan and resting upon it insert a ¾-inch copper tube sufficiently long to come from the bottom of the pan to above the surface of the soil, and through this tube pour sufficient water to nearly fill the pan and so continue to keep it nearly full, and occasionally pour in a little to make up for its evaporation. This soil, when the fire is alight, will always be gently warm, and will strike any plants that may be required, and will always germinate seeds. The fuel used in this furnace might be of a very inferior kind, rough slack and cinders from the house would heat it sufficiently and I could depend upon the flue being warm on the following morning, after the fire had been well backed up the night previous with the dust and ashes from the fire-hole. But not so can you depend upon a fire of coke and coal being left in one of the small heating apparatus supplied, which only contain a small quantity of fuel, and before one half of the night is passed the fire is gone out and the house is cold. The iron flue-pipe from the furnace might be 6 inches in diameter, which for a small house would be large enough, and in it, about 3 feet from the ground, should be a slot hole cast in it, and a damper half-an-inch thick inserted and when the fire is lighted to draw it up, pull out the damper, and when the fire is well burnt up and required to be left, put in the damper to about three parts of its depth, and by so doing, the heat is retained in the flue. The cost of the flue is less than that of the heating apparatus, and the cost of fuel is much less, it being of a less expensive character. M. Gardner.

POTATOS, PAST AND PRESENT.

There is a certain section of the public who would like to make it appear that the sorts of potatos grown a quarter of a century ago were inferior to those which have been introduced since, but I am not wholly of that opinion. I do not mean to say but what some of the newer sorts are valuable additions, but we had good potatos before they were known as we have now. It is therefore wrong to conclude that some of the older sorts were not equal to those of more recent introduction; indeed, the fact that some old and well-known sorts are largely grown proves that it is so.

Leaving out of consideration the fact that the old form of Ashleaf is still universally acknowledged to be the best for early crops, I may mention that the Rocks and the old Fortyfold still find favour with some, and are largely grown in allotment gardens. The rule which guides most people in the selection of the sorts they grow is their suitability for the land. No one can say that the rule is not a wise one. Cultivators do not reject the newer sorts because they are new, but because, after trial, they are not found to be suitable for the character of the land they have to deal with. All experienced men know how much the composition of the soil influences the quality of different sorts of potatos. For this reason the question of the character of the land must remain an important factor in the selection of sorts, and while this is so a few of the old ones will in all probability retain their place. At any rate it is not wise to discard them altogether until others have been proved to be better in all the points that constitute a good and profitable potato.

This is a point that can hardly be urged too strongly upon those who intend for the first time to plant large breadths with sorts that have not been proved by them to be suitable for the soil under their cultivation. In such cases it will be better to plant four or five sorts than one, and for future planting to select at least two that prove to be the best.

It is difficult to point out the characters of any that would enable one to judge (without experience of it) as to whether or not it is likely to take a high place on the list of standard sorts. Yet they have their characteristics no doubt, although they are not always apparent. Take the Magnum Bonum for an example. Except for the length of its stems and their erect growth, there is nothing to distinguish it, for there is nothing in the appearance of the tubers to enable any one to form a correct opinion as to its general merits. Yet in many instances it is the principal sort grown for main crops. This is another proof that every sort finds its own level, if I may so express myself, according to its merits, for the particular conditions under which they are grown.

I have no wish to underrate the merits of many sorts that have been introduced within the last decade, or earlier. There are good ones amongst them I am well aware. The Beauty of Hebron is one of them, when grown on land that brings out the floury character of the flesh; while in some cases the Puritan is quite satisfactory. A good all-round sort for main crop will also be found in Reading Hero. But the best of all for late keeping is Adirondack. It is also a disease resister and a wonderful cropper. Moreover, the crop turns out of a uniform size; the tubers are round in shape with a red eye.

Imperator is, without doubt, a potato of the future for main crop. Its cropping and table qualities leave nothing to be desired. The tubers are white, and oval in shape; associated with these excellent qualities is a robust and disease-resisting growth. There would be no difficulty in extending this list to a greater length with high class sorts; but long lists are objectionable, as they only serve to confuse the minds of inexperienced readers. From the sorts I have named, anyone can make a selection that will be quite reliable under ordinary treatment for the main crop.

With regard to the best to grow for exhibition purposes, I have no doubt there is some difference of opinion as to which is the best; but as there is a large number of sorts to select from, one need not make a trouble about it. My choice of twelve would be: *Six Kidneys*—Carter's Surprise, White Elephant, Reliance, Snowdrop, Welford Park, and Cosmopolitan. *Six Rounds*—Reading Russet, Schoolmaster, Porter's Excelsior, Vicar of Laleham, Walker's Regent, and Village Blacksmith.

For those who have time and space there is a good deal of interest to be got out of the production of an early crop of potatos in the open air, especially when there are several sorts under trial at the same time. Those who feel an inclination in this direction may select the following four sorts for planting on a warm border: Sharpe's Victor, Early Border, Snowdrop, and Early Racehorse. These are all sufficiently distinct to merit the positions on the list they usually occupy. However, in point of table quality, neither of them will surpass the Ashleaf type; but as regards productiveness, Sharpe's Victor and Early Border are much superior. Snowdrop is a little later than the two last mentioned; the tubers are of medium size, and decidedly handsome. It is undoubtedly a high-quality potato, with a certain degree of refinement in its character. J. Macdonald.

Native Guano Company favours us with reports on the uses of native guano in the farm and garden. This manure is prepared from sewage. Dr. C. M. Tidy and Professor Dewar direct attention to it as containing an average of 5·0 per cent. tricalcic phosphate of lime and 3·8 per cent. of combined nitrogen.

RURAL PROSPECTS IN PARLIAMENT.

The proposed improvements in the existing Allotments Act that are to be discussed very shortly in the House of Commons will draw close attention from gardeners and farmers. Perhaps there never was a measure for social benefit that all parties in the House were so unanimous about its being ripe for handling. That unanimous views as to the different features of the subject will be held by members it is too much to hope. All shades of politicians appreciate, no doubt, the weight of the rural vote; and barring the "irrepressibles," we may look for a vigorous handling of the question by all in the House. Taking, too, the fact that the great majority of the Conservative party, the whole of the Liberal Unionists, with very few exceptions, and, of course, the Radicals, are favourable to free education, and remembering that that question is also looming in the near future, and may be a burning one this session of Parliament, it is almost assured that the Allotment Act will be the first question of the day.

A Bill, of which Mr. Jesse Collings has given notice, to give facilities for the cultivation of small holdings, and another Bill, notified by the same gentleman, to promote industrial and agricultural education—these Bills serve to link the Allotment Act and a measure for free education very closely together. Directly speaking, all these measures are the consequence of the county franchise. The vote of the rural labourer is worth bidding for.

That the country has been starving, so to speak, for want of such benevolent legislation goes without saying. That such legislation may be blocked by members who feel no interest in anything save Home Rule was proved last session; let us hope wiser reasonings will prevail this time.

The wave of commercial prosperity that is now sweeping over the country will not remain if all factors are not well employed. Trade, shipping, railways, factories, workshops may all be fully employed, but so must rural life. Our foreign butchers' bill exceeds twenty-three millions a-year; our butter bill nearly nine millions; cheese four and a-half millions; eggs three millions; lard and margarine five millions; and fruit eight millions. It is time we learnt how to keep a part of this magnificent foreign revenue at home. To learn that we must have free education, and free education must be based on secular, rural, and agricultural pursuits. These pursuits again will require facilities for the breaking up into small holdings and the free cultivation of the land. The land under allotment culture by the improved act can only be controlled and developed by local authorities. The act which created the County Councils is not a more important one than is the District Councils Bill, as it is only by a system of District Councils that rural affairs can be properly managed. The District Councils Bill was not mentioned in the Queen's speech, so that we must look to independent and free-handed politicians to develop this completion of the County Government Scheme.

A full session on home and domestic affairs to the exclusion of all others (excepting, of course, foreign events that are under discussion) is much needed. Such a session ought to begin by giving the present Minister of Agriculture plenty of work in connexion with rural affairs; and it ought not to end until District Councils and the office of Minister of Education are facts accomplished. Is it not then within hope that the immediate future will see brighter prospects for the rural population?

R. Beale.

New Southgate.

COOL CULTIVATION OF TROPICAL PLANTS.

(Concluded from page 95.)

Beschorneria.

Several species of this genus of *Amaryllideæ* are of frequent occurrence on the Riviera gardens. They are dwarf stemless plants with a tuberous rootstock and tufted habit. On the lawn at Monte Carlo, and in the garden of the Acclimatisation Society at Hyères, some of the specimens measured 8 feet through. When in flower these must make a beautiful display. The general effect is not unlike that of large clumps of *Yucca recurva* or *filamentosa* here.

Mr. Gumbleton states that at least one species of *Beschorneria* is hardy at Scarborough and at Cork.

The kinds seen on the Riviera were :—

B. argyrophylla, Hort. Possibly *B. Decosteriana*, of Baker.

B. glauca, Hort. Very similar to the last named.

B. superba, Hort., Hanbury. Also cultivated at Kew, but not yet flowered.

B. yuccoides, Hook. A plant was so named at the Villa Thuret, but the leaves were distinctly filamentose, a character which is absent in the Kew plants.

Furcræa.

The following were noted in one or other of the various gardens visited. At Mentone, Mr. Hanbury has a good collection of Furcræas, mostly very large healthy specimens.

F. Bedinghausii, K. Kock (Roezlia regia); large plants, with heads 8 feet through on stems 4 feet high. It flowered recently at Villa Valetta. This plant is also cultivated as *F. longæva*, which is, however, a very different plant. It is also represented in Mr. Hanbury's collection under the erratic name of *Yucca Parmentieri*.

F. cubensis, Haw., and its variety *inermis*.

F. flavo-viridis, Hook.

F. gigantea, Vent. The species which yields Mauritius hemp.

F. Lindeni, Jacobi. A magnificent plant with leaves 8 feet long, coloured rich yellow and green. On a lawn at Monte Carlo.

F. longæva, Karw. Several fine specimens in gardens at Cannes.

Beaucarnea and Dasylirion.

Two species only of *Beaucarnea* were noted, viz., *B. longifolia*, Baker, of which some very fine specimens were seen, the most striking perhaps being at Villa Valetta. Its stem is 8 feet high, 2 feet in diameter at the base, and it bore no less than 12 distinct heads of foliage, no doubt the result of its having flowered. What I took to be the same species was a plant in flower at Hyères. It had no visible stem, but a large rosette of recurved strap-shaped leaves about 4 feet long, in the centre of which stood a massive pyramid of flowers fully 6 feet high and 2 feet through at the base; it was a female. *B. recurvata*, Lem., was noted in several gardens and was in flower at Mentone. It is an elegant plant, much less coarse than *B. longifolia*. It is known generally in the Riviera as *Pincenectitia tuberculata*.

Dasylirion is a popular garden genus. Thousands of plants, young and old, were noted in the various nurseries visited, whilst in private gardens some very fine specimens were seen. *D. acrotrichum*, Zucc., is the commonest. At Hyères it was labelled *Bonapartea gracilis*. *D. glaucophyllum*, Hook., was in flower at Hyères; the plants exactly like that now bearing a spike in the Kew collection. It is known in the Riviera as *D glaucum* and *Bonapartea glauca*. *D. graminifolium*, Zucc., is an elegant little species with scarcely any stem and very narrow spiny leaves. A distinct looking species, unnamed, with narrow, rigid, entire leaves and flower-spikes 5 feet high, was represented by numerous plants at Hyères.

D. quadrangulatum, S. Wats.—This is the plant often known as *Xanthorrhœa hastilis*. It is also, I believe, the *Agave striata*, var. *recurva*, of Baker. In the garden of the Acclimatisation Society at Hyères there is a fine example which was in flower at the time of my visit; it was named *Xanthorrhœa hastilis*. The foliage and habit were exactly the same as those of the plant in the Kew collection called *Agave striata*, var. *recurva*; a provisional name, the plant never having flowered. The specimen at Hyères bore a spike 18 feet high, the upper half clothed with adpressed branches of brown, trigonous, seed-like flowers, not unlike those of a female *D. glaucophyllum*. There is a plant of this so called *Xanthorrhœa hastilis* at Kew, which came from the Jardin d'Acclimatation, Paris. *Xanthorrhœa* proper is Australian, and has an inflorescence somewhat like a bullrush. In the garden at Monte Carlo there is a fine example 7 feet through of *D. quadrangulatum*; it is labelled *D. juncæfolium*. Mr. Hanbury has a good plant of true *Xanthorrhœa australis*.

Yucca.

A magnificent group of large plants of *Y. aloifolia* in the garden at Villa Valetta is one of the most striking and novel of the many effects obtained in this garden. The height of the plants averages 15 feet, and many of them are branched. The bases of the dead leaves have been left on the stems, and they have curled and become a rich light brown colour. The gaunt stems, their heads of dark green spear-leaves, and the strange effect produced by the old leaf bases presented a picture peculiarly picturesque. A large group of tall plants of the variegated form at Hyères was almost as effective. All the Yuccas appear to be exceptionally happy under the conditions supplied on the Riviera.

The most striking kinds are as follows :—

Y. aloifolia, Linn. and its variegated form.

Y. constricta, Buckley.—A plant in Mr. Hanbury's collection under the name of *Y. elata marginata* is probably this species. It is near *Y. angustifolia* in habit, but the leaves are shorter. It is a pretty little plant. The garden name may be accounted for by the fact that Engelmann named this species *Y. angustifolia*, var. *elata*.

Y. Desmetiana, Baker.—A plant 9 feet high at Villa Valetta. It is one of the prettiest of the small leaved Yuccas, and is a useful decorative plant.

Y. filifera, Makoy.—A magnificent specimen at Villa Valetta, with a stem 3 feet in diameter at the base; another at Antibes is almost as large. This species is said to attain a height of 50 feet, and its trunk a diameter of 5 feet. The plant at Antibes flowers every year. There is a good figure of this magnificent Yucca in the *Gardener's Chronicle*, June, 1888, p. 743, figs. 97, 100.

Y. guatemalensis, Baker.—A variable species, and apparently some of its forms have received garden names. I consider the following to belong to this species, viz., *Y. Draconis* (Hort. Hanbury, not of Linn.), *Y. Ghiesbreghtii* (Hort. Hanbury), *Y. Eleana* (Hort. Dognin).

Y. Mazelii (Hort. Dognin).—The last named is 25 feet high, and the stem 2 feet through at the base.

Y. Whipplei, Torrey.—A beautiful plant in Mr. Hanbury's garden, fully 3 feet through, with hundreds of straight narrow leaves. It has the aspect of an *Agave* rather than of a *Yucca*. So far as I know this plant has not been a success in English gardens.

List of some of the most interesting Plants cultivated and established on the Riviera.

Acacia, many species, some represented by large trees. *A. Farnesiana* is largely grown for its flowers, used in scent making.

Aloe; many species; the most noteworthy as being exceptionally large and healthy, are: *A. ciliaris*, very popular on account of its being always in flower; *A. Dyckii*, *A. frutescens*, *A. nobilis*, *A. plicatilis*, and *A. Africana*. At Villa Valetta there is a colony of Aloes, planted so as to produce the most natural wild effect.

Aloysia citriodora, cultivated and used in scent making.

Aralia; *A. papyrifera* grows to a large size, and is very ornamental. *A. dactylifolia*, *A. Humboldtiana*, and others, as garden plants.

Azalea indica, not represented by large specimens.

Banksia; several species, large and very healthy.

Benthamia fragifera. A beautiful fruit tree.

Bougainvillea glabra and *B. spectabilis*. "The glory of the Riviera."

Cacti. Very many kinds.

Camellia. Require very careful cultivation and shade.

Carica candamarcensis. A large plant in fruit at Mentone.

Casimiroa edulis; the Mexican Apple. A tree, perfectly healthy, at Mentone.

Catha edulis, Arabian Tea.

Ceratonia siliqua.—Very common, in fruit.

Chrysophyllum imperiale (Theophrasta); a large healthy specimen at Villa Valetta. This plant is invariably unhappy under cultivation; probably it dislikes a stove temperature all the year round.

Citrus trifoliata; used as a hedge plant, makes a strong fence.

Cyphomandra betacea, the Tree Tomato; an old plant covered with fruit in Mr. Hanbury's garden, and another at Monte Carlo, where it was labelled *Solanum Wallisii*.

Dammara robusta and *D. Brownii*, large trees 30 feet high.

Diospyros.—In the garden of the Acclimatisation Society at Hyères there is a series of trees of *Diospyros*, bearing the following names :—*D. costata*, *D. Lotus*, *D. Roxburghii*, *D. Mazelii*, and *D. Kaki*. These all appear to be forms of one species. I found the fruits offered for sale in Paris. The trees were in fruit at Hyères at the time of my visit, and were exceedingly handsome. They were about the same size as an ordinary apple tree, say, 10 feet high, and they bore hundreds of fruits somewhat resembling a large compressed tomato in size, form, and colour. The flavour of the fruit is rich, very sweet, but rather woody. If taken properly in hand a valuable fruit

might be developed from them. The flavour wants slightly improving and that is all.

Doryanthes Palmeri, Hill.—Fine plants at Cannes, one of them showing flower.

Dracæna indivisa, *D. Draco*, and *D. australis* are of course plentiful all along the Riviera, the last named being as abundant as *Phœnix*.

Eriobotrya japonica.—One of the delights of the Riviera, very fragrant in early winter when it flowers. Cultivated for its fruits.

Eucalyptus; many species.

Ficus elastica, *F. macrophylla*, and *F. rubiginosa*, all large handsome trees.

Freycenetia Banksii; quite hardy at Cannes, where it has flowered.

Grevillea robusta; frequent as a large tree.

Greyia Sutherlandi.—A large plant in fine health at Cannes; it blossoms freely and regularly in March.

Hakea; some large healthy plants at Mentone; *H. eucalyptoides* in flower, was one of the most beautiful objects I have ever seen.

Jacaranda mimosæfolia; large healthy specimens in several gardens.

Jasminum grandiflorum.—One of the prettiest and most fragrant of Jasmines; largely cultivated and used in the manufacture of scent.

Magnolia grandiflora; very large trees, plentiful in gardens; the form with ferrugineous down on the under side of the leaves is called *M. ferruginea*. The fruit in autumn is almost as ornamental as the flowers.

Monstera deliciosa, not quite hardy on a lawn at Cannes, where it grows against a palm and fruits annually.

Musa sapientum and *M. Ensete*, all in good health, the last named flowering in Mr. Hanbury's garden.

Myoporum; several species planted in positions very near the sea.

Papyrus antiquorum, in positions sheltered from wind.

Persea gratissima; a large tree in Mr. Hanbury's garden.

Pilocarpus pennatifolius, the "Jaborandi," a large bush bearing flowers and fruit at Mentone.

Pittosporum, about a dozen species apparently naturalised in the Riviera.

Psidium Cattleyanum and *P. Guayava*; in fruit at the time of my visit.

Puya gigas, Andre.—A fine plant, perfectly happy in Mr. Hanbury's garden. This species produces a flower spike 30 feet high, and white flowers tinged with red and violet. It is in the Kew collection.

Rhododendron; very poorly represented.

Russellia juncea; a common garden plant, beautifully in flower in October.

Strelitzia augusta and *S. Reginæ*, both as fine as at the Cape or Madeira.

Trevesia sundaica and *T. sp.*—These two plants astonished me. They are both natives of Singapore, but at Cannes and Nice they were in perfect health, and had been so for years.

W. WATSON.

FORESTS AND FORESTRY.

A PAPER on "The Utility of Forests and the Study of Forestry" was read recently by Dr. W. Schlich (Professor of Forestry at the Royal College of Engineering, Cooper's Hill) before the Indian Section of the Society of Arts. The chair was taken by Major-General Michael, C.S.I., and amongst those present were: Sir Peter Lumsden, Sir Owen Burne, Sir George Birdwood, Sir Henry Cunningham, Sir Alexander Taylor, Sir Juland Danvers, Sir J. Fayrer, Sir Charles Bernard, General Keatinge, Mr. Seton-Karr, Dr. Hyde Clarke, and Mr. T. H. Thornton.

Dr. Schlich, in the course of his paper, said that, although forestry had been practised in the United Kingdom for centuries, it did not receive much attention until the progress of forestry in India required the appointment of properly-qualified experts who could not be procured in this country. In 1864 Dr. D. Brandis (now Sir Dietrich Brandis, K.C.I.E.) had been appointed the First Inspector-General of Forests to the Government of India, and that eminent organizer perceived at once that if forestry in India was to be really successful and lasting it was necessary to secure the services of an efficient staff to manage the extensive forests of our Indian Empire. As to the importance of forests there could be of course no doubt whatever, and although observations in India had not yet taken place over a sufficiently long period to yield decided results, those in Germany, France, and Switzerland had settled many questions, while they had thrown additional light on others. As far as our knowledge went at present, the following summary indicated generally the utility of forests in the economy of man and of nature: (1)Forests supply timber fuel, and other forest produce; (2) they offer a convenient opportunity for the investment of capital and for enterprise; (3) they produce a demand for labour in their management and working, as well as in a variety of industries which depend upon forests for their raw material; (4) they reduce the temperature of the air and soil to a moderate extent, and render the climate more equable; (5) they increase the relative humidity of the air, and reduce evaporation to a considerable extent; (6) they tend to increase the rainfall; (7) they help to regulate the water supply, insure a more sustained feeding of springs, tend to reduce violent sludge, and render the flow of water in rivers more continuous; (8) they assist in preventing landslips, avalanches, the silting up of rivers and low lands, and arrest moving sands; (9) they reduce the velocity of air currents, protect adjoining fields against cold or dry winds, and afford shelter to cattle, game, and useful birds: (10) they assist in the production of oxygen and ozone; (11) they may, under certain conditions, improve the healthiness of a country, and under others endanger it; (12) they increase the artistic beauty of a country. The importance of employing really competent men in the management of forest estates, whether belonging to the State or to private owners, had led to the establishment of forest schools in most European countries. There were nine such schools in Germany alone, some forming parts of universities, others being attached to higher technical schools, and some being independent institutions. Most of these were first-class schools where instruction was given by a considerable number of professors. In this country there were two places where scientific forestry could be studied. One was at the University of Edinburgh under Dr. Somerville, and the other at Cooper's Hill. The instruction in forestry at the latter institution was, up to the present date, given by the reader of the paper, and it was now contemplated to engage a second professor of forestry and to double the amount of instruction hitherto given. In addition to the instruction given at the college practical instruction was given in the adjoining Windsor Forest, and visits to more distant forests in England and Scotland were also made. At the completion of the course at the college the students who had qualified in the various branches of study proceeded to the Continent, where they were taken charge of by Sir Dietrich Brandis, who, during a period of not less than three months, took them to a number of the most interesting forest districts in Germany, Switzerland, and Austria, where they studied the management of forests which had been under systematic treatment for a long period. This brought their instruction to a close, and the young men then proceeded to India to take their places in the forest department of that country. Thus it would be seen that there was in England the nucleus of an institution which only awaited the full support of the colonies and of the mother country to develop into an institution worthy of the best forest schools of the Continent.

The Chairman said that no one who had visited the great forest regions of Germany, Austria, and France could fail to be impressed with the visible effects of good management, and wish they were more generally apparent in England and Scotland. There were signs, however, that the education and practical training of foresters was becoming more thought of at the present time in England, and he ventured to predict that Dr. Schlich would shortly have a good many students under him who were destined for home employment and not for India only. Personally he knew more about the value of forestry and the life of a forester in India, having spent seven or eight of the happiest and perhaps the most useful years of his youth as a forest officer; that was more than 40 years ago, before the time arrived for experts like Dr. Schlich and his distinguished predecessor Sir Dietrich Brandis to come to the country. He could therefore tell any of Dr. Schlich's students who might be present that the life of a forester in India was not only a career of importance, but that it was one full of interest and of real enjoyment. The formation of the department in which they would serve—and in which Dr. Schlich served so well and successfully—had justly been characterized by Sir Richard Temple as one of the greatest achievements effected in India during the reign of her Majesty the Queen.

The proceedings terminated with votes of thanks to Dr. Schlich and the chairman.

THE CATERPILLAR PLAGUE.

THE Worcestershire orchards having suffered greatly from caterpillars, the *Worcester Herald* with its customary spirit and care for its constituency, initiated a discussion on possible means of prevention of this plague, and to this Miss Ormerod has made a valuable contribution. But it is almost a folly for us to characterize as "valuable" what Miss Ormerod writes on such a subject, for the world is well advised of her vast knowledge and her able deduction of principles from facts to need any preliminary eulogy on our part. Miss Ormerod says:—it is of the utmost importance to stop the ascent of the wingless moths by grease bands, or, at least, by sticky bands of some material which will hold the moths fast without hurting the bark of the tree. I have strongly advocated this in my annual reports—in my reports to the Royal Agricultural Society—and lately gave a special paper on the subject (headed Winter Moths—A Word in Season), in the number for October of the new serial *The Farmer's Magazine*, which I think is probably in your hands.

I quite agree with the gentlemen who give their valuable notes in your paper on the importance of banding, and I believe we are all of one mind that unless the winter moths are stopped going up the trees there will be immense damage done next growing season, and I also consider that none of the various methods of prevention suggested, that we know of at present, are so cheap, safe, and sure as grease-banding.

But I certainly *do* think also that a little more attention should be given to the possibility of the outside of young trees being so much injured by grease (or deleterious matter mixed with the grease) soddening into the thin bark and underlying layers of young wood, that it may be fatal to the tree.

All of us probably who have attended to the matter know about this, but in some cases a word of warning is wanted.

In the case of *old* trees with thick rugged bark, dead on the outside, probably even tar might be safely applied, for the layers of *old* bark lying between the tar and the wood immediately underlying the *live* inside bark would protect it almost as securely as would a layer of cork. I would give a word of warning in such a case not to smooth down the outside bark, as a correspondent recently told me he was doing, or results may be very bad indeed. If the tar, or grease, is of a nature that can readily pass into the tree, it is obvious that the minute cells of the wood and bark will be so altered that they will not be able to convey the sap and the effect will be a dead band, or a band so injured as to be almost equivalent in bad effects to ringing.

I know only too well of this happening, and therefore I would strongly advise all growers to make sure that the grease is not mixed with tar, or residue of petroleum distilling, or too much caustic soda, or any other matter likely to burn or choke tender tissues.

Failing the power to do this, the spending a little time in finding whose neighbours' trees suffered and whose did not from grease banding would be of use.

I would also strongly draw the attention of those who have many quite young trees to the method of banding now in use at the Toddington fruit grounds. This is to pass a band of the thin grease-proof paper used by grocers round the stem; secure the overlapping edges by a strip of paste, and then lay the grease on in the manner advised by one of your correspondents, not with a brush, but with a flat piece of wood. If the paste does not stick at once, a twist of string round the paper or of bass mat and just tying the the ends secures it firmly.

The paper prevents any grease, except what may run down, lying directly on the tree, and I am informed by Captain Corbett and Mr. C. Wise, with both of whom I had long interviews in the course of last week, that they consider this the best method of application.

With regard to birds, I should certainly think it was of great importance not to lessen the numbers of the more especially insect-eating kinds, such as various kinds of titmice, the nuthatches, and treecreeper, in fact, most kinds, excepting the house sparrow, which does mischief by driving useful birds away.

I do not myself feel so sure as some writers that the bullfinch is so very injurious; and would much like that, before condemning him, a careful *post mortem* of contents of stomachs of a few specimens should be made, to see whether the abstracted buds had or had not a maggot within them.

GISHURSTINE continues its good services in the garden as one of the best protectors against the evils resulting from damp feet. We hear words in its praise from gardeners and others who are much in the open air, as a dressing for boots, that renders them warm and waterproof, while it does not in any way affect their appearance as greasy compositions usually do.

Exhibitions and Meetings.

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the general committee was held at Anderton's Hotel, Fleet Street, on Monday evening, under the presidency of E. C. Jukes, Esq., when there was a large attendance of members. The principal business was the election of members of the Floral Committee in place of those retiring in accordance with rules, and to receive the report of the Centenary Sub-Committee as to the arrangements of the great Centenary Festival, to be held November 11, and the three following days. The minutes of the previous meeting having been read and signed,

The election of members and fellows was proceeded with, when several names were added to the list. The Norwich Horticultural Society was also received into affiliation. The election of members of the Floral Committee followed, and for the five vacancies there were seven nominations. On a show of hands being taken, Mr. H. Cannell, Mr. W. E. Boyce, Mr. C. Gibson, Mr. G. Gordon, and Mr. H. J. Jones were declared to be elected. The regulations for the meetings of this committee were considered, and a recommendation to the committee was passed to the effect that when a new variety is submitted bearing the same name as a previous variety in the same section, the committee shall require the exhibitor to give it another name, provided he be the raiser. The dates of the meetings of the committee were fixed for September 10, October 15 and 29, November 11 and 25, December 10, 1890; and January 7, 1891.

The Honorary Secretary next submitted the report of the Centenary Sub-Committee which was signed by Mr. Briscoe-Ironsides, Mr. R. Ballantine, Mr. L. Castle, Mr. R. Dean, Mr. G. Gordon, Mr. W. Holmes, Mr. E. C. Jukes, and Mr. C. Harman Payne. The report stated that the sub-committee had held several meetings and had carefully considered the scheme of the Centenary Exhibition and festival. It was recommended that the exhibition be on the first day opened with some amount of ceremony, and that the general arrangements should be under the superintendence of Mr. R. Ballantine and Mr. W. Holmes. That a conference be held on the second day under the management of Mr. Castle, Mr. Gordon, and Mr. Payne, and that a banquet be held on the third day under the management of Mr. Bevan, Mr. Dean, Mr. Laing, and Mr. Briscoe-Ironsides. It was further recommended that a new medal to commemorate the festival be struck, and that a Centenary medal in bronze be presented to each of the affiliated societies to be awarded for chrysanthemums, and also to each competitor in the three open classes for forty-eight blooms in the society's schedule. The sum proposed to be allotted for prizes at the several exhibitions was £486, and as the September and January shows are on similar lines to those of previous years, the additional amount has been added to the November schedule.

In glancing through the draft schedule submitted, it is seen that several new classes have been created, and the prizes in the greater proportion of the others materially augmented. The most important of the new classes is the Centenary class for forty-eight blooms to comprise equal numbers of incurved and Japanese varieties, with prizes amounting to £75, the largest sum that has yet been offered in the United Kingdom in any one class for chrysanthemums. This sum has been allotted in five prizes of the respective values of £25, £20, £15, £10, and £5. The societies class for forty-eight blooms to comprise equal numbers of incurved and Japanese will be continued with a first prize of £10, and the challenge trophy. In the class for forty-eight incurved, and also in that for forty-eight Japanese the first prize has been increased to £10, and the second to £7. The prizes in the ordinary open classes for twenty-four incurved and twenty-four Japanese are the same as last year, but the prizes in the whole of the classes for twelve, of which there are eleven, have been increased from £1 5s., 15s., and 7s. 6d. to £1 10s., £1, and 10s. The Veitch Memorial trustees having made a grant of £20 and four medals, two classes for blooms to be shown with foliage have been provided. One is for twenty-four incurved and the other for twenty-four Japanese, in each case to be distinct and to be staged with not less than eight inches of stem above the board, and with foliage as grown. In each class the first prize will be £5 and a Veitch Memorial medal, the society providing the second and third prizes, of the respective value of £3 and £1. To encourage the small-flowered varieties, a class has been set apart for eighteen incurved, distinct, from which the Queen of England and its descendants are excluded. The first of £5 has been presented by Dr. Hogg. The classes for arrangements of chrysanthemums have been added to and the prizes materially increased, the use of flowers other than chrysanthemums being prohibited. A class for collections of chrysanthemum blooms, in which the competition is open to foreign growers only, has been provided with the silver gilt and silver medals as the first and second prizes.

The classes for plants have also been added to, the most important of the additions being perhaps that for twelve bush specimens, in which the first prize consists of £5 and the Veitch Memorial medal. There is also a new class for six large flowered standards also with £5 and a Veitch Memorial medal as the premier award. In the class for nine trained specimens, the first prize of £4 is supplemented by a ten guinea cup presented by Messrs. Wood and Son.

After some discussion the report and schedule were unanimously adopted, and a vote of thanks was passed to the sub-committee. It was also resolved that Mr. Holmes be authorized to make arrangements for the payment of a part of the cost of carriage of specimen plants.

The proceedings terminated with the customary vote of thanks to the chairman.

ROYAL HORTICULTURAL SOCIETY, FEBRUARY 11.

SCIENTIFIC COMMITTEE.

Present: W. T. Thiselton Dyer, Esq., in the chair; and Professors Michael Foster, A. H. Church, H. Marshall Ward, D. H. Scott; Messrs. G. F. Wilson, T. Francis Rivers, H. J. Veitch, W. F. Blandford, R. McLachlan, Dr. Oliver, and D. Morris.

Mealy-bug at Alexandria.—Mr. Morris supplemented the information already given by him respecting this new Egyptian pest, by reading a letter from Mr. J. W. Douglas, to whom the specimens had been sent, stating that the coccids had proved to be not only a new species but a new genus. It was proposed to describe them under the name of Crossotosoma ægyptiacum.

Disease of Orchids.—Mr. Morris exhibited several specimens of a Cattleya attacked by a fungoid disease of apparently a very virulent character. From a specimen received about a fortnight ago, Mr. Massee, at Kew, had infected two or three healthy plants, and in three days the whole of the pseudo-bulbs had become diseased. Specimens of similarly affected plants were sent by Mr. James Douglas from a gardener who was anxious to know if there was any remedy, as he feared his collection was in danger of being destroyed. The committee was of opinion that the disease, whatever the cause, was of a very virulent character. It was not the ordinary "spot" so well known to orchid growers. The specimens were referred to Professor Marshall Ward, who had already given some attention to the subject.

Orchid Hybrids.—Mr. H. J. Veitch exhibited Cypripedium Lathamianum ×, raised first at the Birmingham Botanic Gardens, by crossing C. Spiceri-anum ♂ with C. villosum ♀. Messrs. Veitch had raised similar hybrids, and had, moreover, raised hybrids from the reversed cross. Plants from all three sources were shown. These agreed so closely in all essential points, that they must bear the same name. The fact of plants obtained by crossing, and also by reverse crossing, producing seedlings of almost exactly the same character, is very interesting. Similar results have been obtained by Messrs. Veitch in crossings which have produced Cypripedium Sedenii ×, and Fuchsia Dominiana ×.

Mr. H. J. Veitch also exhibited a new hybrid Dendrobium. The seed-bearing parent was D. japonicum, and the pollen parent D. Wardianum. The hybrid, D. Wardiano-japonicum had smaller pseudo-bulbs than D. Wardi-anum, but the flowers were nearly those of D. japonicum, but larger and with broader segments. They were also highly scented, as in D. japonicum.

Canker in Apple Trees.—Professor Marshall Ward brought before the committee specimens of apple trees badly affected with the so-called canker, on which there were numerous red perithecia of a nectria. It is probable that the initial injury in this case had been caused by frost, and that the nectria had established itself in the cracks thus formed.

Picea nobilis.—Mr. James Douglas forwarded branches of Picea nobilis affected by gouty swellings, due probably to the attacks of an Acarus (Phytoptus), or to Æcidium elatinum. Professor Marshall Ward kindly undertook to examine the specimens.

London Fogs.—Dr. Oliver and Professor Scott presented an interim report on the investigations undertaken by them respecting the effects of London fogs on plants under glass. Specimens of orchids affected by fog had been received from Messrs. Veitch and Son, Chelsea; and of tomato plants from the superintendent of the Royal Horticultural Society's gardens at Chiswick. On the suggestion of the chairman, it was decided to take up an investigation of the chemical constituents of London fog, and trace the exciting causes of the injury to plants. The question was a very important one, and demanding considerable time and attention. In order to carry out the work under advantageous circumstances, it was resolved to make application to the Government Grant Committee of the Royal Society for pecuniary aid.

PLANTS FIGURED IN BOTANICAL MAGAZINE.

CARLUDOVICA ROTUNDIFOLIA (*B. M.*, 7083).—A noble palm, native of Costa Rica. It is stemless, the petioles six to nine feet in length, the leaves four feet broad; fruiting spadix bold and handsome.

IRIS BAKERIANA (*B. M.*, 7084) —A native of Armenia, habit that of *I. reticulata*; standards full lavender blue, full violet with orange stripe.

XYLOBIUM LEONTOGLOSSUM (*B. M.*, 7085).—A beautiful orchid from New Grenada; the leaves large and elegantly veined, the flowers in a dense raceme, yellow, spotted with red.

PHAIUS PAUCIFLORUS (*B. M.*, 7086).—A distinct species from Java; flowers white.

GERBERA JAMESONI (*B. M.*, 7087).—A beautiful herbaceous composite from the Transvaal. The flowers are large with long narrow rays of a curious soft vermilion colour. The disk yellowish.

DRACÆNA MARMORATA (*B. M.*, 7078).—A fine new tropical species, received at Kew from Singapore. It is allied to *D. arborea*. The leaves are of great size, sessile, plicate, bright green marbled with white. The inflorescence is a stately panicle with racemose branches of greenish flowers.

PRIMULA PUSILLA (*B. M.*, 7079).—This must not be confounded with *P. pusilla*, of Goldie, a North American plant, being a native of the Alpine region of the Himalaya, at elevations of 13,000 to 16,000 feet. The leaves are in tufts, the flowers in an umbel, sapphire blue. It is allied to *P. farinosa*.

PRIMULA PETIOLARIS *v.* NANA (*B. M.*, 7079).—A common and variable primrose of India, abounding in the Himalaya at elevations of 8,000 to 14,000 feet; varying from a dwarf Alpine no bigger than a penny piece to a coarse herb, with leaves a span long. The leaves are usually sharply toothed, the rosy flowers appear on short stalks in the way of a primrose, the common stem of the umbel being concealed.

FRITILLARIA BUCHARICA (*B. M.*, 7080).—An interesting plant from Central Asia, at elevations of 4,000 to 6,000 feet. The flowers are white.

IRIS PARADOXA (*B. M.*, 7081).—A rare and beautiful iris, coming near to *I. iberica*; the falls are richly veined, black on a brown ground, the standards rosy-purple.

SHORTIA GALACIFOLIA (*B. M.*, 7082).—An interesting North American herb with a tuft of roundish radical leaves, and a number of white flowers produced singly on red stems, which give it a pleasing appearance.

PODOPHYLLUM PLEIANTHUM (*B. M.*, 7098).—A commanding member of this group of herbaceous berberids. It is a near ally of the North American mandrake, or may-apple, *P. peltatum*. This plant is a native of Formosa; the flowers are axillary, in many flowered umbels; the corolla deep purple, the calyx light green. The leaves are grandly peltate, distinctly lobed, and give the plant a fine character.

COTTONIA MACROSTACHYA (*B. M.*, 7099).—An interesting orchid of no particular value as a garden plant.

DROSERA CISTIFLORA (*B. M.*, 7100).—If it be within reason to announce a sublime sundew, we may say here is one. It is a native of South Africa, of most elegant growth, stems and leaves like green wires dotted with miniature rubies, and crowned with large flowers of a flame-like scarlet colour. Plants sent to Kew by Miss North flowered in a sunny greenhouse, and the flowers were good for a fortnight.

CHIRONIA PALUSTRIS (*B. M.*, 7101).—A pretty perennial gentianwort with rosy flowers.

CYPRIPEDIUM ROTHSCHILDIANUM (*B. M.*, 7102).—A superb species obtained from New Guinea by Messrs. Sander and Co., of St. Albans. The form of the labellum is curious, and all the characters are distinct.

"A SIMPLE FACT ABOUT" KEATING'S COUGH LOZENGES. Ask throughout the world, in any country that can be named, you will find them largely sold. There is absolutely no remedy that is so speedy in giving relief, so certain to cure, and yet the most delicate can take them. One Lozenge gives ease. Sold in 13½d. tins.—[ADVT.]

A LOOK AT THE LONDON MARKETS.

IN a walk through the metropolitan markets devoted to fruit and vegetables, it soon becomes evident that the supply of fruit is extremely small, and that there is an abundance of vegetables of all descriptions. Some years have elapsed since the London markets were so indifferently supplied with fruit in February as is now the case. Pears have wholly disappeared, and there are comparatively few apples, of which the greater proportion are of foreign growth. English apples are not only few in number, but they are poor in quality, and include but few of Dumelow's Seedling, and other of the well-known kinds of high quality. Much of the fruit is indeed so small as to be of little use in the kitchen, and the consumer may be well excused if a preference is shown to the fruit from America and France. The French apples, of which there is a fairly good supply, are mostly of medium size, and are bright in appearance, some being very highly coloured. They are chiefly packed in boxes containing about a hundredweight, and sell wholesale at prices ranging from 12s. to 16s. per box. American apples are rather plentiful, and consist chiefly of Greenings and Russets. There is a great difference in the quality of the samples now coming to market, and the prizes show a wide range, the inferior samples being worth more than about 12s. per barrel, whilst the finest russets command about 25s. per barrel. Grapes are becoming scarce and first-class samples realize good prices, touching in some cases 5s. per lb., and they may be expected to increase in value for some time hence. St. Michaels fine apples are also less plentiful than they were a short time since, but there is not, as in the case of the grapes, any increase in the price. Oranges on the other hand are very plentiful and the prices rule low.

Vegetables have been abundant throughout the winter, and at the present time the supplies are so heavy that the prevailing prices are very low, and yield a poor return to the grower. A considerable bulk of green vegetables must have changed hands within the past few weeks at prices that have not been more than sufficient to pay the cost of conveyance to market. Brussels sprouts are now nearly over, but in consequence of other green vegetables being so plentiful, they are not worth more than from 1s. to 1s. 6d. per half-sieve. Cornish broccolis are being received in large quantities and in fine condition, and command from 5s. to 7s. 6d. per crate. Scotch kale and sprouting broccoli are both plentiful, and sell slowly at prices ranging from 6d. to 9d. per sieve. A considerable proportion of the last-named is sent to market in sacks, and the values range from 1s. to 1s. 6d. per sack. Turnip tops are being sent to markets in immense quantities, and are about equal in value to the sprouting broccoli, the ruling prices being from 1s. to 1s. 6d. per sack. Savoys and bunched greens are at a discount, the prices for the first-named being from 2s. to 3s. per tally, and for the greens from 9d. to 1s. 3d. per dozen bunches. That spinach should not command a high price follows as a matter of course, and much has of late been sold for 1s. and 1s. 6d. per bushel, prices that certainly cannot pay the grower.

The supplies of potatos are very large at all the markets, and prices are, as in the case of green vegetables, extremely low. The greater proportion of the bulk consists of Beauty of Hebron and Magnum Bonum, the other varieties in the markets being Early Rose, Regents, Scotch Champion, and Imperator. Differing much in quality, according to the conditions under which the crop has been grown, Magnum Bonum shows a wide range in price. Samples from peat lands of Huntingdon and other counties are only worth 40s. to 50s. per ton; from Bedford, 40s. to 55s. per ton; from Lincoln, 45s. to 65s. per ton; from Yorkshire, 50s. to 75s. per ton; and from Scotland, 50s. to 95s. Beauty of Hebron also varies considerably in value, the prices ranging from 40s. to 90s., according to the condition of the samples. Imperator, Champion, and Regents, on the other hand, do not show a range of value exceeding 20s. per ton, the prices being: Imperator, 50s. to 70s. per ton; Champion, 50s. to 55s. per ton; and Regents, 55s. to 75s. per ton.

Asparagus is now coming to market in moderate quantities, and commands from 8s. to 10s. per bundle of one hundred sticks. Of seakale there are good supplies, and it is by no means expensive, as the average price is 15s. per dozen punnets. There are not at the present time many tomatos of home growth, but there is an abundance in the markets nevertheless, considerable quantities being received from the Canary Islands. The fruits are of medium size, fairly well ripened, and mostly of good colour, although not so brightly coloured as fuits of home growth. They are packed in single layers in boxes about eighteen inches in length, twelve inches in width, and three inches in depth. Each fruit is wrapped in paper, and the packing otherwise is so carefully done that in but few instances do any of the fruits show signs of having been injured in the long journey they have made. The prices vary somewhat, but they are sufficiently low to enable the retailers to sell sound fruit at 6d. per pound. Although not equal to English tomatos, the imported fruit cannot fail to have a depressing influence upon prices.

HOW LEGUMINOUS CROPS OBTAIN THEIR NITROGEN.

By Prof. W. FREAM, LL.D., B.Sc., Lond., F.L.S., F.G.S.

OF all the experimental results which have been established concerning the fixation of free nitrogen by plants, those of the German investigators, Hellriegel and Wilfarth, have commended themselves to Sir John Lawes and Dr. Gilbert as being the most definite and significant. As these special results are frequently referred to in the discussion of the nitrogen question, it will be useful to inquire what was the particular line of inquiry taken, and what were the conclusions arrived at.

Hellriegel's first results were obtained with barley, oats, and peas, which he grew in pots containing pure washed sand. Nutritive solutions, free from nitrogen, were added to all. One series of pots received in addition a fixed quantity of nitrogen as nitrate of soda, a second twice as much, and a third four times as much. In the case of the barley and oats the amount of produce obtained bore a direct relation to the quantity of nitric-nitrogen supplied. With peas it was otherwise; in fact, there was an astonishing growth of peas in the sand containing all food substances except nitrogen, though under exactly similar conditions barley and oats showed nitrogen-hunger and failed. Hellriegel concludes that leguminous plants are distinguished from gramineous plants in not being dependent on the soil for their nitrogenous food. The sources of nitrogen which the atmosphere affords, have, for these plants, the highest importance; they alone can suffice to bring them to a normal and full development.

To determine how far the combined nitrogen—as distinguished from the free nitrogen—in the atmosphere was the source, four experiments were made, in each of which a pot of peas was placed under a glass shade, and a constant stream of air passed through, in one without washing the air, but in the other three the air was washed to remove all traces of nitric acid and ammonia. As a result, the growth was as good with the washed as with the unwashed air, and there seemed no other alternative than to admit that leguminous plants have the power of assimilating free nitrogen—not directly, but indirectly.

With reference to the point last suggested, Hellriegel had observed that when peas are grown in a soil deprived of nitrogen, the growth is normal and the colour of the leaves is healthy until the reserve material in the seed is used up. Growth is then arrested, and the leaves become pale or yellow; but after a shorter or longer time, the leaves regain their green colour, a second period of growth sets in, and it continues to the end. Some, however, fail to develop beyond the first period. Examination shows that the roots of the plants which develop favourably are plentifully supplied with nodules, or tubercles, whilst in the others these structures are either deficient or entirely absent. It was an obvious resort to add distilled-water extracts of fertile soil to the nitrogen-free soil in which the plants were failing. The result was that they regained their vigour, and when they were pulled up their roots were found to be well-furnished with the wart-like nodules. The conclusion is that to the nourishment of leguminous plants, especially their assimilation of nitrogen, the so-called nodules, or tubercles, and the micro-organisms they contain, stand in close and active relation. Lupins and other leguminous plants, such as serrandella or birdsfoot (Ornithopus sativus), addicted to sandy soils, behave somewhat differently. Hellriegel adds that although leguminous plants have the property of turning to account atmospheric nitrogen, they, nevertheless, do take up nitrogen from the soil, especially as nitrates; but he considers it doubtful whether such plants can attain to a normal development with nitrates alone, and with the exclusion of micro-organisms.

Dr. Wilfarth, who was associated with Professor Hellriegel in his experiments, has since published the results of subsequent investigations. In a paper, "Ueber Stickstoffaufnahme der Pflanzen" (How plants obtain their nitrogen), he states that previous experiments had shown that the Gramineæ (cereals and grasses), the Polygoneæ (buckwheat, &c.), the Chenopodiaceæ (beet and mangel), and the Cruciferæ (turnips, swedes, rape, cabbage, kale, &c.), take their nitrogen from the soil, and that their growth is proportional to the available supply of nitrogen. The Leguminosæ (beans, peas, clovers, sainfoin, lucerne, vetches, lupins, &c.) on the other hand take their nitrogen from the air, and grow quite normally in a nitrogen-free soil, provided a very small quantity of cultivated soil be added. The subsequent investigations were made with oats, buckwheat, rape, peas, serradella, and lupins. The soil used was a pure sand, entirely free from nitrogen. Each pot contained 9 lb. of this sand, to which was added the necessary mineral constituents. All the plants grew till the nitrogen contained in the seed was used up. Then to each pot a small quantity of the turbid watery extract of surface soil was added. The result was that whilst neither the oats, rape, nor buckwheat showed any effect from the addition of the soil extract, but remained in a state of nitrogen-hunger, the serradella and lupins recovered, suddenly became dark green, and then grew luxuriantly up to ripeness. In experiments in which the soil extract was sterilised by boiling there was no such result. It is noteworthy that, whereas peas grew well under the influence of extract from any cultivated soil, lupins and serradella only flourished when the extract was that of a soil on which these crops were growing. The series comprised 178 pots, and the results were so accordant that the possibility of accident, or of nitrogenous impurities, was out of the question. Hence it is considered established that the Leguminosæ can take the whole of their nitrogen from the air.

It is interesting to learn that Sir John Lawes and Dr. Gilbert have in progress a series of experiments which will serve as a check upon those of Hellriegel and Wilfarth, and we must wait to learn whether they will prove contradictory to, or confirmatory of, those of the German workers. Meanwhile, the remarks of the Rothamsted investigators upon this inquiry are well deserving of notice. They say that, although the question of the sources of the nitrogen of the Leguminosæ has been the subject of experiment and of controversy for about half a century, it is generally admitted that all the evidence that has been acquired on lines of inquiry until recently followed has failed to solve the problem conclusively. It should not, therefore, excite surprise that any new light should come from a new line of inquiry. Hence should be recognized, whether as real advance in knowledge, or as only incentive to further investigation, the importance of the cumulative evidence of the last few years—of which that furnished by the experiments of Hellriegel and Wilfarth is certainly the most definite and the most striking, pointing to the conclusion that although ordinary green plants may not directly utilise the free nitrogen of the air; some of them, at any rate, may acquire nitrogen brought into combination under the influence of lower organisms, the development of which is, apparently, in some cases a coincident of the growth of the higher plant whose nutrition they are to serve.

Whilst referring to the admirable monograph in the "Philosophical Transactions" for further details, I may remark, as I have done before in these columns, that the nodules or tubercles, which have come into such great prominence, may easily be seen as wart-like growths upon the roots of a freshly-pulled healthy plant of clover, or any leguminous species. I have, within the last few days, shown them in abundance on the roots of birdsfoot trefoil, Lotus major.—*Mark Lane Express.*

ACACIA OVATA.

THERE are so few acacias of small growth that it is a pity this elegant species should receive but little attention from the general body of cultivators. It is one of the smallest of the acacias in cultivation, and in general appearance reminds one of a diminutive form of A. armata, but it is more elegant than is that well known species. The branches are long and slender, and under ordinary good culture the small bright golden flowers are produced in great abundance throughout the whole length of the growths of the previous season. This species appears to singular advantage when grafted on stems of A. armata about twelve inches in height. The acacias are so interesting and attractive that the small-growing kinds are especially deserving the attention of those whose houses are not very large.

G.

TRADE CATALOGUES.

T. T. GREEN, SETTLE, YORKSHIRE.—*Garden and Flower Seeds, Roots, &c.*

HARLAN P. KELSEY, HIGHLANDS, MACON COUNTY, WESTERN NORTH CAROLINA.—*Plants and Flowers of the Southern Alleghany Mountains.*

CHARLES TOOPE, STEPNEY SQUARE, STEPNEY GREEN.—*Hot-Water Apparatus, Plant Propagators, &c.*

JOHN WATKINS, POMONA FARM, WITHINGTON, HEREFORD.—*Seed Potatos.*

CARTER AND CO., 237, HIGH HOLBORN.—*Grass and Farm Seeds.*

SIR ROBERT RAWLINSON ON LONDON SEWAGE.

FAILURE to treat with completeness the subject of London sewage was a great clause in the general indictment against the Metropolitan Board of Works. It is fair to assume that the London County Council will be expected to justify its existence by some better policy than that of its predecessor. The defunct Board accomplished great things for sewage, and its works remain as a gigantic monument of its spirit and power, although they stop short of the commission for the discharge of which the Board was in a great measure brought into existence. In the first instance it acknowledged its responsibility for effecting some utilisation of the London sewage, but the end of its enormous engineering works and heavy taxation of Londoners was, not to render sewage an aid to agriculture, but simply to continue in another form, that pollution of the River Thames, the necessity for remedying which had called it into being. The drainage of London remains, therefore, to be completed, and in view of the very serious task, Sir Robert Rawlinson has placed before the Society of Arts a statement of particulars and possibilities in a paper read December 18. The full text of the paper appears in the Society's *Journal* for December 20, 1889.

Sir Robert gives a good account of the noble river as it now appears, and he speaks of it as, above London, still deserving of its ancient designation, "The Silvery Thames." His history of the drainage of the metropolis is succinct, but sufficient. About 1801, when water-closets first came into general use, the main sewers were much extended, and the volume of sewage poured into the Thames began to increase rapidly. What followed appears now beyond belief, but it is unquestionably true that the sewers were found to operate injuriously by spreading fevers through the influence of the gases that escaped from them, and a remedy was sought by the formation of cesspools within the basements of houses. In Windsor Castle there were 53 "dumb-wells," or cesspools sunk in various parts of the basement. In the year 1848 the first Public Health Act was inaugurated at Gwydyr House, Whitehall, and it was found that the offices of the Board of Health were actually flooded with sewage, the overflow of putrid sewage from nine cesspools in the basement. The Board of Health, established 1848, was abolished in 1854, when the Metropolitan Board superseded it. The Board recognized in its original policy for dealing with the sewage, that its proper final destination was the land for the service of vegetation. The 135th clause of the Metropolitan Management Act concludes with a provision that the Board may sell or dispose of the sewage and refuse from the sewers, as it may see fit; but the Board never moved a stop for the initiation of its proper task, and so far from proceeding to works of utilization, it turned the whole body of the sewage into the Thames, and *that* was the practical end of its recognition of its duty.

All the more distinctive propositions and discussions resulting thereupon of which sewage has been the subject during the thirty years, have been reported and commented on in these pages, the policy of this paper being founded on the principle of restoring to the earth the fertilizing matters removed from it in the form of food, and again made available in the form of sewage. In agreement both with our policy and profession of earnestness, we offered a prize of twenty-five pounds for the best essay on the utilization of sewage on the land, and the adjudicators (Major Alexander McKenzie and William Haywood, Esq., engineer to the City Commissioners of Sewers) awarded the prize to Mr. John Martin, Factor to the Duchess of Sutherland. The essay, as a matter of course, was published, and the first part will be found in the GARDENERS' MAGAZINE for June 17, 1871, being continued therefrom weekly to July 22 of the same year. The paper will be found as useful for practical purposes as though written but yesterday. The laws of nature have not changed since 1871, for water will not now flow up hill, nor will sewage mix with water innocuously; nor can the land be robbed of its phosphates and alkalies without becoming impoverished by the process and less and less capable of maintaining animal life by the production of food.

On the Essex Reclamation scheme, by which Messrs. Napier and Hope proposed to fertilize a tract of sandy shore on the Essex coast, it would be idle to speak, save to say that the record of the affair constitutes a gloomy episode in the history of sewage. The loss on useless engineering works amounted to at least £250,000, with no other result whatever. It was a wild dea to carry the sewage past the farms that might have used it to waste it on the sands of the sea.

There was never any scheme brought forward to take its place; all parties appearing content to discharge the sewage into the Thames, trusting to deodorising agencies to ensure safety, This was, in effect, nothing more nor less than tinkering on a large scale, and proved in the end to be but a part of a general tinkering policy that had many ugly features, and brought the Board to an end that was without honour. The total cost of the sewage works effected by the Board was six millions sterling. There are 82 miles of intercepting sewers capable of intercepting daily about 63 million cubic feet, or nearly 400 million gallons of sewage.

The particulars given in the paper are of the greatest interest, but to reproduce them here would be to depart too far from our own commission, and we therefore refer the interested inquirer to the paper itself as cited above. But we must present our readers with the concluding paragraphs, for they convey information of great value to all concerned in cultivating the ground, and the right management of sewers, rivers, cities, and the public health.

A CHEMIST'S ESTIMATE OF THE VALUE OF LONDON SEWAGE, 1857.

Mr. R. Etheridge estimated the value of London sewage for Messrs. Douglas Galton, James Simpson, and Thomas C. Blackwell, as under:

Thames Mud.—Thames sewage is composed of animal matter, vegetable matter, human excreta in a state of decomposition, and living organisms of the class infusoria, diatomaceæ, zoophyta, and crustacea. The detritus consists of crushed road and street material, such as granite and other crystalline rocks, crushed flint, gravel, and earthy deposit. This is termed "crude sewage."

Analysis.—From the analysis of mean samples of crude London sewage, it was found that 100 tons of liquid possesses a manurial value of 17s. 7d. The suspended matter, "mud," is worth 2s. 2½d. The clarified liquid is worth 15s. 4½d., so that the cost of precipitation obtains in money value about one-seventh that of the entire sewage, and this is to be barged to the sea, whilst by far the largest value is to be sent to the river. If this would not putrify and pollute the river, there would be so much in its favour, but as seven-eighths of the salts of sewage remain in the fluid, plus some of the chemicals used, that which is most valuable as manure is wasted, and the injurious pollution of the river is continued.

The entire volume of the London sewage at 2,145,500 tons per annum, at 17s. 7d. per 100 tons, is worth upwards of £1,750,000 sterling; but 25 years ago the London sewage was valued at £1,000,000 sterling per annum.

Along the entire line of the proposed sewage conduit, sewage may be supplied to farmers, and dairy farms may produce milk for London. Italian rye grass may be grown and sold, as also turnips, mangolds, and other crops. In warm and dry summers hay may be made, and in wet seasons silos. Land is not corrupted by sewage irrigation, but is improved, as the solids out of 100 tons spread over one acre of land would not give a surface deposit of 1-100th of an inch in thickness. In warm summer time 1,000,000 gallons of sewage may be utilised on one acre in one day, and where something like this volume is used, and the land is light and porous, a very small volume drains from the subsoil. In exceptionally hot weather no water flows from the land.

Where chemicals are used for precipitation, and the water so clarified is turned out unfiltered through land, and cattle drink it, the milk is not fit to be used. Cows will, however, drink crude sewage without apparent injury, but they had better have clean water supplied.

THE SLUDGE AND SLUDGE BARGES.

It will be possible to send sludge having 90 per cent. of water to any distance in open troughs or pipes, to be used in warping low land, and this mode of disposing of it will be far cheaper than barging it to sea. Enormous quantities of sand are dredged and passed through pipes to the shore, as in Holland and the Suez Canal. Diluted clay in brick-fields is also sent along open troughs considerable distances, and this form of conveyance for the sewage sludge may enable the County Council to dispense with sludge barges.

I say that this or some similar work must be carried out to free the River Thames from pollution, and that for this purpose the Barking and Crossness outfalls must subsequently be so altered, modified, and dealt with, as not to pass any sewage to the Thames, but by a tunnel from Crossness to Barking, with the engine power to lift the combined volume to the new canal or conduit. I say also that the crude sewage may freely and easily flow along the new conduit, to be used in irrigation, and so much as may not be so required in winter or in wet seasons can be passed on to the North Sea, in like manner as it now flows along the London intercepting sewers to the present outlets, so that it will not be necessary to remove by precipitation one pound weight of sediment, or use any chemicals, as the whole will flow in one continuous stream at a rate not less than two miles per hour. Properly constructed apparatus can be adapted to float along the conduit, sweeping along any deposit there may be.

The main sewerage of London, most undoubtedly is a grand work for the Metropolitan Board to have devised and carried out for the metropolis, and if it had been really wise in its day and generation in devising proper works for dealing with the sewage so as to purify the Thames without any outfalls to the river, it would have deserved a permanent memorial to be a record of its great work, which all men might see and read through all succeeding time. But it has blundered over the Thames purification question until, in its last days, it has handed over abortive works which will cost the County Council not less than a million sterling to get rid of. But must this work remain? I say no and no. It both must and will be abolished.

Look at this mighty city of London, with its millions of inhabitants; look at the beautiful river, which flows gently down in silver sheen from its upper reaches, and supplies wholesome water for the swarming population inhabiting its banks; look again at its lower reaches, the great highway to all the nations of the earth, whose ships, laden with the produce of all climes, crowd the wharves and docks; and then say if the final result of the main drainage question shall be to leave the grand old river a black, loathsome, stinking ditch! My final conclusion is that the sewage must be disposed of out of the river Thames.

Correspondence.

HOLLYHOCKS.

I QUITE agree with your dashing correspondent of the seedling hollyhock, at page 57, that "it is well to have decided views on a subject when the command of facts is sufficient to justify conclusions." As he now informs us that it is a slight exaggeration to say that seedlings come true to the sorts they are raised from, we presume he has found it necessary to modify his views on that point. His pleading ignorance "as to when and where the germs of the fungus are present," is certainly a most ingenious way of getting out of the argument. But his idea "that peas and beans will not spring out of the ground unless there are seeds in the ground to originate them," is perhaps the most original. He may also be aware that *Puccinia Malvacearum* is not indigenous to Britain, and that, had not its germs been imported to us in some way, we might still have been enjoying the delightful displays of the hollyhock as seen at many of our leading autumn shows previous to 1870. Notwithstanding the unnatural influences of propagation, the writer speaks of a houseful of cuttings and grafts he saw in 1850, steaming away in a moist heat 80 deg. Fahr. I ask him, did he either see or hear of any fungus as that time. I think I am right in saying that for several years after that the same mode of propagation was carried on by different firms without any disastrous effect. Indeed, we have the authority of one of the veteran growers, Mr. William Paul, who states that the hollyhock had perhaps never been exhibited in its grandest state until after that date. Now if propagation "has much *perhaps even all* to do with the disease," why did it not bring it about sooner? Surely it would not take fifteen or twenty years to develop. Again, how is it that malva sylvestris and other species of the mallow family in a wild state are found covered with this fungus? these are grown and propagated with as much freedom as nature can produce, yet they are as susceptible to the disease as hollyhocks that have been subjected to 75 or 80 deg. Fahr. I think, as "experiences accumulate," your correspondent will conclude that the conditions of weather, propagation, &c., had for years been as favourable for the growth of this fungus as they are now, only one element had been wanting—the spores. The same may be said with regard to any other species of fungi. Were it not for the existence of the special kind of spores capable of germination, no amount of showery weather would make wheat rust, nor fog and rain cause grapes and peaches and apples to rot. The primitive origin of these species of fungi we need not discuss here. They, in some way, at some time, came into existence, and in the same manner that other species of living beings were originally produced; and it must be remembered that to exist, a fungus is as dependent upon an organised structure as are other plants and animals. I think it is very improbable that we shall ever get quite clear of the fungus, seeing that there is so much of it in many parts on the wild mallow, which, when the spores are matured, are

so easily carried or blown about until they get a resting-place on the hollyhock. I do not wish in any way to depreciate Mr. Blundell's excellent collection; nor the good work he has been the means of doing to bring the hollyhock to the front again. But I must honestly state that the worst form of fungus that I have seen was on plants that came from his stock quite recently, and I am afraid "the baleful marks of the enemy are still on the plants in his ground." It is very gratifying, however, to read that in thousands of gardens in the southern parts of Britain the hollyhock is still to be found in all its beauty. I only hope we shall soon be able to record the same pleasant effect in the north. It is highly amusing to read the different modes of cultivation that are now advanced, in order to keep down the fungus. One correspondent writes that no cure has yet been found for it, and the only preventive is not to grow hollyhocks for two or three seasons. Another writes that he tried an experiment last year with very good results. He informs us that it is moisture the roots want to enable the plants to combat the disease. He put out some plants in order to test this point. Up to the end of June they had all the moisture necessary to promote a vigorous growth, and by the middle of July the strongest had reached to a height of 9 feet and 10 feet with no signs of disease; but at that point root moisture was withheld, with the result that soon after the leaves were attacked with the well-known fungoid growth.

My experience differs from this. Last season I planted out a dozen fine new varieties, clean, healthy plants; the ground had been trenched and thoroughly prepared. My object being to keep up a strong vigorous growth, they were well supplied with water; indeed, some of them were overgrown. The leaves were like rhubarb, so large and strong, yet all were more or less affected with the fungus. My opinion is that no particular method of cultivation will have any effect to eradicate the fungus. We want something to apply to the plants, and the ground, to destroy the spores. This may be found in some of our modern insecticides, of which I have had several sent me for experiment, and I hope to give a favourable report further on. The best composition I have yet tried is from a receipt by Mr. F. T. Smith, who is also carrying on his labours in the Martell Road, West Dulwich. I have no doubt Mr. Smith will furnish any of our readers with this receipt if asked. We know of no person who has done so much for the revival of the hollyhock as Mr. Smith. The whole of his valuable collection (over one hundred varieties) are his own raising, and his plants last season were certainly the cleanest I had seen. It is surprising your correspondent did not see this collection when at Dulwich. Three thousand plants as grown by Mr. Smith is a sight not soon to be forgotten. GEORGE STEEL.

Replies to Queries.

Camellia Buds.—N. S.: The premature fall of the buds as in the case of your large specimen is a comparatively common occurrence, and without some knowledge of the condition of the plants and the attention they have received it is difficult to assign a cause. In some instances the premature fall of the buds may be traced to defective root action, and in others to an excessively dry atmosphere. But the most frequent cause is a check received after the buds have set. If camellias are allowed to become dry at the roots and remain so for a short time after the buds have set, they will not show any sign of injury at the time, but as soon as the time arrives for the flowers to expand the buds swell slightly and then fall off. As your specimen is in a healthy condition, we are inclined to the opinion that it has suffered from dryness at the roots.

Foxgloves.—Amateur: Two or three dozen plants of the foxglove arranged in suitable positions in clumps of three each would add materially to the attractions of your little wild garden. The strain known as the gloxinia-flowered is the best, the individual blooms being large and richly coloured. Sow the seed in a shallow box or in a pan, place in a pit or frame, where the seed will have the assistance of a brisk temperature, and maintain the soil in a nice moist state. When the seedlings are well above the surface remove to cooler quarters, and in due course prick off into other boxes or pans. From these they can be transferred to pots or be planted out where they are to bloom. If the positions are at all crowded the best results will be obtained by putting them singly into three-inch pots and deferring the planting out until they have filled the pots with roots and acquired sufficient strength to be in a condition to contend with adverse influences.

Potatos for Exhibition.—B. B.: It is not necessary in the cultivation of potatos for competitive purposes, to occupy your garden with varieties that are of but little value for the table. So far from that being the case it is essential the varieties placed upon the exhibition stage should be of the finest quality as well as of good appearance, as judges properly qualified for their work do not fail in making their awards to take into consideration the respective merits of varieties when cooked. You have been wrongly advised as to the selection of varieties for exhibition. The following are all of good appearance, heavy croppers and high quality, and will form an excellent collection. Abundance, Adirondack, Beauty of Hebron, Best of All, Chancellor, Early Puritan, Fidler's Prolific, Imperator, Magnum Bonum, Masterpiece, Reading Russet, Ross's M.P., Satisfaction, Schoolmaster, Vicar of Laleham, Snowdrop, Victorious, and Webb's Stourbridge Glory. The ground must be liberally manured, and the soil be well broken up, previous to planting. If the quarters were ridged up in the autumn it would not be necessary before planting to do much to the soil beyond applying the manure and levelling down the ridges.

Caladiums.—W. W.: Caladiums are readily propagated by division of the tubers, which is best done when they are commencing to make new growth. The tubers of the varieties of which you wish to increase the stock should be shaken out of the old soil in which they were grown, and be put in pans with a mixture consisting of loam, leafmould, and sand in about equal proportions. They ought to be covered with about one inch of soil. On their being put in the pans place them in a warm part of the stove or in the propagating house, and if where they have the assistance of a brisk bottom heat it will be an advantage. The soil ought to be in a moderately moist state when used, and be maintained in that condition. When the new growth makes it appearance above the surface take the tubers out of the soil, divide them with a sharp knife into two or more portions. They may, if so desired, be cut into as many pieces as there are growths, as each portion with a growth will make a plant. But unless you require a large stock of small plants for a special purpose the tubers should be so divided that each piece will have from two to four growths. When cut dip the portions into dry silver sand and put them in small pots, using a compost to which a larger portion of sand has been added than is required when the tubers are started and then shifted on without having been divided.

Azaleas.—G. S.: Your large azaleas that have become thin and somewhat unsightly may be rejuvenated without any very great difficulty. To start them into growth at once is of some importance, and if they are fairly well set with buds, your best course will be to place them in a forcing house until they are in bloom, when they should be removed to the conservatory. Immediately they are going out of flower, prune them hard back and place in a house in which a temperature of about 70 deg. and a humid atmosphere are maintained, and use the syringe freely. Under these conditions they will soon commence to break freely, and when the new shoots have attained an average length of one inch, remove them from the pots and reduce the ball of soil by about one-third. Return to pots of the same size and allow them to remain in the same structure until the growth is nearly completed, when a rather lower temperature and a less humid atmosphere will be desirable Water sparingly until the growth has made considerable progress, but syringe freely overhead.

Cannas.—R. Brown: A few clumps of the free-flowering cannas of moderate growth arranged in the mixed border at intervals of about eight feet, would add immensely to its interest and attractiveness throughout the summer. Some of the best of these are: Antoine Chantin, Capricieux, Epis d'Or, Francisque Morel, General de Negrier, Geoffroy Saint-Hilaire, Gerard Audran, J. Cordioux, Jules Chretien, Louise Chretien, Madame Just, Paul Bert, President Dutailly, Simon Delaux. It would be an advantage to obtain the roots in a dormant state, and start them at home, as the cost of packing and carriage would be considerably less, and the risk of the plants having been forced into growth with the aid of a high temperature would be avoided. If you decide to purchase dry roots, obtain them at once, and pot them within a short time of their coming to hand. Use a light and rich compost and five-inch pots, and when potted place in a pit or house in which they will have the advantage of a temperature of about 60 deg. If no other structure is available, put them in the greenhouse or pit. In any case they ought not to be subjected to a temperature much in excess of that of the greenhouse after they have commenced to grow freely. Cannas produce the best effect when arranged in comparatively large clumps, but single plants will not be wanting in attractiveness.

French Beans under Glass.—R. M.: As the space at your disposal is comparatively limited, you did quite right in not acting upon the advice given you with reference to the time of making the first sowing of French beans. When there is sufficient room for a successional supply to be maintained from early in the year until the outdoor crop comes into bearing, the first sowing should be made at the beginning of January. But as the plants raised from the January sowing are less productive than those from later sowings, it was in your case much better to defer the sowing of the first crop until the present time. There should, however, be no further delay. Eight-inch pots are the most suitable for French beans, and the beans may be sown in them, or the plants may be raised in pans or boxes and be transferred to them when the first rough leaf has been developed. When the beans are to be sown in the pots, fill with soil to within two and a-half inches of the rim, then put five beans in each at regular distances apart and cover them with about half an inch of soil. The remainder of the soil required for filling the pots can be added when the plants are four or five inches in height. There is yet another course you may take, and that is sowing the beans in five-inch pots, and then shifting them to the larger size when sufficiently advanced. The latter has much to recommend it. Place the pots in a light sunny position and as near the glass as possible after the plants have made their appearance, as they are especially liable to become drawn. A compost consisting of turfy-loam two parts and half-rotted manure is the most suitable. Williams's Prolific and Ne Plus Ultra are the two best varieties for forcing.

Obituary.

RECENTLY, after a very short illness, Mr. MICKLEWRIGHT, during the past three years head gardener to Andrew Pears, Esq., Spring Grove House, Isleworth, in his 44th year.

ON the 7th inst., MR. CORNELIUS CRASTIN, of the Nurseries, Hertslet Road, Holloway, aged 74 years.

ON February 16, at Bath, of influenza, the Right Hon. Sir LOUIS MALLET, C.B., aged 66. He was the son of John Lewis Mallet, of Hampstead, and of Frances, daughter of John Herman Merivale. His grandfather was Mallet du Pan, the eminent French journalist. His active political life in the Board of Trade, the Indian Council, and other important positions of responsibility, entitle him to the respectful gratitude of the British people.

Markets.

COVENT GARDEN.

FRUIT.

Apples.....per ½-sieve	2s. 0d.	to	7s. 6d.
Apples, American, pr. brl.	12s. 0d.	,,	24s. 0d.
Cobs.....per lb.	1s. 3d.	,,	1s. 9d.
Grapes.....per lb.	1s. 0d.	,,	6s. 0d.
Lemons .....per case	10s. 0d.	,,	15s. 0d.
Pine-apples, English, prlb.	1s. 0d.	,,	1s. 6d.
Pine-apples, St. Michael's each.....	2s. 6d.	,,	7s. 6d.

VEGETABLES.

Asparagus, English, pr bun.	7s. 6d.	to	10s. 6d.
Asparagus, Sprue, per bun.	1s. 0d.	,,	1s. 6d.
Beans, French .....per lb.	0s. 6d.	,,	0s. 9d.
Beet .....per doz.	1s. 6d.	,,	2s. 0d.
Brussels spr'ts, pr ½ sieve	1s. 6d.	,,	2s. 6d.
Cabbages.....per doz.	1s. 0d.	,,	2s. 0d.
Carrots .....per bun.	0s. 4d.	,,	0s. 6d.
Cauliflowers .....per doz.	2s. 0d.	,,	3s. 0d.
Celery.....per bundle	1s. 6d.	,,	2s. 0d.
Coleworts, pr doz bunchs.	2s. 0d.	,,	3s. 0d.
Cucumbers .....each	1s. 0d.	,,	1s. 6d.
Endive.....per doz.	1s. 6d.	,,	2s. 0d.
Herbs .....per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish.....per bun.	3s. 0d.	,,	4s. 0d.
Leeks .....per bunch	0s. 3d.	,,	0s. 4d.
Lettuces .....per doz.	1s. 0d.	,,	2s. 0d.
Mushrooms ...per basket	1s. 0d.	,,	1s. 6d.
Onions.....per bushel	3s. 6d.	,,	4s. 6d.
Parsley .....per bun.	0s. 4d.	,,	0s. 6d.
Rhubarb .....per bun.	0s. 3d.	,,	0s. 4d.
Salsify .....per bundle	1s. 0d.	,,	1s. 6d.
Seakale .....per pun.	1s. 0d.	,,	2s. 0d.
Scorzonera ...per bundle	1s. 0d.	,,	1s. 6d.
Shallots .....per bun.	0s. 4d.	,,	0s. 6d.
Small Salading...per pun.	0s. 3d.	,,	0s. 4d.
Spinach .....per bushel	2s. 6d.	,,	3s. 0d.
Tomatos.....per lb.	0s. 9d.	,,	1s. 0d.
Turnips .....per bunch	0s. 4d.	,,	0s. 5d.

CUT FLOWERS.

Abutilons ...per doz. bun.	1s. 6d.	to	3s. 0d.
Azaleas, per doz. sprays	0s. 6d.	,,	1s. 6d.
Bouvardias.....per bunch	0s. 8d.	,,	1s. 0d.
Callas .....per doz.	4s. 0d.	,,	6s. 0d.
Camellias .....per doz.	1s. 0d.	,,	3s. 0d.
Carnations, per doz. blms.	1s. 0d.	,,	1s. 6d.
Cyclamens, per doz. blms.	0s. 4d.	,,	0s. 6d.
Eucharis ...per doz. blms.	3s. 0d.	,,	5s. 0d.
Gardenias, per doz. blms.	9s. 0d.	,,	18s. 0d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Hyacinths, Roman, per doz. sprays.....	0s. 6d.	,,	1s. 0d.
Lilac, White, per bun. ...	4s. 0d.	,,	6s. 0d.
Lily of the Valley, per doz. sprays.....	0s. 9d.	,,	1s. 6d.
Maidenhair Fern, per doz. bun.....	3s. 0d.	,,	6s. 0d.
Marguerites, pr doz. bun.	3s. 0d.	,,	6s. 0d.
Mignonette, per doz. bun.	2s. 0d.	,,	4s. 0d.
Narciss. Paper White, per doz. buns.	2s. 0d.	,,	4s. 0d.
Pelargoniums, per doz. trusses.....	0s. 9d.	,,	1s. 3d.
Primulas...per doz. sprays	1s. 0d.	,,	1s. 6d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	1s. 6d.
Spiræas, per doz. sprays	0s. 9d.	,,	1s. 0d.
Tuberoses, per doz. blms.	1s. 6d.	,,	2s. 0d.
Tulips ...per doz. blooms	0s. 9d.	,,	1s. 0d.
Violets, per doz. bun. ...	1s. 0d.	,,	1s. 6d.
Violets, Parme, per bun.	2s. 0d.	,,	3s. 0d.
Violets, French, per bun.	1s. 6d.	,,	2s. 6d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents .....per ton	45s.	to	90s.
Magnum Bonum .....per ton	40s.	,,	95s.
Beauty of Hebron .....per ton	40s.	,,	90s.
Imperator .....per ton	50s.	,,	70s.
Scotch Champions.....per ton	50s.	,,	55s.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
2	S	2nd Sunday in Lent.	6 46	12 19	5 39	1 2	5 3	11 1	11 39	7 42	8 26	40·7
3	M	W. C. Macready born, 1793.	6 44	12 6	5 41	2 4	5 41	—	0 15	9 4	9 40	40·8
4	Tu	Lord Somers born, 1652.	6 42	11 53	5 43	3 8	6 11	0 45	1 9	10 10	10 34	41·0
5	W	Covent Garden Theatre burnt, 1856.	6 40	11 39	5 45	4 18	6 37	1 30	1 49	10 55	11 14	41·1
6	Th	☾ Full Moon.	6 38	11 25	5 46	5 27	6 58	2 8	2 24	11 33	11 49	41·3
7	F	*St. Perpetua.*	6 36	11 10	5 48	6 39	7 16	2 40	2 54	—	0 5	41·5
8	S	Sir J. F. W. Herschel born, 1792.	6 34	10 55	5 50	7 49	7 34	3 9	3 24	0 19	0 34	41·6

Orchids in Flower.		Day of Yr.
Dendrobium nobile	India.	1810
D. macrophyllum giganteum	Manilla.	62
D. pulchellum purpureum	Sylhet.	63
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D. Pierardi	,,	65
D. aggregatum majus	,,	66
Phajus Wallichi	,,	67

ROYAL AQUARIUM.—FLOWER SHOWS.

FIRST SPRING EXHIBITION, WEDNESDAY and THURSDAY, March 12th and 13th. Schedules for the whole series of Shows now ready, and may be had free on application.
William Holmes, Frampton Park Nurseries, Hackney, London.

THE BRITISH FRUIT GROWERS' ASSOCIATION.
President—LORD BROOKE, M.P.

Conferences have been arranged to be held during 1890 at Leicester, Brighton, the Crystal Palace, and the Royal Aquarium. Committee meetings will be held monthly in the Horticultural Club Room, Hotel Windsor, Victoria Street, S.W.

Programmes and all particulars can be had post free from the Hon. Secretary, Mr. Lewis Castle, Hotham House, Merton, Surrey.

Auction Sales for the Ensuing Week.

Monday, Mar. 3.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Greenhouse Plants, &c.

Tuesday, Mar. 4.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38 and 39, Gracechurch Street; Roses, Plants, &c.

Wednesday, Mar. 5.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Palms, Seeds, Greenhouse Plants, &c.

Wednesday, Mar. 5.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Conifers, Border Plants, Liliums, &c.

Thursday, Mar. 6.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids, Lilium auratum and other Lilies from Japan.

Thursday, Mar. 6.—Messrs. Protheroe and Morris, at their Central Sale Rooms 67 and 68, Cheapside; Nursery Stock from Sample.

Friday, Mar. 7.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

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ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

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The Gardeners' Magazine.

SATURDAY, MARCH 1, 1890.

The Proposed Hall for Horticulture makes fair progress considering there has been no public discussion of Baron Schroder's proposals, and they are as yet known only to those fellows of R.H.S who were present at the meeting on February 11, and a few others who watch closely the course of events. But a public discussion will be needful, and will have to be provided for, with particulars of finance, and perhaps a tentative plan of practical operations, for money does not flow freely in channels that are undefined. The collapse of the Fruiterers' Company Fruit Culture Fund may be attributed to the vagueness of the announcement of the Company's intentions, for as nobody knew what was to be done with the money, the response was cold, and the end proves to be but another example of how "not to do it." This proposal of a hall for horticulture will fail in like manner unless more definite particulars are put before the persons whose support is looked for; and this should be done quickly, and in the most public manner possible.

The note on the subject in our issue for February 15 will have shown that the project in its present shape is neither commercial nor eleemosynary. The necessary means are to be obtained in the form of a loan that is not to bear interest, but for which the security will be perfect, for the money will be invested in land and building, and every subscriber will have the satisfaction of knowing that his contribution is safely locked up in what should prove to be a property worth the money and likely to increase in value. It differs from a commercial scheme chiefly in the repudiation of possible pecuniary advantage. A trading company would have equally good security for its capital—we may say, identically the same security—and the management would of necessity be independent of the R.H.S., an advantage or a disadvantage, it is impossible to say which at the present time. In any case the Society would have to pay a rental, but a trading company would be likely to follow the example of her Majesty's Commissioners of 1851 in the event of the Society failing to keep its engagements. But if the hall were given to the Society the difficulty of the rent would not occur, and this consideration suggests that the choice lies between the eleemosynary and the commercial methods. A loan not chargeable with interest will require such a length of time to discharge itself by accumulation of rental for the use of the hall, as to have but a poor chance of being completed. Some at least of the persons who might, under certain conditions, be willing to subscribe will ask how they may obtain repayment of their contributions, for men who have money usually possess also a little prudence, and are apt to mix considerations of emergencies and contingencies with the disposal of moneys, even when the sums are smallish.

Having such matters in view, we remarked in our note of February 15 that there was wanting to the scheme a feature favourable to realization; in other words, while it might be desirable for one to sell a share or shares in the loan, it might be equally desirable for another to buy—in the place of interest there must be rights and privileges, and these must be defined and made an integral part of the general plan. A correspondent suggests the formation of Proprietorships of £10 to £20 each, and these as a matter of course should carry with them advantages that the holders will regard as the equivalents of money, and that render the shares, bonds, proprietorships—call them what you will—negotiable at any time, whether at a premium or a discount would depend on circumstances in precisely the same manner as in the case of a trading company.

We are still of opinion that a commercial venture would be far preferable to the proposal now before us, and we do not doubt it could be guarded against dangers that are too well understood to need to be particularized, so as to keep it properly within the charmed circle of scientific institutions. But there is a *prima facie* merit in the proposal of Baron Schroder, for as a master of finance he can claim attention and ensure confidence where many another projector might lack both. But after all there remains the task of borrowing forty thousand pounds on the understanding that there is to be no interest paid for the use of it, and repayment will be in the far future, and as the chapter of accidents may determine, may never happen at all. In the place of interest there must be rights and privileges, or say advantages, of some kind or other. The thing must be made to look better than at present, or the subscriptions will never reach to within many thousands of the total required. Human nature will force its way even into the penetralia of finance, and modern society finds a solvent of all horticultural, theological, political, social, and other questions in the high doctrine of a *quid pro quo*.

Since the foregoing was written we have received a circular signed by the Rev. W. Wilks for the Royal Horticultural Society, setting forth the terms of Baron Schröder's proposal and inviting the Fellows to subscribe to the loan fund, one of the conditions being that after the lapse of two years from the opening of the new buildings the redemption of the bonds will commence, and be continued by drawings annually. A list of subscriptions amounting to a total of nearly £3,000 accompanies the circular.

Mr. John Weathers, of St. Albans, has accepted the appointment of Assistant Secretary of the Royal Horticultural Society. This is an event of some interest, a paid secretary known to and respected by horticulturists having been long needed, not the less in justice to the Rev. W. Wilks, who has given ungrudgingly of his time and strength in the Society's service, than of other interests that can only be properly cared for by a representative always on duty. Mr. Weathers

appears peculiarly suited to the position, having had the training needful for its duties, and possessing the energy and love of the work on which success must finally depend. The Council are encouraged to continue in the spirited course that has been so well initiated by the continuous augmentation of the constituency. At the annual mee ing on February 11 fifty-one new Fellows were elected, and we may hope to see gratifying progress as the spring advances. That the annual meeting should be held so early in the year is in the nature of a calamity, for the country Fellows cannot be expected to appear in force when frost and fog are so likely to make a mere punishment of travelling. We may yet hope to see the date of meeting shifted from February to April or May, and the world at large might then take notice of it.

Mr. W. Brooks has been engaged as head gardener to H. G. Lake, Esq., Fairlawn House, Chiswick.

Mr. W. Cunison has been engaged as head gardener at Loudwater House, Rickmansworth, the residence of P. Gordon, Esq.

Mr. W. Edwards has been engaged as head gardener to J. H. Saunders, Esq., Porters Park, Shenley, Herts.

Mr. F. Knight has been engaged as head gardener at Bitteswell Hall, Lutterworth, the residence of D. Bromilow, Esq.

Mr. T. Townsend has been engaged as orchid grower to Sir Thomas Bazeley, Bart., Hatherop Castle, Fairford.

Mr. G. P. Revens has been engaged as gardener to W. Rought, Esq., Brandon, Suffolk.

Preston and Fulwood Horticultural Society will hold an exhibition of spring flowers on March 19 and 20.

Royal Horticultural Society of Jersey will hold its exhibitions March 12, June 25, August 20, October 22, and November 11 and 12.

The World's Fair in 1892 is provisionally located at Chicago as the result of the cumulative vote to which the question of site was subjected. The selection of Chicago will probably be ratified, but until that is done the arrangement must be considered as provisional.

Mr. D. East, for the past twenty-three years head gardener to F. Wigan, Esq., Clare Lawn, East Sheen, is leaving to go into business, and was a few days since presented with a handsome marble timepiece by the under gardeners and labourers, as an expression of their esteem. Mr. East will be succeeded by Mr. Want.

National Chrysanthemum Society.—The Marchioness of Headfort and the Baroness Howard de Walden have consented to become patronesses, and the Duke of Westminster a patron of the society. The two last named have also contributed donations of £5 each to the Centenary fund now open. Since the meeting of the general committee, applications to be admitted into affiliation have been made by the Batley, Bacup, Hartlepool, and Market Harborough Chrysanthemum Societies.

Primulas from Curraghmore Gardens indicate that the place maintains its character well under the management of Mr. Tucker. A batch of flowers just received from thence includes all the colours in remarkably fine examples of cultivation, the trusses large on massive stems and the pips grandly developed. Would there were many more examples of first-class horticulture than are at present to be found in the Emerald Isle to keep us in faith of a good time coming.

Isle of Wight has had some taste of winter lately, even to the falling of snow upon the mountains there. The downs, when thus embellished, had quite an alpine appearance, their diminutive dimensions being favourable to the illusion as we see them bathed in full light, and the novelty of the scene makes an impression. Spring flowers were making a rush there as in other parts, but the east winds have moderated the movement, so that the island is at this time not much ahead of the southern counties.

A Convention of Canadian Fruit Growers was held at Ottawa on February 19 and two following days, and was perhaps the most important meeting connected with the industry that has been held in the Dominion. All the provinces were represented by delegates, and there was a large exhibition of fruit. The object of the Convention was the development of fruit culture with special reference to the requirements of foreign markets. The subjects discussed were the varieties of fruit that should be grown for export and for home use, and the necessity of improved methods of packing, storage, and transit.

Sparkling Wines are supposed to reach these shores with the sparkle bottled up within them. But the supposition is damaged by the facts. Some so-called sparkling wines are imported in a still condition at a low duty, and are made to sparkle by operations here. The Custom House objects to the proceeding, but sees no way to deal with it directly, for the operators say there is no secresy in the business; the wine is not deteriorated, and there is no infringement of the law. But a case has been made under the Merchandize Marks Act, and a fine of £20 was the price of the offence of labelling the wine in such a manner that the exact case was not stated. The defendant said that in future the labels should show that the wine was made sparkling in this country. It is interesting to learn that at this season of the year, with east winds prevailing, there is sufficient sparkle in this country to bring the wines of Epernay, Moselle, and Burgundy to the sublime standard of effervescence that pertains to them in the sunny lands of their production. Evidently there can be no end to our capabilities.

Edinburgh Exhibition, to include industrial art and electricity, is making fair progress. It is interesting to note that by far the larger proportion of exhibits will be from England. An art section will be added, and a railway section, and there will be special post office and police exhibits. The Lord Mayor of London has promised to attend the opening ceremony.

The Hollyhocks in Mr. Blundell's nursery, Martell Road, West Dulwich, are referred to by Mr. Steel in his letter, at page 112, as being affected by the disease. The statement is incorrect, and consequently calculated to injure Mr. Blundell, while misleading the public. We can state on authority other than Mr. Blundell's, or any interested person, that the hollyhocks in Mr. Blundell's nursery at West Dulwich are, and have been, perfectly clean and healthy; in fact, the stock is in a particularly satisfactory state, the result, as Mr. Blundell believes, of his system of propagation, which has no aid from artificial heat.

Eucalyptus as a Protection against Influenza.—I can confirm the statement in your magazine of February 1 as to the use of eucalyptus in influenza. I have from the commencement of the epidemic used the Eucalyptus Disinfectant Spray (Tucker's) on the handkerchief by day and sprinkled over the pillow by night, and have escaped an attack, although I have attended over two hundred cases. I have saved many others, old people and invalids, from the disease by the same means. It is a most valuable disinfectant, and will protect children and others from infectious diseases. Those who wish to know of its use in scarlet fever, influenza, cancer, &c., can refer to the *British Medical Journal* of October 26, November 23, and December 7, 1889; and the *Lancet*, January 18 and February 1, 1890.—M.R.C.S.

Wildsmith Memorial.—A committee formed of members of the Reading and District Gardeners' Mutual Improvement Association, and consisting of Messrs. W. Basket, J. Coombes, T. E. Henwood, C. Ilott, W. Lees, J. Martin, J. Pound, and G. Stanton, with W. J. Palmer, Esq., as president, and Mr. A. W. Sutton, Reading, and Mr. H. J. Veitch, Chelsea, as honorary treasurers, has been formed to raise a fund which shall serve as a memorial to the memory of the late Mr. W. Wildsmith, by placing a child on the Gardeners' Orphan Fund. It is earnestly hoped that there will be a very ready response to the appeal now being made, especially by the late Mr. Wildsmith's friends and admirers, amongst the gardeners of the United Kingdom. The committee suggest that, in consequence of the late Mr. Wildsmith having promised to take steps to place one of a family of a late gardener's orphan children on the Gardeners' Orphan Fund, so charitable an object on his part will commend itself as the best form of a memorial that can be raised to him, now that death has prevented the carrying out of so generous a purpose.—T. Turton, The Gardens, Maiden Erleigh, Reading, hon. secretary.

Royal Horticultural Society of Aberdeen.—The prize schedule of this society has just been issued for the grand floral fête of 1890 and spring show of 1891. It is much bulkier than usual, and contains a lot of new matter. The patron is H.R.H. the Prince of Wales; the honorary president is the Lord Provost of Aberdeen, and the chairman of the acting directors is Mr. James Murray Garden, advocate, Aberdeen. There are four divisions for competition at the fête, *i.e.* (1), professional gardeners (2), nurserymen and florists (3), amateurs, and (4) working class. There are 722 prizes offered at the fête, which is fixed for August 21, 22, and 23. The spring show will be held in April, 1891, on a date to be afterwards fixed. There is the same number of divisions as at the summer show, and the prizes number 267. It is some time since a spring show was held in Aberdeen, and every effort will be made to make the 1891 one a success. The chief prizes are for collections of pot plants, fruit, vegetables, cut flowers, including bouquets of wild flowers, the competition being open to boys and girls under sixteen years of age, and for which there is no entry money charged.

Allotments.—The Government Bill relative to allotments was issued on Wednesday. Under the Act of 1887 it is made the duty of the sanitary authority, on the representation of six electors or ratepayers in an urban district or a rural parish, to acquire land for allotments, if they are of opinion that there is a demand for them, for the labouring population, and that they cannot be obtained at a reasonable rent and on reasonable conditions by voluntary arrangement. The proposal of Mr. Ritchie's new Bill is to grant an appeal from the local authority's decision to the county council where any six persons qualified to make the representation consider that the circumstances of the district or parish are such as to make it the duty of the sanitary authority to take proceedings under the Act, and that they have failed to acquire land adequate to provide a sufficient number of allotments. On *primâ facie* evidence being given of the facts stated in the petition the county council are to hold a local inquiry into the circumstances; and if they are satisfied that the circumstances are such that land for allotments should be acquired by the sanitary authority, they are to require it to be done within any specified time not exceeding six months. On default of the local authority to acquire land or take steps for doing so, the county council are required to do so themselves. The outlay of the council is to be charged on the local rate; but if the result of an inquiry is that the council send no requisition to the sanitary authority, the expenses are not to be a debt from that authority. For the purposes of this measure each county council is to appoint annually a standing committee, not exceeding a fourth of their whole body, and in business relating to any electoral division the member for that division is to be included in the committee. However, the council may delegate to the sanitary authority certain powers relating to the management of the allotments, and the letting and use of them, &c. And whenever the sanitary authority request it, the council may transfer their allotments and powers to them.

ORCHIDS AT FERNSIDE, BICKLEY.

When the east wind blows cold in the last days of February, it is very pleasant to be able to spend a few hours in a well-furnished orchid house. I had this source of enjoyment the other day in a visit to the collection of H. M. Pollett, Esq. Go when you will, you will always find some rare or beautiful orchids in flower here, and considering the extent of the collection, there was quite a large display of bloom in all the departments. Moreover, if the visitor keeps his eyes and ears open he will be sure to be the wiser and better after his visit.

It may be as well to begin with the cool house, or rather with the two cool houses, for certain species are placed in a house which was quite as cold as an ordinary greenhouse, and here were many specimens of different genera that were supposed to do better in the coolest temperature. The house was certainly freely aired, for I saw several specimens of Onicidium macranthum placed near an open ventilator, and the wind was moving the leaves freely—a cold east wind, be it remembered. The cool house containing the flowering specimens was rather warmer, and the atmosphere necessarily drier, to preserve the purity of the flowers. Mr. Pollett possesses many fine varieties of Odontoglossums, especially of the O. crispum group, and these naturally claim precedence owing to the charming variety and matchless purity of the finer forms, indeed the ordinary visitor sees most beauty in the gracefully drooping spikes and well-formed flowers of the white or lightly spotted varieties; being in blissful ignorance of the commercial value of some of the densely spotted or odd-looking varieties. There are, of course, a few which have flowered in collections that for beauty as well as rarity will always be valued. O. Bickleyense, a variety of O. crispum of the Stevensi type, is distinct and attractive, and the yellow ground form of crispum is very distinct, the ground colour when the flowers first open being of a deep yellow and lightly blotched brown. A good variety of O. Wilkeanum was freely in flower. This is a supposed cross between O. crispum and O. luteo-purpureum. When it first flowered it was recognized as quite distinct in character, and was for some time very rare. But it frequently turns up in collections of unflowered plants of O. crispum. It has flowered in our own collection, and the same importation gave us several good forms of O. luteo-purpureum. O. Pescatorei was also present in the form of some good spikes. O. blandum, also in flower, is a charming odontoglossum. It is well grown here, and, I may add, not at all a common plant. It is rather difficult to import, which may account for this. The flowers are of small size, closely arranged on short spikes, and densely spotted reddish purple on a white ground. Near to it and in striking contrast is O. maculatum, a vigorous species producing spikes with nine flowers on some of them. A few plants of O. luteo-purpureum were in flower, and the distinct-looking O. Edwardi was throwing up strong spikes. Perhaps one of the prettiest plants in the house was a good one of Oncidium Phalænopsis; it had produced five spikes, upon which were sixteen of its charming flowers, white spotted and blotched violet. The above, with a few Masdevallias, such as M. Chelsoni and M. amabilis striata, &c., made a charming display.

The adjoining house, adapted to the culture of Cattleyas, &c., had even a greater show of flowers, and the effect was more striking though not more pleasing. The varieties of Cattleya Trianæ are now plentiful in all collections, and are the leading feature in February and March. Mr. Pollett has wisely taken pains to select good varieties, and has made a complete clearance of all inferior forms. One of the best white varieties I have seen was in flower; the sepals and petals large, of good substance and well formed; there is a lemon blotch on the lip. C. Trianæ Backhousei was in flower, and is well known to collectors for its distinct stain of purple in the centre of the petals. The variety Formosa has a richly coloured lip; there are also many striking varieties now which are not thought to be worth naming. There is a very fine variety of C. Percivalliana, and not all the varieties of Lælia anceps had passed out of flower. Schröderiana was the best of the white forms.

Effectively arranged amongst the cattleyas were good plants of Oncidium splendidum; the rich yellow flowers borne on long spikes are very attractive. They flower from Christmas until March. Mesospinidium vulcanicum, with its bright rose-coloured flowers, and Oncidium cheirophorum, with its curious small yellow flowers on graceful spikes, sweetly perfumed; these were suspended in pans from the roof.

The leading feature in the warmest house are the Lady's Slippers. Amongst them are the more recently-introduced novelties and the rarest garden hybrids. Cypripedium leucorhodum, perhaps the most beautiful of all the Selenepedium hybrids, was finely in flower; the sepals and petals are white, lightly touched with rose, the lip pale rose. C. Sedeni candidulum, much like it in colour, but distinct in form. C. Leeanum superbum, beautiful; exceedingly superior, I think, to either of its parents. It is a product of C. insigne Maulei, crossed with C. Spicerianum. C. Germanyanum, which was exhibited at the Drill Hall and described at page 84, was also in flower. Other well-known garden hybrids in flower were C. calurum, C. selligerum, C. cardinale, C. Williamsianum, and C. Dautheri. The most noteworthy species were C. callosum, distinct, but yet bearing some resemblance to C. Lawrencianum. It is a recent introduction from Cochin China. The most striking species was the C. Elliotianum, certificated at the Drill Hall, and also described at page 84. The pretty C. Schlimi had ten spikes on one plant. They are all in capital condition, and very creditable to the grower, Mr. W. Parks. J. D.

Forecasting the Year's Weather.—According to the chart that Mr. B. G. Jenkins has just issued, the weather we are likely to meet with during the present year is not calculated to prove very propitious, especially to agriculturists. His forecast is indeed a gloomy one, for the chart shows that in no less than seven of the months wet weather is likely to predominate, this being especially the case during the summer, "rain" being predicted for each month from April to September. Should the forecast be correct, and last year's experience leads us to form the impression that Mr. Jenkins will probably not be far out, 1890 will certainly be a very unfavourable year, the months when fine weather is expected and wished for, being just those during which Jupiter Pluvius will exert his influence the most. So far Mr. Jenkins has been singularly successful in his forecast, the wet and stormy weather which was experienced last month being foretold, though in the matter of the gales he was certainly a little out of his reckoning, the hurricanes being later in the month than he anticipated. The chart, it is worthy of note, is based on the variations of temperature that are caused by the perturbations of the moon, sun, and planets upon the earth. The publisher of the chart is Mr. R. Morgan, 65, Westow Street, Upper Norwood.—*City Press*, February 26, 1890.

Exhibitions and Meetings.

THE CARNATION AND PICOTEE UNION.

The fifth annual report of the Carnation and Picotee Union has been issued by Mr. E. S. Dodwell, the honorary secretary, and a glance through its pages shows that the society is in a progressive state.

It appears that one hundred and four new members were added to the list during the year, and that the rate of increase since the formation of the society has been maintained. In the first year one hundred and ten members were entered upon the roll; in 1886 an addition of one hundred and twelve was made; in 1887, eighty-four; and in 1888, one hundred and eleven. On turning to the balance-sheet, we find that the total income, with a balance of £10 9s. 7d., was £189 15s. 1d. Of this the sum of £155 9s. was received in subscriptions, as compared with £59 15s. 6d. The prizes awarded amounted to £67 19s., as compared with £41 in the first year, and it may be mentioned that since the society has been established the sum of £272 8s. 6d. has been disbursed in prizes to one hundred and forty-one competitors. The balance in the hands of the treasurer at the end of the financial year was £14 5s. 1d.

In addition to the usual report and balance-sheet, an official record is given of the awards made and the flowers shown at the exhibition held August 1, 1889, the proceedings at the annual luncheons, and a report by some of the leading growers in various parts of the United Kingdom upon the incidents of the season, and the flowers that had come under their notice, these notes being very interesting and useful to cultivators.

The exhibition will be held on Tuesday, August 5, in the gardens of Mr. Dodwell's residence, Stanley Road, Oxford.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

A meeting of the General Committee was held in the Horticultural Club room, Hotel Windsor, Victoria Street, S.W., on Wednesday, February 19th, at 4 p.m., Mr. T. Francis Rivers in the chair, and there was good attendance of members. After the Honorary Secretary had read the minutes of the previous meeting, thirteen members were elected, and some additions were made to the Executive Committee. The place of meeting for the Committee during the year next came under consideration, and in accordance with a resolution passed on a previous occasion the Rev. H. H. D'Ombrain had been written to with the object of making arrangements for holding the meetings at the Horticultural Club. A reply was now read in which it was stated that "the Committee gladly accedes to the proposal."

Letters were read from J. Storey, Esq., Town Clerk, Leicester; Mr. J. Burn, Abbey Park, Leicester; Mr. Henshaw Russell, Crystal Palace; Mr. E. Carpenter, Brighton, and Mr. W. Holmes, Hackney, with regard to the Conferences of 1890, and after some discussion, it was resolved that the Association should hold the following meetings to deal with the subjects named:—Friday, June 27, Royal Aquarium, Westminster, Strawberries and Bush Fruits; Tuesday, August 5, Leicester, General Fruit Culture for Profit; Friday, September 5, Crystal Palace, Plums and Stone Fruits; Thursday, September 11, Brighton, General Fruit Culture, Grapes and Tomatos; October 15, Royal Aquarium, Apples. Offers of papers upon several subjects had already been received from members and friends of the Association, but the full programme will be announced later on.

It was resolved that the General and Executive Committee meetings be held in the Horticultural Club room at 5 p.m. on Thursdays, March 6, April 3, May 1, June 5, July 24, August 21, October 2, November 27, and December 18.

Communications were read from provincial Societies with regard to providing lectures at their meetings, and the Secretary was directed to communicate with several experienced fruit growers on the subject.

Mr. T. W. Beach, Brentford, exhibited a sample lamp which he had employed for suspending amongst his fruit trees to catch the winter moth and other pests. It was an ordinary petroleum lamp, with an extremely wide shade, the under surface white, and covered with grease and tar. The moths fly to the light, and are held securely by the adhesive mixture. A lamp of a similar kind has been tried on Lord Sudeley's estate with much success, and attention has been called to the subject in some provincial papers. Mr. Beach submitted a number of letters and clippings dealing with the matter, and was accorded a vote of thanks for his communication. Mr. T. F. Rivers referred to the loss the Association and the fruit interest had sustained by the death of Mr. Wildsmith, and it was resolved that a letter of condolence be sent to Mrs. Wildsmith.

AUCUBAS IN BERRY.

Last Sunday, while walking in Amhurst Park, between the railway station and the high road, Stamford Hill, my attention was drawn to the aucubas in the gardens, by the fact that all of them were well supplied with their scarlet berries. In some it was very conspicuous, a striking instance of insect fertilization, as it was not confined to one garden but in all in that part of the road. I did not observe the male plants, but there must have been some close at hand; when I reached the high road there were plenty of the aucubas, but I did not notice a single berry. H. A.

[We have seen more examples of berried aucubas within the past few weeks than at any time since the male plant was introduced, and this in places where the male certainly does not exist. The fact suggests that when the males were in flower last year, circumstances were favourable to the transportation of pollen. In the first few years after the introduction of the male aucuba, we could occasionally trace the influence of our own male plants at a distance of half a mile from the garden, being familiar with the district and fully convinced that our own were the only males then to be found within some miles of the spot. We have lately heard from Mrs. Gedge that seedling green-leaved aucubas from the garden of her brother, the late Dr. Denny, are displaying a fine crop of scarlet berries, although there are no male plants in the garden. It may happen, however, that there are males amongst the seedlings that flowered last year without being observed.—Ed.]

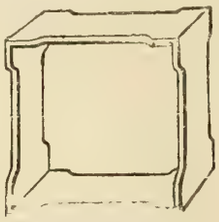
Mr. Alfred Waters has been engaged as head gardener at Hopwood Hall, Middleton, the residence of Captain Hopwood.

WORK FOR THE BEE-KEEPER.

Continuing my notes, the preparation of sections next claims attention, and notwithstanding the impulse lately given to glass sections I am certain they will never entirely supersede the American sections now in use. Novelties that promise to be useful should always be encouraged, but there are two ways of looking at this matter, and it is well to ascertain at the outset if the game is worth the candle. One serious objection to glass sectional supers is that bees do not like glass, and therefore do not take readily to them. The best finished American sections that I have seen during the past summer have been those with four bee ways as here shown in the section before it is

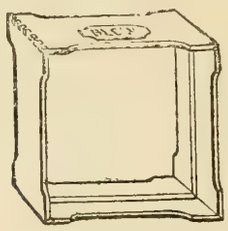


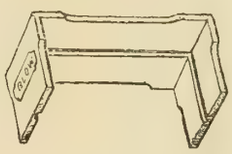
doubled, and the other doubled. These are a considerable advance on the old form, as they allow the bees access to them every way, and by this means avoid pop holes so common in the old form of section.



Four-way Section.

They may be had at any dealers in bee furniture at the same price as the others. Mr. Blow, of Welwyn, Herts, has made an improvement on the above by introducing a groove in which to run the sheets of foundation, which, when folded, completely fills the section, when the upper edge can be secured in its place by a little melted wax. Sheet





wax can also be obtained cut to exactly fit the above for a little extra charge per pound.

Another very ingenious method of fixing comb foundation is that recommended by Mr. Howard, and known as Howard's "Champion" Foundation Fixing. The inventor claims for it as an advantage over the preceding method that no melted wax is necessary, and that a thinner kind of wax may be used with success than in the other method, which is of some consideration, as nothing is more objectionable than thick foundation guide in the sections. A die for cutting the exact sheets may be obtained for the preparation of "Howard's Champion Foundation Fixing."

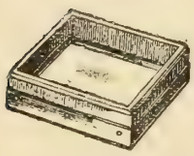


Fig. 1.

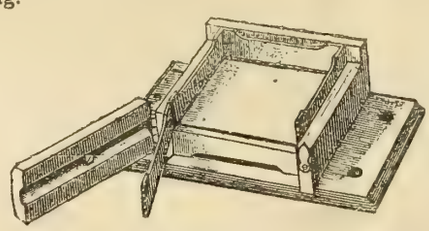


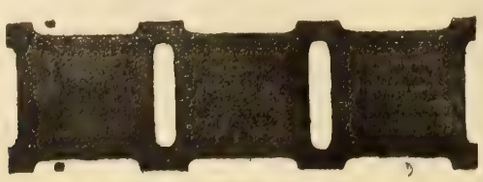
Fig. 3.

Fig. 1.—Die for cutting to exact size the full sheet of super foundation.

Fig. 3.—Section block.

The block is screwed to a table receiving a section cut as illustrated, and on the centre base the full sheet of foundation is guided in the side grooves of section. When the foundation is near the bottom groove, but not quite in, the upper half of section top rail (cut at an angle of 45 deg.) is brought into place by the hinged door of block; and this operation firmly fixes and carries the foundation into the bottom groove.

Whatever kind of section is used, some kind of divider will be necessary to ensure a properly finished surface, without which it is



Improved Slotted Divider.

difficult to secure uniformity. This is necessary that they may be packed safely for travelling, so that some kind of divider should be used. The one here illustrated answers well, and may be had from any dealer in bee-keeping appliances.

The bees much prefer wood in connection with their hives, but these cannot be supplied for four-way sections. These dividers are specially adapted for the ordinary one pound American section, and the usual section tray—viz, holding twenty-one of them. If all the section trays are made the same size, these can be piled one upon another when not in use, and may also be worked in that way.

Every endeavour should now be made to push things forward as rapidly as possible; for the preparing hives, and getting guide-comb fixed in both hives and sections are properly winter jobs, and should all be completed by the end of February or early in March. Except an occasional look round to see that damp has not gained access to hives, little should be wanted till some way into March, and then much will depend upon the weather. So far as present appearances go, bees appear to have wintered well, and have had many favourable days for cleansing flights. If bees are known to be short of store, a cake of soft candy placed under the quilt over the frames is the best way of meeting the deficiency, but bees or colonies of bees that require no such attention are the most likely to be satisfactory. Apiarist.

PROTECTING SEEDS FROM BIRDS.

The time will soon be at hand when quantities of seed will be committed to the ground, and among them will be many for which such birds as chaffinches have a great liking. These include Brussels sprouts, cabbage, cauliflower, savoy, borecole or kale, turnip, and radish. In many gardens, our own included, it would be almost as well to cast the seed on the fire, or leave it in the seed store, as to sow it in the garden without some kind of protection from birds. I have proved this to my cost, and many plans have been adopted for the protection of these seeds, such as damping the seed and dusting it over with red lead; and also covering the plot with netting. But the edges of the netting have to be pegged closely down to the damp ground, which rots the net, and after being once or twice used is of little further value. Add to this the work that is given in cutting forked sticks to keep the net from resting on the surface of the seed bed; for if this is not prevented it fails for the purpose for which it was put on, as the birds settle on it and take the seeds through.

For all the seeds above mentioned, except turnips later in the season we use guards made by splitting or sawing a nine-inch deal board through the middle, making two strips four and a-half inches wide. These are cut into suitable lengths so as to form rectangular frames; when nailed together at the corners these may be made any suitable size, but four to five feet long, and three feet or a little more in width, are very convenient sizes, as one can easily shift them about from place to place. These frames are then covered with half-inch mesh galvanised wire netting, tacked securely to the top edge of the frame, with flat-headed tacks or very small staples. Frames made in this manner last for years, and where succession sowings are made, they may be moved from one sowing to the other, for when the seed is well up it is out of danger of the birds. For later sowings of turnips we use pea guards, which are kept on for a few days after the seed is up. Pigeons and sparrows are the most troublesome birds for peas, and these we always cover with galvanised wire guards, such as generally are in use for that purpose. Mice also like peas, but they prefer toasted cheese, and a trap should be baited with the latter and set near the rows of peas at the time of sowing. C. W.

FORCING FRENCH BEANS.

Those gardeners who go in for early forcing of French beans will have the first batch in bearing now, and of great service. To keep up a succession it will be necessary to sow a batch every ten days. To have French beans in succession from early in March until they come in the kitchen garden is perhaps a task that few attempt. This, of course, could not be done without plenty of room. I find the best plan is to sow in seven-inch pots about seven or eight beans, leaving plenty of room for a good rich top dressing. Thin to five or six, taking out the weakest. Stakes must be put in good time, one to each plant, such as the prunings of young apple trees. An active man would top dress and stake two dozen pots in an hour.

The pots may be placed in any warm place, such as on a board on pipes in pine-stoves, where they can remain until they reach the rim of the pots. From that time they must be kept as near the glass as possible, and be syringed every fine morning (omitting a few days while in bloom), or red spider will be sure to attack them. They must never be allowed to suffer for water, and manure water must be given regularly after setting commences. The compost should be sufficiently rich to support them in health to this period.

I find better results from pot culture than on beds in pits. The crop comes on much faster, and pots can be shifted about at convenience. Air must be admitted on all favourable occasions to keep them strong and healthy. The best varieties for forcing are Osborn's Early Forcing and Ne Plus Ultra. I reckon to gather as fine a crop from pots as in the kitchen garden, and anyone who carries out the same practices will find the same results.

E. Tucker.

Curraghmore.

Early Flowering Daffodils have special interest and value. On the 8th we noted that about a dozen varieties of trumpets were in flower with us in the open ground at Kew. The names of these are Ajax (type), Hudibras, Cambricus, Spurius coronatus, Spurius Henry Irving, Spurius Yellow King, Pseudo-narcissus pleno, Obvallaris, Tottenham Yellow, Pallidus præcox, Minimus, Nanus, Minor.

DESSERT APPLE, GRAVENSTEIN.

This fine apple has been a "bone of contention" lately, a matter for regret, seeing it is one of the most tender-fleshed apples known to European gardens, and every way different to those pommes de terre that sometimes have the bone in them. We have reported on samples supplied to us from the nurseries of Mr. Charles Turner, Slough, and the subjoined figure does justice to them in black and white.

This apple originated in the garden of the Duke of Augustenberg, at the Castle of Grafenstein, in Holstein, a place that may properly give us a good apple, seeing that a considerable portion of the English people came from Holstein, and the inhabitants of that Duchy at the present time bear a close resemblance to the English of our eastern counties. The apple is not much known here, but is often met with in Northern Germany and Denmark, where it is "said" to attain to finer quality than in English gardens, a statement that is true sometimes, but not so often as to prove a rule.

The fruit is above medium size, and decidedly handsome, though not beautiful. It is showy, distinct, irregular, angular, and ribbed; the eye is usually open, but sometimes closed and always rough; the stalk short and inserted in a deep cavity. The skin is smooth, clear yellow streaked with crimson, and occasionally much blotched with crimson and orange, but rarely does it merit to be described as high-coloured.

The flesh is white, crisp, very tender, juicy, and richly flavoured; those from Slough were truly delicious. Its season is from October to February, and as it is equally good for the table or for culinary purposes, it deserves a place in the select garden of apples. It thrives on the Paradise, and forms a spreading, prolific bush, healthy, vigorous, and bearing well.



DESSERT AND CULINARY APPLE, *Gravenstein* (Season October to February).

HEATING SMALL PLANT HOUSES.

As there has been some discussion of late in the Gardeners' Magazine on the heating of small greenhouses, perhaps, as I have passed through the affair to some extent, what I am about to say may be useful to your readers. In the first place it is quite possible to heat a house up to 36 feet long and 8 feet wide with paraffin stoves, and to keep such house 6 deg. above freezing with the glass outside 20 deg. Fahr. below freezing. This may be done without any smell of paraffin, which mainly arises from the air-grating touching, often soldered to, the wick-tube, down which the oil always sweats and then it is vapourised on the hot grating. If the grating is kept say a sixteenth of an inch or less from the tube then the oil passes down on to a cold tin plate and there is virtually no smell, that is if everything is kept clean and proper. It takes for a house that size on ordinary frosty nights two stoves with two-inch wide wicks to do the work, but when the frost is or is likely to be during the night 15 or 20 deg. Fahr. below it will take four stoves or eight inches of wick to do the work. But all this must be very exactly done and very carefully watched, and the stoves should be such as will run for 20 or 24 hours, and they can run that time without attention: that is in careful hands, but then there is the cost. It is said that a pennyworth of coke will do as much heating as a shillingsworth of coal-gas, and I think it is true with gas at near 4s. per 1,000 feet. Now two gallons of paraffin are about equal to 1,000 feet of gas roughly speaking for heating or lighting, therefore, with paraffin at 8d. per gallon, we get 1,000 feet of gas for 1s. 4d., and what is the upshot of this in heating? Why, I find that the work can be done in heating for about one-third the cost with coke at 1s. per cwt. that it can with paraffin at 8d. per gallon, and the trouble and worry is nothing in comparison, besides less skill and care required into the bargain. That I believe is the real truth.

Now, when a person wants to heat his house and has no experience, the best thing to do is to go and look at all the little places he can see and ask for the defects and costs of each friend he can get at. Then he will find that the coils all fur up because the water boils in them, so they are now rejected, and besides the coke used to stick up and the fire go out. I think for a small place up to the size I mention there is nothing equal to a solid cast-iron independent boiler; that is one that wants no brickwork, which should have the qualities of strength and simplicity, easy to light and clean out both the fire-box and ash-hole, and so that all these openings are easy to open and shut close with a damper close to the fire so that the draught can be almost closed to secure very slow combustion. Now, if the stove and boiler are very small, as Mr. Clarke says, they do not hold enough fuel to last long enough; I think no stove, to last safe through a very cold night, say twelve hours, should hold less than 14 lbs. of broken coke such as is sent out by the gas works. This 14 lbs. will last, at a proper draught, twelve hours or rather more, making the cost at 1s. per cwt. 3d. for twenty-four hours' firing. Now, I am not financially interested in any one pattern stove. There are several much alike, but as imitation is the sincerest form of flattery, I find that many forms are very nearly copies and slight variations of Messenger's pattern, that they indirectly point to the excellence of that form. There is a No. 2 Messenger which I think the smallest safe size. Never forget that most manufacturers say that a boiler of a certain size will heat more pipe than it will without running the fire hard, which should never be or you have no reserve force to run on. This No. 2 with a flow and return of 4-inch pipes containing enough water not to get cold too quick if the fire is low is a pretty safe concern. There is another advantage in a stove this size, the combustion may be so slow that the smoke-pipe need not be too hot to be inside a part of the house where plants can live and do so well. My stove is entirely inside a part of the house, and even the little dust and smoke of clearing out and lighting the fire does not do much harm. Remember you want three doors or traps—one to put in the coke, one to rake out the old firing, and one to clear the ashes which the grating may be made to sift, and besides, a moveable trap at the bottom of the chimney-pipe to clean that out. I always use broken gas-coke but have no experience of anthracite coal. I think anyone may depend on a stove like this. I have had mine in use three winters, and it is about as near perfect as can be. I can go to bed on the coldest night without fear, and in the morning the fire is low but the pipes are nice and warm after twelve hours; and of course the same holds good for the day if you make up the fire and have to leave it. It is an entire mistake to think that any little tin jimcrack will not deceive you if you depend on it for too much. As for flues they are out of the question at this time, except in some rare cases.

Forest Hill, S.E. W. Piercy.

SWEET PEAS.

In common with several other important classes of plants that have a place in the flower garden, the sweet peas have had much attention paid to them of late years; and as the result of the labours of those engaged in the work of improvement, we have now a material increase in the shades of colour and in the size of the flowers. The range of colouring has, indeed, been so greatly extended, and the quality of the individual blooms so materially improved, that their value has been much enhanced. It is not so many years since the cultivator had to be content with some half-dozen shades, of which several were wanting in distinctness; but now he has at least double that number of colours, all of which are at once distinct and beautiful. The colours, as a glance at a seed catalogue will show, range from pure white to dark purple, and many of the intermediate hues are surprisingly beautiful. Sweet peas appear to great advantage arranged in medium-sized clumps towards the back of the mixed border, whether filled with hardy or half hardy plants; they are attractive trained to a wire or other trellis about five feet high, and they are of great value for the supply of flowers for indoor decorations. For the latter purpose we find them so useful that I am not surprised to hear of their being largely grown for market purposes.

The cultural details are few and simple, and therefore the production of an abundance of flowers should not occasion any difficulty. The seed may be sown where the plants are to be grown and flowered, or the sowing may be made in pots and the plants be transferred to the beds and borders, when two or three inches in height. In any case it is advisable to sow rather early, and the period between March 1 and 15 is perhaps the best. Sown thus early they become well established and come into bloom before the heat and drought of summer can materially affect them, and as the result of their greater vigour during the earlier stages of growth a more satisfactory bloom is obtained by the cultivator for his labour. As in the case of esculent peas, those grown for the beauty of their flowers require a rich soil and an open position. Therefore in selecting the positions for the clumps in the border full advantage should be taken of vacant spaces that are not likely to be crowded up by tall growing plants and are not overhung by trees or tall shrubs. In preparing the stations the soil should be stirred to a depth of not less than twelve inches with spade or fork and have two or three spadefuls of half-rotten manure added to it. About a dozen seeds should be sown at each station, and if all the plants are successful in escaping mice, sparrows, or other of their enemies, two or three may, to prevent overcrowding, be drawn out, when sticks are put to them. In sowing in pots those six inches in diameter are used, and for filling them a rich and open compost is employed. Eight or nine peas are put in each pot, and if the sowing has been delayed until after the middle of March, the pots are placed in a pit or house in which a temperature of seventy degrees is maintained. But if the peas are sown during the first fortnight of that month they are placed in an unheated pit which is kept quite close until the peas have germinated, when, as a matter of course, air is admitted. Those started with the aid of artificial heat are removed to a cold frame as soon as the plants are about an inch high, as it is essential the growth should not become drawn. The plants from which we obtain our supplies of flowers for filling vases and other receptacles indoors are grown in the kitchen garden under much the same conditions as obtain in the cultivation of garden peas. They are sown in rows five or six feet apart in a quarter that was liberally manured and deeply dug in the course of the previous winter. When a few inches high a little soil is drawn about them on each side of the row, and shortly afterwards sticks of a sufficient length to stand between four and five feet out of the ground are put to them. Ordinary pea-sticks are used both for the rows in the kitchen gardens and for the clumps in the flower borders. But for the latter rather longer sticks are selected, and from six to nine inches of the tops taken off. After the sticks have been put to them they receive but little further attention beyond the removal of the seed-pods as soon as formed. Their removal is very important, for if the pods are allowed to remain the growth will receive a check, and the production of flowers be soon brought to a stop.

In referring to the selection, of varieties of which there is now a goodly number, I would suggest that but few will be required in any one garden. Where it is desired to have a mixture of colours in the clumps I would suggest that, instead of buying a mixture, three or four of the finest forms be purchased and the seed be mixed previous to sowing. This practice can also be strongly recommended when one row of moderate length will suffice for the supply of cut flowers. The varieties that I would specially recommend are Butterfly, white, shaded with lavender, exquisitely beautiful; Cardinal, rich scarlet crimson; Duchess of Edinburgh, scarlet and rose, splashed with white at the margin; Indigo King, indigo-blue and marone-purple; Invincible Scarlet, bright scarlet, one of the best of the older types, and valuable for cutting: Princess Beatrice, carmine-rose; Princess of Wales, white, striped and shaded mauve; and White. The last-named has pure white flowers, and is invaluable for cutting. W. B.

The Supposed Discovery of a Rembrandt has made a stir in the artistic world. The picture was found amongst the effects of a widow, whose death in Paris occurred recently, and it was purchased by a dealer for 4,000 f. The picture is dated 1656. The subject is reported to be Abraham and the two angels. As regards its authenticity, it appears to be in the same position as the magnificent Rembrandtish head on panel discovered a few years since and now in the South Kensington Museum. This last is well known through the masterly etching—a wonderful piece of work—by Mr. Charles P. Slocombe.

ANNUAL PHLOXES.

Annual phloxes are not, it must be distinctly understood, of much value for supplying cut flowers for vases and indoor decorations generally, but for the embellishment of the flower garden during the summer months they have but few superiors amongst plants of annual duration. Vigorous in growth, neat in habit, and free in blooming they will, when placed under favourable conditions, continue in flower until quite the end of the season. Although by no means difficult of cultivation, the varieties of Drummond's Phlox are somewhat peculiar in their requirements, and to ensure a full measure of success it is necessary to take note of these and comply with them as far as it is practicable to do so. Two essentials are a moderately rich soil and a position where they are not likely to be deprived of either light or air by trees or shrubs, or indeed by tall growing annual or herbaceous plants. On thin poor soils they are decidedly ephemeral in character, and when the position is not moderately open they become more or less drawn, and fail to produce the effect of which they are capable.

Having decided to add the phloxes to the list of annuals to be grown, the first matter to be considered is the selection of varieties. Those forming the old type will produce a good display of colour extending over a considerable period; but as the flowers are inferior in size, form, and substance to those of the Grandiflora varieties, it follows, as a matter of course, that where the trifling difference in the cost of the seed is not a matter of much importance, they should not be grown. I would strongly recommend the grandiflora varieties as being decidedly the best for the flower garden, as not only have they a more robust habit and flowers of higher quality, but they give a wider range of colour. There are at least twelve distinct colours, and these may be had separately or in mixtures, as may be desired. When comparatively few plants are wanted, a packet of mixed seed will suffice, but when they are to be grown somewhat largely the selection of a few of the more distinct colours will be preferable. I would suggest as the most desirable, Carmine, Crimson, Rose, Scarlet, and Pure White. These arranged in medium-sized clumps along the second row of the mixed border will produce an effect at once distinct and beautiful. The white and rose-coloured forms of Hortensæflora are also desirable, being compact in growth and so free in blooming that the flowers form dense masses of colour. The Cuspidata varieties which bear flowers having long, pointed lobes, should also be included in the selection, both for their distinct character and elegant appearance. The more important of these are Star of Ludlinburgh and Meteor, both of which are obtainable in mixed colours. The height of the first-named of the two is about nine inches, and of the other six inches, the flowers of both being margined with white.

In directing attention to the cultural details, the practice which obtains of raising these phloxes in a strong heat and then allowing them to remain in the seed pots until they have attained a height of six inches or so cannot be too strongly condemned. When subjected to either of these conditions they become so weakened as to seldom bloom satisfactorily; but when they suffer both from an excess of temperature and overcrowding they are invariably short lived. The proper course to take is to sow the seed early in March, and to place it where it will have sufficient warmth to ensure its germinating within a short time of its being sown. Thin sowing is also important, and pans should, as a rule, be employed in preference to pots. The soil used for filling the pots or pans should be rich and friable, and the seeds be lightly covered with the finer part of the mixture. It is not a matter of much consequence where the pans are placed until the seed has germinated, but as soon as the seedlings have made their appearance in considerable numbers above the surface they should be near the glass and be subjected to but little, if any, fire heat. In due course they must be pricked off into pots or boxes, but the practice of pricking the n off into five-inch pots, four plants in each, has much to recommend it. In pots of this size there is very little risk of their suffering from an insufficiency of root space or from drought, and they can be bedded out without the roots being disturbed. Each potful of plants will, when turned out intact, form a bold and effective group.

The end of May is the best time for bedding them out, and with reference to the selection of the position and the preparation of the soil, it will suffice to say that the one cannot well be too open or the other too rich. Consequently the soil should be enriched with manure and the phloxes have set apart for them positions in the border, where they will not be overshadowed by other things. Overcrowding must also be guarded against, and they should be put from four to six inches apart each way, according to the character of the soil, those having the advantage of a rich soil requiring the greater space. W. J.

Imperator Potato, reported on as but little known in this country, is known so far that it is largely grown as a field variety for the supply of the markets, and is regularly quoted in market reports as selling at about the same rates as Champions, but below Regents, Hebrons, and Yorks. Our neighbours the French appear recently to have discovered it, and they find it highly productive and rich in starch, consequently a thing to be desired in the interests of genuine Cognac. We trust we are, and shall continue to be thankful for whatever useful information our "solanumist" friends on the hither side of the Channel may afford us in respect of this or any potato. But we are bound to note that they appear in this business to be labouring hard to discover things that are well known here. Imperator potato as a field and allotment crop is as likely to pay as any, and should be tried against Magnum Bonum.

RAISING CARNATIONS AND PICOTEES FROM SEED.

On reading Mr. J. C. Clarke's interesting paper, page 43, I fully made up my mind at the time to supplement it by a few remarks with regard to my own practice and experience, humble though it may be. I do not for one moment claim or aspire to be classed with legitimate florists, my position and views during my long association having been more of a cosmopolitan order in all appertaining to the cultivation of plants and flowers. But at the same time, I may have shown a partiality for making some of the good gifts of Nature specialties, and this I have done in the hope of adding to the happiness of many. Your respected correspondent states in the paper under notice that the seed should be sown not later than the middle of February. Now, my ideas have led me to, if possible, steal a march on time, both by anticipation and procrastination. To explain myself more explicitly, I sow my carnation seed as soon as it is well ripened, and my fuchsia seed about February 15, as I have a great many times stated, and I think with similar advantages with reference to a happy issue in securing an early blooming state. I may observe that I have in some measure to the best of my ability endeavoured, in travelling a long and crooked road, to walk in the said road as straight as possible.

I sow fuchsia seed in February, and bloom the seedlings in about five months. Others have advised the sowing as soon as the seed is gathered, and do not succeed in blooming the plants in less time; and, moreover, in all probability fail to obtain such healthy and sturdy well-formed plants.

Seeds of carnations, picotees, and pinks I have sown as soon as thoroughly matured, and by the middle of February have good plants equal in size and strength it may be to some that have been raised from layers or cuttings the preceding autumn. The object of this practice has been to get the seedling plants to bloom the subsequent season if possible, say under twelve months from the time of sowing, but in this success is not always the reward attained. Some varieties are very tardy in the development of their flowers, whilst others are more or less precocious in constitution.

I send you a few seedlings raised from seed saved last summer, and sown on August 30, 1889, or as soon as gathered. Being new seed, it quickly germinated, and the plants made their appearance on September 5. They were sown on a mild bottom heat. I cannot guarantee that the plants sent will prove better than ordinary varieties, although saved from a few very good kinds of varied colours, such as purple, yellow, &c., &c., Mrs. Reynolds Hole inclusive. Should any of them turn up trumps so much the more satisfactory will be my endeavour. At their very worst they will serve as decorative border plants. So far as the writer is concerned, it is not the quality that is the material object in view as securing given results in the shortest space of time possible consistent with good work.

Lewisham. George Fry.

[The plants sent are stout and healthy, with bright grass and plenty of roots; in fact, equal in February to seedling plants as usually grown in the month of May.—Ed.]

GAILLARDIAS.

These handsome composites have taken up a prominent position in the flower garden during the past few years, and there can be no doubt that as they become better known their cultivation will undergo still further extension. They have long been favourites of mine, and for fully thirty years I have grown them in numbers proportionate to the space that could be spared. In the days when the bedding system was at the height of its popularity the gaillardias had to be satisfied with a comparatively small space, for the varieties we then had were not well suited for planting in masses in association with zonal pelargoniums, calceolarias, and other plants so largely employed in colouring the parterre. But in no year since I commenced their culture have I grown less than fifty plants, or failed to derive considerable satisfaction from them. Of late years the change in the style of flower gardening has enabled me to grow a greater variety of plants, and we now put out several hundred gaillardias annually, and they are found extremely useful. Commencing to produce their flowers in June, and continuing in flower until the end of the summer, they contribute materially to the attractiveness of the flower garden during July and the early part of the following month, when there are comparatively few hardy plants in bloom. The flowers are also in considerable request for indoor decorations, as they can be readily arranged alone, or with other flowers, to produce a tasteful effect, and they have the great merit of maintaining their freshness for a considerable period after they are cut.

There are two ways of commencing the culture of the perennial gaillardias, one by the purchase of plants and the other by raising a stock from seed. When it is desired to grow varieties under name plants must of necessity be obtained; but for the decoration of the flower garden and supplying cut flowers seedlings are in every way suitable. They will produce flowers varying materially in colour, but provided the seed has been saved from a good strain the flowers will be large in size and rich in colour. To obtain plants strong enough to come into bloom before June is far advanced it is necessary to sow seed early in the year. My practice for several years past has been to sow at the end of February or early in March, and place the seed pans in the propagating pit, melon frame, or other structure in which a brisk temperature is maintained. Here they remain until the seedlings require more space, when they are pricked off into boxes or other pans, and put about two inches apart each way. On their becoming established, as is made evident by their commencing to grow freely, they are removed to a pit or house in which a lower temperature is maintained. Subsequently they are potted off separately, and then gradually hardened off. It may perhaps be useful to state that a light sandy mixture is used for filling the seed pans, and that the boxes into which they are pricked off are filled with a compost consisting of loam, leaf-mould, and sand. To the compost used when they are potted off a little partly-rotted manure is added. It is necessary the seedlings should occupy a light position during the time they are under glass, for if they become much drawn they will produce but few flowers until quite late in the summer.

In common with the majority of composites, the gaillardias require an open and sunny position to ensure their full development. They are not very particular as to the character of the soil, as proved by the fact that they grow freely and bloom profusely in soils of all descriptions. They are remarkably well adapted for light soils, as they are less liable to suffer from drought than the majority of perennials. They are of bushy habit, and under conditions favourable to their full development they attain a height ranging from twenty-four to thirty inches. Therefore they should be arranged in the second or third rows of the mixed borders, and in the centre of beds. In the autumn, after the tops have been cut down by frost, the roots should be lifted and put in an unheated frame, and covered with soil of a depth of four or five inches. ☞

WEBB'S STAR PETUNIAS.

We are getting some curious things in the way of petunias. I intend to grow several sorts this season to make a feature of interest on a sunny border that is much seen, and on which I like to have a gay variety of flowers. Webb's Star Petunias are so singularly marked that they stand alone for curiosity, and are certainly not wanting in beauty. They do not all come to the same pattern, but the variations are interesting, the colours are rich, and the plants so nearly hardy



WEBB'S STAR PETUNIAS.

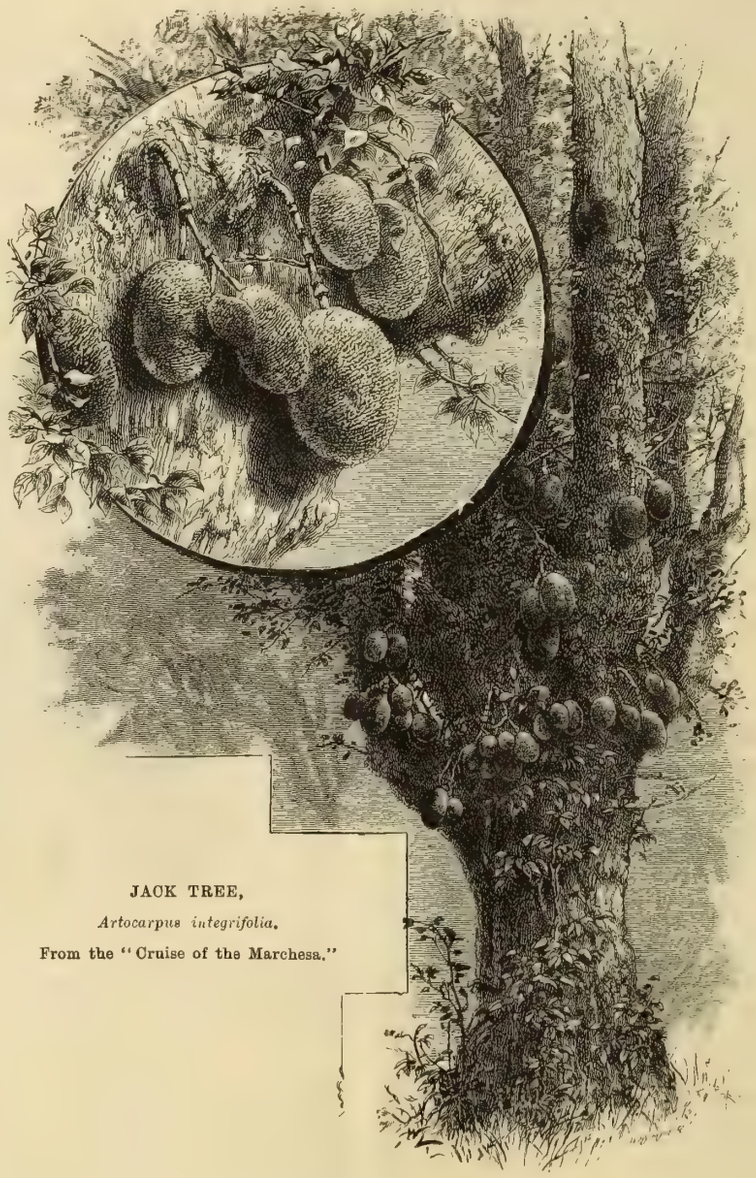
that I put them out early in May. Now is the time to sow seed of such things, as the growth is vigorous from the first, and far less troublesome than earlier sowings. W. B.

Icebergs in the Atlantic have been several times reported on as occurring frequently of late in somewhat low latitudes. This is not an uncommon occurrence, but it has usually happened that it has been regarded as indicative of a cold spring. This has been in a general way so pleasant thus far that a visitation of severe frost would now be a terrible calamity, for vegetation is certainly not in a condition to pass through the trial without serious damage. Our hopes and fears will affect the case so little that perhaps it will be prudent to ignore the expectation, and go chirping on as the birds do in the happiness of the smiling hour. Our own intention is to ignore the fears and also the icebergs.

The Ivies, Winchmore Hill, the residence of H. K. Mayor, Esq., has long been known to the artistic school of horticulturists for its beautiful situation and richly-furnished garden, in which ivies, hollies, conifers, and innumerable other good things are richly represented, while the general keeping has always been perfect. This being so, many of our readers will be interested to learn that Mr. Mayor has determined to leave the place, with all its features and furnishings untouched, having in view to locate himself "far from the madding crowd" of the metropolis in a Derbyshire dale or a Devonshire fernery; in any case, remote from the sound of Bow Bells and the hum of London. He has accordingly put his place in the market, and the market ought to be thankful for such an embellishment. We have secured some views from The Ivies for the advantage of our readers.

Literature.

The Cruise of the Marchesa to Kamschatka and New Guinea. By F. H. H. Guillemard (Murray).—Distinguished as our literature is by brilliant books of adventure, travel, and discovery, not all our experts in the geographical line reach the high mark of this now famous book, which is certainly destined to rank as one of the more conspicuous models of its own important class of literary work in aid of science and the delights that accompany the diffusion of knowledge. The "Marchesa" is a screw schooner of 420 tons, owned by Captain Kettlewell, and the description of her voyage of exploration that forms the substance of this book takes us to other countries besides those that have a leading place in the title, the map of her course in the years 1881 to 1884 including Borneo, the Moluccas, Formosa, Japan, and the chain of islands that enclose the Okhotsk sea. Never has there appeared in modern times a man better fitted for the observations made and the record written than Dr. Guillemard, whose pen is ever heavy enough for the most serious business that demands attention, and at the same time light enough for recognition of the amusing side of the strange sights that a traveller is bound to see who has such a golden opportunity as fell to his lot in this journey half round the world. Had he touched on well worn themes alone we should have had a glorious book, for he knows not how to be dull or commonplace or tiresome; but he saw much that modern travellers have not seen; much that has had no place in literature until he came upon the scene and "booked" the business for the general edification. In a handsome octavo volume, containing a number of admirable figures and a series of maps of more than average excellence, he tells us of the aspects of man and nature in all that long line of maritime country that begins at Aden and terminates at Beren Island, having for a central loop the great group of islands of which New Guinea is the eastern boundary.



JACK TREE,

Artocarpus integrifolia.

From the "Cruise of the Marchesa."

The Exploration of Kamschatka

Follows close upon visits to Formosa, the Liu-Kiu Islands, and a mere passing glimpse of Japan, and much that we learn of the far-off promontory is altogether new. It may be roughly described as about four times the extent of Great Britain, with a mountain chain running due north and south through the centre as a proper back bone to it; and with rivers, bogs, fells, forests, to diversify its scenery, but with a very few dots of humanity to battle with its unpleasant climate or tame the savage glebe to any semblance of fruitfulness. In latitude it corresponds nearly to our own island, the greater part being between 50 and 60 N. lat.; but how far it runs into the mainland of Siberia we do not know, but conjecture that where the mountains divide east and west is its proper northern boundary. Although thus corresponding nearly with our own country in latitude, it differs greatly in climate, being thoroughly inhospitable and suited only to the dull-witted races that are thinly scattered over it, the Russians being masters, and strangers being regarded as intruders. The Marchesa dropped in at Petropaulovsky in golden August weather, and landed its party of explorers, who for a month led a roving life on land and water, seeing many strange things and bagging many specimens in flowers, furs, and feathers, with much genuine enjoyment, that was kept to a certain standard of reality by a fair sprinkling of vexations and disasters. Some of the mountain peaks rise to 9,000 feet, and there are not wanting active volcanoes and hot springs. There is much sublime scenery, but there is no lack of dreary waste to give contrast to mountain masses and tracts richly varied with wood and water. It is interesting to note that at the distance of a hemisphere of the earth, the vegetation and the animal life correspond in many particulars with those of Britain and Northern Europe. The birch is a leading forest tree, "bighorn" sheep and bears are among the larger game; deer, wolves, and foxes occur; the birds include capercailzie, puffins and auks; in the rivers salmon so abound that at certain seasons they perish in thousands through mere overcrowding, and the water, the earth, and the air are alike poisoned by the putrescent masses that choke the streams. Kamschatka is a fishy place, and the soul of all its industry, art, and ambition is the salmon, alive and dead, in decent condition or loathsome with putrescence and maggots. The natives like their salmon "high," and, to make sure of "ripeness," they bury a lot in the soil until they became putrid, and then ladle out the contents of the hole as the choicest delicacy their beloved country affords them.

The capital, Petropaulovsky, is approached by a magnificent bay that has acquired historical importance of a kind unpleasant to the proud Britisher. It is not much more than a hamlet, with perhaps some fifty or sixty buildings, but makes a fine show on the harbour by reason of its numerous sheds for drying fish. During the Crimean war, a portion of the combined French and English fleet thought fit to visit it with cruel intentions, and accordingly six warships arrived in the bay on the 24th or 28th of August, 1854. The Russians were prepared, and had the advantage of a strong situation, but a little valley in the rear discloses a weak place, and the ships having by their attack silenced the batteries of the town, a party of seven hundred marines and sailors were put on shore with instructions to seize the town by way of the valley that appeared so convenient for the purpose. The invaders felt the task to be quite an easy one, and they hurried in a straggling manner to swallow the small mouthful. But they became confused, the trees deceived them; Cossacks concealed in the woods picked them off with such skill that they had not advanced far when their officers were all shot down. Then the confusion increased, and, in ignorance of the movements of their own parties, they actually fired on each other, and were presently compelled to retreat, and many were killed by falling over a precipice. The fleet weighed anchor and set sail, having lost 170 men as the price of their bungling. The Russians, of course, are proud of their victory, but their treatment of the graves is respectful, and there is no reminder of unnecessary bitterness to vex the soul of the British visitor to Petropaulovsky.

There are no roads in Kamschatka, and the "horse" of the country is the dog. For every inhabitant there are at least half-a-dozen sledge dogs; they are the roughest of their race, and lead a life that reads like a catalogue of unendurable miseries, and yet perhaps suits the dogs very well, for they are quick-witted and shape their own ends, however they may be rough-hewn by their owners. There are no homes and commonly no food provided for these beasts. During the long dreary winter they reside in holes they dig for themselves, for they burrow like foxes, and supply their table in much the same way as that provident relative. Of filthy fish they obtain abundance at certain seasons; at other times they hunt the woods and take toll of game of all kinds. The salmon in the drying houses are never a less height from the ground than six feet, because the dogs can secure a treat by jumping when they are at any less distance. They are well trained and work well, but are cunning, obstinate, unmanageable, and absolutely indifferent to the most brutal treatment to which they are subjected, and what we call "kindness" to animals is here unknown. Sheep, goats, fowls, and all other smallish domestic animals are unknown in Kamschatka, for the rapacity of the dogs is such that it is impossible to keep them. There are horses and horned cattle of a miniature kind, and milk and beef are appreciated, though far from plentiful. This is no agricultural land; the staple production is fur, and conspicuous amongst the objects of trade are skins of the sable, a beautiful creature thinly scattered in the most solitary parts of the great forests.

The exploring party made the line of the Kamschatka river the scene of their principal adventures. They went up to its sources in the mountains by means of ponies, and returned by way of the stream in canoes, thus tasting fairly of land and water through a considerable part of the heart of the

country. The journey forms a delightful episode, and is one of the great features of the book. The Australian and Texan buckjumper has his match amongst the ponies of this Siberian promontory, but whatever may be the source of inspiration elsewhere, here it is the cruelty of man, the ponies being treated worse than the dogs, and occasionally resenting it more decisively, for Dr. Guillemard tells of one of his men being rewarded for kicking a horse by having a slice bitten out of his face by the exasperated animal.

It is singular that after long occupation of these regions by Russia, the river craft consists only of "dug out" canoes—a tree shaped with the axe and hollowed by fire. The houses of the upper classes are mostly log-built, small, and unpainted; the horrible winter is fought within doors by the aid of huge stoves of brick or stone, that create a close, suffocating atmosphere, unendurable to those who are unaccustomed to it. The furniture consists of a few chairs, a religious emblem, and any number of cockroaches and less mentionable vermin. The poor natives are quite differently housed; they live in miserable huts, the windows of which are lined with strips of bear-gut in place of glass, and the animals they keep share the shelter with them. But the dogs have no share in the luxury provided for the cow or the pony; and for one reason, perhaps, that there are too many of them. "We reached Narchiki," writes the author, "early in the afternoon, and were greeted by the prolonged howl of innumerable dogs. Though the village boasts of only six huts, there are over one hundred and fifty of these animals to pull the sledges of the inhabitants by day, and to endeavour, in combination with other equally hungry, though happily smaller creatures, to disturb their rest by night. The sledge-dog, indeed, appears to do without sleep, and anything more hideous than their nocturnal concerts it would be difficult to imagine. Fortunately, an open-air life and hard work are not generally compatible with insomnia, and after a few nights the traveller would be more apt to miss his music than abuse it."

Of the kind of life our travellers lived when their lines fell in pleasant places here is a specimen: "We pitched our camp at the edge of what, in England, would have been the village green—a little two-acre patch of real, short, English turf, at a bend in the river. It was a lovely scene. In Kamschatka all the romance of life appears to have left it, and gone out into its surroundings. But however sordid and material the lives of those whose whole existence is one constant struggle against such a climate must be, there is no doubt that nature is here as prodigal of her beauty as she is in any part of the known world. Further north, in the neighbourhood of the huge volcanoes, whose very names are unknown to the vast majority of Englishmen, the scenery is of unsurpassed magnificence. Here it was of a far less pretentious type, but possessed, nevertheless, of a quiet beauty, so perfect in its kind, that the most fastidious of critics would have sought no alteration. Below our camp the river clattered between its banks of yellowing birches towards some snow-capped mountains, that distance had painted a deep violet. The village, gray, battered, and weather-worn, as are all these northern hamlets, nestled at the foot of the three peculiar peaks of the eastern range of the valley. Not a human being was to be seen, and the smoke of our evening camp fire rose like a straight blue pillar into a golden sky. Around us was a stillness that could be felt—the wondrous silence of the North, and on the summit of the little cross above the church a crow sat motionless in the evening sun—a speck of steely-blue against the snow beyond."



KLUCHEFSKAYA VOLCANO, KAMSCHATKA (16,988 feet).
From the "Cruise of the Marchesa."

At the head waters of the Kamschatka river bears were met with, but the hunters had but small fortune in bagging them. The bear has a keen nose, and scents his enemy afar off. Bruin appears to lead a luxurious life in these northern wilds; the rivers provide him with abundance of fish, the hills with berries, and he can help himself occasionally to potatos and cabbages in places where cultivation has pushed its way into the wilderness. He is a dainty beast, and eats only the head and shoulders of a fine salmon, the remainder he rejects as unfit for a gentleman. His mode of fishing is a pattern of simplicity. He walks into the water and remains perfectly still. The fish regard his great paws as fragments of rock, or stumps of trees, and swim so near that by a lightning-like movement he strikes a fish that suits him, and then carries it the bank to make a feast at leisure. Even when hunted this animal has many advantages, for he can push his way through thorns and brushwood, where no man, and not even a dog, can follow, and they have their own well-trodden walks through places inaccessible to all except themselves and birds, and so are free denizens of the forest. But for all this man outwits him, and skins are secured in such plenty that they do not command a high price in the market. It is different with the sable. The skins of sables range in price at St. Petersburg from two to twenty-five pounds each. But the peasant who obtains it has to be content with twenty shillings, and lives on rotten fish in the worst climate in the world, that the merchants may ensure through his labours the usual heavy toll that "commerce" has so successfully organized. The most valuable of all the skins found in this peninsula is that of the sea otter, for which the hunter may obtain a hundred roubles, which is the equivalent of about twelve or thirteen pounds. This realizes in the European market £120, but it must be perfect to run to such a figure. The animal is but rarely seen, and to secure a skin in good condition it must be captured without firing a shot or inflicting the slightest scratch on the pelt.

The sable is a woodland animal of great beauty, with a sharp nose and a romantic tail. It measures twenty-seven inches in extreme length, of which the tail counts for seven inches. The dogs are trained to compel the hunted sable to take refuge in a tree. The object of the hunter then is to knock it down with a stick, or shake it into a net, for it must be captured without injury. Sometimes the tree is cut down to secure the sable, and in a last resort the gun is used, at the risk of seriously damaging the skin.

There is no finer game in this country than the bighorn sheep, *Ovis nivicola*. Its familiar name suggests a feature of its physical character that compels admiration, its head being adorned with a grand pair of finely curved horns, and its physiognomical expression being worthy of such appendages. It is, in fact, a singularly handsome beast, and evidently allied to, and probably a variety of, the American bighorn, so greatly prized as "game" on the great Western Continent. It haunts cliffs, and rocks, and rough uplands, where it is comparatively safe by reason of its strength, and speed, and sure-footedness, but as it forms a fine mark for the hunter's gun, a bag is usually made when the bighorn country has been fairly invaded. On one occasion nine sheep were secured, and "the yacht's decks were more like a butcher's shop at Christmas than anything else." At Betchevinskaya Bay the total bag secured in two days included one walrus, fourteen bighorn, some seals, teal, duck, and golden plover. "Had we been ordinarily fortunate we should have obtained two bears, which, though badly hit, managed, owing to the denseness of the shrub,

to escape. We found the bighorn meat delicious; it was declared on all hands that no such mutton had ever been tasted before. Our men were in their element salting down and preserving, and were unanimously of opinion that there was no country like Kamschatka, where salmon, grouse, and mutton were to be had for the killing. The ship was hung with carcases, which some facetious individual had labelled with placards, 'First prize, Petropaulovsky Cattle Show,' and steaming joints of mutton graced the board at every meal in the forecastle mess."

The business of the Marchesa was not to serve as a shambles simply, for when opportunities occurred, captures were made of living creatures for the London Zoo, and so by degrees the decks served as a cattle show for something other than dead sheep. Dr. Guillemard shall speak for himself on this subject, and with his own short story of the happy family that found a home on the yacht.

"Nowhere has one a better opportunity of watching the habits of pet animals than on board ship, and on the Marchesa, where they were permitted to roam at large, causing occasionally no small amount of astonishment and alarm to our visitors, they were seldom out of our sight for long. On our return from New Guinea the yacht was little more than a floating menagerie—a happy family of cassowaries, wild pigs, kangaroos, and a host of other creatures; but northern regions are not very productive of pets, and our chief favourites at this period of the cruise were only three in number—the fur seal; Misky, a large, but not fully adult bear presented to us by the Russian officers; and a charming little Sinhalese mongoose. The fur seal, known to the sailors as Tommy, flopped about the deck with the ungainly semi-paralysed gait peculiar to his species, choking and spluttering with mingled fear and rage when anyone approached him. Every day we lay in harbour a long line was fastened to his hind flipper, to the end of which a life-belt was attached, and thus buoyed he was put overboard to swim about or go ashore as he pleased. His manner of feeding was curious, any fish he was provided with not being snapped up immediately, but played with and mouthed all over for a quarter of an hour or more, when it suddenly disappeared as if by magic. Poor Tommy was in a very feeble state of health when he came into our possession, and his death, which took place just before we left Kamschatka, was not unexpected. Though dead he yet lives—in spirit.

"Misky, though a great favourite with everyone, was perhaps not altogether a source of unmixed pleasure to us. To an unsuspecting visitor the sight of him bearing down at a loose trot to investigate matters was anything but reassuring, and it was in vain for us to tell our guests that it was 'only his fun.' A gallant lieutenant coming on board one day in full dress proved too great a temptation for Bruin, who immediately seized him by the coat-tails. It was found impossible to make him let go until the discomfited officer had reduced himself to his shirt-sleeves, when, delighted with his success, the delinquent shuffled off. He was apparently almost indifferent to pain. A smell of burning being one day discovered forward, one of the crew proceeded to investigate the cause, and found Misky standing upright on the top of a nearly red-hot stove engaged in stealing cabbages from a shelf above. He was growling in an undertone, and standing first on one leg and then on the other, but he nevertheless went on slowly eating, heedless of the fact that the soles of his feet were burnt entirely raw. Endless were the stories about him, and the scrapes he got into, but punishment was apparently in vain, for he got worse as he grew older; and after having devoured portions of the cabin skylight and a man's thumb, and finished by drinking the oil out of the binnacle lamp, he was shipped to England, and found a new home in the bear-pit in the Zoological Gardens.

"Misky's sworn enemy was the mongoose, into whom seven devils at least must have entered. His sole object in life was mischief, and it must be confessed that he never idled for a moment. Whether biting one's toes as one lay asleep in the early morning, capsizing the inkbottle, or bolting surreptitiously with some coveted morsel from the dinner-table, he was never still, but his greatest happiness—for it was attended with that spice of danger which gives the true zest to sport—was to 'draw' Misky. When that unsuspecting animal rolled its unwieldy body about on deck, ignorant of the proximity of his enemy, the mongoose would approach noiselessly from behind and nip him sharply in the foot. Long before the huge paw had descended in a futile effort at revenge, the little rascal was safely under cover, on the look out for another opportunity, and the bear might just as well have attempted to catch a mosquito. A more thorough little pickle never existed, but, like all pickles, he was very popular, and when one morning he disappeared, never to return, there was great lamentation among our men. We never learnt his fate. Probably Misky had caught his tormentor, after many months of vain endeavour, and had dined off him."

The visits to the Sulu and Celebes islands, Borneo, Sumbawa, the Moluccas, and New Guinea supply a series of chapters that continually vary in interest, and in the end have this special value, that the author gives us the best account we have yet seen of the native inhabitants and the missionary stations of Dutch New Guinea. The facts are not only of the greatest interest as a study of human nature, but they are of the greatest importance as suggestive of the policy to be followed in civilizing and colonizing the Papuan Island that of late years has so engrossed the attention of our compatriots in Australia. In the unfolding of events there, something doubtless will have been gained by the contributions to the knowledge of the subject secured by the visit of the Marchesa.

A Simple Method of Fumigating Plant Houses is described in a recent issue of *L'Orchidophile*, and appears to be well worthy of a careful trial. The apparatus required consists of an iron cylinder nine inches in length, and six and a half inches in diameter, a sheet of iron about eighteen inches square, and a tin vessel large enough to hold not less than three pints of the liquid. In using the apparatus the cylinder is made nearly red hot, and then laid upon the sheet of iron placed in a suitable position in the plant house. Over the heated cylinder is suspended the can filled with diluted tobacco juice, and having a small puncture in the bottom to allow the liquid to drop slowly upon the iron until exhausted. As the liquid drops upon the cylinder it gives rise to a vapour found very destructive to plant pests, but in no way injurious to vegetation. It is suggested that one pint of water be added to every quart of tobacco juice, and three pints of the liquid will suffice to vapourise a house having a capacity of sixty cubic yards. For larger houses, two or more cylinders may be employed or a larger apparatus be used. A can with a puncture in the bottom has been found by Mr. C. Roman to answer very well, but a vessel fitted with a small tap would no doubt be in some respects preferable. It is not necessary to remain in the house during the time it is being fumigated.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Greenhouse Plants in bloom include:—Acacia pubescens, A. longifolia magnifica; Azalea indica; Acrophyllum venosum; Chorozema Lawrenciana; Deutzia gracilis; Eriostemon pulchellum; Epacris Exquisite, E. multiflora; Habrothamnus elegans; Hyacinths, Ixias, Lachenalia Nelsoni; Primulas, double and single; Pimelia spectabilis; Polyanthus Narcissi; Sparaxis, Statice Holfordi; Tremandra ericifolia hirsuta.

THE HOUSE.

It may perhaps be useful to remind those who keep feathered songsters in living rooms that the birds require rather closer attention than usual just now, and as the season opens out and the weather becomes more genial they should enjoy a breath of fresh air daily, either by the opening of the windows or by being placed in airy quarters. Exposure to draughts ought to be avoided. In the matter of feeding they should have a liberal supply of food, which ought to be of a simple yet nourishing character. Canary seed should now, as at other seasons of the year, form the staple, and to this may be added rape and millet in comparatively small proportions. Birds intended for breeding ought to have in addition a little bruised hemp or poppy seed occasionally, the hemp being preferable. The necessity for a daily supply of fresh water may well be pointed out, for it is too much the practice of renewing the water twice a week or so to the injury of the birds. It will not suffice to add a little water to that in the glasses; these receptacles must be emptied and entirely refilled. More liberal supplies of green food will become necessary, and just now the tender tops of radishes and the leaves of lettuces from the frames, and the tops of water-cresses, are particularly suitable for birds confined to cages.

CONSERVATORY AND GREENHOUSE.

Annuals ought to be growing freely now in a genial atmosphere, and very near the glass. If they are running up and becoming spindled, prick them out and plant them in a fresh soil deep enough to cure their legginess.

Bedding Plants.—Cuttings put in now will bear more heat than those put in a month ago, as vegetation is more active with the advance of the season. There is plenty of time now to raise stock of verbenas, petunias, fuchsias, and lobelias, and they will bear a moist temperature of 75 deg. to advantage. Pot off into thumb-pots newly struck cuttings as soon as they begin to make new growth at the points. Young plants that want a shift to larger pots, and which are to be stopped to make them bushy, should be stopped first, and the repotting delayed till the side shoots begin to break.

Camellias out of bloom to have a higher temperature and a moist atmosphere, to assist the new growth. Any that require a shift may have it now; but the general shifting is best delayed till the wood is ripe or ripening.

Cinerarias are now coming finely into flower, and must have constant attention. Neglect of watering will cause the lower leaves to shrivel, and too much water will cause the colours of the blooms to run. Tie out specimens in good time. Those only just showing their trusses may have a shift, so as to form fine plants late in the season.

Fuchsias are growing finely now, and plenty of cuttings may be obtained without distressing the old plants; in fact, the stoppings of shoots will do, for it matters not how short and soft the cuttings are; they always root instantly if put into sand in a nice heat. It is no use to grow fuchsias slowly; let them have the warmest berth possible, with plenty of moisture and only a little air.

FORCING AND FRUIT HOUSES.

Cucumbers.—It will be more difficult now to keep the heat of bearing beds up to the mark than it has been all the winter, for the east winds will cool them more rapidly than the rains. Linings will now be of great value. In giving air guard against the entrance of parching cold winds; a mat hung over will allow of an exchange of atmosphere through it without permitting the entrance of a killing draught.

French Beans in the forcing pit must be kept very near the light, and have a brisk temperature. Give air early on fine mornings while the plants are moderately dry, to promote the setting of the fruit. Crops that have been gathered from to have the help of soot-water, or a solution of guano, half an ounce to the gallon, to promote a luxuriant growth.

Figs in the early house are now swelling their fruit nicely, and require plenty of water. If allowed to root through their pots into rotten leaves and other such plunge material, liquid manure will perhaps not be needed. If in pots, and not plunged, they must have liquid manure.

Melons to be grown in frames to be planted at once, so as to have the full benefit of sun-heat when the temperature of the beds is declining, and to ensure a perfect ripening of the fruit. Put them out on a good depth of strong loam, without manure.

Peaches and Plums must be carefully managed while the fruits are stoning. Any excess of fire heat, or water, or cold draughts will cause the fruit to fall at that critical period. As they commence swelling after the stoning period, the heat may be slightly raised, and the trees to have frequent showers from the syringe. Peaches in the early house to have a temperature by day of 75 deg. to 80 deg.; by night 55 deg. On dull days the temperature not to rise above 65 deg.

FLOWER GARDEN AND PLEASURE GROUNDS.

Auriculas to have plenty of water and air, but during driving rains it is best to keep them sheltered. Remove all secondary trusses, and thin the pipes of the trusses left for blooming.

Box Edgings made now will do far better than in autumn. If the weather is dry after planting, keep newly planted box well watered, as if a few plants die the unsightly gaps are not easily mended in the height of summer.

Verbena venosa is a very easy subject to manage, for it is only needful to keep the roots safe from frost from the time of taking up till now to secure any amount of stock of it. Put the roots into shallow boxes, and place them in a propagating pit at once. They may, however, be put in small pots if more convenient.

KITCHEN GARDEN AND FRAME GROUND.

Asparagus beds to be lightly pointed over and dressed with salt at the rate of a pound and a-half to every square yard. Sow seed for new beds.

Celery sown early will now require to be pricked out into boxes on a slight hotbed. Sow now for the main crop.

Potatos may be planted for main crops. The sets should be hard, dark green; the sprouts short and purple; the soil in a dry state, and quite pulverulent; the sets trenched in.

VILLA FARM.

Pigs are most useful animals on the villa farm, for with but little aid from purchased food a goodly number in proportion to the size of the holding can be kept with what is but little better than waste, and produce a liberal supply of manure, not so valuable perhaps as that obtained from the stable, but not to be despised either for the garden or farm. Since the large importations of bacon and hams from America have depressed values so considerably the keeping of pigs by those who have had to purchase all or a very large proportion of the food has been anything but profitable; but even now the keeping of pigs, where nearly the whole of the food is produced at home, and much of it would be otherwise wasted, will afford a good return. Whether the pigs are profitable or not depends very much upon the selection of a breed suitable to the purpose for which it is required, and judicious management. Large framed pigs are much less useful than those of medium or small size, for they consume quite as much food in proportion to their weight as small pigs, which, when killed are worth thirty per cent. more. The best breeds for pork are the Essex and Sussex, both of which are of comparatively small size, for they lay on flesh at a rapid rate, and are comparatively speaking very delicate. A good, if not the best, breed for bacon is the Berkshire, and as it is so often met with out of character, owing to crossing with other and in many instances larger breeds, due care should be taken to obtain a true stock. A warm and rather sunny position should be selected for the styes, which must be provided with spacious yards, and be perfectly water-tight, for, although pigs are [not the most tender or the cleanest of animals, they thrive much better when they have warm quarters and a dry bed provided for them. In the feeding of pigs the fact must not be lost sight of that at all times they should be well kept, and that from the first they should have daily a moderate quantity of bran or pollard, with a little corn occasionally, for if kept when young entirely upon vegetables, milk and wash, the flesh lacks firmness, and is extremely wasteful when cooked. All corn and other dry food should be either cooked or scalded before it is given to the animals, as they then take it more readily, and obtain a greater degree of nourishment from it. The styes must be cleaned out at regular intervals, and the bed be provided and maintained in a clean and comfortable condition, but it is not imperatively necessary to maintain the same degree of cleanliness as in the habitations of other animals.

Calls at Nurseries.

MESSRS. J. LAING AND SONS, FOREST HILL.

The orchid houses which form such an important feature in the well-known nurseries of Messrs. J. Laing and Sons, Forest Hill, are now gay with colour and rich in attractions, and a walk through the several structures at the present time cannot fail to prove highly interesting. Other structures contain much that deserves the attention of plantsmen, more especially that devoted to clivias, to the cultivation and improvement of which the firm have devoted a large share of attention for several years past.

In the Cattleya houses there is an effective display of the beautiful Cattleya Trianæ now in perfection. Chief among other varieties of this useful Cattleya are C. Trianæ marginata, a superb form the sepals and petals of large size and of a mauve pink hue, the labellum amethyst with well-defined white margin, C. Trianæ grandiflora distinguished by the large size and rich colouring of the flowers; and C. Trianæ delicata, a charming variety, the flowers large, with white sepals and petals and white labellum marked with rose. Very fine also was the attractively-coloured C. chocoensis, which has rather large flowers somewhat bell-shaped, the petals of considerable breadth and waxy white, and the labellum white, yellow, and rich purple. Cœlogyne cristata is in strong force, and the snow-white flowers with their orange and lemon coloured markings at once arrest attention. The Chatsworth variety, remarkable for its somewhat bolder habit and the larger size of its flowers, is conspicuous, and the comparatively rare C. cristata alba is not likely to escape notice. Cypripediums in bloom abound on all sides, and mention may well be made of C. callosum, C. Harrisianum, C. barbatum major, and C. insigne sylhetense, not so much for their rarity as for their freedom of flowering and intrinsic beauty. Lælias include L. anceps, one of the most useful of the winter flowering orchids, and now approaching the end of its season, and L. harpophylla, the brilliant scarlet flowers of which present a striking contrast to those of the cattleyas and the other kinds with which they are associated.

Dendrobiums produce a bright display of colour to which D. Wardianum now coming rapidly forward contributes most liberally. This fine species is very strongly represented in the collection, and as the plants are all more or less well flowered, they present a highly attractive appearance. Less numerous but not less attractive is D. Ainsworthi, which by reason of its freedom of flowering and attractive colouring deservedly occupies a high place amongst the dendrobes flowering during the winter. D. nobile is flowering freely and worthily maintains a foremost position, and of the several varieties now in bloom the most remarkable is perhaps D. nobile pendulum, which is remarkable for the great depth of colouring in the flowers. D. nobile cœrulea, also in bloom, is also distinguished by the richness of the markings. Phaius grandifolius, which is not regarded with special favour by the majority of orchidists, is flowering freely, and the admirably flowered specimens present a stately appearance.

In the Cool houses there is an abundance of flowers of Odontoglossum crispum, representing many excellent varieties, O. Cervantesi, O. adspersum, O. Pescatorei, O. Rossi majus, O. Sanderianum, O. Œrstedi majus, and O. pulchellum majus are also well represented. Masdevallias comprise several fine forms of M. Harryana, M. ignea, and Dr. Paterson's variety of the last-named, which differs from the type in having flowers large in size and rather lighter in colour. Of the oncids in bloom note was made of Oncidium cucullatum, O. Ornithorhyncum, and O. barbatum, the last-named a comparatively rare and extremely beautiful species with brown and yellow flowers of medium size. Calanthes and Lycastes abound, and the charming Pilumna fragrans was in perfection.

With reference to the clivias, it must suffice to say that they are now commencing to produce their flower scapes and promise to produce a marvellous display in a short time hence. Already a few of the varieties are in full bloom, notably sulphureum, one of the best of the light varieties.

CARNATIONS AND PICOTEES IN 1889.

For some years past Mr. E. S. Dodwell has annually invited the members of the Carnation and Picotee Union, of which he is the honorary secretary and treasurer, to report upon the incidence of the season, and upon the flowers they have grown or seen. These reports are published in the annual statement of the Union, and invariably contain information of considerable value to cultivators of the carnation and picotee. The following are a few excerpts from the recently published report of the Union which are likely to prove useful and interesting.

Warwickshire.

Mr. Robert Sydenham, of Birmingham, after remarking that his flowers were not on the whole so good in 1889 as in 1888, states that the plants greatly improved after they were potted in October, with the result that they now present a highly satisfactory appearance. Proceeding to report upon the varieties, he says: Of good flowers I should name—

Scarlet Bizarres.—Robert Lord, Robert Houlgrave, J. Crossland, and Admiral Curzon. The latter was usually fine and strong with me last year. Robert Houlgrave was best seen at the London show, in Mr. Turner's stand—the finest flower in my opinion of the whole season.

Crimson Bizarres.—Edward Rowan, Master Fred, Wm. Bacon, and John Harrison. Master Fred generally does very well with me. I had a very perfect bloom of John Harrison early in the season; but this variety is, unfortunately, apparently a poor one to increase, as from eight plants I have only seven layers.

Pink and Purple Bizarres.—William Skirving, Mrs. Gorton, and Sarah Payne still hold their own. Mrs. Whitburn is a good flower, but lacks depth of colour in the darker shades.

Purple Flakes.—James Douglas, George Melville, Florence Nightingale, Prince George of Wales, and Gordon Lewis were my favourites. The two latter bid fair to beat all in their class.

Scarlet Flakes.—Alismonde, Sportsman, and Matador. Sportsman was also last year unusually fine and strong with me.

Rose Flakes.—Rob Roy, Thalia, and Lovely Mary. The second and third mentioned will undoubtedly prove the best in this class.

Picotees.—Red Edged.—Brunette, John Smith, Princess of Wales, Morna, and Thomas William still hold their own, but will find strong competitors in Mr. Lakin's new seedlings.

Purple Edged.—With me Hilda, Fraulein, and Muriel were the best Heavy Purples; the latter, however, was unusually cloudy in the white. Fraulein I think a flower of great promise. Ann Lord and Mary were my best light purples, and some promising seedlings are likely to come well to the front in this class next season.

Rose Edged.—It will be difficult to find better flowers than Mrs. Payne, Lady Louisa, Ethel and Nellie.

Scarlet Edged.—Nothing has yet been found to beat Mrs. Sharp (Heavy Edge) and Favourite (Light Edge).

Fancy Yellow Grounds now form a leading attraction at all shows, and although some good old florists hesitate to accept them, there is no doubt they are destined to take a high place in the favour of the general public. Dodwell's S. 167 is one of the grandest flowers in existence in my opinion; after which his S. 180, S. 163, S. 187, S. 188, S. 156. Theodore (Benary) and Stadrath (Benary) stand well to the front. Ada, Romulus, Dorothy, Terra Cotta, and Colonial Beauty should also be in all good collections. Lemon Drop, a new variety raised by the Rev. A. Rawson, of Windermere, which may be described as an improved Almira, is likely to prove a very choice flower.

The Kilmurry yellow flowers have not altogether answered growers' expectations.* I fancy this may to some extent be attributed to the great demand for them; but I have great hopes that when well acclimatized to different localities they will well hold their own—particularly Alfred Grey, Exile, Queen of Hearts, Rachel, and Ursula.

Self Carnations.—The following were in my opinion before all others:—Germania and Dodwell's S. 197 (yellows), Cassandra (scarlet), Tom Pinch (rich crimson), Budge (rich pink or rose). Also a grand pink or rose sport from Thalia is worthy of mention; it was the admiration of all who saw it in my garden. Emma Lakin (white), Hebe (a rich flesh shade, rather darker than The Governor), Fred Turner (a dark red scarlet), and a lovely ruby sport from Robert Houlgrave.

Lancashire.

Mr. Samuel Barlow, Stakehill, writes:—My knowledge of Carnations for the last season has been confined to the exhibition of the Carnation and Picotee Union at Oxford, the exhibition of the National (Northern Section) at Manchester, and my own collection. At Oxford the established favourites were well to the fore. Master Fred and Robert Houlgrave were quite the foremost in their respective classes. Two fine examples of Germania won first in their class and premier respectively. It will be some time, I fear, before we can show twelve or even six varieties, distinct, Self Yellows, at all approaching Germania in quality. Among the Selfs, Mr. Lakin's two beautiful White varieties, Emma and Annie, were especially notable. A grand bevy of Fancies were exhibited. In the first stand of twelve—Mr. Read's—the variety, Dodwell's S. 167, which was awarded the premier prize, was a noble flower. Theodore (Benary) was also very attractive, both for quality of the flower, and its novel colour, a bluish grey. No exhibition pretending to be representative of the Carnation can afford to ignore this lovely fancy class. At Manchester the established favourites were well and numerously exhibited, and I noted an unusual number of good Fancies, the best of which were the seedlings shown by Mr. James Yates, of Stockport; they were badly staged, but this did not eclipse their beauty. Selfs and Fancies should be better encouraged than they have hitherto been at the Northern National exhibition. I had a fairly good bloom of my own collection. A scarlet flake seedling, Flamingo, and a scarlet edged picotee seedling, Rosalind, will, I think, distinguish themselves. Among a number of good Selfs I had one of good form and size, scarlet in colour, and with a clove scent, equal to the old Clove Carnation.

Nottinghamshire.

Mr. Jno. S. Hedderley remarks:—The season of 1889, for the Carnation and Picotee, may be described as a good one, though the blooms were at their best in the Midlands a few days before our grand exhibition at Oxford. Every florist fortunate enough to be present on the memorable day must have been gratified by the display of our favourite flowers; a display unrivalled in

* I print Mr. Sydenham's remark exactly as given; but I am bound to say the information is very different indeed to that which has come to me.—E.S.D.

number, perfection of form and marking, and novelty of colour. Progress of the most marked character was visible throughout, but especially in the Yellows, Fancies, and Kilmurry Seedlings, the latter quite a new feature, giving promise of yet further variety of colour. Mr. Dodwell's new seedlings were marvellous, and it must be a source of great satisfaction to be the raiser of such floral gems. The past autumn was very favourable for the layers, but a number of the earlier potted off have suffered from spot, those potted later being now the best plants. On the question as to the advisability of extending the classes for the Yellow Grounds, as with the White Grounds, I believe, with Mr. Dodwell, that the time is not yet. Where are the Light and Heavy Reds, Rose, and Purples? The time for classification will doubtlessly come, but at present it is in the dim future. Let me express my hope we all may be permitted to note its advent.

Derbyshire.

Mr. W. M. Hewitt, Chesterfield, says:—The field in this district is limited in its opportunity for observation. My opinion of the season's bloom, mainly derived from the glorious display at Oxford, was very favourable. The Yellow Grounds far exceeded my expectations, the advance in so brief a period has been so rapid, and the promise of yet further progress is encouraging. The several classes in White Grounds were well represented, the Bizarres, Selfs, and Fancies being especially strong. Rose and Purple Flakes were relatively weak. Picotees fairly good, though surpassed by the Carnations. Undoubtedly the glory of the exhibition was in the Bizarres, the class for Selfs, Fancies, and Yellow Grounds—the first stand in which was the finest ever yet shown, a magnificent specimen both of cultivation and arrangement—and the unrivalled bank of twenty-seven boxes of Yellow Grounds. It was a sight never to be forgotten.

Essex.

Mr. J. F. Kew, Southend, observes:—In this eastern county of Essex, the spring was not favourable; excessive heat in May and June, and constant dry easterly winds stunted the growth and led to premature bloom; vigorous and precocious sorts like J. S. Hedderley and Harrison Weir, C.B.'s being out by July 1st, and the general bloom on quite by July 15th, too soon for the exhibitions; but to make amends for this, the Yellow Grounds came in grand form, and the season seemed to suit them exactly.

Scarlet Bizarres.—My best was George.

Crimson and Pink and Purple Bizarres.—Hextall, Hedderley, John Laing, and the ever fresh and lovely Sarah Payne; also H. K. Mayor and William Skirving were all grand.

Purple Flakes.—Florence Nightingale, a noble flower; but best of all for its intensely rich purple, a Purple Flake sport from Sarah Payne.

Scarlet Flakes.—John Ball and R. Dean, very good, and a fine grower which is more than can be said of most of this class.

Rose Flakes.—Mrs. May was the best of nine varieties.

Fancies.—The Maestro is quite the best; grand in colour, form, and petals.

Selfs.—Of good flowers, their name is legion; but I must just mention two, viz.:—Joe Willett, the best of all the Reds, and Gladys, the most lovely of Pinks, with its particularly fascinating petal method; unfortunately, with me it shows symptoms of diminishing vigour.

Of course I grew Kilmurrys. Of these most growers will agree with me that Alfred Grey is the most desirable; its rich deep golden ground and fine scarlet markings being very prominent wherever it was exhibited. Next come Queen of Hearts, Exile, Gretchen, and Patricia; all very beautiful in their several ways, and of full size. Mr. Dodwell kindly sent me some of his New Yellows, these I found quite able to hold their own alongside the Kilmurrys. Nos. 164, 166, 170, 186, 191, 192, all fine things, with rose and scarlet markings, on various shades of yellow.

Surrey.

Mr. M. Rowan says:—Following the abnormally late season of 1888, the one just past is remarkable in its turn as having been one of the earliest in the experience of growers. In 1888, the bloom in the south was at its height from about the 7th to the 10th of August, while in the past season the parallel period was from the 17th to the 20th of July, a difference of quite three weeks. The early flowering of the past season was due, firstly, and perhaps mainly to the absence of the usual spring frosts. The plants free from the customary check grew apace, and began to spindle unusually early, and the warm weather in May and June may be held accountable for the rest. The show of the National Carnation Society held on the 23rd of July, was the largest and on the whole the finest ever held by that body. Though the date through the unusual earliness of the season was some days past the point at which the Bizarres and Flakes could have been shown in the first bloom or their perfection, it was still possible, thanks to the inherent lasting power of the Carnation bloom, to present them in very fine form indeed. The Picotees, naturally a few days later in flower than the Carnations, were fitted with the date, while Selfs, Fancies, and Yellow Grounds were shown in the highest quality, and in unexampled profusion. The same remark applies to the show of the Carnation and Picotee Union at Oxford—the display of Yellow Ground flowers being even larger and finer than that in London. Of the class Carnations (Flakes and Bizarres) the most notable feature was the excellence of the Purple Flakes, which probably have never been seen more richly marked than during the past season. The two new varieties of Mr. Dodwell's, Gordon Lewis and Oscar Wilfred, both seedlings from his fine flower George Melville, are valuable additions to this very short class, and like their parent will be heard more of as they come to be more extensively cultivated. Both are vigorous growers. Among Scarlet Bizarres, Robert Houlgrave has now fully confirmed its title to be the champion flower of its class. Of the newer Scarlet Bizarres, Alfred (Dodwell) is the best, and will no doubt take rank with the finest productions of its veteran raiser.

Picotees were in fine character, though there was a tendency generally observable to less heavy marking than usual, a feature lending the utmost refinement to flowers like Mary and Nellie, while perhaps in the later blooms of Mrs. Payne subtracting something from her usual glory. Among the Selfs, Governor was paler than its wont, losing, as it developed, the beautiful flesh tint as yet so rare and so covetable among Carnations. Florizel was the finest among the dark Crimsons, Purple Emperor and Black Knight among the Purples, while Joe Willett was the best of the Scarlets. Among the shades of Pink, Gladys was shown at Oxford in beautiful form. Taking her all in all, Gladys, at her best, is perhaps the Queen of the whole Self tribe. Germania was well shown both in London and Oxford, going first in its class and gaining the award of Premier Self at the latter exhibition. This variety seems to be rather later in blooming than most of its class, which alone would give it an advantage in so early a season as the last; but whether in form, colour, or size, Germania must be conceded its place now as the finest of all the Yellow Selfs.

Yellow Ground Carnations were shown last season in such richness and profusion that one is at a loss to single out varieties for special commendation, yet, Rachael, as indicating the future Yellow Ground Carnation, Agnes Chambers, the Picotee, and Dodwell's No. 167, as representing the Fancies, seem to stand out with a brilliance especially their own. Stock of almost all varieties has been less abundant than usual, and instances have been frequent of no increase on the plants. The layers, however, rooted freely and early, and if less plentiful than in some other seasons, the young stock is vigorous and sound and promises well for next season.

Notes of Observation.

PRESERVING THE BUDS OF PRUNED TREES.

As pruning is pushed forward, and the number of buds available to the birds reduced, care should be taken that the most is made of what are left, and this can best be done by dressing the bushes with a mixture of lime and soot. To prepare the mixture properly, about two-thirds of lime and one of soot should be passed through a fine sieve, so that when water is added and well stirred the whole will pass freely through the jet of an ordinary syringe. A dry day should be chosen for the operation, and when not very windy, as it is undesirable to blow the mixture upon plants which do not require it. The buds which the birds take with us are principally those of the gooseberry, red and white and also black currants, and also plums. Bullfinches are the principal depredators. The black currants with us during the last two or three years have been sadly mutilated, and we have adopted a good many devices for the prevention of the same, and netting them proved the best of all, but unless this was thoroughly done it was of very little avail, as the birds found a way in and committed their depredations as usual. I have also tried the plan of tying the branches up in bunches tightly, but have not been at all satisfied with the result. The birds never attack the black currants until the bud is burst, so that the lime and soot-dressing is of very little use in warding off their attacks. When applying this mixture it should be applied from all directions, so as to cover all the buds. It is our intention to repeat the dressing on black currant bushes just as the buds are bursting, and probably even a third time, for after the buds are fully burst open they appear to have no attraction to the birds. C. Warden.

BROCCOLI—SUTTON'S WINTER MAMMOTH.

For a long time I have been searching for a broccoli that would produce heads during December and January, but have been unsuccessful here on our strong soil, which lays cold and wet during the winter. But now I have found the very thing in this broccoli, which supplies the gap. We are enabled now to cut splendid heads at the time named, far surpassing Snow's white both for size, purity of colour, and hardiness. I therefore look upon Sutton's Mammoth Broccoli as a real boon to gardeners placed as I am, with a soil which is bad to deal with for vegetables that are at all tender. E. Molyneux.

HELLEBORUS ATRORUBENS.

At the present time and for the last three weeks this hellebore has been a delightful object in the front of the shrubbery. We have many strong clumps of it, and right well do they flower every year, not being disturbed in any way about the roots. The pretty purple tinted blossoms on a greenish white ground form a most agreeable contrast with the surroundings—mainly evergreen shrubs of various hues of colour. For use in a cut state this variety is useless, as the flowers quickly fade in water, although they will last so long upon the plant. It is not actually the petals which fade after being cut, but the stem just below the bloom seems to be so soft that it droops directly, almost giving the flowers a faded appearance. Perhaps it is as well that this should be so, because the borders are the more benefited through the uselessness of plucking the blooms of this hellebore, as they would be almost certainly if as durable as H. niger, for instance. E. M.

MARANTA ERECTA.

The leaves of this variety are narrow, erect in habit, the centre green, outer part dark. The beauty of the leaves is seen in the rich plum colour of the underneath side. During the months of January and February the stove is brightened up with the flower spikes, which are produced at that time, standing well above the foliage; the flowers are white, shaded with pale lilac. Plants in four-inch pots are useful subjects to grow for the decoration of vases and jardinieres at the foot of large mirrors, where the foliage can thoroughly be seen. E.

EPIPHYLLUM TRUNCATUM IN BASKETS.

There is no more effective way to cultivate this plant than in baskets. The natural growth of the plant is drooping, which entirely fits it for basket work. Suspended from the rafters of the greenhouse or conservatory, covered with flowers, it is a fine sight. Baskets, one foot wide, circular in form, and made of light galvanized wire, look well, and are perhaps the most suitable of any kind. The plant naturally grows round, therefore to put it in a square basket would be out of character altogether. A thick lining of green moss is first put into the basket, which prevents the soil falling through between the wires, and when the moss is kept green it makes a good contrast with the plant when in flower, and also hides the wire. For basket work we find plants that are growing on their own roots answer best. They are low, and droop over the sides of the basket better than when grafted on stocks of the Pereskia aculeata, although if this was done on low stocks I see no reason why it should not answer equally well as from cutting growth. A compost of loam, peat, leaf soil, and charcoal suits this plant well. Give plenty of water at the root when growth is being made and less afterwards to ripen the wood thoroughly, and let the specimens be accommodated with a light position in the greenhouse. S.

RAILWAY RATES.

The inquiry directed by the Board of Trade, respecting the tables for the classification of goods and the schedules of maximum rates prepared by the railway companies continues before Lord Balfour of Burleigh and Mr. Courtenay Boyle, at the Westminster Town Hall Much of the evidence given has been of a purely technical character. More recently charges for carriage of agricultural and horticultural produce have come under consideration, and some portions of the evidence bearing upon the proposed charges for the carriage of the produce of the field and garden are especially worthy of the attention of many of our readers. The seedsmen, although the inquiry has an important bearing upon their trade, do not appear to have made themselves felt, but the fruit growers are evidently anxious that their case should be fully considered.

Mr. Balfour Browne, Q.C., in opening the case for the traders in opposition to the schedules prepared by the railway companies, urged the importance of having the classification of goods considerably modified, and that as far as possible the articles should be enumerated in the schedules that the sender may know exactly what the cost would be. He said that although nearly 4,000 articles of commerce were mentioned in the Railway Clearing House classification for the convenience of the trade and railway companies the latter had power to say, "There are only 62 enumerated articles in our Acts; all the rest must go into the fifth class." In their present proposal the companies enumerated 1,043 articles, although in 1885 they proposed to enumerate 2,028. The number had been increased to 1,643, but there was still an enormous number, amounting to quite one half, unenumerated. To show the effect of including in the fifth class unenumerated articles which were classified in the Clearing House classification, but not in the proposed schedules, Mr. Balfour Browne pointed out that the consequence of taking unenumerated articles from Class C would be to justify an addition to the rates of 10s. 2d. for the first 20 miles; 14s. 4d. for 40 miles; 18s. 1d. for 60 miles; 25s. 7d. for 100 miles; and 44s. 4d. for 200 miles.

Mr. Marshall Stevens, representative of the Lancashire and Cheshire conference of corporations, municipal bodies, and individual traders, was the first witness examined on behalf of the traders. The general tenour of his evidence, which extended over two days, was to the effect that the actual rates now charged by the railway companies are in excess of their existing powers, much higher than those to which Continental and American traffic are subjected, and that if the present proposals are adopted they will be considerably increased.

Mr. William Andrew Nicholls, fruit merchant, of Manchester, said that he was president of the Market Tenants' Association, who objected to the existing rate clauses as not sufficiently protective of the fruit and vegetable industry. They were quite willing that the new rates should be founded upon something similar to the existing rates, the Clearing-house classification, with a few alterations, being a fair basis to go upon. It was important to the industry he represented that all terminals should be detailed and fixed. According to the schedules the rates for long distances would be lower than the existing *maximum* charges, but for short distances it would be *vice versâ*. Some of the traffic came to Manchester from Kent, and would pass over four lines. It was possible, therefore, that the traffic might be subjected to four terminal charges. Then, again, a good deal of the traffic was in small parcels, and in that case the companies took powers to impose increased rates. The proposed *maximum* charges, if actually imposed, would involve an increased rate upon almost every article of from 50 to 100 per cent. In regard to empties he objected to the proposals of the companies on the ground that they would have the effect of enormously increasing the present charges. He was of opinion that empties over half a hundredweight should be put into Class C, which would come to something like the present rates. He would give an instance to show how the new proposals would affect an individual grower. Mr. Swift had a farm at Charlton, in the Evesham district of the Great Western system, from which he sent to Manchester market 583 tons of vegetables last year for £303 5s. 9d. Under the new *maximum* rates he would be required to pay for the same weight of traffic £600 3s. 9d. Mr. Swift also sent 130 tons of fruit for £129 8s., but which would be liable in future to pay £274 11s. For returned empties at the rate of 20s. per ton he paid £49, but upon an average of the proposed rates the charge might be increased to £83 18s. 3d. The total increases were equal to an advance of £4 17s. per acre on the rent of the farm.

Mr. John Innes Rogers was examined principally in reference to the rates for smalls and empties. He stated that taking five typical towns, Watford, Maidstone, Colchester, Leicester, and York, he found that comparing the proposed *maximum* rates with those actually charged at present, they involved an increase of 127 per cent. upon consignments of 28lb., of 120 per cent. on 56lb., 136 upon 112lb., and 91 upon 448lb.

Mr. W. W. Berry, of Selling, Kent, near Faversham, put in the agricultural classification agreed to at a conference of fruit-growers and others in regard to agricultural produce and traffic. He described the labour at the Selling Station (London, Chatham, and Dover Railway) as very limited—possessing only a stationmaster, who had to issue tickets, and a porter, who had to attend all passengers, assist and relieve the signalman, and might give three hours' work in station terminal services to the traders, and yet £127 per annum was charged for this part of a man's work. An "average terminal" on the London, Chatham, and Dover system would be most unfair on all the stations of the line. He complained of the action of the London and Chatham and South-Eastern companies on carting, and he gave instances of what he considered overcharge. The fruit-growers asked to have the right conceded to them of doing their own cartage, if the railway companies did not charge reasonably. The fruit-growers had brought a case against the London, Chatham, and Dover Company for charging a terminal at Selling, and won the case, and if the companies were admitted to charge an "average terminal" this allowance would reverse the verdict in that case. As to hops he said that the South-Eastern and London, Chatham, and Dover Railway Companies had doubly depressed the hop industry by the charges for manure down and the high charges up, and this while merchants and brewers had their hops carried at a less price. It often occurred that the same hops sent to London at a high price would be sent back at a less price for carriage, though 25 per cent. had been added by the London journey, thus giving an advantage to the brewers and merchants refused to the hard-pressed grower. On the subject of "load through rates" he said this was a most important question for the county of Kent, and unless the growers of produce got a "load through rate," say from Kent to the north, they could not send the produce to the north, where it could not be grown. The fruit would either rot upon the ground or be consigned to London and then re-consigned to the north at a greater cost and deteriorated. The Kent growers wished to send their produce to the northern markets on the Great Northern Railway, but the London, Chatham, and Dover Company objected because if the traffic went direct over the Great Northern line the Chatham would lose the cartage charges. It would, therefore, not be allowed, so he had been informed, unless a heavy rate was charged 1s. 6d. per ton per mile.

Lord Balfour of Burleigh considered that it was no part of the duty of the tribunal to investigate such matters.

Mr. Balfour Browne thought that the illustration thus given could be properly brought before the tribunal as showing the difficulties of the traders getting through rates and the danger of intrusting the railway companies with excessive powers in regard to *maximum* charges. The Great Northern Company was anxious to have the traffic, the traders were anxious to send it, and the consumers needed the produce; but the London, Chatham, and Dover refused to carry it unless they had the enormous mileage of 1s. 6d. a ton in order to compensate them for the loss of their exceedingly high charges for cartage.

Lord Balfour of Burleigh considered that the question of rates between companies and companies did not come before the tribunal.

Mr. Berry then gave evidence as to the necessity of soft fruit being taken to the market quickly—a necessity which was thwarted by the difficulties interposed by the London, Chatham, and Dover Company, except at a great cost. With reference to hops he considered that as they were as easy to load and carry as wool, they should be in the same class. In regard to perishable articles, he did not complain of a distinction being drawn between hot-house fruits, which were worth £100 a ton, and ordinary fruit, which was only worth from £15 to £16 per ton. The rates proposed to be charged would, taking a full year, have the effect of doubling the price of Kentish fruit to the customer. He thought the principle which was adopted in the grain trade, of accepting an empty package no matter whence it came, should apply also to the case of fruit. He suggested that empties should be classed in Class C, which would leave the traders in the same position as that which they occupied at present He had prepared a table to show the excess of the cartage rates proposed to be charged by the London, Chatham, and Dover Company over the ordinary station-to-station rate. Maidstone was 41 miles from London, and the charge for apples was by the sieve and half-sieve. It was unusual to send apples in any other way. 5½d. per sieve or 3d. per half-sieve was the rate quoted by the company, including delivery. The charge was 20s. per ton if packed in any other way, and the proposal of the company was to charge hereafter 16s. 3d. per ton for cartage by the sieve and 18s. 4d. for cartage by the half-sieve in London. In the case of soft fruit the cartage of fruit in quarter-sieves would amount to £1 9s. 9d. per ton. The actual charge for cartage to the Borough Market was 2s. 1d. per ton, and 5s. per ton to Covent-garden, while, according to the present schedules, the charges were liable to be increased to £1 9s. 9d. and £1 10s. 3d. In the tables for vegetables the same inconsistency between the actual and the proposed charges was apparent. Faversham was 52 miles from London, and green peas, broccoli, and Brussels sprouts were sent to London and charged ½d. per package more than fruit, although the vegetables themselves might only be worth from 30s. to £2 per ton. From Faversham, including cartage, the rate would be 25s., while the station-to-station rate was 9s. 2d.

In cross-examination, the witness said that all the fruitgrowers asked was that, if these charges were to be made in future, they should have the opportunity of doing the cartage themselves. At present they have no reasonable facilities for doing it. If they had such facilities, there was nothing to prevent them from carting their own goods from the railway terminus to the London markets. Adverting to the hop trade, he said it was true that the traffic came in gluts, but it arose from the fact that the company had no convenience for loading them except in the open air, and therefore they refused to receive hops in wet weather. It was not an uncommon occurrence for the company to carry 6,000 to 7,000 pockets upon one day and only 1,000 pockets upon another. The traders engaged in the fruit business simply asked for reasonable facilities for the reception and carriage of their traffic, and if the company were of opinion that it was unreasonable to ask them to keep their stations open all night, the growers would not object to pay a reasonable charge for the accommodation, say 1s. per ton. What they did object to was the proposal to charge them £1 9s. 9d. per ton for cartage. Apples were accepted by the London, Chatham, and Dover Company at the rate of 50 bushels to the ton. He believed that certain fruitgrowers at Sittingbourne entered into an agreement with the company in 1887 as to rates. The rates were lowered in consequence, but the real ground of the concession was that the Sittingbourne growers threatened to run a small steamboat to London in competition. Rainham, which also possessed the same water service, obtained similar terms. The reason why the steamboat competition was threatened was that the high railway rates absolutely prevented the growers from obtaining a profit. The fruit traffic was usually carried on at night. The carmen in London preferred to work at night because the streets between Blackfriars and Covent garden were less obstructed. If the traders did their own cartage they could get it done for 2s. 6d. a ton.

Mr. George Barham, representing the British Dairy Farmers' Association and the Express Dairy Association, was examined as to the rates for milk. He said the first named association had considered the subject carefully, and suggested rates for dairy produce conveyed by passenger trains on all lines as follows:—Milk for any distance not exceeding 30 miles, ½d. per imperial gallon, with a *minimum* per consignment of 6d.; above 30 and not exceeding 75 miles, ¾d. with a *minimum* of 9d.; above 75 and not exceeding 150 miles, 1d.; with a *minimum* of 1s.; and above 150 miles, 1¼d., with a *minimum* of 1s. 3d.—the empty cans to be returned free of charge at the owner's risk. No extra charge to be made for weight of cans, and no charge to be made for labour, or for station or service terminals. It was now proposed to charge 5d. for returninglan empty can, although the present charge for the conveyance of 12 gallons of milk was only 6d. The *maximum* rates proposed to be charged by railway companies for milk by passenger trains were next compared with the present rates. For 10 miles the companies proposed to charge 1s. 3d. for 12 gallons, 1s. for terminals, 3d. for the return of empty. and terminals on empty 2d., amounting altogether to 2s. 8d., whereas the actual charges at present ranged from 6d. to 1s. 2d. For 50 miles the propcsed *maximum* was 2s. 11½d.; for 75 miles, 3s. 3d.; 100 miles, 3s. 6½d.; 125 miles, 3s. 10d.; and 150, 4s. 1½., whereas the existing charges ran from 1s. to 1s. 2d. for 50 miles, from 1s. to 1s. 5d. for 75 miles, from 1s. 0½d. to 1s. 9d. for 125 miles, and from 1s. 0½d. to 2s. for 150 miles. The percentage of the proposed increase was, in the case of the Midland, 246 per cent.; North-Western, 246; Great Western, 140; South-Western, 164; Great Eastern, 255; Great Northern, 246: South-Eastern, 167; and London and Brighton, 167. The increase in the case of milk consumed in London alone would amount to £350,000 a year. A farmer with a dairy farm of 200 acres would keep 30 cows and would send 60 gallons of milk away daily. The increased rates would amount to a tax upon him of

£6 per cow, or an addition of £1 an acre to his rent upon the carriage of milk alone.

Mr. John Coleman, chairman of the Derbyshire Dairy Farmers' Association, said there were 12,902 cows kept by the various members of the association, and the annual yield per cow was 600 gallons. This would give a total yield of 7,200,000 gallons of milk per annum. Three quarters of this quantity went to London—viz.,5,400,000 gallons, or the produce of 9,000 cows. The cost of carriage at the present rate was £21,176, or at the rate of £2 7s. 0½d. per cow. The charge under the proposed *maximum* rates would be £82,058.

Replies to Queries.

Apricots.—W. L.: The Peach, Royal, and Shipley's are all excellent varieties, being hardy, productive, and of high quality.

Asters.—M. D.: The Chrysanthemum flowered and the Victoria are the two most useful types of asters for the flower garden, the last named being in some respects preferable. The Comet is a beautiful rose-coloured variety of much value for supplying cut flowers, as the blooms are less formal than are those of the other sections. It will not be advisable to sow the seed until after the middle of March.

Names of Plants.—Plants in tin box, Albuca caudata, Jacobinia Pohliana. J. H.—1. Abutilon megopotamicum; 2. Pteris longifolium; 3. Drynaria quercifolia; 4. Asplenium marinum; 5. Lastrea filix-mas cristata; 6. Onychium Japonicum.—Feathers: 1. Oncidium ampliatum; 2. O. altissimum; 3. Lycaste crinita; 4. Masdevallia infracta.—R. H. Powers: 1. Saxifraga sancta; 2. Iberis sempervirens; 3. Leaves of Ramondia pyrenaica; 4. Myrica gale. The last-named requires a wet bog soil.

Planting Vinery.—Young Gardener: It will be advisable to have the borders prepared and planted before the end of March, as the vines will then have plenty of time to form strong, well-ripened canes by the end of the summer. Large canes will not be required, and your best course will be to purchase vines prepared for planting. On their having been received from the nursery, cut them back to within about six inches of the base, and place them in a pit or house in which the temperature is sufficient to start them into a steady growth. Remove all but the strongest shoots from each vine, and when the new growth is about six inches in length plant them in the borders. In performing this operation, loosen the roots round the outside of the ball, and plant deep enough for the base of the young shoot to be just below the surface.

Spirals.—Japanese: The new esculent, Stachys tuberifera, appears to be not at all particular as to the kind of soil it is grown in, but where conditions can be chosen for it, a fertile sandy loam will prove to be the best, and the plot selected should be prepared as for potatos. The plant must be in a sunny situation, and if single tubers are planted at one foot apart every way, an abundant crop may be expected. Now is the time for planting, which may be continued to the middle or end of April. But it is better to plant before the tubers begin to grow. Plant three inches deep, or less rather than a greater depth. All the plant requires in the way of cultivation is that as soon as the green tops are seen, the spaces between the rows should be lightly pricked over with a small fork, after which weeds are to be kept down with assiduity.

Propagating Double Primulas.—R. W.: The practice which generally obtains in the propagation of double primulas is to take off the crowns as low down as possible, and after removing a few of the lower leaves to insert singly in small pots, and place them where they will have the assistance of a brisk temperature. It is an advantage to place the plants in a structure in which a temperature rather higher than that of the greenhouse is maintained, a few weeks previous to the crowns or cuttings being taken off; the pots should be filled with a light sandy mixture, and the cuttings kept rather close for a short period. The practice thus briefly described, although it so generally obtains, is not the best that could be adopted, more especially by those who have not had much experience in the multiplication of the double primulas. The most simple and also the most certain course of procedure is that followed by some of the large trade growers. Towards the end of the winter examples with several crowns are selected, and a few of the older leaves and a little of the surface soil are removed. The pots are then filled to the rim with a mixture of cocoa-nut fibre refuse and silver sand. In due course the crowns produce roots along the greater part of their length, and may then be taken off and potted separately. By this method there is no risk of loss, for with ordinary care the rooted portions can be depended upon to make plants, and those that fail to become rooted can remain upon the old stool until the following season.

Woodlice in Mushroom House.—F. P. writes: I have three mushroom beds, and although they are in bearing I cannot obtain a dish from them, as the woodlice eat the mushrooms as fast as they make their appearance. I have tried a considerable number of the remedies proposed for the destruction of this troublesome pest, but without any satisfactory results. I see that Mr. J. Wright recommends in his "Mushrooms for the Million" boiling pieces of parsnip in a solution of arsenic, and then laying them in their haunts. I should like to know how to prepare the parsnips and arsenic, and also to ascertain whether there is any risk of the use of arsenic in the mushroom house. In other words, whether the woodlice are likely to carry the arsenic over the beds?

[It is at all times necessary to be very cautious in the use of such a deadly poison as arsenic, and you will act prudently in not taking any preparations of which arsenic forms a part into the mushroom house. Large numbers of woodlice may be destroyed by pouring boiling water down crevices and other places where they congregate Large numbers may be caught in a short time in pots containing wisps of hay. Five or six inch pots are the most suitable, and they may be clean or otherwise, but they must be perfectly dry. In each pot put rather loosely a handful of waste hay, also quite dry, and then lay them on their sides. Large numbers will congregate in these, but not to the same extent as in structures where there is not so much harbour as in the mushroom house. To destroy them, take the pot in one hand, and with the other withdraw the hay and shake the woodlice that are in the pot and hay into a vessel containing water as near the boiling point as possible. The pots should be examined daily, and should the hay become damp replace it with fresh. We would suggest that all old and decaying wood be removed as far as it is practicable to do so, and that all crevices in the walls be filled with mortar or cement. If any of our readers can throw any light on the matter we shall be glad if they will do so.

Fruit of the Egg Plant.—A. H.: All the kinds of egg plants produce edible fruits, but only the large dark green and purple fruited kinds are worth attention for the table. These are known as *Auberginea*, and are used when quite ripe The fruits are then cut open and the seeds removed. They are then fried of a golden brown in pure butter, are eaten with cayenne pepper and a squeeze of lemon. There are other modes of cooking practised, but this, the simplest, is about the best. They are delicacies of some importance where elegant table trifles are appreciated.

Camellias.—A. F.: The most suitable temperature for camellias during the flowering season is one ranging from 40 deg. to 50 deg., but a few degrees higher than the maximum will not do them any harm. The comparatively high temperature to which they have to be subjected one day in each week is no doubt more or less injurious to them, and it is probably the cause of the premature falling of the buds. A dry atmosphere is not less injurious than a high temperature, and it would probably be beneficial to give them a light syringing overhead in the evening, after the conservatory has been closed for the night, the syringing to be discontinued when the flowers are expanding.

Correspondence.

DEATH OF MR. MAGGS AND HIS SON.

The attention of the Aylesbury Local Board of Health has been called to a paragraph in the Gardeners' Magazine, in which it is stated that the outbreak of typhoid fever, which resulted in the lamented death of Mr. Maggs and his son, "has been traced to defective manholes, air tainted with emanations of sewage, and water affecting the milk supply of the household."

The board direct me to inform you that you have been misinformed as to the probable cause of the disease. The medical officer of the board, assisted by the inspector of nuisances, has made a searching inquiry into the case, and they have come to the conclusion, which the medical officer of health has reported to the board, that the mischief arose through the milk consumed by the family being contaminated.

I may add that several cases of typhoid fever occurred at the time Mr. Maggs' family were attacked, and the medical officer reports that in each case the patient formed one of a family who received their milk supply from the same farm.

George Fell.
Clerk to the Local Board of Health, Aylesbury,

February 18, 1890.

TRADE CATALOGUES.

United States Nursery, Short Hills, New Jersey, U.S.A.—*Chrysanthemums and Single Dahlias, Imported Orchids.*

T. S. Ware, Hale Farm Nurseries, Tottenham.—*Hardy Florists Flowers, Choice Hardy Perennials, Hardy Climbers, Pœonies, Dahlias.*

John Sharpe and Son, Bardney, Lincolnshire.—*Vegetable and Flower Seeds.*

W. and J. Birkenhead, Washway Road, Sale.—*Vegetable and Flower Seeds, Shrubs, Trees, &c.*

Obituary.

On February 18, at 76, Elm Park Road, Chelsea, Miss Maud Naftel, R.W.S, an eminent painter in water-colours, best known for her beautiful flower pieces.

On February 16, Sir Robert Kane, LL.D., F.R.S., a literary and practical scientist of high reputation. Having, as a medical man, contributed much to the science of pathology, he became professor of chemistry to the Apothecaries' Hall of Ireland, and professor of natural philosophy to the Royal Dublin Society. He obtained the medal of the Royal Society, 1840, for researches on the colouring matter of the lichens. None of his labours were of greater importance than those that had in view the advancement of Irish industries, and it was for these chiefly that he was honoured by knighthood. He was in his 82nd year.

Markets.

COVENT GARDEN.

Fruit.

Apples	per ½-sieve	2s. 6d. to	8s. 0d.
Apples, American	per brl.	16s. 0d. ,,	24s. 0d.
Cobs	per lb.	1s. 6d. ,,	1s. 9d.
Grapes	per lb.	1s. 0d. ,,	6s. 0d.
Lemons	per case	10s. 0d. ,,	15s. 0d.
Pine-apples, English	prlb.	1s. 0d. ,,	1s. 6d.
Pine-apples, St. Michael's	each	2s. 6d. ,,	7s. 6d.

Vegetables.

Asparagus, English	per bun	6s. 0d. to	8s. 6d.
Asparagus, Sprue	per bun.	1s. 0d. ,,	1s. 6d.
Beans, French	per lb.	0s. 6d. ,,	0s. 8d.
Beet	per doz.	1s. 6d. ,,	2s. 0d.
Brussels spr'ts	pr ½ sieve	1s. 6d. ,,	2s. 6d.
Cabbages	per doz.	1s. 0d. ,,	2s. 0d.
Carrots	per bun.	0s. 4d. ,,	0s. 6d.
Cauliflowers	per doz.	2s. 6d. ,,	3s. 6d.
Celery	per bundle	1s. 6d. ,,	2s. 0d.
Coleworts	pr doz bunchs.	2s. 0d. ,,	3s. 0d.
Cucumbers	each	1s. 0d. ,,	1s. 6d.
Endive	per doz.	1s. 6d. ,,	2s. 0d.
Herbs	per bunch	0s. 3d. ,,	0s. 4d.
Horse-radish	per bun.	3s. 0d. ,,	4s. 0d.
Leeks	per bunch	0s. 3d. ,,	0s. 4d.
Lettuces	per doz.	1s. 0d. ,,	2s. 0d.
Mushrooms	per basket	1s. 0d. ,,	1s. 6d.
Onions	per bushel	3s. 6d. ,,	4s. 6d.
Parsley	per bun.	0s. 4d. ,,	0s. 6d.
Rhubarb	per bun.	0s. 3d. ,,	0s. 4d.
Salsify	per bundle	1s. 0d. ,,	1s. 6d.
Seakale	per pun.	1s. 0d. ,,	1s. 6d.
Scorzonera	per bundle	1s. 0d. ,,	1s. 6d.
Shallots	per bun.	0s. 4d. ,,	0s. 6d.
Small Salading	per pun.	0s. 3d. ,,	0s. 4d.
Spinach	per bushel	2s. 6d. ,,	3s. 0d.
Tomatos	per lb.	0s. 9d. ,,	1s. 0d.
Turnips	per bunch	0s. 4d. ,,	0s. 5d.

Cut Flowers.

Abutilons	per doz. bun.	1s. 6d. to	2s. 6d.
Azaleas, per doz. sprays		0s. 6d. ,,	1s. 6d.
Bouvardias	per bunch	0s. 8d. ,,	1s. 0d.
Callas	per doz.	3s. 0d. ,,	5s. 0d.
Camellias	per doz.	1s. 0d. ,,	3s. 0d.
Carnations, per doz. blms.		1s. 0d. ,,	1s. 6d.
Cyclamens, per doz. blms.		0s. 4d. ,,	0s. 6d.
Eucharis	per doz. blms.	3s. 0d. ,,	4s. 0d.
Gardenias, per doz. blms.		9s. 0d. ,,	18s. 0d.
Heliotropes, pr doz. sprys		0s. 6d. ,,	1s. 0d.
Hyacinths, Roman, per doz. sprays		0s. 6d. ,,	1s. 0d.
Lilac, White, per bun.		4s. 0d. ,,	6s. 0d.
Lily of the Valley, per doz. sprays		0s. 9d. ,,	1s. 6d.
Maidenhair Fern, per doz. bun.		3s. 0d. ,,	6s. 0d.
Margueritos, pr doz. bun.		3s. 0d. ,,	5s. 0d.
Mignonette, per doz. bun.		2s. 0d. ,,	4s. 0d.
Narciss. Paper White, per doz. buns.		2s. 0d. ,,	4s. 0d.
Pelargoniums, per doz. trusses		0s. 9d. ,,	1s. 3d.
Primulas	per doz. sprays	1s. 0d. ,,	1s. 6d.
Roses, Tea, per doz. blms.		0s. 6d. ,,	1s. 6d.
Spiræas, per doz. sprays		0s. 9d. ,,	1s. 0d.
Tuberoses, per doz. blms.		1s. 6d. ,,	2s. 0d.
Tulips	per doz. blooms	0s. 9d. ,,	1s. 0d.
Violets, per doz. bun.		1s. 0d. ,,	1s. 6d.
Violets, Parme, per bun.		2s. 0d. ,,	3s. 0d.
Violets, French, per bun.		1s. 6d. ,,	2s. 6d.

BOROUGH AND SPITALFIELDS.

Potatos.

Regents	per ton	40s. to	80s.
Magnum Bonum	per ton	40s. ,,	90s.
Beauty of Hebron	per ton	40s. ,,	85s.
Imperator	per ton	50s. ,,	60s.
Scotch Champions	per ton	45s. ,,	50s.

"THERE IS UNQUESTIONABLY" no better remedy in the whole world for all cough and throat troubles than KEATING'S LOZENGES—any medical man will assure you of this fact. Relief is speedy; they contain no strong acting, but only [simple] drugs; the [most] delicate can take them. Sold everywhere in 13½d. tins.—[Advt.]

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
9	S	**3rd Sun. in Lent.** Emp. Wm. died, 1888.	6 31	10 40	5 51	9 3	5 52	3 40	3 55	0 49	1 5	41·7	Angræcum falcatum..... Madagascar.	68
10	M	Prince of Wales married, 1863.	6 28	10 24	5 53	10 19	8 8	4 11	4 27	1 20	1 36	41·8	Cattleya amethystoglossa ... Brazil.	69
11	Tu	Benjamin West (artist) died, 1820.	6 26	10 8	5 55	11 35	8 29	4 44	5 0	1 52	2 9	42·0	Cœlogyne cristata..... Sylhet.	70
12	W	*Gregory, Bishop and Martyr.* [1881.	6 23	9 52	5 57	Morn.	8 53	5 18	5 35	2 25	2 43	42·1	Cypripedium Hookeræ ..... Borneo.	71
13	Th	Assassination of Alexander II. of Russia,	6 21	9 36	5 58	0 53	9 24	5 55	6 16	3 0	3 20	42·2	Dendrobium Findleyanum .. Cochin-China.	72
14	F	(Last Quarter.	6 18	9 19	6 0	2 10	10 5	6 40	7 9	3 41	4 5	42·3	Masdevallia ignea..... Colombia.	73
15	S	Sir W. M. Gomm died, 1875.	6 16	9 2	6 2	3 20	11 0	7 39	8 16	4 34	5 4	42·4	Odontoglossum triumphans Ocana.	74

ROYAL AQUARIUM.—FLOWER SHOWS.

FIRST SPRING EXHIBITION, WEDNESDAY and THURSDAY, March 12th and 13th. Schedules for the whole series of Shows now ready, and may be had free on application.
William Holmes, Frampton Park Nurseries, Hackney, London.

BATH BULB SHOW, March 19th and 20th.
Entries close March 14th. For Prize Schedules, &c., apply to
2, Northumberland Buildings, Bath. B. R. F. Pearson, W. Jeffery, } Joint Secretaries.

Auction Sales for the Ensuing Week.

Monday, Mar. 10.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Greenhouse Plants, &c.

Monday, Mar. 10.—Messrs. Protheroe and Morris, at The Nurseries, Romford; Nursery Stock.

Tuesday, Mar. 11.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Baskets and Hampers.

Tuesday, Mar. 11.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38 and 39, Gracechurch Street; Roses, Greenhouse Plants, &c.

Wednesday, Mar. 12.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Roses, Greenhouse Plants, &c.

Wednesday, Mar. 12.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, &c.

Thursday, Mar. 13.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids, Lilium auratum, &c., from Japan.

Friday, Mar. 14.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

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The Gardeners' Magazine.

SATURDAY, MARCH 8, 1890.

The Relations of Horticulture to Science in General is a subject of the highest importance that obtains attention occasionally in connection with some partial propositions, but has rarely obtained systematic, much less exhaustive, treatment. It may be said, we fear with truth, that not many, either of scientists or horticulturists, are competent to treat the subject adequately. But that is no discredit to any of either class, because the minute study of scientific subjects that is now followed, results in what may be termed minute divisions of labour, and the more complete the knowledge of an expert in the "specialties" he has become attached to, the less is he capable of grasping the generalities that for the purpose are required. It is not given to many to be capable of the large views of men like Sir John Herschel, Baron Humboldt, Mr. Grove, Mr. Stokes, Charles Darwin, or Sir Joseph Dalton Hooker. Botany and Horticulture have commonly found exponents and advocates amongst practical men of limited knowledge, and while there has been no lack of high talent in both departments, the late Dr. Lindley being one of the best examples, the tendency of any general treatment has been towards localization of thought in the direction of some special experience rather than to the bold generalizations that bring correlated truths before us with the emphasis that renders them a power for teaching.

All who have acquired knowledge and experience in the two important branches of the study of vegetation, the classification and the cultivation of plants, have wished for some kind of key to their relationships, or some royal road to the region where they may be supposed to join hands and give promise of unity of action in behalf of a true science of plants, in which the work of the herbarium and the garden, and even of the market and the household, shall be fused, that every part may help every other part, as in the application of mathematics to astronomy, or the reduction of astronomical, geological, and ethnological facts may be, and to some extent are, fused for that study of the earth's surface which may be called geography *in extenso*. The definitions are probably impediments to progress. We dignify by the term botany the work of the herbarium, although much of it is far removed from any study of the living plant. In the herbarium great pains are taken to trace stipules, and hairs, and glands, and scales as aids to the distinction of species, and the bibliography of plants is pursued beyond all possible limits of usefulness, the end of it being that the herbarium gives us as the outcome of an immensity of labour conclusions that are of the least imaginable consequence, even to the science that sanctions the proceeding, while as to the service of mankind, that may be considered out of the field as a matter that has not been thought of. We call this botany, or the science of plants, and we are seriously assured that there is not much to be derived from it in aid of horticulture. No; horticulture deals with the living plant, and its practitioners will not expect much aid from the students of the dead plant, any more than a person who had never seen anything of a baby beyond the skeleton of one in a museum would be capable to act as nurse to a tender consumer of milk and tops and bottoms. And if we may go wrong in the definition of the botanist, we may do the like in defining the horticulturist. He is sometimes great in orchids and small in all things else; or he is a fruitist, or a fernist, or some other "ist," and accordingly tied to an "ism," and cares little for aught that lies outside the region of his "specialty." But if we bring all these into a congress, and start a subject of universal interest, they may all throw light upon it as the points of special interest are made conspicuous, and so in the end from the dry-as-dust of the herbarium to the exhibitor of prize pumpkins there will be found in the body at large collective wisdom tending everywhere to practical ends.

Between the botanist of the books and the botanist of the hills there is this difference as regards possible aid to the horticulturist, that the first can do little and the second can do much for the advancement of useful knowledge. We may be seriously told that the observations of travellers are of doubtful value when it is sought to apply them to practical horticulture, but the declaration is of scarcely more importance than idle words might be. Between conditions reported to prevail in any particular case and the actual experience of the cultivator there may be discrepancies, but common sense provides a margin for exceptional cases, and a clear view of the subject will in the end demonstrate that the discrepancies are in accordance with the general plan of nature, wherein also is a margin for variation of particulars. One golden rule may be deduced from all observations both of plants in their homes and of plants under cultivation, and it is that actual frost is the greatest of all factors in determining limits of plant life and concurrently limits of conditions conducive to success in cultivation. In the climate of south-west England and south-east Ireland many plants that are natives of warmer climes may be grown with partial or complete success, but when frost occurs they are put to an extreme test: a test that the heat of summer does not in any way resemble, for the first means often death and the second a merely temporary influence for good or harm, but in no way affecting vitality. We may in cultivating plants obtain success by deviating in many particulars from the conditions reported to prevail in their homes, but they will be consistent with the possibilities of that "margin" of nature above referred to, or in other words the adaptability to a certain range of conditions will be illustrated by the facts, and no fundamental principle will be affected. The margin is somewhat narrow, for it does not afford room for the cultivation in a dry, burning sand of a plant that in nature is always found in swamps or submerged in water, while on the other hand the plants of the dry desert will not adapt themselves to a permanent bath, for in neither of these cases is the margin of variable conditions wide enough for such extremes.

Science can tell us of structural affinities, and experience will tell us something at least of what they mean for the cultivator. When we are told that a plant is an alliance of the roses, we shall expect it to conform to the average conditions of a temperate clime, and to be unable to endure exposure to any extreme conditions in respect of drought or moisture. Examples of this kind might be multiplied *ad infinitum*, as the love of moisture common to orchids, the love of dryness common to crassulaceous plants, and the use of special organs as of prehensile tendrils and root-formed struts, we may be taught by science in order that we may in our cultural economy make preparation for ensuring to the plants the conditions nearest to their requirements that are possible in gardens. Whoever shall say that the natural conditions are matters with which the horticulturist has no concern must be dismissed as broaching injurious nonsense. We may not be able to establish identically the same conditions; but if we do not come near to them, and at least within the margin that is on the practical side of the impossible, we shall have no success, and our endeavour will be labour thrown away. There is no more empiricism in horticulture than in any other of the useful arts. It is founded on principles, and to the establishment of these science has contributed in greater degree than has been recognized; for when a thing is accomplished we dismiss the steps and stages by which success was secured, our view forward being too earnest to permit of retrospection. Botany is a larger science than the herbarium recognizes; the useful work accomplished there has certainly no very direct relation to horticulture; but then herbarium work is only a department of botany, which attains to its highest stage in the study of the living plant, its structure, habits, requirements, and uses.

The Present Prospect is a pleasant one, but already we see that discounts must be endured, for the weather never suits all things alike. As grass made but little growth in January, the plant is ready for business when the time for it arrives. Winter wheats look well, but were only checked in time, for the warmth of January was working mischief. The same was the case with fruit trees, for pears and plums were showing a determination to activity, and a prolongation of the unseasonable warmth for only one week more would have been most injurious. But these received a salutary check, and at the present time fruit trees everywhere are quiet and safe, and their spurs look for a crop should the season prove favourable. So far as to all the more important subjects so far as the winter can affect them. Vegetables and roots demand but little consideration in the present connection, as up to the present time but little seed sowing or potato planting has been done. Last year's supplies are still plentiful, and frost, by raising prices, will benefit the many growers who have been supplying the markets at a loss for some weeks past. Amongst the discounts will be many choice garden subjects. Innumerable are the plants that have pushed through the soil untimely to be pinched by frost and spoiled for the season. From many places doubtless we shall in due time hear of lilies that fail to flower, of plants that have disappeared entirely, and of others that are diseased, crippled, and impoverished. The cultivators who are always on the alert find means of averting much of such mischief, and often some cheap, rough shelter for a few days only will suffice to save much that would otherwise be destroyed. But for all the care that may be taken, a burst of warmth in winter, followed by proper wintry weather, will work mischief that none can prevent and not many perhaps can clearly foresee.

The First Exhibition of Spring Flowers at the Royal Aquarium will be held on Wednesday and Thursday next.

Reigate Chrysanthemum Society will hold its annual exhibition, Friday, November 14.

Mr. T. Price has been engaged as head gardener to H. J. Harris, Esq., Bowden Hill House, Chippenham.

Mr. James Preece has been engaged as head gardener, at Warley Place, Great Warley, the residence of F. Willmott, Esq.

Mr. F. J. Debnam has been engaged as head gardener to A. Pears, Esq., Spring Grove, Isleworth.

Mr. A. Milne has succeeded Mr. Holmes as head gardener at Ashburnham Place, Battle, Sussex, the seat of the Earl of Ashburnham.

Right Hon. Joseph Chamberlain, M.P., has consented to become a vice-president of the National Chrysanthemum Society, and has sent a donation to the special Centenary prize fund.

Mr. W. Bowell, many years head gardener at Stawell House, Richmond, has been engaged as head gardener at Shiplake Court, Twyford, Berks.

Chiswick Horticultural Society will hold its summer exhibition in the gardens of the Royal Horticultural Society on Thursday, July 10.

Rose Culture formed the subject of an able paper, read by Mr. George Cannon, of Ealing, at the meeting of the Chiswick Gardeners' Association on the 28th ult.

Maidenhead Horticultural Society's annual exhibition August 14.

Mr. H. J. Jones, who has for some years past been in partnership with Mr. N. Davies at Camberwell, has commenced business on his own account at the Ryecroft Nursery, Hither Green, Lewisham.

Chiswick Gardeners' Association will bring the current session to a close on the 28th inst. with a dinner at the George Hotel, Chiswick, when Mrs. Lee's prizes for essays written by the members will be distributed.

Meetings of L'Orchideenne at Brussels will in future be held on the second Sunday and Monday in the month. The hours on Sundays will be 1.30 to 6; on Mondays for members only from 9 to 12, and for visitors from 1.30 to 6.

National Rose Society.—A meeting of the executive committee will be held, by permission of the Horticultural Club, in their rooms, Hotel Windsor, on Tuesday next, at three p.m., to arrange schedules for 1890 and appoint local recretaries.

Reading Chrysanthemum Society.—Seventh annual exhibition, November 13. The income for 1889 amounted to £228 18s. 2d., and the payments (including prize money, £113 9s.) to £226 13s. 6d., a gain of £2 4s. 8d. Cash balance in hand reaches £83 2s.

Banbury Chrysanthemum, Fruit, and Winter Flower Show.—Annual exhibition, November 19. This society's income for the past year reached £100 10s., and the payments (including £56 2s. as prizes) to £90 10s. 4d., a gain on the year of £10 less 2d. Its cash balance stands at £32 12s. 8d.

A List of Seeds saved in the Royal Gardens, Kew, in the year 1889, has been published as a supplementary issue of the *Kew Bulletin*. These seeds are available for exchange with Colonial, Indian, and Foreign Botanic Gardens, but are not sold to the general public.

Tuesday next should be a busy day with horticulturists. Three committees of R.H.S. meet at the Drill Hall, Westminster, at 12 noon. The Scientific Committee will meet at 4. The general meeting at 3 will be enlivened by discourses on Hippeastrums by Mr. Harry Veitch and Mr. James Douglas.

Ealing Horticultural Society was found to have too large a field, for it included Ealing, Acton, and Hanwell. Henceforth it is restricted to Ealing parish. The exhibitions are fixed for July 9 and November 5. Mr. Richard Dean has retired from the secretaryship after fourteen years' service as an honorary officer, and is succeeded by Messrs. Dawes and Cannon.

A Statue of M. Boussingault, the eminent chemist to whom we are indebted for very much of our present knowledge of the requirements of plants and the chemistry of manures, is to be promoted by a committee in Paris, of which M. Pasteur is the honorary president. The secretaries are Messrs. Müntz and Sagnier, and the treasurer M. Liebaut.

Victoria Dry Glazing will be adopted in the winter garden Madame Adelina Patti is having constructed at her residence, Craig-y-nos Castle, South Wales. This house will measure 104 feet by 70 feet, with curved roof 45 feet high. The roof will require some 8,000 feet of glass. This mode of glazing is adopted on account of its ability to resist the gales of the Welsh mountains. Messrs. Sam Deard and Co., of Harlow, by whom the work will be done, inform us that this is the fourth order received by them from Madame Patti.

Gardeners' Orphan Fund will hold its annual meeting and dinner at the Cannon Street Hotel, on Friday, July 18. The election of pensioners will take place on the same day, when ten children will be placed on the fund. The preliminary arrangements for holding the annual fête in Covent Garden Market are receiving the attention of the executive, and a meeting of the committee, to which the growers and stand holders will be invited, will be held at Hummums' Hotel, on March 14th for discussing the details.

Alliance Assurance Company favours us with reports, balance sheets, and particulars of progress, for any proper notice of which we are debarred by the remoteness of the subject from horticulture. But in behalf of our travelling friends we extract from the list of conditions the following:—"Except in special cases, new Life Policies are free from all restrictions as regards foreign travel and residence, and occupation, so that, subject only to the payment of the Premiums fixed at the date of the acceptance of the Proposals, and to the admission of age, such Policies are whole-world and indisputable."

Southampton Horticultural Society held its annual meeting on the 27th ult., when the report submitted showed that by leaving out of account the amount disbursed in payment of the arrears of 1888 and the cost of carrying out certain alterations in Westwood Park, there was a small credit balance on the year's working. But by taking these payments into account the balance-sheet shows outstanding liabilities to the amount of £164 5s. 11d. The exhibition resulted in a loss of between £70 and £80, and in consequence the chrysanthemum show had to be abandoned.

The Story of a Grain of Wheat was told by Mr. W. Carruthers, president of the Linnean Society, at the monthly meeting of the Bedford Park Gardening Society held on the 1st inst. In the course of his lecture Mr. Carruthers gave an outline of the life-history of the wheat plant, and also proved to demonstration the practicability of giving an accurate description of the various processes involved in the germination of the seed, the development of the tissues, the nutrition of the plant, and the maturation of the seed without the use of the cumbrous terms so freely employed by the majority of lecturers on botanical subjects.

The Forth Bridge was opened on the fourth without the aid of floral decorations. This is a serious matter, because the decoration of the bridge would have made a pleasant item in the floral work of the season. The banquet hall in which the Prince of Wales was entertained was dressed with coloured calicoes, and the chairman's platform was adorned with a canopy of gold and plush, and there is no mention of flowers, trees, or garlands. It is interesting to learn from his Royal Highness, the august opener, that to put the bridge in proper condition about twenty-five acres of surface will have to be painted with three coats of paint.

Wildsmith Memorial, of which our readers have had notice, and to which they are invited to contribute, combines in a most happy manner good feeling and common sense. It is desired to commemorate a good man, and the friends select for the purpose a cause to which he devoted strength and affection—the cause of orphans of gardeners. By subscribing the needful amount a special trust will be created in connection with the Gardeners' Orphan Fund, for the benefit of an orphan who will be the "Wildsmith orphan," a distinction in its way and a reminder to those who may need it that "the actions of the just smell sweet and blossom in the dust." Gardeners in the southern counties are in especial appealed to in aid of this movement, but the late Mr. Wildsmith was so extensively known and respected that his claim is universal.

A Smart Frost has made a reality of the winter. On Tuesday last thermometrical readings were as low as 7 Fahr. at Beckenham, Kent, 13 at Dungeness, 14 at Cambridge, 15 London, 17 Oxford, and 18 Loughborough. Mr. W. Piercy reports from Forest Hill, March 4: "We had last night the remarkably low temperature of 10 Fahr., equal to 22 degrees of frost. It is a singular thing that on March 4, 1889, we had 20 below freezing. I remember some sharp frosts years ago in March. Upon one occasion my father, brother, and self walked across the middle of the old Hornsey Wood House pond on very strong ice on March 10, and I remember on another occasion skating on strong ice on March 25." In the north of England and Scotland the temperature has ruled considerably higher than in the south. At many Continental stations the temperature on the mornings of Sunday, Monday, and Tuesday were lower than any registered in Great Britain.

Whitsun Exhibition of the Manchester Royal Botanical and Horticultural Society will be on the same scale as the great gatherings at Old Trafford in previous years, and will probably prove one of the most important horticultural events of the year. The schedule contains seventy-nine classes, of which fifty-two are set apart for private cultivators, the remainder being open to nurserymen only. In each of the two divisions there is a class for collections arranged for effect, and consisting of orchids, palms, ferns, and other decorative plants, with prizes of £25, £15, and £10 respectively. There are two other classes for groups, in one of which the prizes amount to £27, and in the other to £28. Orchids have, as usual, had liberal provision made for them, the prizes in the amateurs' classes amounting in the aggregate to £130. Roses in pots, stove and greenhouse, ornamental leaved, and hardy plants, pelargoniums, begonias, violas, and fruits, with numerous other objects, are also liberally encouraged. The exhibition will be held from May 23 to 28, thus closing two days earlier than in previous years.

PROTECTING THE BLOSSOMS OF FRUIT TREES.

Although I do not agree in a general way with any make-shift system for the protection of the bloom of fruit trees, believing if it cannot be efficiently done, that it is better left alone, I do not go so far as to say that temporary coverings are of no use in warding off the frost. My contention is that when any considerable outlay is intended that it is better to protect a few trees in a thoroughly reliable manner than to do a large number in a way likely to prove ineffectual. I have great faith in a substantial coping to walls, and curtains to draw over the trees at night, but I have a well grounded objection to having any tree covered up more or less for three or four consecutive weeks with any kind of material that will exclude light and air. During my lengthened experience I have made observations on the behaviour of protected and unprotected trees, and unless the shelter has been of the most reliable kind the unprotected trees have been as fruitful as the others. I am alluding now to trees on high walls, and as these are of necessity the most expensive to shelter it is a question that one may well stop and consider before making any outlay.

But when we come to trees that are more under command, such as those on low walls, or pyramids, or dwarf bushes, the question of affording them some protection when they are in bloom is worthy of being seriously considered, because the convenient height of the trees enables the cultivator to apply a covering of sufficient consistency to exclude frost, and that without any serious outlay. When there are peach trees trained to walls that are not more than seven feet high it is not a difficult matter to hang a mat or piece of canvas over a few trees when there are indications of a frost. Such a form of protection is much better for the trees than allowing it to remain over them for a week or two. It does not take long when the materials are close at hand to put it on at night and take it off again in the morning, and very often a few nights' attention will save the crop. It is necessary, of course, to watch the state of the weather and to act accordingly. In a general way I find there is a tendency to cover too much instead of too little. The protection is often put on before it is actually required, and then it does more harm than good, as it hastens the trees into flower.

For trees on walls mats or stout canvas is the best where only a few trees are to be dealt with; but where there is a long length of wall to cover tiffany is the cheapest material to use. If cut into lengths it may be secured to the wall in a short time at night and be as readily removed again in the morning. I am assuming, of course, that there would be an objection to make the tiffany into curtains and fix them on wires to be drawn over the trees at night and undrawn in the morning; that would be the better plan but more expensive.

Much may be done with temporary coverings at night on such forms of trees as espaliers, bushes, or pyramids. A few lengths of canvas laid over the trees on the approach of frost would often save the crop. The trouble of doing so is more imaginary than real, as the time over which the protection is required does not extend over more than two or three weeks. Interested amateurs might, I think, increase their measure of success in hardy fruit culture considerably if they were to pay more attention to covering their trees while they are in bloom. They give them every other necessary attention through the several seasons of the year, yet, strange to say, when they want a little extra care to carry them safely through a critical time, no effort is made to help them. There is certainly room for improvement in this part of the management.

J. C. Clarke.

BRUSSELS SPROUTS.

Those who have had much experience in the management of the kitchen garden will agree with me as to the utility of Brussels sprouts and the importance of giving them a prominent position in the scheme of cropping. From September to March they may be had in excellent condition, and throughout this comparatively long period they will not fail to be fully appreciated when upon the table. As regards productiveness they will favourably compare with other green vegetables of their season, and are therefore adapted for small gardens in which it is important to obtain as large a bulk as possible from a given space as well as for gardens of large size.

We are sometimes told that Brussels sprouts are not required until the summer vegetables are no longer available. In some places they may not be wanted until the frost has destroyed the kidney beans, and the peas are exhausted. In my case they become a necessity in September, and I have to commence sending them to table by the middle of the month, and a supply has to be maintained until March, not daily, but at intervals in association with kales, coleworts, and other green vegetables in season. To obtain supplies in September it is necessary to sow the seed either at the end of the summer of the year previous or under glass early in the spring. I find the plants raised in spring to give the best results, and accordingly adopt sowing under glass. To select a strain that produces its sprouts at a comparatively early period is essential, and the "Exhibition" type is unquestionably the best. This type is of moderate height and produces large sprouts, which, in consequence of the great length of the stalks of those towards the base, assume a pyramidal shape. It is not suitable for the late supplies, as the water lodges about the closely packed sprouts and renders them especially liable to frost. I prefer for the late supplies one of the rather tall strains in which the sprouts are set closely to the stem, as the winter must be very severe to do them much injury. Northaw Prize is an excellent type, as also is the Imported when representing a good strain.

For the earliest supplies I sow rather thinly in shallow boxes, filled with a light, rich compost, and place them in a frame or pit where a temperature of about 60 deg. is maintained. The boxes may be placed in a cucumber frame, provided they are removed to cooler quarters when the seedlings have developed their first rough leaf. A position near the glass is necessary, and the watering must be done with care, for when the tender seedlings are kept very moist they will damp off in large numbers. On their becoming large, prick off on a bed of rich soil made up in an unheated frame, and put them about two inches apart each way. Ventilate freely as soon as they have recovered from the check and complete the hardening off by the withdrawal of the lights on the removal of the frame, should it be required for some other purpose. Failing a frame in which to prick them off, select a sheltered position in the open and protect with mats or some other covering until they are sufficiently hardened to bear the exposure. The sowing from which the late crop is raised is also made in March, but in a bed in the open. Thin sowing is advisable that the plants may remain without being injured until they are transferred to their permanent quarters.

The soil for Brussels sprouts cannot well be too rich to ensure a heavy, profitable crop, therefore the quarters devoted to both the early and late crops should have been liberally enriched with manure and also deeply dug in the winter or spring previous. The plants of the dwarf type for the early supplies should have a space of thirty inches each way. The later crop should be allowed more space, a good distance between the rows being three feet and in the rows thirty inches. I plant the greater part of the latter between the second early potatos which have purposely four feet spaces between the rows; they may be planted between the main crop potatos, provided the varieties do not make too strong a growth.

Old Spadesman.

Wallflowers have been well-nigh destroyed in the southern counties by the recent frost. Present appearances are adverse to any possible recovery. We have seen many acres of wallflowers that were freely pushing into flower a few weeks back when warm weather prevailed that now look as dilapidated as though having been dipped in boiling water. Lilies are in many places seriously injured, for they were in free growth above ground, more especially scarlet martagons and testaceums, but candidums appear unhurt, and their fresh green colour is in no way impaired. The losses will be many amongst the softer kinds of garden vegetation, but for the present the wallflowers appear the most severely punished.

BERRIED SOLANUMS.

The berried solanums present such a bright and effective appearance when well fruited and remain in good condition for so long a period, that it is not surprising they should be highly esteemed for winter decorations by all classes of cultivators. In the conservatory they will retain their freshness and beauty for at least three months, and they are so well able to withstand the effects of the adverse influences to which plant life is exposed in living rooms, that examples placed indoors, will, with care, last nearly as long as those in a glass structure. Their culture is very easy, but to ensure strong lasting specimens bearing a heavy crop of well ripened berries, it is necessary to raise the stock rather early in the year. They may be propagated from cuttings or seed at the discretion of the cultivator. Each method of increase has its advantages, but the balance, so far as the general body of cultivators is concerned, is on the side of raising from seed. In the first place it is much easier to raise seedlings than to strike cuttings, and in the second the plants obtained from seed are more vigorous and therefore less likely to suffer from the attacks of red spider and other insect pests, than are examples propagated from cuttings. It is important to obtain seed from a good type, that known as Williams's Improved Hybrid being one of the best. This form introduced some years since is remarkable for the neat free branching habit of the plants and for the abundant production and large size and brilliant colouring of the berries. The accompanying illustration, although of small size, will give a good idea of the character of the plants belonging to the strain.

To commence early is necessary to allow the plants plenty of time to produce a heavy crop, and well ripen their fruit by the end of October, when berry bearing plants are more or less in request. Having purchased seed of the best possible quality it follows that there should be no waste, therefore sow thinly in pans to avoid injury to the seedlings from over-crowding, before they are large enough to be pricked off. The size of the pans must be regulated by the quantity of seed to be sown, but they should in all cases be efficiently drained and filled to within half an inch of the rim with light sandy soil; especially suitable for the purpose is a mixture consisting of loam, two parts, and leaf-mould and sand one part each. In this the seedlings will grow



Solanum, Williams's Improved Hybrid.

freely and lift with good roots. Until the seedlings make their appearance it matters not much where the pans are placed, provided the seed has the assistance of a temperature between 60 deg. and 70 deg., and the soil is maintained in a moderately moist state. On the seedlings commencing to push through the soil, the pans must be placed where they will have the advantage of light, a moderate circulation of air and a brisk temperature, and generally it will suffice to remove them to a lighter position in the same structure. When the seed is sown thickly and the young plants become much crowded, at an early stage it will be necessary to prick them off into other pans or a box; but in all other cases they may remain until they are large enough to be put into small pots.

If on their removal from the seed pans they are pricked off into boxes or pans, use a mixture somewhat similar to that advised for the seed bed and put them about two inches apart each way; when, on the other hand, they are to be put direct into the pots, prepare a moderately rich compost such as would be formed with loam four parts, and leaf-mould, manure, and sand one part each. Pot them off singly, use three-inch pots and keep them rather close and warm until they are established. When they have recovered from the check received nip out the points, and on the production of lateral growth remove to the greenhouse or a pit, the latter being preferable, as they can then be placed within a short distance of the glass. They should remain under glass until near the end of May, and during that time receive liberal supplies of water at the root, over-head syringings at frequent intervals, and liberal ventilation. Should they be attacked by green fly, fumigate with tobacco or tobacco paper; but when the syringe is used freely, neither this pest, nor indeed any of the insect plagues will occasion much trouble.

By the end of May more space will be required by the roots, and it must then be determined whether they are to be grown in pots or to be planted out. Pot culture is in some respects preferable, but when planted out they require but little attention, and there is practically no risk of their coming to grief through neglect in the course of the summer as in the case of the pot plants. Those to be kept in pots should be shifted into six-inch pots and have a substantial compost; they may remain in the pit with the lights withdrawn in warm weather, or be removed to a sunny position in the open. In either case the pots should be placed on a bed of coal ashes or a hard surface and have some loose material packed between the pots to check evaporation and thus reduce the labour of watering. For those to be planted out, select an open position in the kitchen garden, a warm, sunny border being in every way the most suitable. The soil should, as a matter of course, be dug over some time previous to the plants being put out, and a little manure may be added if necessary. It is important to avoid the too liberal use of fertilizers, as when the growth is very luxuriant, the berries fail to set freely, and the plants in consequence are of but little use. It may be necessary to stop the growth a second time before they are removed from under glass, and it is a good practice to remove the ends of the shoots just above the berries when they are swelling fully. When this is done the berries are fully exposed, and the short growths subsequently produced give the plants a light appearance. It is important to lift the plants early in September, and to put them in a pit when potted up.

W. B.

HELLEBORUS NIGER.

Another season's results of growing this Christmas Rose in such a manner that a frame can be placed over it without interfering with the roots, shows what a grand plant it is when treated in this manner, for producing a supply of pure white flowers from Christmas to the middle and end of February. Considering the small cost of either labour or expense, the wonder to me is, that many more are not cultivated than at present is the case in the manner named. No matter how strong the plants are at first, annual lifting and flowering of of them inside very quickly weakens the roots, so that in about a couple or three years they produce next to nothing in the way of blooms.

Planted in the herbaceous or shrubbery borders, left without any protection during the winter for the flowers, or without any attention to the roots in the way of fresh soil or manure, this hellebore will thrive capitally in some districts, but the blossoms do not present that chaste appearance which they do when expanded under the protection of a frame, which is also kept safe from frost by covering the glass with mats or other protecting material. On the east side of a high wall, six years since, we planted half a dozen plants of H. Niger, first thoroughly trenching deeply the soil, which was cold, heavy, and retentive of moisture. About the roots at planting time (early in March), we placed peat, turfy loam and leaf soil, afterwards mulching the surface with horse manure and partly decomposed leaves. I omitted to say, that when planting, a liberal addition of silver sand was given which we afterwards found increased root action considerably. During the summer the plants were freely supplied with water to the roots. Needless to say, they thrived well and produced a good crop of flowers the following winter. Our plan ever since has been—after flowering and the frame removed early in March, just as the young leaves showed an inclination to make a start into growth, the soil about the roots has been carefully loosened, which had got very hard through treading upon in gathering the flowers. If any part of the surface soil shows a scarcity of roots underneath, this is removed and supplemented with a mixture of loam, horse dung, and leaf-soil, again mulching the surface with the two latter ingredients. The plants make a free and early growth, and are never allowed to suffer for want of water, good doses of liquid manure being occasionally given them during the summer. The plants are so arranged that a two-light frame fits over them. This is put on early in November, removing the lights in dry weather, but having them handy in the case of heavy rain. At the end of the month the frame is closed every night, allowing plenty of air during the day, and by Christmas day we are enabled to gather seasonable flowers and with a minimum of trouble expended.

In such profusion are they produced that the plants are literally white with their pure white fragrant blossoms as to please all who see them. In our soil no water is needed to the plants from the time the frame is put on, to the time—(four months), in which it is again removed, nor is any given. The chief point, in my opinion, to ensure success, is the encouragement of a free growth during the Spring and Summer. The protection from frost and wet of course keeps the flowers pure and clean.

W. B.

Testimonial to Charles Roach Smith, Esq., F.S.A., is to take the form of a commemorative medal to be struck in his honour. The proposal has our hearty sympathy, and we feel assured that many of our friends will embrace the opportunity it offers for a tribute of respect to a distinguished horticulturist and antiquary. Mr. C. R. Smith's contributions to the subject of fruit cultivation in this country, and of wine making too; for his home-made burgundies and clarets are excellent and testify to the perfection of his growths of vineyard grapes at Rochester, and his researches illustrative of the Roman occupation of Britain, constitute a series of claims on public regard of the very first importance. The generous manner in which he gave his museum to the public, and his sacrifices in the interests of history, and especially of our own national history in continuing the "Collectanea" and other works that he has produced at his own cost and always at great loss, may now be called to mind as a justification to the world at large of the present action of his friends. The movement is reasonable and seasonable, and we will hope that many of our readers will be of our own mind on the subject, and will find an agreeable way of expressing it. The honorary treasurer and secretary to the testimonial is George Payne, Esq., F.S.A., the Precincts, Rochester.

THE WOOD LILY.

Trillium grandiflorum.

There is no hardy plant known to our gardens more worthy of special care than the great wood lily, *Trillium grandiflorum*, curious in its arrangement of leaves and petals in threes, the flowers being like those of our chaste Lilium candidum in colour and purity, and sometimes almost their equal in size. It is a plant of peculiar constitution, unable to endure without harm the "slings and arrows of outrageous fortune," for a cold drying wind, combined with a hot sun—conditions peculiar to our climate in spring, are deadly to it; but shelter, moisture, warmth, such as a peaty soil in a snug nook in the rockery may afford, will suit it so well that we may thereby ensure a fine development of its exquisitely beautiful flowers in June or July. Given suitable conditions, and this, like many other good plants will take care of itself. It is of robust habit, grows freely, increases profitably, and flowers freely—what more can one want of a simple herb like this, that costs nothing and only asks for some reasonable imitation of its native woods in North America, to be perfectly happy in our English gardens. In gardens near London the shelter of a hand-light is to be desired to preserve the exquisite purity of the flowers. Even at Tottenham, where it is admirably grown in Mr. Ware's nursery, the flowers are sullied unless protected in some such way.

CANKER IN MARECHAL NIEL ROSE.

A plant of Marechal Niel rose that had become badly affected with canker has been restored to health by Mr. Thomas, gardener to W. Marshall, Esq., The Elms, Taunton. To thoroughly understand the case it will be necessary to refer to the condition of the same plant three years ago. At that time, when I saw it, it covered the whole of the rafters of a span-roof house about twenty-five feet long. It was then flowering abundantly, and was in the most vigorous health; in fact its condition was so satisfactory that one would have thought it would go on in the same way for many years; but in the following autumn canker set in on one part of the stem about three feet from the ground. The result was that the next year the growth was much weaker, and the number of flowers reduced in number and smaller in size. There was in fact, every indication that the plant would die if left to its own resources. Not liking to lose a plant that had given such magnificent returns without an effort to save it, the gardener decided to try remedial resources, and I am able to say that his efforts have succeeded admirably. Seeing that only by establishing a new set of roots was there any prospect of saving the life of the plant, it was decided to do so; but to be successful it was evident that the new roots must be obtained at a point above the cankered part. The nearest point of the stem that was not affected being four feet from the ground this was not so easily accomplished as at first appeared. However, it was decided to try. A pot, eight inches in diameter, was cut in half lengthways. This was placed round the stem, being bound together with wire and afterwards filled with soil. The soil in the pot was kept constantly moist, with the result that in a few weeks new roots were being formed. At the end of twelve months the pot was full of roots. Since then it has been severed from the old stem below, and the roots put into a larger pot. At the present time the plant appears to have taken a new lease of life, for it is commencing to grow in the most vigorous manner, and another year there is every prospect that it will be as satisfactory as at any time previous. I have seen many attempts to deal with canker in this rose before, but I never saw a plant so thoroughly resuscitated so far from the ground. When canker has set in, as it often does just above the soil in the border, I have secured another set of roots from the stem by making a mound of turf sods round it. But that is comparatively little trouble as compared to getting them to form further up the stem. There is a good deal that is perplexing and disappointing when canker affects the growth of this rose, as it frequently does when the cultivator thinks it is going on for an indefinite time. So far as I am aware, there is no cure for it. It has been said that it is caused by the plants becoming hide bound, and that by running the point of a sharp knife up the stem through the bark or rind that it will prevent it or stop its progress. But I cannot say whether that is so or not, although I hope in time to be able to speak definitely about it. I have lately operated on four plants in the same way just to put the statement to a test. The plants dealt with are now in the most vigorous health; the last year's shoots being as large as a man's thumb, with not the least signs of canker or weakness. Two of them are on their own roots, one on the seedling brier, and the other on the manetti stock. Should this terrible affliction affect either or all of them, the experiment will show whether the plan is of any use or not. It is, however, as well to remember that when once canker has shown itself in any part of the growth, that even if it is cut away at once it will invariably appear on some other branch. That being so, I think there is no better plan than to let the old plant live as long as it will, and in the meantime have another in readiness to take its place. There need not be much time lost if a strong plant is put into a twelve-inch pot, and turned out of that when it is established. J. C. C.



WOOD LILY, *Trillium grandiflorum* (Flowers pure white).

CELERY, STANDARD BEARER.

This is unquestionably a good celery. It has been described as obtained from a cross between Major Clarke's red and another strong growing variety. But whether it is the result of a cross or selection is a matter of no consequence, seeing that it is a very desirable sort to grow. I like it for its hardy character and compactness of growth, the latter feature is quite characteristic, but it is unfortunate that new celeries soon run out. Only a few years ago Leicester Red was as good a red celery as any one could wish to grow, but it is most difficult now to obtain samples of the type as I first knew it.

The same remarks apply to Major Clarke's solid red. It is difficult to get it true now, greater care appears to be necessary in selecting the plants for seeding, as if the older sorts had not run out, there would be no room for new ones, they would not be wanted; But as the once reliable sorts cannot be depended upon, it is desirable to try the new ones. They will retain their true characters for at least two or three years, but as soon as several individuals begin to save seed, the principal characters will be lost; such is my experience of the different sorts of celery that have been introduced in my time. J. M.

Notes of Observation.

DAPHNE MEZEREUM.

This old-fashioned sweet smelling hardy flowering shrub is the most attractive of anything in the open air just now, the fragrance of the flowers being particularly agreeable. It is somewhat strange that we do not often see this plant except in cottage gardens, yet we have few things that flower in the open air in mid-winter. Later on the flowers of this daphne will be replaced with bright coral red berries, which hang upon the branches for a long time. So this shrub may be said to have two distinct seasons of attractiveness. R. H. B.

CHRYSANTHEMUM GOLDEN JOHN SALTER.

It was not without some regret in preparing the chrysanthemum audit, that I found one bloom only of Golden John Salter amongst the incurved varieties, for, when fully developed, it is extremely beautiful and affords perhaps one of the best tests of the skill of the cultivator. As Mr. Molyneux remarks at page 87, I am quite aware that the blooms are not over large, and also that they have not too many florets, but when shown in first class condition, as was frequently the case from ten to fifeen years ago, they will do good service in a close competition, provided of course the prizes are awarded by men who do not regard mere size as the most important point. I have no special affection for the small flowers because they are small, or for old varieties because they are old; but I regret that the varieties belonging to the Queen family should have such facilities given them by compilers of schedules for ousting a considerable number of beautiful varieties from the exhibition stage. Compilers of prize schedules have much to answer for in this respect. In some instances instead of so arranging the classes as to secure a thorough representative exhibition, they aim chiefly at obtaining a large number of blooms, and proceed on the lines of "making it easy for the exhibitors," by allowing them to show duplicates in even small classes. As the result the part of the exhibitions devoted to the incurved varieties is in many cases very monotonous and wanting in attractiveness to the general public. I have no wish that the restrictions should be such as to prevent a keen competition, but the exhibitor who cannot put twelve or even twenty-four blooms, all of which shall be distinct, on the exhibition stage on any given date, has much to learn. When discussing with members of the committees of societies the desirability of restricting as far as possible the staging of duplicates, I am frequently told that the public require "big blooms," and that, therefore, it is necessary to allow exhibitors of incurved varieties to stage as many blooms of the Queen of England and its descendants as possible. I do not believe anything of the kind; the general body of visitors like to see the blooms of each variety in the highest state of development of which it is capable, but they like also a diversity of colouring and form. I am very glad that a class has been provided in the schedule of the National Chrysanthemum Society for eighteen blooms from which all the members of the Queen family are excluded. I am gratified, not because I fail to fully appreciate their great beauty, but because I want to see the stands of incurved made as varied and interesting as possible.

George Gordon.

SHIRLEY POPPIES.

The attractive character of these poppies is widely known, but not more so than their merits deserve, for seeing how highly ornamental they are, and how easily they are cultivated, it would be matter for surprise if they did not find a great number of admirers. I think they would still be more widely known if it was generally understood that the seed should be sown where the plants are to flower, as I happen to know that some of my friends last year attempted to raise their stock of plants in pans of soil under glass and planted them out, with the result that, although they spent more time and care on their plants than I did, they did not obtain flowers so early or such good growth. The proper way to treat them is to sow the seed early in April very thin, and then with a Dutch hoe just move over the surface soil. That is all the attention in the way of sowing and covering of the seeds that they require. Most likely the plants will come up too thick in some places. If so, they must be thinned, as the plants last much longer in flower when they are not crowded. R. H. B.

BIGNONIA MOLLISSIMA.

This is a capital climber for a large cool conservatory where it can have space, both for the roots and growth. The form of the flower closely resembles B. venusta, except that individually the flowers are larger. The colour is a pale orange red. It is much more hardy than B. venusta, not requiring so much heat to develop the blossoms; it is therefore better suited for a cool conservatory. E. M.

RUBUS CORONARIUS.

This is a useful plant to grow in small pots for flowering at this time of the year. The double white bramble-like flowers are pleasing when freely produced on stems one foot long, or more if the growth has been vigorous during the preceding summer. Suckers may be taken from the base of an old plant with roots attached, potted in three or four inch pots, grown on in a warm greenhouse until growth is completed, when a sunny position should be secured for them out of doors to thoroughly ripen the wood. Given a temperature of 60 deg. during the month of January, flowers will quickly be developed, and will prove useful for garnishing purposes. M.

SUPERLATIVE RASPBERRY.

Too much cannot be said in praise of this grand new raspberry, as it bears abundance of the finest fruit I have yet seen on any canes, and is also a robust grower. Where raspberries are appreciated for dessert it is invaluable, as a handsome dish may be made so different from those from the general stock of this fruit. All making new plantations of this fruit should give it a trial. C. Warden.

HORSERADISH.

Only those who know the difficulty that attends the production of horseradish in a cold, heavy soil, can be prepared to estimate the trouble as compared to growing it in a land of lighter description. In heavy ground it is almost impossible to get straight and even roots without special preparation. But where the land is of a lighter and more open texture, good samples are obtained with comparatively little trouble. The best way to obtain straight roots, of a uniform size throughout, when the ground is inclined to clay, is first to dig it up to the depth of eighteen inches, giving a liberal dressing of manure at the same time. When the ground is ready it should be marked out in lines eighteen inches apart, holes being made with an iron bar to receive the sets, which should be thrust down to the bottom, when the holes should be filled up with fine sifted soil. The best sets are obtained from those pieces which have a crown attached to them leaving about two inches of the root to each set. Of course I am aware that sets without crowns will grow and ultimately make good plants, but those which have crowns will make the most rapid progress. It is not a good plan to crowd the growth of horseradish. The best and earliest results are obtained where the leaves have plenty of room to grow without overlaying each other. Some people have an idea that horseradish will grow in any kind of soil, and as well in the shade as in the full sun. But that is a mistake. No subject of the kitchen garden pays better for good cultivation. To grow it well and quickly it requires a fairly rich soil and an open, sunny position. As I have already said, where the land is fairly light and open, horseradish can be grown with less trouble. In such cases it is a good plan to open a trench about two feet wide and eighteen inches deep, placing two rows of sets along the bottom. Then commence another trench to fill up the first. Where there is a large demand it is usual to have a trench always open, which admits of the supplies being obtained as wanted, and an equal space being planted at the same time without any additional labour. In a general way it takes two years' growth to produce large and straight roots. J. Macdonald.

CHRYSANTHEMUM MRS. NASH.

In Mr. Molyneux's interesting review at page 87 of my audit of the chrysanthemum exhibitions mention is made of the white incurved variety, Mrs. Nash, about which I am desirous of obtaining further information. As stated by Mr. Molyneux, it is so much like Mrs. George Rundle, that there is a difficulty in distinguishing it from that variety, and I agree with him that exhibitors should not stage the two varieties in the same collection when the plants or blooms are required to be distinct. The judges who are thoroughly acquainted with the characteristics of these and other varieties will not have much difficulty, when Mrs. G. Rundle and Mrs. Nash are shown side by side, in determining whether they are distinct or not. On the other hand, should the awards be made by judges who have not had much experience, the probability is the collection will be disqualified. It is sometimes said that when an exhibitor comes to grief in sailing so near the wind he is not deserving of much sympathy. This may be true in some cases, but not in all, as the following case will show:— Last autumn, at one of the principal exhibitions at which I acted as one of the judges, an exhibitor contributed to the class for six trained specimens. distinct varieties, a collection in which occurred examples of Mrs. Rundle and Mrs. Nash. Some of those present, previous to the prizes being awarded, thought disqualification inevitable, but no such bad fortune befell the exhibitor. In the course of a brief discussion in the course of the afternoon he stated that he had no choice in the matter. Previous to the early part of the year he was unacquainted with Mrs. Nash, but on the variety having been strongly recommended to him for specimen culture he included it in his selection. He had only grown seven specimens, one of which was not sufficiently in bloom, and was therefore compelled to stage that of Mrs. Nash, and fully appreciated the risk he run, although knowing that it was not an exact counterpart of Mrs. G. Rundle. In habit and in foliage and in the size and build of the blooms there is a remarkable similarity, but in the florets there is a decided difference. The florets of the blooms of Mrs. Nash are flat and slightly pointed, whilst those of the blooms of Mrs. George Rundle are broad at the points and turn inwards at the edge. As the difference is so slight the question as to whether these two varieties should not be regarded as synonymous is worthy of consideration. I am desirous of ascertaining when and where Mrs. Nash originated, and shall be glad of any information with reference thereto. George Gordon.

WALLFLOWERS.

It does seem strange when the fact that wallflowers will not stand ten or twelve degrees of frost has to be chronicled. For the last five years we have not been able to grow these flowers in one part of the garden for the reason stated above. In one part of the garden some beds are situated close to a holly hedge eight feet high, which bounds the beds on the southern side. In this position, through absence of sun all the winter, wallflowers are a total failure. The first frost of 6 deg. injures the foliage, the next of the same, or greater severity, causes the points to decay when a thaw sets in. If frost occurs on three or four consecutive nights the plants remain frozen all the time, afterwards presenting a miserable appearance. One bed is so situated that through a gap in the hedge the sun's rays fall upon this one. Here the wallflowers are in good order and promise a fair crop of flowers. At one time I thought the fault lay in growing the plants too strong before placing them in the beds. But since they have been sown later and grown on poor soil to make them hardier; but all the same, the result is a total failure, whereas in other parts of the garden, where the soil is both stronger and wetter during the winter, the plants flourish as well as can be desired. M.

DOUBLE PRIMULAS.

This race of plants is perhaps the most useful of all greenhouse subjects for producing flowers during the winter. I know of no other kind of plants which will commence to flower in October and continue until early in April if required, and that take up so little space as double primulas of the old double white section and a few other varieties. When once a stock is obtained no difficulty need be experienced in keeping up the requisite number of plants. We grow here a good number of the old double white and prepare a shelf for them close to the glass in the greenhouse, which is kept cool all the winter, never being more than 55 deg. Fahr. either night or day, and often enough falling to 40 deg. Fahr. during the night. I think it is mainly due to the position our plants occupy and the cool temperature they enjoy that we are enabled to be successful in having a good supply of flowers during the time named. By suspending to the rafters with the use of irons made to fit we arrange a broad shelf within one foot or so of the glass. In this manner the foliage never becomes drawn up weakly through being a long way from the glass, and in a temperature often much too high to command a stocky growth. The blooms can be used for filling vases by cutting the whole spikes; in which manner they present a light appearance when arranged thinly with some greenery or other and a few of their own unopened flower buds, of which there is sure to be a few when the whole spike of bloom and buds is cut. For button-hole bouquets double primulas are by some much admired, the single pips are gathered, and by wiring them their short stalks are not noticed.

There are a few essential points requiring care in the culture of double primulas beside those named—cool temperature and a position close to the glass—There must be care to avoid over potting and over watering; given such precautions, a successful start into growth of the plants when the stock is increased, will be ensured. Beside the old double white variety, King of the Purples, Annie Hillier, a delicate pink or deep blush, very full and double; and Princess of Wales, a sort which produces flowers in limited quantity owing to its delicate constitution, growing but little, being decidedly a "miffy" subject to handle The blooms are excessively white, heavily fringed, and of compact form. All the foregoing are varieties worthy of notice.

The cultivation may be said to begin early in April, when the roots should be divided. Every piece with roots attached should be potted into as small pots as they can be got using sandy soil in which leaf-mould is conspicuous. Pot rather deep so as to have short stocky plants which are much to be preferred to those tall and lanky in growth. Plunge the pots in a gentle bottom heat: a hotbed which is nearly spent is the best position for the plants in this stage when growth at the top will be made in proportion to the roots formed. If too much bottom heat is given the plants the foliage will be drawn up weakly owing to its being made in excess of the rooting capacity. Give sufficient water to the roots to prevent the leaves flagging, shade from bright sun as well. The plants should have space to grow without overcrowding—which is fatal to their success.

When the pots are full of roots a shift into larger will be required, those of 4, 5, and 6-inches will be large enough for almost any purpose. The soil should consist of three parts fibry loam, one of leaf-soil, one of horse manure and peat together, a liberal quantity of coarse sand, and a little charcoal to keep the soil open, if inclined to be heavy, will be an advantage. Pot firmly, placing the plants rather deeply in the pots as roots will issue higher up the stem than before being potted. On a thick bottom of coal ashes in a cold frame is the best place for the plants after potting. If the frame is placed at the north side of a wall the time occupied in shading the plants from bright sun will be saved. The plants should stand as near to the glass as possible, the frame kept close for a few days until new roots are being formed in the fresh soil, afterwards abundance of air will be needed to keep them stocky in growth. If the soil was as moist as it should be at potting time, no water will be needed for the first three or four days. But if the weather be warm the foliage should be syringed daily, in the afternoon. I omitted to say that each pot should be thoroughly drained as the plants object strongly to anything like stagnation at their roots, either through the ingress of worms which disarranges the drainage, or insufficiency of it to each plant.

Early in September if the weather be dull the frame should be placed in a southern position where the plants will obtain a little sun to strengthen the leaves and stems. At the end of the month they should be removed to the shelf in the greenhouse. From that time onwards the plants will be all the better for a stimulant of some kind. Care must be taken that it is not applied too strong or the roots, which are very fine, will be injured, which causes the leaves to flag under strong bursts of sunshine during the winter. Five or six doses of liquid manure, well diluted, may be given at intervals of two or three days between each dose. This manure may be changed for half-a-teaspoonful of Standen's manure sprinkled on the surface of each plant. Watering it in with clear tepid rain-water once a week will be often enough for the stimulant. Much caution should be employed to note the soil in the pots is not kept in a wet state or the foliage will assume a sickly yellow cast. The growth will not be nearly so free nor, of course, will the flower trusses be produced in such numbers or of so good a quality. The soil should be kept just moist and no more, except, of course, at the time when water is applied.

If a sufficient number of plants cannot be obtained by dividing the roots as directed, cuttings will root in a gentle bottom heat; but this must not be too strong or the atmosphere kept too moist or many will rot off at the collar. It is a safer plan to bank up around the stem of the plants before they have done flowering with cocoanut-fibre, moss, or leaf-soil; into this roots will form, and when the plants are divided a greater number will be obtained. But by simply dividing the old roots at the time named much labour is saved where a sufficient number of stock plants are on hand to begin with. W. B.

YELLOW CARNATIONS.

The recent discussion on the suggested classification of the yellow carnations has had one good result. It has called attention to them and their undoubted beauty, and it is operating to stimulate raisers to exertions in order to extend the varieties, and, at the same time, improve them. What has already been done during the past few years is of an eminently satisfactory character, but much more remains to be done, and will no doubt be done; and some of the valuable suggestions contributed to the annual report of the Carnation and Picotee Union of Oxford appear to me to lay down the right lines upon which to proceed.

But here allow me—without any desire to introduce any contentious matter—to make a short reference to a paper contributed by Mr. Dodwell under the heading of "Carnation Classification: a Help or Hindrance," to the Magazine on January 11th, and reproduced in the above-mentioned report. In this paper Mr. Dodwell appears to labour under the impression that in the article from my pen on the classification of the yellow carnations, to which he replies, I was attacking the "note" relating to the judgment of the yellow carnations at Oxford, which appeared in the schedule of prizes. I did nothing of the kind either directly or indirectly. I had not the note in my mind when I penned the article; indeed, I had forgotten all about it. I wrote quite independently of any consideration of that kind, and simply set down some thoughts which had occurred to me at the London and Oxford Exhibitions. I state this most unreservedly, and my old friend, Mr. Dodwell, may rest assured that the paper was inspired by no other motive than a warm admiration of the yellow ground carnations, and a desire to see them produced at their very best.

I very well remember the yellow picotees that were grown 40 years ago. The late W. R. Bragg, of Slough, used to cultivate them as successfully as their weakly constitutions would admit, but they were extremely difficult to manage, and gradually fell out of cultivation. They were well described at the time as "not a robust class, capable of enduring, without protection, the vicissitudes of our climate, but are a delicate race, extremely difficult of cultivation, and frequently rendered more so by unskilful treatment." We now possess stronger growers and larger blooms, but nothing to touch the fine form of petal and regularity nd variety of marking seen in the yellow picotees of those days. I am quite in agreement with the Rev. F. D. Horner as to the value f commencing with the white ground flowers in the first instance, to secure perfection of form in the petal and diversity of marking in the petal edge. The importance of this line of floricultural procedure was seen at the period I have mentioned, for "Alpha," in an article contributed to *The Florist* in 1849, recommended seeding:—"From deep coloured yellow selfs, hybridised with the highest coloured white ground picotees of the several classes of red, purple, and rose, using the pollen from those flowers which are particularly distinguished by a steady style of the marking, and not intermixing light and heavy edge." The article from which I have taken the foregoing extract appeared also in the *Midland Florist* for January, 1849, and if the directions given were acted upon nothing of a particularly permanent character appeared to have flowed therefrom, notwithstanding the fine blooms shown by Mr. Smith at Moira, Bath, in 1858. And while I joyfully admit that the Continental florists, and especially the carnation lovers in Germany, have given us flowers that are real acquisitions, in combination with robustness of constitution, we have yet largely derived from Germany tints termed yellow that cloud the purity of the ground colour, and give us shades and tints that do not deserve the appellation of yellow, though classed among the yellow grounds. It was because of this that I raised my voice in favour of some attempts at classification.

When Prince of Orange, Ascot Yellow, and others appeared on the scene some years ago they aroused considerable interest because they presented to view in a less refined form the lost yellow picotees of long ago. There were not wanting florists shrewd and far-seeing enough to perceive that yellow carnations would have a commercial value in the future, and many set about raising seedlings, and that in, I fear, quite a haphazard fashion, without any thought of improvement from the florist's point of view. But little of real value came from such attempts. Mr. Douglas proved singularly fortunate in obtaining a fine break, but it is no disparagement to his flowers to say they are more of the character of the carnation in their markings than of the yellow picotee of old. But this is doubtless only a preparatory stage—a kind of parenthesis—for already signs of progress appear, and there is scarcely a cultivator contributing to the report of the Oxford Union who does not refer to the yellow grounds, showing the importance they are acquiring in floricultural circles. The advance is general, and we shall no doubt see some remarkable blooms during the next few years.

I am pleased to see Mr. Dodwell writing so favourably in reference to Maud Ellis, a seedling raised by Mr. R. Ellis, of Forest Hill, and which I had the pleasure of growing in 1889. I could not do it full justice, as the plants were small and late in starting, but I saw enough of it to convince me that it is a real acquisition. My best flower was full, with a deep yellow ground, well formed smooth petals, and with a very heavy edge of deep bright red. It is a good grower; my young plants of it are growing strongly and very forward. So I hope to get a good bloom in the summer. I made a trial of a batch of yellow carnations I got from Mr. R. W. Proctor, of Chesterfield, viz., Miss Proctor, John Huss, G. W. Proctor, Beethoven, and Madame Benary, but, with the exception of Beethoven, they appeared to be weakly growers. Perhaps the incidence of the season was against them, and they will prove in better character under more favourable conditions. R. Dean.

THE TEA TREE AND THE BOX THORNS.

Lycium Barbarum, or the Barberry Box Thorn,—a deciduous climbing plant, capable of growing ten to twelve feet in height, having small purplish yellow flowers and ovate shaped yellow berries, when it happens to fruit, is probably well known and habitually kept in stock by nurserymen. I have little to say in its praise, though it is known as the Duke of Argyll's Tea Tree, and continues to be honoured under that name.

Lycium europœum, on the contrary, I consider one of the most ornamental and desirable amongst hardy, easily grown, berried plants. The wonder indeed is, that it is not grown in some form or another in all gardens. Its only drawback is its deciduous nature, otherwise it grows with great rapidity in any kind of soil, forming annually long shoots very thin and wiry many feet in length, which, during the summer months, are laden with small, somewhat insignificant flowers, pale violet in colour followed by very numerous long attenuated berries, bright scarlet, or yellow in colour, which are fully ripe from the month of September onward. They hang upon the branches long after the leaves have fallen, and until the sharp frosts of winter destroy them. This species, though evidently considered by nurserymen too common to hold in stock, exists abundantly in cottage garden hedges, here in South Essex, and is to be seen at this date laden with its extremely cheerful and pretty berries. The plant is, moreover, often to be seen trained to a goodly height and in shapely form in courts around Paris. It will grow, as there seen, to a height of twenty-five feet. If trained up a pole to that height, then being induced by the constant removal of all suckers which push up from around its base, and all growth is periodically pruned from the upright foot stalk, the plants will throw out numerous shoots from near the apex, which will grow downward in long whip-like branchlets until they reach the ground. These young shoots laden almost throughout their entire length with berries produce quite a vegetable fountain in appearance, or a bower plant second to none. Again, trained to a sunny wall it is extremely beautiful when in berry. To insure perfect effect however, the aforesaid suckers must be frequently checked, and the young shoots of each preceding summer pruned back down to a foot or two of old wood near the base; such young shoots being neatly nailed to the wall as growth progresses during summer.

Though these plants belong to Solanacæ, I have observed a peculiarity in regard to them. I know a very large plant, which, growing freely and blooming equally free, on a very warm and favourable aspect, nevertheless has never produced a solitary berry, which, it is needless to remark is a great disadvantage. It is desirable, therefore, for those who intend propagating this plant from such home source, to secure offspring from such as bear fruit. It is easily propagated by inserting ripened shoots into sandy soil in Autumn or early Spring, covering them over with a hand glass.

Weeping trees are generally valued for appropriate sites on lawns, for which the American Weeping Willow is very suitable. We possess however, an extremely elegant plant in Lycium europæum, the long thin branches of which, laden with long thin scarlet berries, being particularly suitable for such a mode of culture; whilst the easy way of growing such, by first tying a branch up to a stake or pole, for subsequent training over, places it within reach of all.

William Earley.



FRUIT OF BULL'S NOSE PEPPER, Natural size.

APPLE WELLINGTON, OR DUMELOW'S SEEDLING.

A friend has lately sent some of the above-named apples to the London markets, he divided them into first and second qualities. His returns for the first average fourteen shillings, and for the others ten shillings per bushel. Surely at that price it will pay as well to grow apples as corn. I am aware that in some cases the Wellington is not always a regular cropper, but it is as good in that respect as many other sorts we grow. It is a great wonder that the apples of which I write had not been converted into cider as many others are. In the West of England there are thousands of bushels of apples of fair average quality, that if properly stored, would keep until January or February, that are every year made into cider; while at the same time our local markets are mainly supplied with fruit from America that is not any better and frequently not so good. Truly we English are a conservative people, we continue to produce corn at a loss, while we send money out of the country for produce that we could grow at home, and which it is very plain would produce a margin of profit if gone about in the right way.

J. C. Clarke.

SWEET PEPPER, BULL'S NOSE.

Amongst many remarkably interesting contributions from Messrs. Vilmorin of Paris, to the Vegetable Conference, occurred this variety of sweet pepper. It is perhaps ugly enough as it appears here in b'ack-and-white, but its colour is such that, as a cheap and useful decorative plant it wou'd be no easy matter to equal, much less to beat it. The growth is free and the plant highly fruitful, as the sketch will show. The fruits are of immense size and of the richest imaginable crimson colour, highly varnished and seemingly full of fire. These sweet peppers have no pungency, but a mild balsamic flavour. The outer coat is the part from which the flavour is derived when they are employed in cookery. This is leathery in texture and soon communicates the required flavour, being of no further use. A few of these plants should be grown where berries and fruits are in request for furnishing in autumn, this Bull's Nose Pepper being such as may be properly termed a "sensation" plant.



LARGE FRUITED SWEET PEPPER, *Bull's Nose* (Colour intense fiery crimson, highly varnished).

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Stove Plants in Bloom.—Amaryllis; Anthurium Andreanum; Begonia Carrieri, B. corallina, B. Ingrami, B. semperflorens alba; Centropogon Lucianus; Clerodendron Balfouri; Eucharis candida; Franciscea confertiflora; Gardenia Fortunei; Guzmannia picta; Imantophyllum miniatum, I. Marie Reimers; Ipomea Horsfalli; Medinilla magnifica; Rhododendron Taylori, R. Williamsi.

THE HOUSE.

Spring Flowering Bulbs are now coming freely into flower, and those who take a special interest in the embellishment of indoor apartments with flowers, may be well reminded of the charming combinations they are capable of producing. Most of the bulbs, particularly the hyacinths and tulips, may have the whole of the soil removed from about the roots, and be arranged in ornamental receptacles without suffering to an appreciable extent, and be made to present a much more attractive appearance than when in the pots in which they are grown. They can be arranged in any of the ornamental vases or stands usually employed for holding plants placed in apartments, but the best effect can perhaps be produced in wicker baskets about six inches in depth, and from ten to fifteen inches in diameter. In filling them the bottom and sides have to be lined with moss or some other loose material that will prevent the soil filtering through the wicker work, and the soil for packing about the roots must be friable, and the refuse from the potting bench will do equally as well as the best possible compost. The arrangement of the flowers must be left to individual taste; but two or three ferns should have a place in each basket. The best ferns for this purpose are the ever-popular Adiantum cuneatum and the common but elegant Pteris serrulata, and thrifty examples in small sixties are the most suitable for associating with the bulbs. Where indoor decorations are in request a stock of these two ferns should be grown specially in small pots, as they can be employed to great advantage in many arrangements other than those of spring bulbs. The soil must be pressed firm, and when it becomes dry the baskets should be dipped in a vessel of water.

CONSERVATORY AND GREENHOUSE.

Conservatory must be kept as much as possible without fire heat, as the natural temperature will now be high enough for most of the forced flowers, such as cinerarias, cytisus, deutzia, &c., and they will last longer than with heat. But as frosts often occur at this season, with cutting east winds, a fire may be occasionally needful, in which case get it up without delay, for many of the subjects in bloom now are of a delicate nature, and climbers growing on pillars and rafters will suffer much if chilled. To keep the conservatory gay put roses, rhododendrons, azaleas, and early pelargoniums into a moderate warmth to bring them into bloom.

Greenhouse must be freely ventilated as the weather will permit. Give plenty of water and liquid manure to plants coming into bloom especially azaleas, camellias, pelargoniums, and acacias. Plants done blooming should be tended with care to secure a healthy growth of new wood, and be cut in if required, before they spend their strength at the ends of flowering shoots. Give plenty of air, and increase the heat in all plant houses. Use the syringe freely to keep a clean foliage: repot any plants that want more root room; see to the training of greenhouse and conservatory climbers before they get into too free a growth to be handled conveniently.

ORCHID HOUSE AND STOVE.

Orchids will now be coming into growth, but must not for that reason be stimulated too suddenly by any undue rise of temperature. There are very few that will require more than a temperature of 65 deg. as a maximum, and 55 deg. minimum, and the amateur cultivator is advised to keep to this moderate range, as much safer than a higher temperature at this time of the year; but as the month advances the mid-day temperature may be allowed to rise to 70 deg. Growing plants will require increased supplies of water. Those that want a shift to have it as soon as they show signs of being really on the move.

Stove Plants must be repotted as required. Those with variegated leaves usually do best in fresh compost of a rather poor nature; stimulating substances, such as rotten dung, frequently drive out the variegation, and restore the plant to a normal condition. When variegated plants require extra nourishment, it is best accomplished by potting in turfy loam and good leafmould.

FORCING AND FRUIT HOUSES.

Fig Trees swelling fruit must have liquid manure and plenty of water at root and overhead. Stop the growing shoots at six inches long. Beware of sudden changes of temperature.

Melons should soon be bedded out for the summer crop, for it is well to be early, so as to derive the fullest possible advantage from sun-heat. To ensure success a constant heat is necessary, and if from fermenting materials all the better; in fact, there is nothing to equal dung-beds for melons and cucumbers. This is not said to disparage hot water, for that is safe and certain; but where manure is plentiful, and there is sufficient skill and labour to manage dung beds well, cucumbers and melons are sure to be well grown. One of the first essentials in making up a bed is to have plenty of material; small quantities are of no use at all. A strong, steady, but quite sweet heat is needed, and this can only be obtained by working the manure sufficiently, and no more than sufficient, and making it up at last with a sufficient degree of moisture to maintain the fermentation. As for soil, a good strong maiden loam full of grass fibre is the best.

Peach and Nectarine Trees will require attention in the way of disbudding, thinning, and training in; all these operations should be carried on in a systematic manner, and the trees should have daily attention.

Pines swelling fruit must have abundance of moisture, and a day temperature of 75 deg. to 85 deg.; night 60 deg. Young plants recently potted must be encouraged to make new roots.

FLOWER GARDEN AND PLEASURE GROUNDS.

Auriculas will require frequent watering and plenty of air, but must be sheltered from cutting winds. Weak liquid manure will strengthen the trusses. Green-fly must be promptly met by means of tobacco smoke.

Carnations and Picotees.—Clean up the plants, and make ready for potting in the second week of the month, and search the compost well for vermin.

Pansies to be pegged out in the style of verbenas, so as to display their blooms over a large surface, and root if they please at every joint. Sow now to bloom during the summer.

Hollyhocks from seed and otherwise not yet planted out must be hardened and planted without delay, and stakes placed for them at once, as driving the stake down hereafter will do injury to the roots.

FRUIT GARDEN AND ORCHARD.

Mulch raspberries with three or four inches of half-rotten dung. Trees newly planted to be securely staked, and in dry soils it will be as well to mulch their roots. Finish pruning and nailing, have ready calico, netting, or whatever else is used for protecting wall trees. Lay down plenty of rotten dung between strawberries, if it can be spared. All kinds of fruit trees and fruit bushes may yet be planted, but it is time planting operations were completed.

KITCHEN GARDEN.

Cauliflowers will be growing as soon as the weather is milder. Give air by tilting the lights, and let them have warm showers, but cover up at night in face of frost.

Manure the plots to be sown or planted this month and next, and dig the ground over deeply, and leave the surface rough. Level down the ridges of ground prepared last month, so as to be ready to sow and plant as soon as weather permits.

Potatos are best planted in trenches, and covered loosely with soil; dibbling is apt to cause rotting by the holes getting filled with water.

Horseradish may be planted in any spare corner, but the ground should be dug deeply, and the roots will become finer if the subsoil is well manured. The crowns should be planted fifteen inches deep, and six inches apart every way, and the holes filled with fine coal ashes, or the sets put in as the trenching proceeds. Any part of the root will do as well as the crowns, if cut into inch pieces.

Sow turnip, long radish, main crop of parsnips, horn carrot, cauliflower, cabbage, savoys, broccoli, main crop of onions, peas for succession, lettuce of all kinds, round spinach, parsley, and small salads.

VILLA FARM.

Warmth is essential to obtaining early broods of bees, the value of which can hardly be over-estimated, and this may in some degree be promoted by liberal supplies of food; therefore hives should be again examined without undue exposure of the bees, and if there is a short supply of honey the feeding bottle must be at once brought into requisition, and with reference to this matter it should be distinctly understood that the bees will not allow the population of the hive to increase out of proportion to the food supply, and in consequence, should there be a scarcity, or a spell of bad weather put a stop to the ingathering of honey, the workers will expel an immense number of the helpless young, to the great injury of the colony. Early feeding is not in a general way productive of good, but in the ordinary run of years it is perfectly safe to begin in the first week in March. The steady supply of food stimulates breeding to a great extent, and by careful attention to this matter the apiarian may generally secure early swarms. Bees that are well fed are in better condition for undertaking foraging expeditions than those in a half-starved state, and consequently are well able to take advantage of the supplies derivable from the early spring flowers. From commencing to feed until the outdoor supplies are abundant there must be no intermission in the supply, and should the weather be unfavourable to the gathering of honey for a week or so the bees must have such assistance as will enable them to tide over it without suffering to an appreciable extent, but feeding must not be persevered with for the purpose of enabling the bees to lay up stores more quickly than they would be able to do without assistance, for be it known sugar, no matter what process it may be subjected to by the bees, is not converted into honey worthy of the name. The most suitable artificial food for bees in spring is the best loaf sugar, dissolved in water at the rate of one pound and a-half of sugar to a pint of water, and then boiled for ten minutes, and during the boiling a teaspoonful of good vinegar should be added. The most simple, and in fact the best way of feeding now is to put the syrup in a wide-mouthed bottle, tie a piece of muslin or leno doubled over the neck, and then turn the bottle bottom upwards and insert the neck in the hole provided for the purpose in the top of the hive. When the bottles are inverted in the manner here described, there is no risk of the syrup flowing faster than it can be taken by the bees.

EASTWOOD PARK

Is one of those charming modern castellated residences within cannon shot or say five miles of Glasgow, in the shire of Renfrew. It is situated in the midst of 63 acres of parks and pleasure grounds, and is quite famous enough in itself as a country residence, but is particularly famous in the higher walks of horticulture in respect of its genial owner being the possessor of possibly one of the best lots of cool orchids without doubt in Scotland, and taking rank from a cultural point of view, with the best lots in England. Of these we shall speak in detail, meantime we can't help admiring the fine collection of trees that has been gathered together, and which tells so grandly in the dying off shades of autumnal beauty, particularly when there is an admixture of coniferous and evergreen tree and shrub life. To that we have to note the well laid out drives and walks, the velvety lawns, the pasturage parks dotted here and there with arboricultural examples helping to swell the interest as the eye sweeps the viewable radius. Nothing is so grand as these great big-leaved planes, the corstorphine one in particular, like a fountain of gold and green before parting with its leaves, and then the russety beech whose umbrageous branches have tickled the fancy of the classical scholar. The well-known conifers which have a home everywhere, and seem to take to it comfortably, are here. Among piceas, there are Nordmanniana, grandis, and nobilis; among abies there are well-grown morindas, orientalis, and some samples of the Douglas fir, which does not do so well. Perthshire, Stirlingshire, and the northern counties are the home of this handsome useful conifer. How well, however, the deodar does! and how beautifully glaucous are the fountain-spray-like branches, making up a most telling individual in dress grounds! The birches shine out in the landscape with their greyish-white trunks, the rhododendron beds look massive, and the individual cut-leaved beeches are quite fern-like and interesting—splendid specimens, too, by the side of a brook that is murmuring slowly past. After all is said and done, our English landscapes in autumn, now fortified by the immense variety of form and feature of the plants and trees of other lands, are becoming more and more interesting every year, so that the pallet of the painters will require reinforcement in colours, and the hand that wields the brush will be compelled to introduce more detail in all modern landscapes.

The owner of this demesne is Mr. David Tod, who learned his gardenesque notions from a veteran gardener, now gone to the great majority, by name James Murray, while he gardened for the family in one of the villas of Partick. He employs on his retirement a number of gardeners. The responsible head man is Mr. Andrew Rae. He is ably seconded by Mr. James Ewart, who may be said to have grown the collection of orchids from its infancy up till now. Mr. Tod knows orchids about as well as any owner, that is of the kinds he elects to grow. In addition there is a very charming large fernery, nicely designed and planted by Mr. Wakefield, the owner who preceded Mr. Tod, and most beautiful looking and refreshing it is, particularly the division apportioned off for the growth of todeas. These plants are simply remarkable for size and health, and on the top of some of the flatter stems and down among them is the Killarney fern in home fashion. A couple of vineries, or rather three, and a peach house, together with a rose house, and a stove house in the centre for miscellaneous plants, and there is a series of pits and auxiliary houses that furnish material for the considerable quantity of bedding out going on, as well as for furnishing plants, cut flowers, and such like for mansion work.

There are five orchid houses, although we may throw in another two or three as doing duty for a miscellaneous horde. The two principal ones stand out by themselves, and are of convenient size, with a great central and three-feet side tables all around, excellently fitted for the keep of valuable plants, and that they are well-kept and well-managed in every way goes without saying, as anyone, either with or without gumption, will not be long in seeing. Let us name a few of the elephantine plants, or rather the plants with elephantine bulbs, in so far as it is possible to convey in word painting of what proportions they are. For instance, take Odontoglossum Andersonianum, and if anyone remembers the plant of Oncidium ampliatum majus, grown within the confines of Liverpool a quarter of a century ago, and described by one or two of the London nurserymen's travellers, the bulbs big, and all as they were are out-matched here! Everybody knows, and the sponsor of its name ought to know, that the species generally produces oblong ovate bulbs. In this one here, which is worth a special journey to see, the bulbs are orbicular and stout in proportion to their size. For those who don't know the big O. ampliatum let them shut their fist and clench it, and that is about the size and make of the bulbs to which we refer. I understand that each flowering bulb produces over one hundred flowers, and such flowers too as would waken up the orchid-growing craft, because I have seen them. There are two such plants in this collection, with others of lesser dimensions. The O. Alexandræ are equally marvellous, pictures of health, and the wonder is how they maintain their size. For instance, I counted on one plant 40 pseudo bulbs and 10 growths, and if they were puny bits of things it would neither cause me nor anybody else to get open-mouthed in wonderment; but really gigantic bulbs, and the young growths so lusty that the leaves, in their vigour, have not time to expand their cellular walls, suggesting the idea from the parallel longitudinal corrugations the necessity of a smoothing iron to obtain the usual plane surface. There are scores of them, and the bigger these sort of plants get the more difficult they are to "keep at it." Here are some with monster bulbs; O. Alexandræ, 10 bulbs and 4 growths, 10 and 3, 10 and 4, 12 and 3, 10 and 3, 14 and 4, and so on. Other sorts in magnificent order are O. mulus, with two very strong growths; O. prionopetalum, with 8 pseudo bulbs and 2 growths; O. triumphans, in quantity the best, having 10 and 2 growths; also very fine O. Jenkinsianum, O. limbatum, and one of the rarest, O. elegans; this plant has 6 bulbs and 4 growths, and is not unlike in colour and habit in every way, barring, of course, O. citrosmum; O. Halli is here in half a dozen "elephants," the bulbs, in fact, as large as a well-grown Oncidium macranthum. One could not help smiling when Ewart told the writer and Harry Veitch at the Edinburgh Fruit Show that he had grown spikes of Halli with over 60 flowers, but when you look to the pseudo bulbs your surprise melts away. The leucoglossum form of this had 20 pseudo bulbs and 8 leads. O. Sanderianum is in specimen size, but this species grows readily. In one of the samples we counted 30 bulbs and 10 growths. O. Edwardi had bulbs seven inches long and proportionate—very fine specimens indeed. O. liliflorum is a beautiful looking and distinct plant with its leaves as sharp cut at the edges as to do damage to the hand when drawn up as is sometimes done. It has not flowered here, nor, so far as I know, anywhere else in this country. O. ramosum is here, but why it should be called so is a question easier asked than answered. It will soon be in flower, and good sized flowers they appear to be, although few on the shortish spike. O. gloriosum is also well grown, and is admirable; in some varieties it has 7 bulbs and 3 growths. O. tripudians has 10 bulbs and 2 growths bulbs—all in fact of the same style. Mr. Tod has a capital plan of having all his plants entered in a ledger, with the corresponding numbers in lead on the pots, and he discards all those not coming up to his estimate of three crosses. Five crosses is his maximum, and the book seemed very wealthy in crosses.

The Masdevallias here are quite a treat to look upon. They are more astonishing even to a metropolitan gardener than the Odontoglots. There is scarcely a speck of blackness about their leaves, and their size is specimen, not made up, but each plant on its own bottom. Mr. Tod and his gardeners took some time in hitting the mark here, but they have won their spurs now. There will be about a hundred plants of them altogether, comprising the best forms of Harryana, including Denisoniana, Bull's Blood, The Meadowbank splendens, which, from its grand leaves, you could pick out among a thousand; Veitchiana in its best forms, the handsome Chelsoni ignea, Walkeriana, Lindeni, the rare but very distinct militaris. Abundance of air is let in, moisture plentiful, but not distributed "hand over head," and the water poured carefully round the mass of upgrowing leaves, not in the centre of them. The biggest of them will be in about nine-inch pots, and how they are kept so green and look so beautiful and yield flowers largely is one of the mysteries of culture. Oncidium macranthum does splendidly in this climate, its bulbs being on a piece with all the others described.

But, and it is a good thing we have something to say to humble the pride of the culturist, the O. Pescatorei has in a measure been, as the Yankees say, climbing down. There are a great number of plants, but very few can take rank with their compeers. It is put down to a variety of causes, the chief being the mistake of over-flowering or rather allowing the flowers to remain. It deserves censure to allow the flowers of pescatorei to remain on, as they will do, three months or even two months. One month is quite long enough if one looks for the continued health and vigour of the plant that bears them. O. Rossii, Cervantesii, and the charming Disa grandiflora are well in hand.

In the three smaller houses to which entrance is gained by a glazed corridor with rockwork and todeas facing you are some well-grown Odontoglossum pulchellum of the larger flowered kind, with fat bulbs glistening in beautiful greenery. Klaboch's variety of O. cirrhosum is here, and many others. O. maculatum and its more tawny spotted fellow O. cordatum, are very striking. How beautiful O. madrense is in some of its forms. Its pure white segments and velvety blotched rose commands admiration. Oncidium Weltoni does very well in this house, although we have seen the bulbs of it much bigger, particularly at the late Mr. Wilson's, Sheffield, where it grew suspended from the roof in really Brobdingnagian style. The handsome O. naevium majus was also here fairly well cultivated. In the same climate was Dendrobium Jamesianum, named in honour of the late James Veitch, and one of the grandest of white dendrobes, lasting out even the old nobile flowers, and each flower as good and far better for general use than either of the white Moth orchids (Phalænopsis). We counted some seven nodes where three and four flowers had been on each. There is none of the hirsute section of dendrobes at all equal to this, only it is generally grown and wasted in too hot a temperature. Epidendrum vitellinum does well in the same climate, and its orange scarlet flowers on dumpy spikes are very telling. There is a fine batch of Lemoine's variety of Cœlogyne cristata, swelling its bulbs to a nicety. Maule's Cypriped is also here and flowering away.

In the intermediate house are some noteworthy plants, particularly Miltonia vexillaria, and what we might call Miltonia (Odontoglossum), Roezlii. Both these species are alluring for thrips, and if once a foothold is taken in either of them, farewell to a healthy, presentable plant. Mr. Tod has always had the vexillaria very excellent, and in times past the Roezlii quite unique. However, they took a "strut" and about dwindled away, but now again have been resuscitated and show great signs of vigour. Of course their beauty is unexceptional, and the great variety of the exotic seedlings suggest selections for keeping in stock. Both these species are very free growers, require of course a better temperature than most Odontoglots, and if they be kept clean they rapidly grow into size. The handsome Cattleya marginata was doing well, and so were some of the Lælias.

The tropical house is the least interesting one here. There are a few Phalænopsis, a few nondescript Cattleyas, some masses of Lady's Slippers, the tropical North Australian Dendrobiums, and a few others.

The mixed houses do well for a variety of Dendrobes, the handsome African Ansellia, which throws its great thyrses of interesting creamy ground and crimson spotted flowers. It makes a fine *vis-a-vis* for the great gaunt growing Lælia superbiens. What a charming fern that is suspended in a basket, Gymnogramma gloriosa superba. Its leaves are suggestive of the finest lace, and its graceful depending habit at once arrests attention.

The kitchen garden is large, laying well to the sun. The flower borders have in a measure been relegated to selected herbaceous plants, bedding-out being curtailed. Indeed, new fashions in this department of gardening, like dress fashion, re-appear, and plants that were all but forgotten are sought for and prized. If you see a yard of ribbon gardening, you see a mile, so to speak, but the eye never wearies resting on the variety commandable in a herbaceous border. We spent a very agreeable two or three hours in discoursing upon the various gardening subjects treated upon in this article, and we must compliment those in charge for the very high degree of order that generally prevailed. J. A.

THE STUDY OF NATURAL HISTORY.

At the annual meeting of the Royal Microscopical Society the President, Dr. C. T. Hudson, F.R.S., delivered an address on "Some Difficulties in the Study of Natural History." He discussed the difficulties thrown in the way of the study of natural history by the frequent changes in classification, the use of ponderous technical language, and the multiplication of species. He maintained that the study of natural history would never flourish if it ceased to be interesting. For though there were a few branches of it, notably that of the minutest forms, which might be of the profoundest consequence to us, yet in general the study was of no practical use; it warded off no material dangers, and served no material interest; so that its chief title to exist was the delight it gave to those who studied it—a delight that ran grave risk of being smothered under elaborate classifications, uncouth terms, exasperatingly minute subdivision of species, and a heap of matters that could interest none but specialists. Those who were blessed with a love of natural history should not dull their keen appreciation of the wonders and beauties of living creatures by dwelling on such things; especially when so little was known of the animals themselves, of the way they lived, of the craft with which they secured their prey or outwitted their enemies, of their charming confidence or diabolical tempers, their curious courtships, droll tricks, games of play, and perplexing stupidity, coupled with actions of almost human sagacity. Information on all such matters—that is to say, on the very points which, of all others, we wanted to know—was scanty indeed in the majority of books, and for the best of all reasons, that the knowledge of them did not exist. Neither was it well for the student to confine his attention to one group of animals, and waste his time in acquiring a knowledge of forms that differed from one another in minute and uninteresting particulars. Such forms were the bane of monographs, making them at once both expensive and dull. Let him study a few typical forms in many groups; and let him not heed the taunt of his having only superficial knowledge. Almost everyone's knowledge in such matters was "superficial"—nay, hardly worthy of even that name, but rather to be termed "linear," or "punctiform." Yet that knowledge would give the keenest pleasure, and so acquired would gratify the natural craving for variety that we all had. Nor should the student be deterred from studying some group of creatures because he could not afford to purchase some expensive book. Books in this case were of little importance, and names and classifications of still less. Both these latter, indeed, were of ephemeral interest; they were the pride of to-day, and the reproach of to-morrow. It was to the living animals themselves that we must turn, fascinated not only with their beauty and their actions, but with the questions which the contemplation of them perpetually provoked, and very rarely answered. For in the long procession of the humbler creatures who could tell where life first developed into consciousness, and why it did so; where consciousness first stretched beyond the present so as to include the past, and why that happened; or at what point, and why, memory and consciousness themselves were lighted up by the first faint flashes of reason? We knew nothing of such things now, and probably we never should know much; but the mere fact that the study of natural history irresistibly drew us to the consideration of these questions gave to her pleasant features an undoubted dignity and raised the charming companion of our leisure hours to the rank of an intimate sharer of some of our gravest thoughts.

ORCHIDS IN MR. VANNER'S GARDEN, CAMDEN WOOD, CHISELHURST.

A small, but choice collection of orchids is cultivated here; and on calling the other day I found many choice specimens in flower. The Cattleya house was particularly gay with flowering specimens; notably a handsome vigorous plant of Lycaste Skinnerii alba with ten flowers fully expanded; a truly beautiful sight. The new method of cultivating Lycastes in a compound soil of which the principal constituent is leaf-mould is pursued here as well as at other places. A good trial has been given to it by some of the leading cultivators. The one who has, as far as I know had the longest practice is Mr. Gilks', gardener to Alfred Borwick, Esq, of Glenthorne, near Harrow; and it would be interesting now, if we could learn whether the plants that have been grown in leaf-mould, for say eight or ten years in succession, are now as strong and vigorous as ever. I cannot say they have done so here. Plants that are kept in good condition for nearly twenty years, in the usual peat and sphagnum mixture, declined in vigour in five or six years when leaf-mould was used. The back bulbs remain plump in the peat, but they shrink up sadly in leaf-mould. As far as I could see both in this collection and also in Mr. Pollett's at Bickley there was no decline in vigour.

Here were also some good forms of Cattleya Trianæ, one of the most useful cattleyas we have, producing as it does its splendid flowers so early in the year. In our own small collection the first blooms opened in January, and we are likely to have a good succession of them until the end of April. They are also to be classed amongst the easiest to cultivate of any in the large genus to which they belong. There was in flower a fine white form, with merely a dash of saffron in the throat. Also a curious variety, but beautiful withal, having a portion of the yellow usually found in the throat of the flower transferred to the centre of the petals. This instance is I believe unique, nature doth very seldom place her colours on the wrong place. I do not know whether the variety Backhousiana may be instanced as another case, for in this variety the rich colour of the labellum is in the form of a dash of colour in the centre of the petals. Another variety has also flowered here from the general collection, with the distinctive mark of Backhousiana on the petals, and the lip of a rich purplish crimson colour.

The old Dendrobium nobile is still one of the most beautiful species in the genus, and it was well represented here by the varieties Cooksoni and nobilius in flower side by side. They are now well known in the principal collections, but it ought also to be well known that such beautiful species of dendrobiums as D. Wardiaunm, D. Bensoniæ and D. crassinode have a tendency to degenerate sadly in a few years, whereas D. nobile and its varieties seem as if they would maintain the same vigorous character until the end of time.

The collection here is also strong in hybrids of cypripedium, conspicuous in the centre of the warmest house being a fine specimen of C. grande, with one strong spike. The vigour of this hybrid is remarkable, not only surpassing that of either of its parents, C. longifolium and C. caudatum, but every other known cypripede. Its flowers are also the largest of all the Selenipedum hybrids. C. leucorhodum also in flower promises to come next to C. grande in its vigorous development. It is, like the above, a hybrid raised in Messrs. Veitch's nursery in Chelsea, and the very best of the group. It is a cross between C. longifolium and C. Schlimi albiflorum. A seedling was in flower raised from the same parents as C. cardinale, viz., C. Sedeni and C. Schlimi albiflorum, but the cross has been reversed. It was exhibited before the Orchid Committee as C. cardinale variety, and certificated. It is a beautiful thing, quite distinct in the delicate pink of the lip or pouch; but a variation in colour, however much the departure may be from the original cannot influence the production of a species. C. Measuresianum in flower shows that C. villosum and C. venustum are its parents, but varieties of villosum are more beautiful.

The moth orchids formed a group of elegant and choice flowers, amongst them being good forms of P. Sanderiana, P. grandiflora, and P. Schilleriana.

The ancectochili are well grown in a corner of the warm house; the plants near the glass roof, but not in a case or glass frame. The leaves of healthy examples are beautiful in the extreme. They are difficult subjects to deal with, as many gardeners can testify. They will do well for years, and all at once take a turn the wrong way, and gradually decline until they disappear altogether, even if infinitely more care is taken of them in their declining years.

J. D.

WATERFOWL IN ST. JAMES'S PARK.

The great majority of Londoners are, I feel sure, unaware of the number and variety of this interesting collection, of which I send you a list. You will observe that it comprises two varieties of the swan, 11 sorts of geese, and 20 sorts of ducks, besides coots, moorhens, and dabchicks, two sorts of gulls, the common cormorant, and the stork; most of which, as I am informed by the enthusiastic waterfowl keeper, Riley, have bred in the park.

Swans.—Mute, Cygnus olor; black, Cygnus atratus.

Geese.—Chinese grey, Chinese white, Anser cygnoides; Chinese, a hybrid; Egyptian, Chenalopex Egyptiaca; Magellan; Brent, Bernicla brenta; Bernicle, Bernicla leucopsis; Bean, Anser segetum; Sebastopol (or woolly); Canada, Bernicla Canadiensis; white-fronted, Anser erythropus.

Ducks.—Sheldrake or burrow ducks, Casarka rutila; ruddy sheldrake; common; wild, Anas boschas; Rouen and Baudon; wild Australian, one female; call (white and grey); black Indian; English pintail, Dafila acuta; Chilian pintail; common teal, Querquedula quecca; garganey teal (or summer), Pterocyanea circia; widgeon, Mareca penelope; Muscovy; spot bill; shoveller, Spatula clypeata; mandarin, Aix gareliculata; Carolina; tufted or gold-eye; pochard, Nyroca terina; crested pochard.

Coot.—Fulica atra; moorhen, Gallinula chloropus; dabchick, Podiceps minor.

Gulls.—Herring, Larus argentata; small black-headed.

Storks.—Common stork, Ciconia alba.

Cormorants.—Common cormorant, Graculus carbo.

Morlah, 16, *Tregunter Road, S. W.* Walter H. Tregellas.

The Chinese Way of Doing It.—Perhaps the first Chinese translation from the English of a technical work on railway and harbour construction consists of eight chapters of Mr. Mattheson's "Aid-Book to Engineering Enterprise." The title of the translation would read in English, "Essay on Construction. Englishman Mattheson gave the idea. Englishman Fryer and Chang Tien translated it." Printed on fine thin rice paper, from large type, this book is enclosed in loose boards of polished rosewood, held together with silk ribbons, each chapter being separately stitched into a silk cover. The original engravings have been faithfully, though quaintly, reproduced on a larger scale.—*Athenæum.*

AMERICAN NOTES.

Viburnum pauciflorum.

This pretty species, which attains a height of three or four feet only, might, remarks the *Forest and Garden*, be described as a dwarf, V. Opulus, with small cymes, terminating short, two-leaved, lateral branches, and without the showy neutral ray flowers of that species. It is a widely distributed northern plant, inhabiting cold, moist woods from Labrador to Alaska, extending south to the high mountains of northern New England, the Saskatchewan country, Washington, and to the Rocky Mountains of Colorado. Viburnum pauciflorum has recently been introduced into the Arnold Arboretum, where it has not, however, flowered.

Water Lilies.

A tank for these aquatics should, writes a correspondent of the *Garden and Forest*, have a depth of four feet, with a length and width according to convenience, and it may be built in any part of the greenhouse where room can best be spared. Cement is one of the most durable materials for this purpose, and at the same time it has a neat appearance. The walls should be eight inches thick, with holes in the bottom large enough to draw off the water when required, and these may be stopped with wooden plugs which should be long enough to stand above the soil. A four-inch pipe round the tank will easily raise the water to a temperature of 80 deg, the warmth which is necessary, but if the tank is more than twelve feet in width it would be advisable to put in an extra pipe. Good loam to the depth of one foot should be placed in the bottom, with a little manure added. To insure an early supply of flowers the bulbs should be planted early in February, putting in enough tepid water to cover the soil, and increasing the quantity of water as the plants grow. An essential point in the cultivation of water lilies is pure water—*i.e.*, water which has not become stagnant—and this can be secured by inserting a small overflow pipe through the wall of the tank near the top and running in fresh water once or twice a week. The following are a few of the varieties which can be used to make a good display: Nymphea cœrulea, N. Devoniensis, N. alba candidissima, and N. Zanzibarensis. Nelumbium speciosum is also a handsome aquatic in a heated tank. A good display may be made out of doors in summer in a cool tank with the following plants. Nymphea odorata, Aponogeton distachyon, Lymnocharis Humboldti, and Pontederia crassipes. These, with the exception of the last, may be planted in tubs or baskets and placed in the tank; the Pontederia does not require any soil about the roots, as it floats on the surface of the water.

Hydrangea vestita pubescens.

This Hydrangea, remarks the *Garden and Forest*, is one of the handsomest of the numerous shrubs which have found their ways of late years from China and from Japan into our gardens. A native of the mountains of northern China and of Mongolia, it is not believed by M. Maximowicz to be specifically distinct from the Himalayan *H. vestita*, a small tree, of rather wide distribution. Here the north China plant makes a graceful shrub, four or five feet high, with slender branches covered with red-brown bark. The leaves are pale green and rather velvety on the upper surface, ovate-acute at both ends, or sometimes somewhat rounded at the base, coarsely glandular-serrate, three and a-half to four inches long, borne on stout petioles, cinereous-pubescent, and slightly pubescent on the lower surface, as are the young shoots, the petioles, and the inflorescence. The cyme of flowers is flat and ample, with numerous neutral ray flowers an inch or more across when expanded. These open early in July, and are then creamy white; they gradually change to rose colour, and remain quite fresh upon the plants until November. This plant is perfectly hardy. It is the first of the Hydrangeas to flower, and the most desirable as a garden plant of all the species which are hardy in this climate, with the single exception of the Oak-leaved Hydrangea (*H. quercifolia*), of our south Atlantic States. The specimens in the Arboretum were raised from seed sent several years ago from Pekin by Dr. Bretschneider, to whom we are indebted for a number of fine hardy plants.

Home Made Fruit Evaporator.

The evaporators manufactured for commercial purposes are, states the *Orchard and Garden*, expensive affairs, and where it is designed to dry a supply of fruit for home consumption or utilize surplus products merely, it is possible to construct a drier that will answer the purpose just as well and at a comparatively low cost. Such an evaporator is the one described by Professor Arnold as follows: "I built up a brick wall of three sides, about thirty inches square and three feet high, inside of which I placed an old box stove of large size, and on top of the brickwork I set a box, twenty-seven by twenty-eight inches (inside measurement), and about five feet high above the brickwork, with a door in front, which, when open, would admit ten sliding trays twenty-seven inches square. These trays were made of light basswood frames and mosquito netting tacked on the underside of the frames—although they could be used either side up. The netting required replacing once during the season. In the evening my son or hired man would pare about a barrel of apples in an hour, one other person and myself would trim the ends, cut the apples half in two, and our two little girls, age seven and nine, would spread the fruit on the trays, and I would slide them into the drier. In this way we usually filled the drier in sixty or seventy minutes. We endeavoured to have the temperature 150 deg., and about 120 deg. after the fruit was partly dry. We had a ventilator, six by twenty-seven inches, near the top, which could be opened or closed as desired, but should always be open while in use. At bedtime we filled the stove with large wood, closed it tight, and in warm, dry weather our apples would be nicely evaporated in the morning. Out of this little cheap drier, we have taken over seven barrels of nice evaporated apples, well pressed out, over two barrels of peaches, besides currants, corn, &c. I should have said that this drier, being one inch longer from back to front than the trays, admits a space of one inch at the back of the first tray, and also at the front of the second, and so on alternately. I have found this better than a half-inch space in back and front of each tray.

Dwarf Pears on the Quince.

At the annual meeting at Rochester of the Western New York Horticultural Society, it was generally held that an orchard of dwarf pears is more profitable than one of standard trees. Dwarf trees had proved long-lived, yielded as good if not superior fruit, were less susceptible to blight, and bore more regularly. Dwarf pears could be planted on heavier soil—indeed, they should not be planted on light, sandy ground, which is not naturally adapted to the quince root. The Duchess had heretofore been used almost exclusively as a dwarf, but the Kieffer was now largely worked on dwarf stocks, and the Anjou and Howell were named as varieties especially adapted to this treatment. One orchard of four and a-half acres yielded 441 barrels of Duchess pears last season, which brought 1,906 dollars. The practice is to cut back severely every year and fertilize heavily.

ORCHIDS IN FLOWER.

Cool, Mexican, and East Indian houses are all more or less attractive, for there is a host of good things in bloom, and among them are several species and varieties of great interest.

Angræcums which have contributed so liberally to the attractions of the East Indian house for several months past are now nearly over. The handsome and somewhat singular A. sesquipedale is represented by a few specimens in good condition, but it is not difficult to see that it is reaching the end of its season. The species of most interest at the present time is perhaps A. citratum, a dwarf growing and elegant form by no means plentiful in private collections, although comparatively cheap, and therefore well within the range of the majority of orchidists. In habit it is not unlike a small growing phalænopsis, the stem being short and the leaves oblong. The flowers are sulphur white and borne in long gracefully arching racemes. It thrives in shallow pans or baskets with sphagnum and an abundance of crocks, and as a native of Madagascar requires the warmth of the East Indian house. This angræcum forms a strong feature in Messrs. Low's collection at Upper Clapton where there are several thousand flowering specimens.

Calanthes continue to contribute liberally to the attractions of the Mexican house for V. Veitchi and the forms of C. vestita are succeeded by others not less interesting. One of the most beautiful of those now in bloom is C. bella, a charming hybrid between C. Veitchi and C. Turneri, which was first introduced to public notice at the meeting of Royal Horticultural Society in December, 1881, when it had a certificate of the first class conferred upon it. The flowers are borne in tall racemes and about equal in size to those of the last-named of its two parents, the sepals white, the petals pink, and the labellum delicate blush marked with a crimson blotch. Cultivators should make a note of this hybrid, as in every way desirable. Other kinds deserving special mention comprise C. Turneri nivalis, a chaste variety differing from the type in bearing flowers free from any markings on the labellum. C. Regnieri and C. Regnieri fausta, two handsome forms which agree in having large flowers with white sepals and petals. C. Williamsi is a handsome form with delicate pink flowers and especially valuable for the comparatively late period at which it blooms. These and other of the calanthes are admirably represented in Messrs. B. S. Williams's nurseries at Upper Holloway.

Cœlogynes are now in strong force and in collections where they are well grown, they at once assert their claims for consideration. Although the crested cœlogyne is so plentiful that strong plants may be obtained for a few shillings, it must be said that it is one of the most beautiful of the white flowered orchids in bloom, and well worthy of a prominent position in the most select collection. Its beauty and easy culture should ensure for it a place in mixed collections of stove plants. C. cristata citrina, more generally known as C. cristata Lemoniana differs from the type in having a lemon-coloured blotch on the labellum and is rather later in coming into bloom. C. cristata alba has flowers that are wholly white and very properly regarded with much favour by those who have it their collections. The Chatsworth variety, which also is rather later in flowering than the type and now in perfection is remarkable alike for the large size of the pseudo-bulbs and the flowers and although rather straggling in habit is highly effective. The crested cœlogyne and its varieties require as a matter of course a decided season of rest, but this is compatible with a more liberal supply of water at the roots during the autumn and the early part of the winter than is by some cultivators considered necessary.

Cattleyas, now flowering, consist chiefly of C. Trianæ and its varieties which are sufficient to produce a rich and varied display as proved to demonstration in the magnificent cattleya house in Messrs. Veitch's nurseries at Chelsea. Of the typical form it is not necessary to do more than to say that it is the most useful of all the cattleyas flowering thus early in the year; to refer in detail to the varieties now in bloom that have been named is out of the question because of the space that would be required. Mention must be made of C. Trianæ Backhousiana, a superb variety distinguished by the great depth of colouring of the labellum; C. Trianæ delicata, an exquisite beautiful form with flowers of a blush pink colour C. Trianæ marginata, a distinct variety, the flowers of average size, and bright in colour; the labellum rich amethyst with distinct white margin and elegantly fringed. C. Trianæ Osmanni, a superb variety which first flowered in the collection of the late R. B. Dodgson, Esq., Beardwood, Blackburn, then under the charge of Mr. Osmann. The flowers are very large, measuring between six and seven inches across, the sepals and petals magenta rose, and the labellum bright purple crimson. There is a good figure of it in the *Floral Magazine*, second series, t. 361, and it may be mentioned as indicating the beauty of the variety that when Mr. Dodgson's collection passed under the hammer the specimen was sold to Mr. B. S. Williams for two hundred and fifteen guineas.

Cypripediums make a brave array and charm the eye by their quaint forms and distinct colouring. If the species and varieties in bloom are not innumerable they are so numerous as to render an enumeration of any considerable proportion of them undesirable. Foremost amongst the lady's slippers is the magnificent Cypripedium Rothschildianum of which a characteristic figure was given in the Gardeners' Magazine of February 22. Further description is unnecessary as the figure and accompanying letter-press will show that it is one of the most valuable additions that has been made to the list of late years. C. Elliottianum, also flowering, is so similar to C. Rothchildianum that it must be regarded as a variety of that species. It is, however, decidedly inferior to it, as proved by the fact that when the two were shown together at Westminster a year since it failed to obtain recognition. C. Germinyanum and C. Lathamianum are two beautiful hybrids of recent introduction, the first-mentioned being distinguished by its rich colouring; the other partakes largely of the character of C. Spicerianum, which is one of its parents and is remarkable for its vigorous habit and freedom of flowering. Of older date but extremely beautiful are C. Boxalli atratum, a fine dark form of this handsome species; C. Measuresianum a superb hybrid which has been figured and described in these pages and may be regarded as a triumph of the hybridist's art; C. tessellatum porphyreum, a handsome form with large reddish purple flowers; C. Sedeni candidulum, a form of this free blooming hybrid with large flowers tinted pink on a white ground; C. cardinale, a fine hybrid belonging to the same type as the last named, but with bright rose coloured flowers, and C. œnanthum superbum, a distinct hybrid with flowers of medium size and rich in colour. With reference to the old and well-known kinds, it may be said that C. insigne and its varieties have nearly run their race for this season, and are being succeeded by the numerous forms of C. barbatum.

Dendrobiums contribute liberally to the brilliant display of colour in the East Indian house, for the showy Dendrobium Wardianum is now at its best and the old and popular D. nobile is flowering with great profusion. With reference to D. Wardianum it may be said that there is no more attractive dendrobe in its season, and that an abundant production of flowers may be ensured by placing the plants under the conditions favourable to their making a vigorous growth as soon as the flowering season has passed and then giving them a good season of rest. D. nobile must be referred to for the purpose of saying that the comparatively rare D. nobile nobilius, which is remarkable for the large size and deep colour of the flowers is now blooming freely; D. nobile Cooksonianum, although not equal in its intrinsic beauty to the last named it is still very attractive, the large marone blotches at the base of the labellum producing a distinct effect. The Burford Lodge variety, which has longitudinal blotches of marone on the sepals, is interesting but wanting in beauty.

Lycastes include Lycaste Skinneri in great variety, conspicuous amongst them being the chaste L. Skinneri alba, which is now becoming more plentiful.

Lælias are not numerous, but as they include L. cinnabarina and L. harpophylla, they are conspicuous in the Mexican house. Both have orange red flowers, and the elegant racemes interspersed amongst the other occupants of the structure produce a striking effect.

Odontoglossums are sufficient to make the cool house immensely attractive. They include C. crispum in great variety, the broad petalled richly marked forms being extremely beautiful; O. cirrhosum, one of the most elegant of the light forms; O. Andersonianum, a handsome form and highly effective when well coloured; O. triumphans, one of the most richly coloured of the several species; O. luteo-purpureum, also remarkable for its high colouring, of which one of the best varieties is O. luteo purpureum sceptrum; O. odoratum, and O. Rossi majus.

Oncidiums in flower are not very numerous but they include several species of exceptional beauty, notably O. Cavendishianum, O. cucullatum, and O. splendidum, to which it is not necessary to make special reference.

Phalænopsis now contributing to the display in the East Indian house include P. amabilis, P. grandiflora, P. leucorrhoda, P. Sanderiana, P. Stuartiana, and P. Schilleriana, and they are all so marvellously beautiful that it is matter for regret their culture is not better understood by the great body of cultivators than is at present the case.

Vandas have a double claim on our consideration, for they are not only highly attractive but they are delightfully fragrant, a few good spikes of V. suavis being sufficient to render a comparatively large structure redolent with perfume. In addition to the foregoing, V. tricolor and V. tricolor Patersoni must be mentioned, as also must V. cœrulescens, an elegant little species producing long racemes of light blue flowers.

GARDEN PONDS.

Mr. John Burgess, of the Midland Counties Fish Culture Establishment, Malvern Wells, writes:—The attractiveness and beauty of a garden are greatly enhanced by ornamental ponds, whose presence amidst flowers and foliage lends additional animation and intensity to the prevailing tints and throws up with great effect the entire surroundings. But a pond without fish is like earth without vegetation. Water that is barren in fish life is fruitful in weeds, vermin, and all kinds of impurities, while it presents a spectacle the reverse of picturesque. On the other hand the presence of fish of suitable kinds imparts to the water a lively, fresh and sparkling appearance, causing it to be always a source of interest and pleasure to everyone. Fish are undoubtedly great favourites with us, whether they be confined in the narrow regions of the tank or in the garden pond, in both of which habitats it is our delight to domesticate them. Those possessing ponds in their gardens would therefore do well to introduce fish into them. The best kinds for this purpose are those of an ornamental character, but care should be exercised in selecting only those species whose habits would not militate against the preservation of the waters' brightness. There are those fish, such as the carp and tench, which keep at the bottom of the pond, and not only hide from view, but stir up the mud and darken the water. In ornamental waters, therefore, a species of fish must be selected that is not only attractive in colour but moves near the surface of the water, thereby rendering itself the observed of observers. Owners of ornamental waters have no patience with fish that do not show themselves, and yet it frequently happens that they turn in that species of fish which may be nearest to hand without considering whether or not it is suitable. None of our own fresh-water fish can be called ornamental, albeit they are very beautiful. We must look abroad for that richness of colour which is wanted in the garden-pond or tank, but, alack, it is very few that we can acclimatise in this country. The Goldfish is generally selected for ornamental purposes, on account of its beautiful colouration, but the difficulties attending its introduction in ponds and tanks that are exposed to the weather are very great. I am quite aware that success sometimes attends the undertaking, but as a rule these fish soon die.

The fish that I recommend for ornamental purposes is the Golden Orfe of Bavaria, which is superior to the Goldfish, not only in beauty, but in hardihood, and has been known to achieve goodly proportions in some of the lakes of this country where it has also bred.

Lord Walsingham and Sir Albert K. Rollit, M.P., possess some of them in their waters and pronounce them to be valuable objects of introduction for enclosed locations. This fish does not require much flow of water nor special feeding, and is content with such food as our waters afford. The perch is a desirable fish for ponds and lakes, but does not thrive in stagnant water like some of the members of the *Cyprinus* family. The perch is seen to better advantage in the aquarium than in the pond where fish of a bright decided colour are required. A gentleman residing at Sydenham has recently formed a pond in his garden which is supplied with water from the house. In it he keeps trout of various kinds, and what is more hatches them artificially. They are fed artificially and grow fast, evidently appreciating the food upon which they are maintained, which consists of raw liver. The bottom of the pond is cemented, it being necessary to have this done to prevent the water, whose supply is limited, becoming absorbed. It is always best, however, under other circumstances, not to cover the soil with any material, as it deprives the pond of a great deal of natural food and the fish of hiding places which are so essential to their well-being. To those who may be desirous of creating ornamental ponds in their gardens I would advise that the bottom of the pond be puddled and that the soil be allowed to remain just as it is if a continuous supply of water can be guaranteed. Aquatic plants can then be established which will provide food for the fish and keep the water in a pure, healthy condition while at the same time it will add beauty to the ponds. If success is to be gained in maintaining them under artificial conditions, the balance of nature must not be upset, and there should be present a proportionate number of plants and animals according to the size and capacity of the water.

Calls at Nurseries.

MESSRS. J. CARTER AND CO.'S PRIMULAS.

Few classes of soft wooded greenhouse plants have received so large a share of attention or been so greatly improved during the past twenty years as have the Chinese primulas. Long compelled to be content with two or three colours, the cultivator has now at his command at least a dozen distinct and beautiful shades, and a considerable variation in the form, both of the flowers and foliage. Concurrently with the increase in the number of the colours, there has been an enlargement of the size and an improvement in the shape of the individual flowers, thus showing that every detail likely to enhance their value for the decoration of the conservatory and drawing room, and for competitive purposes has received a full share of attention. The change that has been effected is manifest on all sides; but its full significance is not apparent until one has an opportunity of seeing a large trade collection, such as that which forms such an important and attractive feature of the Forest Hill nurseries of Messrs. J. Carter and Co. at the present time. This firm, as so well known to the general body of cultivators, has for many years past devoted a considerable share of attention to the improvement of these flowers, with the result that they have been successful in introducing several shades of colour and in bringing their strains to a high state of perfection.

At the present time there are upwards of six thousand admirably grown plants in bloom, and arranged in large blocks according to their colours, they produce a striking effect. But more important than the display produced is the remarkable uniformity in the several strains, for one may search in vain through a block containing several hundred plants without finding the slightest variation, either in the habit of the plants or in the form and colour of the flower. Variations there are in plenty, but these are the result of systematic intercrossing, and represent much skill and judgment in the use of the camel's hair brush. In briefly referring to a few of the more important types, mention must first be made of Holborn Vermilion, a strain having comparatively large flowers of a brilliant scarlet crimson hue and extremely effective at this dull season of the year. Other varieties deserving of special mention comprise Holborn Ruby, a charming fern leaved variety with large finely formed flowers of a rich ruby-red hue; Holborn Magenta, one of the finest of the so-called purple strain, the habit exceedingly good, the flowers of large size and the colour rich magenta purple; Holborn Salmon, a distinct shade of rose salmon and very pleasing; Holborn Carmine, an excellent variety with bright rose carmine flowers, are produced in exceptionally large trusses; Holborn White, a useful white strain; Elaine, a beautiful variety with ivory white flowers of the largest size, and elegantly fringed, Venus, a charming variety, the flowers of average size and freely striped and spotted on a pure white ground; and Holborn Blue, a good type of the blue Chinese primrose, which by the way does not appear to advantage in dull weather. Messrs. Carter have as the result of a cross effected two years since obtained a greatly improved form of the last named. The habit is decidedly better, being more robust with stout leafage, and the flowers are much larger, ranging from two to two and a-half inches in diameter. In shape and substance they have much the appearance of the flowers of The Queen and the colour is an effective shade of turquoise blue. Of this the stock is sufficient to show that the strain is fixed, but some some time must necessarily elapse before the supply of seed will be large enough to enable it to be distributed. Another noteworthy break has pure white flowers with bright carmine pink picotee edge and, as it appears to be constant, it will probably find much favour when it passes into the hands of the body of cultivators.

The semi-double varieties form a very useful section for they are free and effective, and as the flowers stand well when cut, they can be employed in bouquets and other arrangements. Probably the finest of these is that known as Empress, which has comparatively large flowers of a brilliant rosy red hue. Also of exceptional excellence are Princess of Wales, a robust variety with bright carmine flowers, and Snowflake, of which the flowers are pure white. The semi-doubles are especially adapted to the requirements of those who are not successful in growing the double varieties, for they can be raised from seed with the same facility as the single types, and thrive under precisely the same conditions.

It may be added that anyone who is interested in primulas will be shown the collection on calling at the nurseries, which are about a mile from the Forest Hill station of the London, Brighton, and South Coast line.

Literature.

The Art of Landscape Gardening, By Arthur M. Kettlewell (Satchell, Kington): This is a short essay by a landscape gardener, on the general pursuit and on certain points of importance that may be regarded as of universal interest. The author takes practical common sense views of things, avoiding all risky and eccentric feats in landscape gardening; and consequently, although he gives us but half an hour's reading, he manages to convey useful information and healthy ideas.

New Verse in Old Vesture, By John Cameron Grant (E. W. Allen): This volume of verse challenges criticism, and should obtain special attention from versifiers and students of the construction of verse. The originality and freshness of the sentiment are everywhere heightened by the peculiar diction, which is elegant, forceful, and a kind of half-reserved nervous power that gives newness to old themes. An assertion in verse of the purity of Vivian is a novelty to serve as a comment on the Laureate's verses. The introductory essay on Mr. Cameron Grant's method will be read with peculiar interest by those who are well schooled in English poetry.

TRADE CATALOGUES.

Ellwanger and Barry, Mount Hope Nurseries, Rochester, New York.—*General Catalogue.*

Dicksons, Chester.—*Select Farm Seeds.*

Horticultural Club monthly dinner and conversazione will take place at Hotel Windsor, Victoria Street, on Tuesday next, at 6 p.m. The discussion will be on "Plant Hybridism," to be opened by Mr. Lewis Castle.

NOTES ABOUT TOWN.

In its very interesting series of articles on "Saturday Afternoons," the *Pall Mall Gazette* of the 1st inst., deals in a popular and sketchy fashion with "an afternoon in March at Kew." The biting east winds of the past week or so, as the writer evidently thinks, do not suggest much pleasure in the garden; there is, nevertheless, plenty of profitable and entertaining food for reflection at Kew at all times of the year. This is a fact which very few people recognize. For much less expense than a decently good seat at a theatre, to say nothing of the stuffy and frequently unhealthy atmosphere, a man with any soul at all in his body might spend ninety-nine Saturday afternoons out of every hundred at Kew, and avail himself of a pleasure at once delightful and profitable. The nearest way to the closest "pub," has now become almost an exact science, and the toilers in great cities like London do not obtain anything like a proper return for the advantages to which they contribute directly or in directly. The percentage of *bona fide* London visitors to Kew is simply deplorable, and goes far to confirming one's belief in the Carlylean theory about the preponderance of fools in this country.

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Referring, again, to the *P.M.G.*—and the surprised delight of the writer is evinced in almost every line he writes—we extract the following pretty little word-picture: "Looking eastward across the pond the eye rests on a sloping lawn, thickly studded with thousands upon thousands of yellow crocuses. They are naturalized here, as also are the myriads of purple, blue, and white kinds, which greet the visitor entering by the Cumberland Gate. This is the wild garden, the home of daffodils, snowdrops, primroses, anemones, and Lenten lilies. In a few weeks the crocuses will have gone and their places be filled by 'a waving sea of daffodils.' Several hundred thousand bulbs of these plants have lately been presented to Kew by Lady William Godolphin Osborne, whose son collected the whole of them in Biarritz. Many of these are rare and choice kinds." Among the numerous objects of interest under glass, that which appears to have attracted the journalist most was "a little plant, not an inch high, with one large, quaint-looking flower, suggestive of the head of a lop-eared rabbit, and coloured rosy-white, with numerous spots of deep purple. It is about four inches across, and its name is *Cypripedium bellatulum*. We are informed that a year or so ago plants of this could not be bought under ten guineas, which are now obtainable for as many shillings. And yet every-one of these plants has to be brought from some small islands difficult of access off Siam."

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The cost and risks attending a florist's shop in the West-end of London must necessarily be great. Here are a few facts which a correspondent—evidently of the "weaker" sex—contributes to a contemporary. The situation of the shop was not far from Belgrave-square, and the rent was £65 per annum; possibly the shop only consisted of a single room. The assistant's salary is stated at a guinea per week, and an errand boy at five shillings. The stocking of the window entailed another thirty shillings a-week; "thus one has to spend something over £200 before one can make any net profit." In the "over the counter" trade the transaction is usually a ready-money one. This trade consists mostly of button-holes "on which one ought to make 100 per cent. profit." In the "order trade" consisting mostly of bouquets, sprays for dresses, dinner-table decorations, &c., 200 per cent. is the usual profit. "But in the order trade we may have to wait three months to a year for payment; meanwhile the grower expects cash down."

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The foregoing facts will serve to dissipate the general impressions that a florist's initial outlay is *nil*, and that the risks—such as bad debts—are few. The profit, as a consequence of various risks, must be large. Those who pay have to pay for those who don't. The high percentage of profit obtained by florists with shops, naturally leads to consideration of the other extreme. In all the most frequented thoroughfares of the metropolis will be seen flower-girls with large baskets, or men with large barrowloads of flowers, which are nearly invariably good in quality, and one might venture to say invariably cheap in price. A capital rose or a neat little bunch of lilies of the valley may be obtained for a penny or two pence. Considering that there are several profits to come off before these flowers come into possession of the ultimate vendors, how is it possible that the grower can obtain a small profit, or indeed any profit at all? Does he "live by the loss"? It would be a useful as well as an important service if someone set about gleaning particulars about the prices paid and profits made by the street vendors of flowers. The late Henry Mayhew touched upon this subject forty years ago in "London Labour and London Poor," but the whole question has not only become since then revolutionised, but it has developed into channels then undreamt of.

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"Why should not women be gardeners, and grow vegetables, flowers, and fruit for market?" is the question which Miss Edith Chamberlain asks in the current issue of the *Women's World*. According to this writer, the necessary qualifications are energy, patience, perseverance, and fairly robust health, neither of which—nor, indeed, the whole together—is, we may add, worth much, unless it is supplemented by the far more important elements of practical experience, and the *nouse* of doing things at the proper time. Now, with all our very well known gallantry for women, we are bound to admit that we have no faith—and little hope—in them as gardeners. The long-suffering patience of an angel, combined with the practical teaching of years of all sorts of seasons—generally bad ones—are characteristics of the gardener and they would drive anyone else into an early grave. Very few women have the persisting courage to overcome the difficulties which all encounter in the pursuit after horticultural experience. Even in his hunts after the picturesque, after consolation, and after a wife, the learned Dr. Syntax met with troubles.

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There are, of course, exceptions to every rule; and in this category Miss Chamberlain must be classed. She points out that a hopelessly delicate woman could not undertake gardening in any shape; but, she contends on the other hand, for a girl who is "not very strong"—a too common pretext nowadays for loafing—without having any definite ailment, "no employment can be healthier, and I can say from personal experience that it is marvellous how soon one becomes hardened and impervious to all kinds of weather." Miss Chamberlain, whilst admitting that growing for the wholesale markets is "very interesting," points out, and very properly so, that it is "sometimes productive of disappointment." The neighbourhood is also made a point of some importance. It should, in the first place, be within an easy distance of a large town; and, in the second, the wants and needs of the said town must be carefully considered before any experiments are made. For example,

"irises and other flowers, valued highly in London for their artistic beauty, are accounted of no value in Birmingham; yet I have obtained good prices there for mixed fancy carnations, when a Covent Garden salesman would give nothing for them because they were mixed." Like many other growers, our lady market gardener has arrived at the conclusion that it pays best to grow the more superior strains of certain flowers in large quantities only. The three crops which she found to pay best were roses, cucumbers, and celery; but she thinks, nevertheless, that, given a quantity of glass structure, nothing pays so well as growing choice flowers. "Given a suitable soil and site, a fair living (mind, I don't say a fortune) can be made by fruit growing," which is rather an easy and qualified way of getting out of a big subject. Miss Chamberlain's faith in the raspberry as a paying crop is very great, and the example which she quotes certainly induces one to think that "there is something in it." The paper, which would have been very much more valuable had it been accompanied by statistics, concludes with an enumeration of the advantages to be obtained by women adopting gardening as a profession: "The gardener is far more her own mistress than is the milliner, who, by omnibus, rail, or cab, must reach her shop and leave it at fixed hours; she enjoys fresh air and exercise, while the clerk or secretary sits ever writing—writing in a confined office. She grows her flowers with delight, cuts and packs them half grudgingly, but inwardly rejoices that she does not pass her time in hot studios painting roses bought at the street corner, or apples from the greengrocer." W. R.

Replies to Queries.

Zonal Pelargoniums.—F. B. C.: The zonal pelargoniums that you lifted from the beds in the autumn and put in boxes, should now be cut back rather hard and be put singly in three-inch pots according to their size, but for the majority, the sixties will be large enough. Use a moderately rich compost, and supply sparingly with water until they are commencing to grow freely.

Herbaceous Lobelias.—H. B., Sussex: The herbaceous lobelias are singularly effective when associated with Madame C. Desgrange, Mrs. Pitcher, and other white chrysanthemums flowering at the end of the summer. They thrive under the same conditions as the chrysanthemums. Purchase the lobelias in April, and have them sufficiently hardened to be planted out with the chrysanthemums early in May.

National Chrysanthemum Society.—D.: Members of the society pay an annual subscription of not less than 5s., and Fellows pay not less than £1 1s. Members have the privilege of attending the whole of the exhibitions and meetings of the Floral Committee, and of competing in the whole of the classes in the schedule free of charge, the entry fee of 5s., previously charged in two or three of the classes, having been abolished so far as the members are concerned. Fellows have two tickets of admission.

Removal of Greenhouse.—B. W.: As the greenhouse is attached to the freehold you cannot remove it at the termination of your tenancy without the consent of your landlord. As the term was so short, you should have either had a portable structure or obtained the written consent of the landlord to remove the greenhouse when you wished to do so. Were tenants to take one of these precautions they would frequently save themselves much vexation and some loss.

Single Dahlias.—Inquirer: The single dahlias can be readily raised from seed, and a packet of seed will give you a good stock of plants, producing a considerable diversity of colour. Seedlings, however, are not so suitable for the flower garden as plants of selected varieties raised from cuttings, as they will be more vigorous in growth and later in flowering, and a considerable proportion will produce flowers more or less inferior in form or colour. There is considerable interest in raising seedlings, but they should the first year be grown in the kitchen garden or reserve ground.

Pot Vines.—B. W.: The pot vines that you require for planting in April ought to have been cut back to within two or three inches of the base whilst quite dormant. If you cut them back after having started them into growth they will suffer severely from a loss of sap. The best course for you to take with them is to lay the canes down horizontally, or with the upper portion rather lower than the base, to induce the buds at the lower part to make a vigorous growth and take the lead. When the young shoots are about two inches in length commence disbudding, and proceed gradually with the removal of the shoots until all but the one selected for the new cane be removed. When this has attained a length of about eighteen inches cut the old rod off immediately above the new growth, the vines can then be planted out.

Moles.—Talpa: It will be perfectly proper to trap the moles when they intrude on your flower beds, but so long as they keep to open quarters away from the dressed grounds we are not in favour of your exterminating proposals. Moles are like many other so-called pests; they render substantial service that more than compensates for any harm they may do. They are the deadly enemies of wire worms, click beetles, chafers, and other ground vermin, and their burrowing is a kind of cultivating on the Jethro Tull and Lois Weedon systems. We have seen mole runs in our onion beds, and we would not allow the miners to be persecuted, and the ground being carefully trodden down when the moles left the spot the crop of onions was better on that bed than the others the moles had not touched. But we are not advocating the tunnelling of onion beds; we do not pretend to approve of everything the creatures may do in a garden, but of this we are certain that in rough ground they do more good than harm.

Damping off.—W. C.: The decay of the stems of the seedlings in the manner you describe is technically known as "damping off," and is caused by a species of pythium, the most common being P. De Baryanum. These fungi require for their development an abundance of moisture combined with a close atmosphere, and their attacks may be prevented by placing the seedlings in a light position, where they will have a moderate circulation of air, and by careful watering. All the cruciferous plants are especially susceptible to this disease, and in raising cauliflowers, Brussels sprouts, and stocks under glass early in the year, it is a good practice to stand the seed pans on pots or in shallow vessels containing water, and allow them to remain until the moisture begins to rise to the surface of the soil. If you do this you will not again have such severe losses as those of which you complain this season. It will be much better to remove a few seedlings when overcrowded than to have them damp off in a wholesale manner.

Propagating Dahlias.—G. S.: There are two courses open to you. One is to purchase pot roots of the desired varieties, and raise a stock from them, and the other to wait until May and then purchase plants. By taking the last named of the two courses you will save yourself some trouble, but by commencing with pot roots will be able to have strong plants for bedding out at the proper season. As you have ample conveniences for spring propagation the purchase of pot roots will be preferable, and this we would advise you to do at once. The selections in the *Garden Oracle* will give you full information as to the best varieties in the several sections and lines of colour. When the roots are received put them in six-inch pots with a light rich compost, and place in one of your vineries or other forcing houses. Under the influence of a brisk temperature and a moderate degree of moisture they will soon start into growth, and produce shoots suitable for propagating purposes. If you are anxious to obtain as large a stock as possible allow the shoots to remain until they have three joints, and then take them off above the lowest pair of leaves. Insert singly in small pots filled with a light sandy mixture, and place where they can be kept rather close and warm. In due course a second crop of cuttings will be produced from the axils of the leaves remaining. These should be taken off with a portion of the shoot from which they have been produced, and be dealt with in precisely the same manner as the earlier cuttings. It is important to harden off as soon as it can be done with safety.

Ornamental Capsicums.—R. M.: All the capsicums are more or less ornamental when well grown and carrying good crops of fruit, but those best adapted for the conservatory and for the dinner-table are Princess of Wales, a distinct variety, producing long yellow fruits; Carlton's Coral Red, a recently introduced variety with medium sized conical red fruits borne more or less erect; and Williams's Little Gem, which has bright scarlet globular fruits about the size of red currants. The first-named appears to the best advantage when grown with a clear stem seven or eight inches in height, but the other two are the most attractive in bush-form. They are all cultivated in precisely the same way, and the seed should be sown about the middle of March and be placed in a pit or house in which a brisk temperature is maintained. When large enough to be removed from the pan, put them singly in small sixties, and use a compost consisting of loam, manure, leaf-mould, and sand. Return them to the same or similar structure where they should remain until they are commencing to grow freely; they are then to be removed to the greenhouse or a pit in which no more fire-heat is employed than is necessary to keep out frost, and in either case to be near the glass and enjoy a moderate circulation of air. When well rooted and before they have become pot-bound shift into five or six-inch pots and employ a compost consisting of loam four parts, and manure, leaf-mould, and sand, one part each. A well ventilated pit will afford them the most suitable accommodation during the summer. Capsicums are rather susceptible to the attacks of green fly, therefore keep a sharp look out for the pest and adopt remedial measures immediately they become necessary.

TUDOR EXHIBITION, NEW GALLERY, REGENT STREET.

The Exhibition of the Royal House of Tudor is at once extensive, interesting beyond all precedent in such things and sumptuously beautiful. It consists of pictures, drawings, plate, armour, relics, coins, vestments, books, manuscripts, and miniatures, the catalogue of which extends to 319 pages. The pictures consist of portraits chiefly, and the persons represented are of the first importance in history and literature, King Henry the Eighth, Queen Elizabeth and William Shakespeare being conspicuous amongst them, while of other persons a majority are such as contributed to the Tudor period its special characteristics in politics, religion, literature, and art. Of the pictures the names of the painters are in many instances unknown, but amongst those known Holbein and Zucchero are conspicuous for the importance and splendour of their works.

Although the whole of the spacious chambers and balconies are occupied with the several departments of this exhibition, the chief attractions are in the West Gallery where the reigns of Henry VII. and Henry VIII. are illustrated; and the North Gallery devoted to illustrations of the reign of Elizabeth. In the first, "Bluff King Hal" is conspicuous by reason of his striking figure and unmistakable features. Here amongst many remarkable things is the celebrated picture lent by the Queen from the collection at Hampton Court of the "Meeting of Henry VIII. and Francis I. on the Field of the Cloth of Gold" (57). The wives of the uxorious monarch form an interesting series. A portrait of Sir Thomas More (94), by Holbein, is one of the minor gems of the show. The noblest picture in this chamber doubtless is "Henry VIII. and his Family" (101), a grand example of colour, architecture, stately design, and fashionable formality, for the posing of the two daughters right and left brings in a ludicrous element that curiously illustrates the manners of the age represented. The celebrated picture by Holbein, the property of the Barber-Surgeons' Company, representing "Henry VIII. granting the Charter" to the company (152) is particularly interesting, for it has acquired great renown, but has been seen by few, while as regards its place in art it is typical. In the North Gallery the place of honour is occupied with the splendid portrait of Queen Elizabeth, lent by the Earl of Salisbury from the noble collection at Hatfield, above it being a magnificent full length by Zucchero. The Queen's collection of Holbein's drawings from the Royal Library at Windsor has especial attractions for artists, but as the subjects are of historical importance and often of the highest literary interest, the visitor is advised to look for them in the West and South Galleries.

The seven portraits of Shakespeare vary in merit, and only two of the number fix our attention. The Baroness Burdett-Coutts is the happy owner of three of them, the Earl of Warwick is owner of one, and No. 394, which is strikingly characteristic, is lent by Mrs. Lucy, of Charlcotte.

The directors of this exhibition have very properly accepted and catalogued all the contributions under the descriptions given by their owners. But often these are sadly erroneous. There are several pictures ascribed to Holbein that he certainly never touched, and whoever will inspect the pictures with the aid of the catalogue will readily discover them. There is one, however, that may cause perplexity that a word will suffice to prevent. The picture entitled "Marriage of Henry VII. and Elizabeth of York" (12), has no right to such a title. It is a remainder of an altar piece painted for the chapel in the Palace at Sheen, and originally the Virgin and Child occupied the centre of the panel. These have been painted out and the space filled in with a representation of the interior of a church. In its original state it must have been a work of great beauty and is doubtless of Italian origin.

Correspondence.

CLASSIFICATION OF THE CARNATION.

IN my paper on pages 34, 35 of our annual report, quoted from the GARDENERS' MAGAZINE of January 11, I have given my reasons for the note appended to the yellow ground section in our last schedule of prizes, and the objections, as they appear to me, lying against the existing system followed in the case of the white ground picotee.

"Colour being the rule of selection, we reject arbitrarily and barbarously, in the case of the picotee, every hue or combination of hues not distinctly either a red, or purple, or salmon, pink, or rose. And, sub-dividing the colours into heavy-edged and light-edged sections, we leave out in the cold, and make of no account, the whole of the medium or feather-edged varieties;" that is, in the case of the single bloom classes.

It appears to me that this is most unsatisfactory, and to threaten, as it is extended, yet more undesirable results. Fifty years since we had two classes in picotees for single blooms. We have now six, and I observe, from the copy of the schedule of prizes sent me, our friends of the National Carnation Society extend it to eight, without however covering the objection I have referred to as to the medium-edged class, or including every hue, or combination of hues, developed in the flower. Resting upon colour it is *exclusive*, and unless we are to set up classes for every hue and shade of colour, a *reductio ad absurdam* will ever remain so.

I propose, therefore, in the case of the white ground picotees, to rest the division upon the breadth of the marginal colour—an easily understood and perfectly feasible arrangement in the case of the curvilinear-edged flowers, and dropping all requirement as to colour—to offer prizes in three divisions: 1. Broad edged; 2. Medium edged; 3. Light edged. We may thus do away with the reproach of hard and fast lines of exclusion, sometimes, and in this case justly as it appears to me, laid against us, and adopt a rule which, whilst allowing every hue or combination of hues in the flower to be brought forward, would require the selection not to depend upon the preference of individuals for particular colours or shades of colour—a subject upon which tastes may legitimately differ—but upon well-defined and well-understood intrinsic merits.

Of course this proposition touches only the curvilinear-edged flowers. Longitudinal markings rest upon a very different principle; therefore, in place of the regularity of marking so harmonious in the curve, we have the marvellous variety of nature for our guide.

I shall be glad to hear from you at an early date, and to be advised of any point you may think germane to the subject. E. S. DODWELL.

The Cottage, Stanley Road, Oxford, March 3, 1890.

P.S.—You will note this arrangement brings the picotee into equality with the two other most advanced sections of the carnation—the bizarres and flakes—each having *three* sub-divisions; whilst the sections less advanced, the selfs, fancies, and yellow grounds, have one arrangement each, an arrangement fulfilling every practical necessity.

Markets.

COVENT GARDEN.

FRUIT.

Apples	per ½-sieve	2s. 6d. to	5s. 0d.
Apples, American	pr. brl.	16s. 0d. ,,	26s. 0d.
Cobs	per lb.	1s. 6d. ,,	2s. 0d.
Grapes	per lb.	2s. 0d. ,,	6s. 0d.
Lemons	per case	10s. 0d. ,,	15s. 0d.
Pine-apples, English	prlb.	1s. 0d. ,,	1s. 6d.
Pine-apples, St. Michael's	each	2s. 6d. ,,	7s. 6d.

VEGETABLES.

Asparagus, English	pr bun.	6s. 0d. to	8s. 0d.
Asparagus, Sprue	per bun.	1s. 0d. ,,	1s. 6d.
Beans, French	per lb.	0s. 6d. ,,	0s. 8d.
Beet	per doz.	1s. 6d. ,,	2s. 0d.
Brussels spr'ts	pr ½ sieve	1s. 6d. ,,	2s. 6d.
Cabbages	per doz.	1s. 0d. ,,	2s. 0d.
Carrots	per bun.	0s. 4d. ,,	0s. 6d.
Cauliflowers	per doz.	2s. 0d. ,,	3s. 0d.
Celery	per bundle	1s. 6d. ,,	2s. 0d.
Coleworts	pr doz bunchs.	2s. 0d. ,,	3s. 0d.
Cucumbers	each	1s. 0d. ,,	1s. 6d.
Endive	per doz.	1s. 6d. ,,	2s. 0d.
Herbs	per bunch	0s. 3d. ,,	0s. 4d.
Horse-radish	per bun.	3s. 0d. ,,	4s. 0d.
Leeks	per bunch	0s. 2d. ,,	0s. 4d.
Lettuces	per doz.	1s. 0d. ,,	2s. 0d.
Mushrooms	per basket	1s. 0d. ,,	1s. 6d.
Onions	per bushel	5s. 0d. ,,	6s. 0d.
Parsley	per bun.	0s. 4d. ,,	0s. 6d.
Rhubarb	per bun.	0s. 3d. ,,	0s. 4d.
Salsify	per bundle	1s. 0d. ,,	1s. 6d.
Seakale	per pun.	1s. 0d. ,,	1s. 6d.
Scorzonera	per bundle	1s. 0d. ,,	1s. 6d.
Shallots	per bun.	0s. 4d. ,,	0s. 6d.
Small Salading	per pun.	0s. 3d. ,,	0s. 4d.
Spinach	per bushel	2s. 0d. ,,	3s. 0d.
Tomatos	per lb.	0s. 9d. ,,	1s. 0d.
Turnips	per bunch	0s. 4d. ,,	0s. 5d.
Sprouting Broccoli	pr. s'k.	1s. 6d. ,,	2s. 0d.
Turnip Tops	per sack	1s. 0d. ,,	1s. 6d.

CUT FLOWERS.

Abutilons	per doz. bun.	1s. 6d. to	2s. 0d.
Azaleas, per doz. sprays		0s. 6d. ,,	1s. 0d.
Bouvardias	per bunch	0s. 8d. ,,	1s. 0d.
Callas	per doz.	3s. 0d. ,,	4s. 6d.
Camellias	per doz.	1s. 0d. ,,	3s. 0d.
Carnations, per doz. blms.		1s. 0d. ,,	1s. 6d.
Cyclamens, per doz. blms.		0s. 4d. ,,	0s. 6d.
Eucharis	per doz. blms.	3s. 0d. ,,	4s. 0d.
Gardenias, per doz. blms.		9s. 0d. ,,	18s. 0d.
Heliotropes, pr doz. sprys		0s. 6d. ,,	1s. 0d.
Hyacinths, Roman, per doz. sprays		0s. 6d. ,,	1s. 0d.
Lilac, White, per bun.		4s. 0d. ,,	5s. 0d.
Lily of the Valley, per doz. sprays		0s. 9d. ,,	1s. 0d.
Maidenhair Fern, per doz. bun.		3s. 0d. ,,	6s. 0d.
Marguerites, pr doz. bun.		3s. 0d. ,,	5s. 0d.
Mignonette, per doz. bun.		2s. 0d. ,,	4s. 0d.
Narciss, Paper White, per doz. buns.		1s. 6d. ,,	3s. 0d.
Pelargoniums, per doz. trusses		0s. 9d. ,,	1s. 3d.
Primulas	per doz. sprays	1s. 0d. ,,	1s. 6d.
Roses, Tea, per doz. blms.		0s. 6d. ,,	1s. 6d.
Spiræas, per doz. sprays		0s. 9d. ,,	1s. 0d.
Tuberoses, per doz. blms.		1s. 0d. ,,	1s. 6d.
Tulips	per doz. blooms	0s. 9d. ,,	1s. 0d.
Violets, per doz. bun.		1s. 0d. ,,	1s. 6d.
Violets, Parme, per bun.		2s. 0d. ,,	3s. 0d.
Violets, French, per bun.		1s. 0d. ,,	2s. 0d.

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Regents	per ton	40s. to	75s.
Magnum Bonum	per ton	40s. ,,	80s.
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Imperator	per ton	45s. ,,	65s.
Scotch Champions	per ton	40s. ,,	50s.

Obituary.

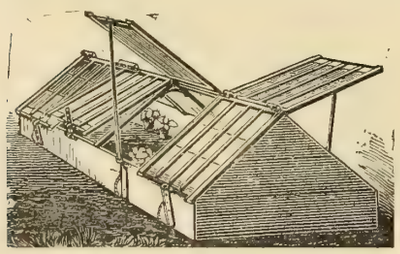
ON the 24th ult., from an attack of influenza, Mr. MAURICE YOUNG, of the Milford Nurseries, Godalming, in his fifty-sixth year.

RECENTLY, Mr. WILLIAM HUMPHREYS, during the past twenty-six years head gardener at Wimpole Hall, Cambridgeshire, in his sixty-eighth year.

"ANY DOCTOR WILL TELL YOU" there is no better Cough Medicine than KEATING'S LOZENGES. One gives relief; if you suffer from cough try them but once; they *will* cure, and they *will not* injure your health; they contain only the purest and simplest drugs, skilfully combined. Sold everywhere in 13½d. tins.—[ADVT.]

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This is a very strong and handy Frame, 14 inches high at the sides and 27 inches at the ridge. The lights turn quite over, are fitted with set-opes and stays, and are glazed with 21-oz. English sheet glass and painted three times.

	Length.	Width.			
1 Light Frame,	4 feet by	6 feet		£2	15 0
2 ,, ,,	8 feet by	6 feet	CashPrices,	4	7 6
3 ,, ,,	12 feet by	6 feet	CARRIAGE	5	17 6
4 ,, ,,	16 feet by	6 feet	PAID.	7	7 6
5 ,, ,,	20 feet by	6 feet		8	17 6
6 ,, ,,	24 feet by	6 feet		10	7 6

CARRIAGE paid to any goods station in England and Wales, to Dublin, Cork, Glasgow, and Edinburgh, or stations equivalent.

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Peas	4 qrts.	Cucumber	1 pkt.
Beans, Broad	2 pints	Endive	1 ,,
Beans, French Dwarf	½ pint	Leek	1 ,,
Beans, French Runner	1 ,,	Lettuce	2 ,,
Beet	1 pkt.	Mustard	½ pint
Borecole, or Kale	1 ,,	Onion	2 ozs.
Brussels Sprouts	1 ,,	Parsley	1 pkt.
Broccoli	2 ,,	Parsnip	2 ozs.
Cabbage	2 ,,	Radish	3 pkts.
Carrot	2 ozs.	Spinach	2 ,,
Cauliflower	2 pkts.	Savoy	1 ,,
Celery	1 ,,	Tomato	1 ,,
Cress	1 ,,	Turnip	2 ozs.
		Vegetable Marrow	1 pkt.
		Herbs	3 ,,

Carefully packed, and sent Carriage Paid to any address in the Kingdom.

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Further information and full Descriptive Garden Seed Catalogue gratis and post free on application.

C. FIDLER, READING.

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VINERIES,
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HORTICULTURAL TIMBER.

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All Goods delivered carriage paid. Send for Price List to TUCKER, TOTTENHAM.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
16	S	**4th Sun. in Lent.**	6 13	8 45	6 4	4 19	—	8 59	9 48	5 41	6 24	42·6
17	M	*St. Patrick.*	6 11	8 27	6 6	5 3	1 26	10 39	11 24	7 13	8 4	42·7
18	Tu	A. DeMorgan died, 1871.	6 9	8 10	6 8	5 38	2 49	—	0 2	8 49	9 27	42·8
19	W	Admiral Sir E. Belcher died, 1877.	6 7	7 52	6 10	6 7	4 15	0 37	1 3	10 2	10 28	43·0
20	Th	New Moon.	6 5	7 34	6 11	6 30	5 38	1 28	1 52	10 53	11 17	43·2
21	F	*St. Benedict.*	6 3	7 16	6 12	6 49	6 56	2 18	2 34	11 38	11 59	43·4
22	S	William I. of Prussia born, 1797.	6 1	6 58	6 14	7 7	8 18	2 54	3 13	—	0 19	43·5

Orchids in Flower.		Day of Yr.
		1890
Chysis aurea	Venezuela.	75
Cycnoches pentadactylon	Brazil.	76
Phalænopsis amabilis	Manilla.	77
,, grandiflora	Java.	78
,, rosea	Manilla.	79
Cymbidium eburneum	India.	80
Cypripedium Hendersoni	India.	81

ROYAL BOTANIC SOCIETY. GARDENS, REGENT'S PARK.
FIRST EXHIBITION of SPRING FLOWERS, WEDNESDAY, MARCH 26th, Gates open at 2 o'oclock. Band from 2.30 to 5.30.
Tickets to be obtained at the Gardens only, by vouchers from Fellows of the Society, price 2s. 6d. each.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.
The SPRING FLOWER SHOW will be held within the CITY HALL, GLASGOW, on WEDNESDAY, 26th MARCH, 1890.
Prize schedules and tickets of admission to be had from the Treasurer, Mr. Chas. Macdonald Williamson, 194, West George Street, Glasgow; any of the Directors; or at my office here. Member's ticket, 5s. each.
167, Canning Street, Glasgow. FRANC GIBB DOUGALL, Secretary.

Auction Sales for the Ensuing Week.

MONDAY, MAR. 17.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, and Greenhouse Plants.
TUESDAY, MAR. 18.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38 and 39, Gracechurch Street; Roses, Palms, &c.
WEDNESDAY, MAR. 19.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Greenhouse Plants, &c.
WEDNESDAY, MAR. 19.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, Plants from Ghent, &c.
THURSDAY, MAR. 20.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids, Japanese Lilies, &c.
THURSDAY, MAR. 20.—Messrs. Protheroe and Morris, at their Central Sale Rooms 67 and 68, Cheapside; Nursery Stock from Sample.
FRIDAY, MAR. 21.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.
ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

TERMS OF SUBSCRIPTION.—Post free from the Office, 4, Ave Maria Lane, London, E.C. to any part of the United Kingdom, One Copy, 2½d.; 3 Months, 3s.; 6 Months, 6s. One Year, 11s. 6d. (including the Christmas Number). To America, Australia, Belgium, Canada, Denmark, France, Germany, Holland, India, Italy, Spain, Sweden, and Switzerland, 14s. per annum.

SPECIAL SPRING NUMBER.
SATURDAY, the 22nd of MARCH,
Is the day arranged for the publication and distribution of the Annual Spring Number of "The Gardeners' Magazine"—the distribution, as in former years, to be throughout the United Kingdom and Abroad.
The Spring Number will contain a selection of most interesting and seasonable articles, including: The Best Apple in the World—Summer Cultivation of the Potato—Herbaceous Borders and Alpine Houses—Ripening Tomatos in the Open Ground—Cyclamens for the Rockery and Alpine House—A Beautiful Water Scene—Some Curious Kinds of Tomatos—Notes of Observation in Garden, Greenhouse, and Stove—A Few New Ideas for the Culinary Department, &c., &c.
A TINTED PHOTO PLATE
of
THE HISTORIC GARDENS OF WOTTON,
The Residence of John Evelyn, Author of the Celebrated "Diary."
As stated above, copies will be sent to large gardens throughout the country; successful exhibitors at the various shows in 1889 will be entitled to a free copy; a distribution amongst wealthy Amateurs will be made; and the Horticultural Trade will also be posted.
Thus, there is no class with whom advertisers—whether wholesale or retail—will not be directly brought into communication, and as a considerable demand upon the limited number of advertising pages is expected, an early application for space should be made.
All Advertisements intended for this Number should reach the Office by Wednesday, March 19th, at latest, to ensure insertion.
Advertisement Offices—148 *and* 149, *Aldersgate Street, London, E.C.*

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The Gardeners' Magazine.
SATURDAY, MARCH 15, 1890.

SEED SOWING IS THE BUSINESS OF THE SEASON, and in proportion as it is carried out with needful skill and care, will be the result in the crops hereafter, *ceteris paribus*. There is a struggle in many minds as the year opens and the weather forbids seed sowing, and the conviction grows that our seasons are too short for the satisfaction of our wants, and there appears no royal road to their expansion. Well, there is no royal road; whatever is to be done must be done by what is called "plodding," and must not cease either by day or night. According to the dictionary, to plod is to walk laboriously and painfully, and it also means to push one's way with difficulty through mud and mire. Where early seed-sowing can be carried out in comfortable pits and houses, the cultivator may be said to walk with ease in silken slippers, for, in addition to the advantage of the lengthening of the growing season that is thus secured, all the operative details are compatible with ease and comfort, especially where there are underlings to do the rough work incidental to all good cultivation. But "stealing a march" by early sowings out of doors is a case of plodding; we must have reed mats and thatched hurdles to screen the wind from the seed rows; we must cover with loose, dry litter when biting winds and frosts prevail; we must move about in rain, snow, wind, sometimes in the mud, and even sometimes in the water; for the sudden and extreme changes that characterize the season we playfully speak of as "smiling spring" will provide a wonderful variety of emergencies for those who are determined to succeed, and who know that an hour of neglect at a critical moment may make a wreck of all the work that has been done, and in some part of what remains to do. But for all this, in many of our best gardens, early seed sowing has been long since reduced or exalted (the reader may choose for himself which) to the precision of a science, for although there can be no precision as to results, the means are well known, and innumerable methods have been formulated for the appropriation and storage of sun heat, and the tiding over visitations of frost in aid of seeds and seedlings prematurely committed to the more favourable positions in the open ground. For this kind of thing—the lengthening of the season without the aid of glass—business begins in November with the sowing of beans and peas, and is taken up in earnest in January and February, and results are obtained that in a general way, justify the trouble and ensure for the operator an enviable triumph. In gardens where this kind of practice prevails, we see peas in flower at the time when in other gardens the plants are but just appearing in the seed rows; and we see potatos lifted for table use at a time when the general crop has but just begun to grow freely, so that by the time the first moulding up of the main crop takes place, there is ready a pretty sample of Early Ashleaf or Sharpe's Victor to make a tempting dish upon the dinner-table; and there should be with such management green peas in May in southern counties, and early in June in the midlands and the north. As for the rest, the books will tell the story, and Hibberd's "Kitchen Garden," perhaps, as well as any.

The tastes of our young men are apt to run in directions remote from what may be termed serious usefulness. Generally speaking, the vegetable garden is not in such favour with them as the orchid-house; while the fruit garden scarcely attracts them so forcibly as the plant-stove, the peach-house and the vinery. It would be unpardonable for the G. M., with its severe orthodoxy, to question the propriety of a careful study of orchids, miscellaneous stove and greenhouse plants, and the fruits that are grown under glass by all the young men who are ambitious to excel in gardening; but, at the risk of appearing undignified, we must say that young men who intend or merely hope, to become gardeners, should first master the growing of a dish of early peas before giving much attention to those higher departments that really need the preparation of practice so instructive in elementary principles as this of early seed sowing. It would be of incalculable service to horticulture were our venerable R.H.S. to institute competitions in early produce of esculent roots and vegetables, and classes for young men under (say) twenty-five years of age would tell directly on the education of gardeners. It is not for us to ask if green peas from the

home garden are any more desirable on May 20 than on June 20; it is enough that early produce has both a sentimental and a commercial value, and if market prices are of any consequence in a world that values facts, the gain of a week in the open ground supply of any summer vegetable is a matter of the greatest consequence. Will our Gardeners' Mutual Improvement Societies oblige us by taking notice of this matter? It is a matter of some importance, perhaps, whether Puffkins' cigarettes are as good as Fuses' small smokes; but it is of far more importance for a man to understand his business, and only those who can pull out the possibilities to a length beyond the average have any reason to hope for fortune beyond the average. It is dreadful to earn only commonplace wages, but the world has its own way of estimating commonplace work.

But all this counts for nothing to the thousands who do not speculate on extra early crops, having no special taste for plodding in times when outdoor life is attended with such inconveniences as fits of sneezing, coughing, shivering, and occasional catarrh. And we wish to say a wise word to the readers of this who are not in the school where racing is practised, and who therefore are content to wait for their early vegetables until such time as they may come easily and very conveniently, without any special effort. The wise word amounts to this—that the extra early supplies are costly, and therefore to gain them is not all gain; and this important fact must be recorded, that the difference between early and late is not, from a commonplace view of the case, fully justified by the labour requisite to the first of the two performances. By "late" we mean late only by comparison, for if the case is to be fairly judged we must have the earliest possible supplies from both methods of procedure. When these are before us the difference is certainly not great, and the reason is easily found, for the early plant is often killed entirely, and that makes discount number one. But when it lives through the trial—as it usually does in gardens where the business is understood—the plant is often so much impoverished by the assaults of frost and wind and other injurious influences, that in the end it is unequal to the completion of its work, and gives but a poor crop to reward the cultivator. On the other hand, March sowings have to encounter the fewest risks. From the time the plant appears above ground the worst of the winter is over; all the time before it is growing time; it suffers no serious check; every day adds to its strength, because it has not to recover from a succession of shocks, and the truth must be confessed that in many a place at this time November and January sowings have wholly disappeared, and whatever the summer will produce in the way of esculents grown in the open ground will be the produce of sowings and plantings made in the months of March and April. It needed not this article for the assertion of the case in this way, for it is part of the wisdom of the world that March is the time to sow seeds, for Nature then invites us. But having troubled our readers so far, we will add that the young men who will not give their minds to the production of early crops of esculents will never so well master the fine arts of the garden as those who first give their minds to this particular business, and make it a basis for higher aims. It is for the mountebank alone to attain at one leap to the top of the ladder, and even he has to learn the business by a process of patient plodding.

Bath Bulb Show will be held on Wednesday and Thursday next.

Stanley and African Exhibition will be opened on the 24th inst.

Hammersmith Horticultural Society's annual exhibition will be held July 17.

Scottish Primula and Auricula Society will hold its annual exhibition at Dundee on Thursday, May 8.

Scottish Pansy Society's Exhibition will be held at Edinburgh Friday, June 20.

Mr. Alderman W. H. Rogers has been elected chairman of committee of the Southampton Horticultural Society.

Headington Horticultural Society, Tenth annual exhibition, August 4.

Woodstock Flower Show will be held in Blenheim Park, Tuesday, September 9.

Richmond Spring Show on Tuesday and Wednesday next will be opened by H.R.H. the Duchess of Teck and H.H. the Duke of Teck at 3 p.m.

New Zealand International Exhibition progresses in a satisfactory manner. In the British section Messrs. Sutton and Sons, of Reading and London, are extensive exhibitors.

Cabinet Pictures at McLean's Gallery, of which the 26th exhibition will be opened on Monday next, include a number of important works that lovers of art will find worthy of attention.

Kew Bulletin for March contains reports on Indian Yellow or Purree; Bombay aloe fibre; Loxa bark; Barilla; and the plants yielding it. These several reports have such commercial importance as to distinguish the March number of this useful work as valuable beyond the average.

Mr. Alphonse Smets, honorary secretary of the Lye and Wollescote Floral Society, was, on the occasion of the annual meeting held a few days since, presented with a handsome marble timepiece in recognition of the services he had rendered the society.

Royal Institute of Painters in Water Colours. The annual exhibition will open on Monday next. At the private view we saw many good things, and can announce that the present collection will be reckoned one of the best.

Haarlem Quinquennial Bulb Show will be opened on the 21st and continue to the 25th. The subjects will comprise Tulips, Hyacinths, Narcissi, Amaryllis, and miscellaneous bulbous and tuberous-rooted plants. The nurserymen of Haarlem will expect many visitors on this occasion.

Reading Gardeners' Mutual Improvement Association.—The papers to be read at the meetings during March and April are: March 17, "The Wonderful in Horticulture," by Mr. R. Dean; March 31, "Rose Culture," by Mr. George Cannon; April 14, "Rhododendrons," by Mr. W. Lees; April 28, "The Gloxinia, 1739 to 1890," by Mr. J. Martin.

British Fruit Growers' Association.—At the monthly meeting of the general committee, at the Horticultural Club, Victoria Street, on the 6th inst., local secretaries were appointed in thirty counties with a view to the preparation of a report on the present condition and possibilities of fruit culture in the United Kingdom. The arrangements for the conference on strawberries and bush fruits at the Royal Aquarium, on June 27, were advanced a stage, and several additions made to the list of members.

Kingston and Surbiton Chrysanthemum Society. The many valuable services rendered this society by Mr. John Drewett have been recognized in an agreeable manner by a presentation to him of a gold watch, a "Tantalus" stand for the sideboard, and an inscription on vellum of the presentation and the subscribers' names. The chief mover in the business was Mr. George Woodgate, and the presentation was made at a pleasant meeting with the aid of a well-spread board by G. C. Sherrard, Esq., J.P., the president of the society.

Tuesday last was a good day at meeting of R.H.S., and there was a great meeting of the men who keep the horticultural world revolving, the committees being in more than usual activity. The show was excellent for the season: daffodils plentiful; a sufficiency of fruits to form a feature, miscellaneous subjects numerous and comprising a few things of special interest. Some substantial contributions to Hall of Horticulture Fund were announced; and thus far the thing progresses in a hopeful way.

Royal Gardens, Kew, are offering many attractions to the public now, and visitors have been somewhat numerous in the past week. The wild garden on the mound, near the Cumberland Gate, is freely sprinkled with lively flowers, deciduous trees of many kinds are pushing into leaf, and the rockery and alpine house are rich in good things. Londoners who love gardens will now find much to entertain them in this horticultural paradise while much has been done and is being done to furnish entertainment to the general public as well as scientific knowledge for the studious.

Spring Advances with rapidity notwithstanding recent checks by severe frost and cold rains. On railway banks and rubbish heaps in all the home counties the coltsfoot is now in flower making golden gardens in places that are usually dreary and barren. In the gardens crocuses are now brilliant, and in warm sheltered places almond trees are in flower. Daffodils may be said to be coming on with a rush. Those that were in flower when the recent frost occurred appear to be none the worse for the check, and the wall-flowers that appeared to be near obliteration have recovered in some degree. In the past few days the temperature has been high for the season and grass land is fast acquiring a new and promising colour.

Floral Decorations will receive special attention at the International horticultural exhibition to be held at Berlin from April 25 to May 5. The exhibition will comprise several new and distinct features, and exhibitors will be afforded special facilities for showing the public how plants and cut flowers can be used in the ornamentation of the dwelling house on festive and other occasions. For this department of the exhibition, two large banquet halls, each one sixty-two and a-half feet wide by eighty feet long will be provided, and these, with the tables, are to be decorated in competition. Then there will be ten rooms, each twenty-three feet long and twenty-feet eight inches wide, to be considered as drawing, dining and sitting-rooms, to give an opportunity for showing how different rooms can best be decorated for special occasions. There will be two yards connected with houses, one furnished with porticoes and the other with balconies, both of which are subjects for competitive decoration. In addition to the foregoing, there will be a chapel for the accommodation of decorations for nuptial, baptismal, and other religious ceremonies.

Wildsmith Memorial Fund.—The following subscriptions have been received: The Hon. Emma L. Shaw Lefevre, £5; John Hargreaves, Esq., J.P., £5; W. J. Palmer, Esq., J.P., £5 5s.; Messrs. Sutton and Sons, £5 5s.; Mr. A. W. Sutton, £3 3s.; Messrs. J. Veitch and Sons, £5 5s.; Mr. H. J. Veitch, £1 1s.; F. B. Marson, Esq., J.P., £2 2s.; Miss Potts, £1; Miss Markby, 10s.; Mr. W. Binder, 5s.; Mr. H. J. Clayton, £1; Mr. W. Coleman, £1; Mr. W. Crump, £1; Mr. A. Dean, £1; Mr. W. C. Davis, 7s. 6d.; A Friend, No. 1, £1; A Friend, No. 2, £1; Mr. S. Kerry, £1; Mr. A. Maxim, £1; Mr. W. A. Searing, 5l.; Mr. T. Turton, £1; Messrs. W. Wood and Son, 5s.; G. F. Wilson, Esq., F.R.S., £1 1s.; Mr. P. M. Veitch, 10s. 6d. Hon. Secretary, Mr. T. Turton, Maiden Erleigh Gardens, Reading. Hon. Treasurers, Mr. A. W. Sutton, Reading, and Mr. H. J. Veitch, Chelsea.

PRUNING ROSES.

The present season has given us one of the best lessons we could possibly have had on the importance of not being in too great a hurry in pruning roses, and those who believe in unsheathing the pruning knife early in the year will probably not readily forget it. The mild months of January and February so stimulated the growth, that at the end of the second of the two months mentioned, the young shoots near the top of the branches were of considerable length, and the trees, having the shelter of a wall, were liberally furnished with the tender green leafage. The comparatively high temperature experienced during the first two months of the year was followed early in March by frosts of exceptional severity, the thermometer falling on the 3rd and 4th of the month to within a few degrees of zero at several places in the neighbourhood of London. As the result of this great change in atmospheric conditions much of the leafage is blackened, and the tips of the greater proportion of the young shoots cut off. Where the trees had been untouched by the pruning knife this year this destruction of the young growth will not be in any way injurious to the trees. The buds towards the lower part of the shoots are still dormant, and will in due course start vigorously and produce an abundance of young wood. On the other hand, when the pruning was done sufficiently early for the lower buds to start, much harm will have been done by the frosts at the beginning of the current month. It is a good rule, as proved by the events of this year, to commence the pruning of roses about the middle of March, and to proceed with it at intervals until completed, the finishing touches being given to the teas and noisettes in the first week of April.

The pruning of roses is a comparatively simple matter, but to ensure satisfactory results the manner of performing the operation must be carefully adapted to the requirements of the several sections and the peculiarities of varieties. The standards and dwarfs form the two most important groups in the rose garden, and the greatest possible care should be brought to bear upon the thinning out of the weakly shoots, and the shortening of those remaining. The bourbons, hybrid perpetuals, Chinas, moss, and other of the hardy kinds, should have first attention, and not until they have been pruned should the teas and noisettes be touched with the knife. Before commencing operations it will be necessary to determine whether extra large flowers are required for exhibition or otherwise, or simply an abundance of blooms of medium size is wanted. If large, fully-developed blooms are desired it will be necessary to promote the production of stout shoots by restricting their number by severe pruning. In this case the condition of the trees and the strength of the individual shoots must also be taken into consideration, and it may be stated, as a rule, that the pruning should be in inverse proportion to the strength of the trees and the shoots. It will not be necessary to tell the experienced rosarian that by cutting a shoot back to within about two buds of the base a much stronger growth is obtained than when six or seven buds are left on the portion of the shoot remaining. But excessively strong shoots are not required, and the cultivator has to aim at the production of shoots sufficiently strong to bear full-sized flowers without unduly reducing the size of the tree or the number of flowers. Where the wood is of a moderate degree of strength the shoots should be cut back to the second or third bud, and where they are strong they may be pruned to the fourth, fifth, or sixth bud. Those on the other hand required simply for the decoration of the garden, or for the production of large supplies of flowers of medium-size, should not be pruned so severely. The shoots should, in fact, be left when pruned fully double the length advised above. In the case of garden roses it is better to prune too little than to use the knife too freely. The trees will not fail to bloom satisfactorily when not pruned at all, but better results are obtained when a judicious system of pruning is carried out. There are a few details that are equally applicable to both garden and exhibition roses. One of these is to cut away all the weak spray from the centre of the trees, whether bush or standard, these shoots being cut off close to the base to prevent the production of a second crop of spindling shoots, which interfere with the development of those sufficiently strong to produce flowers by depriving them of some portion of light and air during the earlier stages. Another detail is to cut the shoot back to a bud pointing outwards and immediately above it.

The pruning of pillar and climbing roses differs somewhat from the practice recommended in speaking of the bushes and standards. It is in all cases advisable on their being first planted, to prune them rather hard back, to promote the production of a strong growth at the base. At subsequent prunings it is necessary to shorten the leading shoots moderately, to cause them to produce laterals, and thus well furnish the whole of the space. After the trellis or wall has been filled, the practice must be modified according to the requirements of the varieties forming the several sections The Ayrshires, the strong growing bourbons, and some others require very little pruning, whilst others, such as the strong growing teas and their hybrids, will require the laterals to be pruned to within two or three buds of the base. It is essential in the case of all the climbing and pillar roses to maintain a constant succession of new wood, therefore, after they have been planted several years, and are beginning to present a worn out appearance, one or more strong shoots should be taken up each season, and the older rods be cut away to make room for them. Four years since, I was consulted by a friend as to what could be done to restore to vigour of some specimens of Gloire de Dijon that are trained over one side of his residence. They covered a wall space of almost twenty-five feet in height, and had for many years grown freely and produced a profusion of flowers of excellent quality. At the time of my being consulted, the trees, of which there are four, presented a worn out appearance, and it was feared that they would have to be removed to make way for young plants. A cursory examination revealed the fact that for some years the strong shoots springing from the base had been carefully repressed and that the whole of the leading branches were of considerable age. I advised the renewal of the trees in this manner and as the result the trees consist of comparatively young wood, and are in as vigorous a condition as at any time during the twenty years they have occupied their present position, This course of procedure can be taken with the most satisfactory results in the case of Reine Marie Henriette, Cheshunt Hybrid, and others of the robust growing hybrid teas which are so valuable for high walls and tall pillars.

Pegged-down roses, now so popular in many gardens, must be pruned somewhat differently from either of the other groups referred to. They require a constant succession of new wood, and the pruning consists in cutting away the branches that produced the flowers during the season previous, and shortening the shoots of the previous season. In pruning these shoots twelve inches or so should be cut from the top, and when this has been done bring them down in a more or less horizontal direction, and fasten down with stout pegs. If the latter are not readily obtainable drive short stakes into the ground and fasten the shoots down to them with string or bast. Considerable care is necessary in bringing them down because of their liability to snap near the base.

After the pruning has been completed a liberal top dressing of stable manure or some suitable artificial fertilizer should be applied. More especially is the liberal use of fertilizers necessary in the case of those trained to pillars, walls, and trellises. On light hot soils cow manure may be substituted for that from the stable with advantage. In all cases the manure should, for the sake of appearances, be lightly covered with soil.

Practical Rosarian.

BEAUTIFUL ANNUALS.

Annuals give such a great diversity of form and colour as to be extremely useful for associating with the hardy perennials and tender bedders, and it is satisfactory to know that they are now more highly appreciated than at any period since the introduction of the bedding system. During the past four or five years their cultivation has undergone a material extension; and in referring to this fact, it may be useful to state that they ought not to displace to any great extent the perennials, whether hardy or tender, suitable for the embellishment of the flower garden. The principal kinds are frequently described as well adapted for massing in beds, and gardens of annuals are sometimes recommended. Some of the kinds are very effective when arranged to produce large blocks of distinct colours; and a garden devoted wholly to annual flowers will present a beautiful appearance when at its best. Nevertheless, to devote the beds to distinct kinds is, with but few exceptions, not desirable, and to exclude all but the annuals from the flower garden would be a serious mistake. The object at which to aim in arranging the flower garden is not so much the production of a brilliant display of colour on any given date, as the maintenance of the flower garden in an attractive condition over the longest possible period. This object cannot be attained by the planting of annuals to the exclusion of other subjects because of their comparatively ephemeral character. The duration of the season of flowering depends in some degree upon the conditions under which they are placed; but even when these are most favourable, they invariably become exhausted before the end of the summer. I have seen several attempts to have gardens of annuals, and they have all proved more or less unsatisfactory. The most successful of the attempts that have come under my notice was that in the public gardens on the cliffs on the western side of the town of Scarborough. The gardens are laid out in the natural style, with winding walks and large, irregularly-shaped beds. The latter are chiefly sown with annuals that are usually at their best in August and the early part of September, and the gardens are thus rendered attractive at a comparatively small outlay, when the town is filled with visitors.

Not only should the annuals be employed in conjunction with other classes of ornamental plants, but care ought to be taken in making the selection. The last-named is a point of special importance, because of the large number of species in cultivation that are either so ephemeral or unattractive as to be of but little value for garden decoration. Those who have but little acquaintance with this class of flowers should adhere to the selection given herewith, as it contains none but those which are attractive in form and colour, and free and continuous in flowering. Having selected the best kinds obtainable, it will not suffice to merely scratch over the surface with a rake, sow the seed, and then leave them to take care of themselves. They must have good culture, and that consists chiefly in providing deeply stirred and moderately rich soil, and allowing plenty of space for the plants. When sown, as is frequently the case, as thickly as is advisable in the case of small salading, the plants rush into flower and remain but a very short time in bloom. On the other hand, when the plants have sufficient room to attain their full size they produce much finer flowers, and the season of blooming extends over a longer period. When grown in beds and borders by themselves from five to seven inches is a good distance at which to put them apart. In arranging them in mixed borders the best practice is to plant them in groups of distinct kinds, each group to consist of three or four plants in each. In some cases five or six plants may be put in each group, as, for example, when comparatively large spaces towards the back of the border have to be filled. Speaking generally, three is the best number, and it is a good rule to plant them to form a triangle, having seven-inch sides. Some time previous to planting the soil should be stirred to a depth of ten or twelve inches, and be enriched with old hotbed manure or an artificial fertilizer, as may be the most convenient. Where it is not

practicable to dig over the whole of the bed or border, mark out the stations, and then incorporate two or three shovelfuls of manure or an equivalent of the artificial with the staple. It is important to have the plants strong and well hardened when put out, and it should be remembered that hardy examples of medium size will bloom more satisfactorily than plants of large size that have been drawn up in heat.

The following comprise the annuals that should in all cases have first attention :—

Asters comprise one of the most valuable groups of annuals we have, and they should in all cases be grown in comparatively large numbers. There is no better way of raising a stock of asters than by sowing on a bed of rich soil in an unheated frame. By sowing thinly in drills six inches apart, and ventilating freely when the seedlings make their appearance, strong plants can be obtained without the trouble and labour of pricking out. If no frame is available sow thinly in shallow boxes, and place the seed in any pit or house in which space can be found, provided a very high temperature is not maintained. Then thin them to a distance of about two inches apart each way, and prick those removed into other boxes, and proceed to harden them off. The Dwarf Chrysanthemum flowered, Pæony flowered, and the Victoria are the three best types for the grower.

Calliopsis or Coreopsis are free and continuous in blooming, and the flowers are attractive in colour and useful for decorations in a cut state. They can be raised in boxes under glass and be then planted out, or the seed may be sown where the plants are to bloom. When raised under glass they can be pricked out on the border direct from the boxes or pans, as there is no occasion to prick them off. In sowing in the borders distribute the seeds rather thinly, about twelve at each station, and thin the plants to three or four when they are commencing to grow freely. The best are the varieties of Calliopsis bicolor, and C. coronata, C. Drummondi, and C. Burridgi.

Candytufts do not remain in bloom a sufficient length of time to justify their being grown largely. They are, however, so bright and attractive when at their best that a few clumps should be annually grown. The seed should be sown where the plants are to bloom, and care be taken to thin before the plants have been injured by overcrowding. Dunnett's, Giant Rocket, and New Carmine, which have crimson, white, and carmine flowers respectively, are all remarkably beautiful.

Cornflowers are welcome for their diverse character and usefulness in a cut state. Centaurea cyanus and its deep blue variety, Emperor William, are the best. The rose and purple varieties are not wanting in beauty, but they are not equal to the blue forms. The plants may be raised under glass, or the seed be sown where the plants are to remain, but the latter course is in some respects preferable.

Chrysanthemums flowering in summer comprise several of our best annuals. The most useful group is that formed by the varieties of C. tricolor, which attain an average height of twelve inches. The Corn Marigold, C. segetum, is also desirable. It has large yellow flowers which stand well close cut, and can be employed to advantage in a cut state, The seed of the tricolor varieties should be sown in boxes, and the seedlings be pricked out into the borders when of a suitable size. The corn marigold should, on the other hand, be sown where it is to bloom.

Gaillardias of annual duration include several excellent kinds, more particularly the varieties of G. Drummondi, which attain an average height of eighteen inches, and have crimson and yellow flowers. C. Lorenziana, a distinct form, with double flowers, can also be recommended. It is a good practice to sow the seed of these in boxes, and place where it will have the advantage of a brisk temperature. Then prick off into five-inch pots, putting three plants in each, and bed out without separating them.

Godetias are unsurpassed in richness of colour and will well repay the most careful culture. A rich soil and plenty of space are both essential to success. The stock should be raised under precisely the same conditions as the gaillardias, but care must be taken not to subject the seedlings to a high temperature for a considerable length of time. Duchess of Albany, Lady Albemarle, and Lady Satin Rose are the three finest varieties we have. The colours are white, crimson, and pink respectively.

Jacobæas do not enjoy a very high degree of popularity at the present time, yet they are decidedly attractive, and they continue in bloom throughout the summer. The seed should be sown some time in March, and have the assistance of a brisk temperature during the process of germination. When of a suitable size put them into three-inch pots, and as in the case of the other subjects bed them out without separating them or otherwise disturbing them at the roots. The colours are Red, Purple, and White, and there are two types, one of which attains a height of twelve inches and the other of six inches.

Larkspurs are rather too ephemeral to justify their being planted very largely. They are, however, distinct in character and effective when at their best, and should, therefore, be represented in the mixed border. The best results are obtained by sowing in the borders. The Stock-flowered and Candelabrum-shaped are two excellent types, both of which attain an average height of twelve inches.

Linums are so attractive that they deserve to be more generally grown than is at present the case. They should be raised under much the same conditions as jacobæas. Linum corymbiflorum luteum, and L. grandiflorum coccineum, which have yellow and scarlet flowers respectively, are the two best kinds.

Lupins are so distinct in character, and, moreover, so effective when in bloom, that they ought to be well represented in the mixed border. The seed should be sown where the plants are to bloom, four or five seeds at each station. L. Hartwegi, L. hybridus, L. luteus, and L. subcarnosus are the most worthy of general culture. The yellow L. luteus is dwarf and neat, and sweet-scented.

Marigolds are wondrously showy when grown under conditions favourable to their full development. The plants should be raised as advised for the jacobæas, and be put out in thoroughly rich soil. The African and French Dwarf are both remarkably good, and for ordinary decorations it will suffice to have each type in mixture. Aurea floribunda is a strain of great excellence, attaining a height of nine or ten inches, and producing medium-sized bright yellow flowers.

Nasturtiums are unsurpassed in effectiveness and bloom continuously throughout the season. The plants can be raised in boxes, and be then potted off two or three in each pot. The seed may be sown where the plants are to bloom, but they will, of course, be later in coming into flower. Sow outside about the middle of May. Scarlet King, Golden King, and Empress of India are exceptionally good.

Phloxes of annual duration are unsurpassed amongst annuals, but as their cultivation has been recently dealt with it is not necessary to refer to them further than to say that they should be included in all selections of annuals.

Salpiglossis are remarkably effective, and they are so distinct in character that it is rather surprising they are not more largely grown. The seed should be raised under glass, and the plants be potted off in precisely the same manner. The seed should be obtained in mixture. A rich soil is in all cases desirable. G. S.

The Household.

NOTES FOR THE SEASON.

Oatmeal Porridge and Influenza do not appear to have any necessary connection, but I have been interested in hearing from a lady friend who has abundant opportunities for observation on matters domestic, especially in relation to health, that the persons who habitually eat oatmeal porridge appear to be proof against the prevailing epidemic. This lady is responsible for the feeding of a number of young persons, and a few of those in her charge who "cannot touch" porridge have been afflicted, while all the porridge eaters have thus far escaped. A corresponding observation has been made in respect of the nutrition of adult persons; the porridge eaters amongst these appear to be the safest. And the explanation appears to be that those who do not eat porridge take instead coffee and tea, which are less nutritious and more exciting, and they also (probably) eat more animal food, and (probably) use condiments, which are often of a stimulating nature and of no advantage to health. So much as to this particular matter: the meaning is that simplicity of living is a defence against disease.

But another point of interest arises out of the difficulty people profess to find in making porridge. They say it requires so much cooking as to be troublesome. The usual way of operating is to throw the meal into the boiling water a little at a time with one hand while the other wields the spoon to stir it in. This is a good method if followed by boiling and occasional stirring for full half an hour, by which time the porridge will be fairly well cooked. But there is a *better* way. It consists in measuring out the meal and the cold water eight or twelve hours in advance, and leaving the meal to soak in the water for that time. Then it is cooked in the same water and twenty minutes' boiling, with a stir now and then, results in a well-cooked creamy porridge that is really a delicacy for the breakfast or supper table. The coarsest Scotch oatmeal should be used, and as for the rest people must be allowed a little freedom in eating it. But good porridge is best eaten with milk alone; sugar spoils it and promotes acidity in the stomach. A little salt is less objectionable than sugar, but is not needed: good milk is a proper accompaniment, and will suit all tastes and all ages.

Rhubarb is better stale than fresh, as we have several times stated in this department. But people forget good advices and remember bad ones; consequently it is now repeated for the advantage of all that rhubarb differs from most other vegetables and fruits in being better if kept a few days, or even a week, until quite wilted, when it is of far better quality for cooking than the fresh article. It needs no particular mode of keeping, but is best in a bright, draughty place, for light augments the colour, and the exhaustion of a dry wind takes the excess of water out of it, and improves its more desirable properties. Rhubarb that has become withered in a shop window is a superior article to crisp, fresh rhubarb just brought in.

Washing spinach is a troublesome process, and is sometimes managed by cramming a lot in a colander and letting water run through it or over it; the washing in this way being very incomplete, so that a residue of grit may be expected. At the restaurants spinach and turnip greens are often gritty, and alas, on the domestic table, grit is an occasional performer. All such vegetables should be first picked over carefully and thrown into a roomy tub or pan to be rinsed about in a good body of water, and, if needful, they should have two or three such washings *in good time*, so that they may be heaped in a wire basket to drain before being cooked. And it should be noted that the painful business of putting the hands into cold water is not necessary, for warm water washes vegetables more perfectly than cold. X. Y. Z.

EXHIBITIONS AND MEETINGS FOR THE ENSUING WEEK.

Tuesday, March 18.—Manchester Royal Botanical Society.—First Spring Show.
Tuesday, March 18, and Wednesday, March 19.—Richmond Horticultural Society.—Spring Show.
Wednesday, March 19, and Thursday, March 20.—Bath.—Spring Exhibition.
Wednesday, March 19, and Thursday, March 20.—Preston Horticultural Society.—Spring Exhibition.
Thursday, March 20.—Linnean Society.—General Meeting.
Saturday, March 22.—Royal Botanic Society.—General Meeting.

Calls at Nurseries.

ORCHIDS AT MESSRS. F. SANDER AND CO'S., ST. ALBANS.

The cultivation of orchids at this immense establishment has increased to a remarkable extent, and their cultural requirements are now so well understood that the failures have been reduced to a very low point indeed. To a practical cultivator it is a great pleasure to see house after house of orchids supposed to be difficult to import, and not easy to manage afterwards, growing freely by hundreds and thousands. The first house I entered was filled principally with that distinct and beautiful orchid, Phaius tuberculosus, every plant growing freely, many of them showing flower spikes. Most orchid growers remember the first importations of it, when it was distributed some ten years ago from Mr. Stevens' sale rooms, and many good growers tried to cultivate it, but few succeeded. I had six plants, and watched them day by day, and month by month, yet not one of them started to grow, although one specimen kept fresh and green looking for eighteen months. It is a Madagascar plant requiring a high temperature, and when the right conditions are obtained as they are here, the plants grow like willows by the water-brooks. With it are a number of handsome specimens of the old Phaius Wallichii with handsome spikes. This is a most stately orchid and a truly handsome plant for the decoration of our plant stoves. When Dr. Sims was editor of the *Botanical Magazine*, this plant was figured at Tab. 1924 as Bletia Tankervilliæ, and he says it was "introduced from China by our much-esteemed friend Dr. John Fothergill about the year 1778," and it must have been well grown, as the strong spike figured testifies. It is again figured in the same publication as Phaius bicolor, Tab. 4078, from Mr. D. Llewellyn's collection at Penllergare, this time imported from Ceylon. Once more it is figured in the *Botanical Magazine*, Tab. 7023, as P. Wallichii. The editor says, "It has a wide distribution in India, from the Nepal forests in the tropical region, eastwards in the lower Himalayas to Assam, the Khassia Mountains, and southward to Burma, and it occurs as P. bicolor in Ceylon." From twenty to thirty years ago this handsome plant was a great favourite with exhibitors at the metropolitan exhibitions in May. It is now scarce, but is likely to come to the front again. Hybrids between this species and P. tuberculosus are now flowering in the collection of Norman C. Cookson, Esq. I counted as many as ten flowers on one spike of P. tuberculosus.

Dendrobiums are now flowering freely, and one must give the palm of victory to D. nobile, all points considered. There are certainly more beautiful Dendrobes as regards the beauty of the flowers, D. Wardianum for instance, but who can grow and propagate this beautiful species with the same freedom as D. nobile? A distinct and pretty form is D. nobile Sanderianum. D. lituiflorum in great beauty might be mistaken for a richly-coloured form of nobile; it has slender pseudo-bulbs and is a charming plant. Several good forms of D. Brymerianium were in flower; the rich yellow flowers and fringed lip are very striking. A group of Calanthe Regnieri had a very fine effect. This is a very valuable species, coming into flower as it does after the vestita group is over. It produces vigorous compact spikes of flowers, the sepals and petals white, the lip stained with crimson at its base, or toning down to different shades of pink. The species is from Cochin China. Cœlogynes form an interesting and valuable group of orchids for flowering in the late winter or early spring months. Collectors have not paid so much attention to this genus as to some others, but there are many fine things in the genus, only waiting to become more generally known to become popular. There is here a good stock of that remarkably distinct and beautiful species, C. Massangeana. Its long drooping spikes, sometimes two feet in length, set with its ochreous yellow flowers: the lip marone and yellow form a striking combination of colours. It is a most vigorous plant, and easily cultivated. The beautiful C. cristata hololeuca, its flowers of the largest size and spotlessly pure white are most attractive. The pretty little C. sparsa is a sweet thing for basket culture, it produces short spikes of creamy-coloured flowers with an orange throat; they are closely placed on the spikes.

The Cattleyas form a gorgeous feature in this collection. The varieties of C. Trianæ are lovely even yet in the early days of March, although the finest well-marked varieties are eagerly purchased by customers, as soon as the flowers are sufficiently developed to show their distinctive character. Many yet remain to impress the visitor deeply with their immense value as decorative subjects. Some have flowers of immense size, others smaller and of exquisite form, the colours of the sepals and petals are pure white in some instances, and in others exquisite shades of rosy purple; some have the lip white as the petals, with merely a stain of orange at the base; these are very rare, and valued accordingly; others have the lip or labellum almost wholly of an intense purple crimson colour. Here is also in flower a very remarkable Cattleya distinct in form and colour, C. Schofieldiana; the flowers are six inches across, the ground colour of the sepals and petals tawny yellow, densely crimson spotted, the lip violet purplish colour with a paler margin. The beautiful C. amethystoglossa is also a most useful species flowering thus early. C. Loddigesi, var. Harrisoniæ, is quite a distinct variety of this the first Cattleya introduced to European gardens; it flowers in March, whereas the normal form flowers in August and September. The flowers were opening of a blush white colour. Here also are hundreds of flowering plants of Cymbidium Lowianum, the earliest spikes have the flowers open, and others advancing in rapid succession: some of the varieties are remarkable for their rich crimson marone blotch on the lip. The striking C. Dayanum is now fairly plentiful, its long many-flowered pendant spikes of a yellowish ground colour richly lined and marked with deep dark red. C. eburneum is growing with the greatest vigour, and, indeed, all of them are, now that cultivators recognise the fact that good fibrous loam is a better staple for some orchids than fibrous peat, and that leaf-mould and well-decayed stable manure may be used in some cases as a substitute for sphagnum moss. Careful experiments are here made on a large scale, as to the relative merits of different soils for orchids. Indeed, I well remember being startled by seeing here some years ago thousands of Odontoglossums, principally C. crispum and Pescatorei, planted out in beds of peat soil, mostly siftings from the potting bench, but here they are still showing by the rapid increase in size of the pseudo-bulbs year by year how well they have taken to the novel conditions in which they were placed.

Another new departure has been made in the same direction. This is the planting out of a bed 200 or 300 feet in length of Cypripediums in a compost of which the principal constituent part is good fibrous yellow loam. The species treated in this way are C. callosum, C. Spicerianum, and C. Leeanum. They are moving with rapid strides at St. Albans certainly when a quite recently raised bybrid Cypripedium is already plentiful enough to be planted out in beds of loam. I may add that although I did not see C. caudatum planted out in loam, it is found to succeed admirably in that material grown in pots. A good comparison can here be made between the two new Cypripediums introduced by the firm, viz., C. Rothschildianum and C. Elliotianum; they are nearly allied to each other, but sufficiently distinct to warrant that accomplished botanist Dr. Reichenbach in giving to each specific rank. The first-named has the dorsal sepal marked with dark marone lines, while the latter has brownish lines. They are both free flowering, and when the plants are better established will probably produce much larger flowers. A quite new and pretty little Cypripede is in flower, C. Schomburgkianum, it can best be described as a miniature form of C. Dominianum, at least that is the nearest to it of any of the Selenipedium group.

Quite a number of the lovely Lycaste Skinneri alba is in flower; it can only be obtained in very limited quantities, and hence must bear a price proportioned to its beauty and rarity; but as a rule not one in a thousand has any specially novel features in colour. It is, therefore, a greater pleasure to note one now in flower with the sepals pure white, the petals suffused with a pleasing apricot colour, and the labellum of the same colour but a little deeper.

Amongst an importation of Sobralias, one with rich purple flowers has been named S. macrantha nana purpurea. Epidendrum Wallisii, a distinct and beautiful species, is now in flower. The sepals and petals deep yellow, distinctly crimson spotted, the lip primrose and spotted. An interesting plant in flower was Schomburgkia marginata, and worthy of notice because it exemplifies the mistakes that may occur by relying on the colour of flowers, as an evidence of specific distinction. The variety in flower had yellow sepals and petals, the lip whitish, whereas the plant described and figured as S. marginata in the *Botanical Magazine*, Tab. 3729, had brick red flowers with a whitish lip stained yellow at the base. Although only a few plants of the Miltonia vexillaria are yet in flower, it would not be proper to omit mention of the splendid condition of the plants. Amongst the thousands of plants of this species alone there are none not in perfect health, and when they are in flower a month or two hence it will be worth while going a long distance to see them.

Nothing has as yet been said about the cool house orchids, although Odontoglossums alone may be counted by hundreds of thousands. A number of good plants of Odontoglossum Pescatorei were in flower, and in good variety. O. Pescatorei in pans or baskets suspended from the roof, with the spikes dangling in mid-air without any support were much more effective than we usually see them as pot plants on a hothouse stage. O. gloriosum is a charmingly sweet species, the flowers having a strong hawthorn scent. Rosy-tinted forms of O. membranaceum are distinctly pretty. O. mirandum yellow ground. Masdevallias are in capital condition, but the main collections of such beautiful things as M. Harryana, M. Veitchiana, &c., are not yet in flower. Some fine varieties of M. ignea are noteworthy, and most brilliant in their rich orange scarlet colour. M. racemosa (Lindley) was also in flower, and is one of the most distinct species in the genus, it has rich orange red or crimson flowers on long racemes, and is not at all a common plant. It was first gathered by Hartweg, and named by Dr. Lindley from his herbarium specimens, but Messrs. Sander claim to be the first who introduced living specimens to England.

All the immense ranges of houses seem to be quite full of plants, but they must find ready purchasers, as collecting still continues. Cases of plants come in constantly from abroad, summer and winter it makes no difference. They are cleaned and potted or sold as they arrive, for, of course, some customers like to purchase their plants at once and run the risk of establishing them in their own houses. Orchid importing is not all pleasure or all profit; account must be taken of heavy freight charges for wagon loads of packages, which, when opened, display nothing but masses of decay, dead or dying plants, besides the expense of collecting for six months or more. Amongst the blanks there are many prizes, and it would be safe to assert that Messrs. Sander, of St. Albans, by their indomitable perseverance, have succeeded in extending the culture of orchids to an extent that the greatest enthusiast could not have dreamed of twenty years ago. They have effected an orchid revolution.

EMIGRATION OF BEES.

The following somewhat singular narrative, although it may not be altogether uncommon, is, I think, sufficiently so, to be by no means without interest to a few of your numerous readers; at least, so I have been told by several persons who ought to know, for I am no bee keeper, neither do I profess to understand these most interesting insects.

Some years ago, early in the spring, an unusually large swarm of bees settled on a branch of an alder tree, some twelve feet or more from the ground growing in my garden. Having previously stationed the stable boy beneath the branch with one of the old-fashioned skeps, elevated on a pitchfork to receive the swarm, I ascended the tree with great confidence, doubtless imparted by former success. It may here be mentioned that I promised the boy sixpence for every sting he should receive, provided he remained perfectly still; for my belief, which, by the way, I have since had reason to change, was, that bees are in no way hostile unless alarmed by unnecessary movements and bustle on the part of the operator amongst them. Well, I succeeded in removing the swarm, which, though very large, mostly fell into the straw hive. Some of the bees, however, fell to the ground, and slowly crawled up the boy who stood perfectly still, whether from fright or the promise of sixpences, or both, I cannot say, but he received no sting whatever.

The hive was then successfully lodged, and the inmates soon commenced operations; but after a few days they vacated the present abode and betook themselves one and all to an elm tree some four hundred yards away. This, being hollow, seemed to suit all their requirements, and they positively filled the upper part of the trunk with comb, and stored a great deal of honey. It is noteworthy that they built upwards and not down the hole, thus avoiding all the wet, though either course was open to them. Some time towards the end of the season we suffocated the bees and extracted the comb, which came away in pieces as large, and longer than one's arm, and with which we were able to fill two large pails, even having some over. B.

[Such occurrences are not unusual, but are nevertheless interesting. A curious instance of the kind was related by Mr. Hibberd in the *Journal of Horticulture* (then *Cottage Gardener*) in the year 1858. It may be found on reference under the heading "Apis, a Tragedy."

"A SIMPLE FACT ABOUT" KEATING'S COUGH LOZENGES. Ask throughout the world, in any country that can be named, you will find them largely sold. There is absolutely no remedy that is so speedy in giving relief, so certain to cure, and yet the most delicate can take them. One Lozenge gives ease. Sold in 13½d. tins.—[Advt.]

TWO GOOD TOMATOS.

Our crop of tomatos grown under glass in the past five years has been much remarked upon by our neighbours as remarkable for abundance and quality. I confess I am well satisfied with them, and I also confess with pleasure that in my management I took a leaf or two out of the Chiswick book, and now record the fact, with thanks to "A. F. B.," who has a way of succeeding to perfection with everything he touches. Tomatos are grown here in all possible ways, the demand being so constant and heavy. My best crop is obtained from a back wall of a long narrow peach house, in a high, dry sunny situation, the trees being on horizontal sloping trellises, so that the back wall is not shaded by them, and as summer advances an abundant ventilation is kept up. This plan I commend to all, a dry bed, a sunny wall, plenty of air, and very moderate watering in all the early stages being conditions favourable to a heavy and a handsome crop. I thin flowers and fruit to keep the bunches down to reasonable numbers, and I prune in order to prevent lateral growth, but always leave my plants as much leaf as possible, to sustain them in vigour, and keep up the bearing to the very end of the season. There are at least a dozen good varieties, and *Perfection* is certainly one of the best. But my heaviest crops from the wall in the lean to have been from *Trophy*, a grand smooth fruit, and the *Old Red*, which is deeply corrugated and out of exhibition form. But I prize it for its exceeding fruitfulness, and the cooks appreciate it for their own purposes, and so we are all satisfied.

R. P.



EXHIBITION TOMATO, *Trophy*.

VIOLETS, OLD AND NEW.

No doubt there are some people who would derive a certain amount of pleasure in growing many different sorts of violets, but it is very doubtful if it would interest a great number of cultivators. Such, however, is the opinion I have formed after having carefully tended more than a dozen sorts of double varieties for twelve months. The first point that struck me as they came into flower was the fact that many of them are too much alike. No one but a very large grower would require such sorts as Venus, New York, and the Duchess of Edinburgh, all of which have about the same shade of colour in the flowers. The last-named may be a little lighter than the others, and the habit of growth is also different. The plants are not so compact, while runners are very freely produced, but the blossoms are so much alike that I doubt if either of them would be retained after the first year's trial if Marie Louise is grown with them at the same time. I do not mean to say the three first-named sorts are not distinct either in the habit of growth or in the shade of colour, but they are not sufficiently so for the ordinary cultivator to trouble much whether he has got them or not. With regard to the sorts bearing light blue flowers, many people are still of opinion that the old Neapolitan is the best, but I do not think so. The sort known as De Parme is more compact in growth and flowers with greater freedom. Taken altogether, it is, in my opinion, the best of the light blue varieties, the colour being quite two shades lighter than that of Marie Louise.

But, however useful varieties with different shades of colour in the flowers may be, there is no doubt that as an all-round sort Marie Louise is far and away the best. Well-grown plants produce the largest blooms of any of the sorts, as well as furnishing them over a longer time. With regard to this last character, the difficulty is to name a month in the year when flowers may not be had from plants that are fairly well looked after. In the matter of continuous blooming De Parme is a long way behind Marie Louise. As a continuous bloomer the Neapolitan stands next to the last-mentioned sort.

We are still wanting a good double white violet equal in size and fragrance to Swanley white, that will flower in the autumn as well as in the spring. This the sorts we now possess will not do. The Swanley violet is a very satisfactory sort in the spring, but it produces but few blooms in the autumn or winter. Belle de Chantenay behaves in the same way, however well it may be treated. A good autumn blooming white sort is much wanted.

It must be understood that the treatment has a good deal to do with the behaviour of some of the sorts—Marie Louise for instance. Old plants of this sort never flower so well in the autumn as young ones. For this reason those who require this kind to bloom through the autumn and winter should depend on young stock only. The best way of securing young plants is to get a piece of turf about two inches square and peg a runner upon it. Each runner would require a separate piece of turf of course, but no one will regret the time it takes after one season's trial of this plan. The runners quickly form roots in the turf, and when removed from the old plant and put out in good soil they grow away quickly and make large plants by the autumn. Another plan is to peg the runners down upon the bed of soil in which the plants are growing, removing them as soon as they have made sufficient roots.

Some growers increase their stock by making the runners into cuttings, and inserting them in pots filled with sandy soil in the usual way. If the pots are placed in a close frame where there is moderate heat they will form roots in four or five weeks. Plants obtained in this way, although generally smaller at the end of the summer than those obtained from layers, are superior to old plants for autumn flowering.

Taken altogether, there are few more disappointing things than violets. They sometimes fail when least expected. Many striking failures have come under my notice during the winter now passing away, and these for the most part in gardens where last year they were in every sense satisfactory. If I were asked to explain the reason of this, I should, without any hesitation, say that the treatment of the plants during the summer previous was the cause. Red spider had evidently taken a strong hold of the leaves, which weakened the plants so much that they could not endure the damp and changeable weather of the winter. In more than one case that I know of, the plants have wholly disappeared. It is very clear to me that in gardens where the soil is naturally light and well drained it is best to grow the plants during the summer in a partially shady place. Under such treatment red spider is not so likely to do them harm, if the plants have plenty of water in dry weather, and the foliage is well damped with water of an evening. With such treatment they will invariably do well. But I ought to remark that it is no use to attempt to grow violets in a poor soil. It must be fairly rich, and the manure will do more good if it is six inches under the surface than when nearer the top. When the manure is placed at the depth I have stated, the roots will go down for it, which will take them out of the reach of an ordinary dry time.

I find it is a mistake to aim at getting large plants. They do not

flower so freely in the autumn as those of medium size, nor do they stand the winter so well. The larger they are the more they are affected by damp. This question of damp is a serious one in some cases, and although I have been a grower of violets in pits and frames for many years I must confess I am sometimes puzzled to account for the destruction which it causes amongst the foliage and plants. Some clever people tell us that when the plants are put in the frames for the winter they should nearly touch the glass. My stock of 200 plants have stood all the winter in a long span frame. Those in the centre are three feet from the glass, and none nearer than one foot, yet the plants are perfectly healthy, while in another garden only 200 yards distant the plants are all dead. These were planted in the orthodox fashion close to the glass. I do not say that it was the closeness to the glass that caused the mischief, because I am not a strong believer in its being so. As I have already stated, we are more likely to find the true cause in the condition of the plants when they are put in their winter quarters. If red spider has attacked them during the summer, mildew will invariably follow them in the autumn, and then the leaves will go, for there is no remedy that will effectually check the progress of such an enemy. Mildew I have noticed is the effect, and not the first cause. The only way to guard against it is to keep them free from their first enemy, the red spider, for as sure as this enemy obtains a lodgment on the plants it will weaken them so much that mildew later on will follow. As I have already indicated, plants of fair average size pass through the damp winter weather better than large ones. This ought to be a sufficient reason why an effort should be made to increase the stock either by layers or cuttings, as two or three prominent, well-ripened crowns in the autumn are better than a larger number that are weak and indifferently matured through being overcrowded.

J. C. Clarke.

SINGLE ZINNIAS.

Although not in any way prejudiced against double flowers, I am very partial to the single zinnias because of their light appearance and effective colouring, and for many years past have included them in my selection of annuals; last year I devoted one of the beds to them as well as planting some in the mixed border, and the bed was considered to be one of the best I had in the garden. To raise a stock of plants is a very simple matter, the seed is sown in a pan some time between the middle of March and the end of the first week in April, and placed in a cucumber frame; when the plants are about an inch high they are potted off singly and put in large sixties, and when nicely established are removed to an unheated frame and subsequently hardened off. They are planted out at the end of May or the beginning of June, and put six inches apart each way. If in a moderately vigorous state when put out they soon fill the bed and commence to produce their brightly coloured flowers. The time of sowing is of some importance, for when raised too early they become stunted and do not start away so freely as could be desired, and when the sowing is delayed much beyond the first week in April they are late in coming into bloom.

E. A.

A Green Flowered Chrysanthemum was figured in the December number of the *Journal* of the Japanese Horticultural Society. This interesting variety belongs to the Japanese section.

Notes of Observation.

CYCLAMENS AND PRIMULAS AT REDLEES.

In few private establishments are cyclamens and primulas so successfully cultivated as in the gardens of Redlees, Isleworth, the residence of Mrs. Farnell Watson, and the displays of these flowers at the present time are such that Mr. D. White, the head gardener, has good cause to be satisfied with them. More remarkable, however, than the development of the plants is the high quality of the strains, both cyclamens and primulas being distinguished by the large size, fine form, and effective colouring of the flowers. It is now many years since these two important classes of winter flowering plants began to receive special attention in the Redlees gardens, and the several splendid types represented much skill and attention. In carrying on the work of improving the primulas, attention has been paid to the habit of the plants as well as to the size and colour of the flowers, and as the result the growth is vigorous, the habit neat, and the flowers produced in large heads well above the foliage. These important points have been secured without any sacrifice of size or form, for the flowers of the scarlet, magenta, and white types are all stout in substance, circular in outline, finely fringed, and somewhat above the average in size. In addition to the strains that have originated at Redlees, the fine white form known as Alba magnifica is grown remarkably well, and the example represents the type at its best. Double crimson, a semi-double variety bearing huge trusses of finely formed bright red-crimson flowers, is also in strong force and evidently highly appreciated. The cyclamens comprise pure white, white with purple base, bright rose, brilliant crimson and rich marone crimson, and in each case the flowers are exceptionally large and of the finest form. The dark colours are particularly effective, and the white varieties mark an important advance upon the white cyclamens in general cultivation.

G.



CULINARY TOMATO, *Old Red*.

HARDY AZALEAS AND DEUTZIAS.

The spacious conservatory at Redlees, Isleworth, is now liberally embellished with azaleas, camellias, epacris, rhododendrons, and other plants that may be had in bloom at this season of the year, and very beautiful is the effect produced; the varieties of azalea mollis are especially well represented, as the soft shades of colour they afford are much appreciated. In discussing with Mr. White their great value for the decoration of the conservatory and the supply of cut flowers thus early in the year, he directed attention to the importance of having them well established when they are placed in the forcing pit. So decided is his opinion upon this point that he keeps them in pots throughout the year, instead of planting them out in beds for the summer and lifting them in the autumn as is frequently done. Plants grown wholly in pots not only bloom more profusely than do those lifted from the beds, but the flowers, whether cut or remaining upon the plants, retain their freshness and beauty for a much longer period. This will apply to the majority of the hardy shrubs adapted for forcing, and the necessity for having deutzias well established is even greater than in the case of the hardy azaleas, as exemplified by some examples to which Mr. White directed my attention. When lifted from the border in the autumn, then potted, and in the course of the winter started in heat, deutzias will bloom fairly well, but they fall far short of examples that have had the advantage of a year's growth in pots.

They will come quickly into bloom, but a considerable proportion of the flowers will be blind, and those which attain their full development remain a comparatively short time in good condition. The result is a poor return for the time and space that have been devoted to them. Azaleas, deutzias, or other of the hardy shrubs grown wholly in pots, entail more labour than do those planted out, but the additional labour involved will be more than repaid by the greater abundance of the flowers and the increased length of time they remain in perfection. The re-potting, if necessary, should be done after they have flowered, but with the aid of rich top dressings an annual re-potting will not in many cases be required. G.

THE CORN MARIGOLD.

The Corn Marigold, Chrysanthemum segetum of the books, is one of the most useful yellow flowered annuals from which to cut during the summer months that we have, and fully justifies its having been transferred from the field to the garden. The seed can be sown in the borders where the plants are to bloom or in boxes and the seedlings be raised under glass; I prefer the latter course, and prick out the seedlings where they are to remain as soon as they are about an inch in height. The corn marigold is perfectly hardy, and unless drawn up in a strong heat, the frosts experienced after the end of April will not injure the seedlings raised under glass, provided they are hardened previous to being exposed. When not overcrowded the corn marigold produces effective masses of colour, and a comparatively few plants will give an abundant supply of flowers which have the important quality of standing well when out. E. A.

SEMI-DOUBLE CAMELLIAS.

Although the semi-double camellias do not conform to the canons of the florists, they are all more or less beautiful, and for decorative purposes in a cut state the flowers of several are more useful than are those of the majority of the double varieties. One of the most attractive of the semi-double camellias is Conspicua, which has an excellent habit, and bears medium sized flowers of a bright scarlet hue. Another semi-double variety of special merit is the well-known Donkelaari, which in freedom of flowering and effectiveness is unsurpassed, and has but few equals. I was reminded the other day of the attractiveness of this fine old variety and its usefulness for the supply of cut flowers by a remarkably fine specimen met with in the conservatory attached to the residence of J. G. Barclay, Esq., at Knott's Green, Leyton. This specimen presented a very striking contrast to the other camellias with which it is associated. It was indeed so liberally furnished with flowers as to present a brilliant appearance, although large quantities have been cut for indoor decorations. The flowers, as so well-known, are bright rosy crimson, mottled with white, and at Knott's Green they are much appreciated for placing in specimen glasses on the dinner table, as well as for associating with other flowers in vases and epergnes. G. G.

KESWICK CODLIN.

How is it that in all the controversy about apples, nothing was said about Keswick Codlin, an apple without its equal for either cooking or eating? In the former it becomes like a ball of flour and when ripe it is of a beautiful colour and exquisite flavour, far better than any other large apple to my mind. The only drawback is it does not last many months. This apple has always a line down the side as if it had been sewn up. Another apple is the Golden Pippin, a small apple, bright yellow colour, and a flavour infinitely superior to King of the Pippins. Yorkshire Greening is a keeping apple. When you next have occasion to discourse on apples I hope you will mention these three fine varieties. A. E. Taylor.

[Keswick Codlin is an excellent culinary apple, the tree a free bearer and the fruit useful as early as the end of June. But we do not consider it has any place as a table fruit and as it is out of season so early as October, it compares unfavourably with some other sorts that are equal in quality and keep longer. The Golden Pippin is one of the best table apples known, but its small size is somewhat of a disadvantage and it is of no use for culinary purposes. It is a very nice apple, better adapted for the garden of a tasteful amateur than for the market grower, as there never can be any great sale for such a fruit. Yorkshire Greening is a fine variety, commanding in size, of excellent quality for culinary purposes, and keeping well until February. The recent discussion on apples arose out of a proposal that certain apples should be grown for market, and therefore Mr. Hibberd kept to the commercial view of the subject. Other writers wandered into space but had no warrant for doing so with the commercial question before them as the basis of proceedings.]

CINERARIAS AT REDLEES.

The Redlees gardens have so long been famous for their magnificent strain of cinerarias, that it was highly gratifying to note on visiting them the other day that the display this year is one of the best that has yet been produced. Exhibition specimens are not so largely grown as in some previous years, but they are not wholly unrepresented, and should Mr. White take part in any of the competitive gatherings, he will no doubt give a good account of himself. The chief interest centres in the large collection of seedlings now flowering, for the display of colour is extremely rich and varied, and the large superbly formed flowers afford a remarkable example of the high degree of perfection to which the cinerarias have been brought. As in previous years the collection is particularly rich in selfs, which, when so brightly coloured as in this case, are highly effective. Not the least important of the distinguishing characteristics of the Redlees strain are the dwarf habit and the large thickly set flower heads, two points that are well brought out by the cultural skill of which they have had the advantage. G.

WHITE SALVIA PATENS.

One of the most charming effects I have had in the flower border for some years past was that produced last summer by Salvia patens, and its white form known as S. patens alba. I have long grown the typical form, for it is perfectly distinct from other summer blooming plants, and its flowers give us one of the most brilliant shades of blue we have. The white variety was unknown to me until two years since, when, recognizing its usefulness, I commenced to work up a stock. I was so far successful that last year I was able to put out about twenty plants. These I arranged with the type in clumps of four plants, consisting of two of each kind; by the time they commenced to produce their flower spikes they had run together, and the pure white and brilliant blue flowers thus associated together produced a very pleasing effect. To raise a stock of Salvia patens and its white variety it is necessary to start the roots early in the spring with the assistance of a brisk temperature, and then strike the young shoots as they are produced. R. W.

DOUBLE ZONALS FOR WINTER FLOWERING.

Those who are anxious to maintain a bright display of colour in their greenhouses and conservatories during the winter months, should take full advantage of the assistance the double zonal pelargoniums are so well able to render. Two of the finest of the double varieties with which I am acquainted, are M. Bruant and F. V. Raspail. The first named has large semi-double flowers of a bright clear scarlet colour, and the other has deep scarlet flowers. They are both remarkably free in blooming, and under ordinary good management will produce their brightly-coloured flowers in succession for several months. The trusses are admirably adapted for associating with the white chrysanthemums when cut, and the most effective arrangements, both for the drawing-room and the dinner table can be formed with a handful of trusses of either or both of these zonals, and a similar quantity of flowers of any of the white chrysanthemums. H. T. Humphries.

Childe Oakforde, Blandford.

MUSHROOMS IN VINERIES.

A well-appointed house is so generally considered indispensable in the production of a crop of mushrooms at this season of the year, that it may be useful to remind those who have no mushroom house that in many instances a good supply may be had without its aid. As a case in point, I would mention the fact that at Redlees Mr. White is now sending to table an abundance of mushrooms from a bed made up in one of the early vineries. The house is rather lofty, and in the centre has a lattice work stage under which the mushroom bed is made up. The bed is invariably formed in accordance with the practice which generally obtains; when the early vinery is shut up, preparatory to its being started, and is then in full bearing some time before the temperature reaches the maximum required in the production of an early crop of grapes. The objection to a high temperature is the rapidity with which the beds become exhausted when subjected to it. The bed in the Redlees vinery is, it may be added, covered with mats, supported by cross pieces of wood so fixed as to support the mats above the surface. Mr. G. Stevens, of St. John's Nursery, Putney, has during the past autumn and winter devoted some of his spacious plant houses to mushroom culture and has had enormous crops. G.

BEAN NE PLUS ULTRA.

Having to meet a large demand for French beans from early in February onwards, I have grown most of the varieties likely to prove useful in the forcing house, and as the result of my trials I am in a position to say that taking all points into consideration, Ne Plus Ultra is unsurpassed. Moderately robust in growth, it produces heavy crops of rather large pods which are very fleshy and have a good appearance when placed upon the table. Canadian Wonder will give a good return in the forcing house, but it takes up rather too much space and continues in bearing rather too long. Sion House, on the other hand, does not occupy much room, but it is a light cropper and the pods are small. Being somewhat intermediate in character between those two favourites, Ne Plus Ultra has much to recommend it. For French beans to continue in bearing a considerable period is an advantage when they are grown in the open, but when under glass it is better for the crop to be produced within a comparatively short time, as the plants can then be cleared away before they are infested with red spider. W. J.

HORNED PROPHET'S FLOWER.

In general character the recently introduced Arnebia cornuta bears some resemblance to the now well known A. echioides, but it is more robust in growth and attractive in appearance, and is of annual duration only. When allowed sufficient space the plants will in moderately rich soil attain a height of nearly two feet, branch freely and bloom profusely throughout the summer. The flowers are produced in small spikes and are nearly as large as a shilling, the colour bright yellow with large dark blotches. There are five blotches on each flower, and when it first expands they are black, on the second day they change to bright marone, and on the third they wholly disappear, as in the case of the markings on the flowers of the perennial species. The annual arnebia may be grown under much the same conditions as other half hardy annuals, and presents an effective appearance both in masses and arranged singly in the mixed border; it also appears to great advantage when arranged in groups of three plants each. R. B.

The Mexican Flora is receiving the special attention of American botanists, and an exploring expedition to the comparatively unknown districts of Southern Mexico and Yucatan has been arranged.

NEW ZEALAND CLEMATIS.

Clematis indivisa.

The flowers are now appearing on this beautiful greenhouse climber to justify all that has been said in praise of it, and to offer persuasions for its more general recognition. The artist in New Zealand selects this almost first amongst the native wild flowers as a subject for the pencil, and it has there a beauty that here it lacks, although we can grow it to perfection and its characters are in no way changed. But in the strange scenes that enchant a new comer this clematis appears as a reminder of home. The special attraction it has for eyes as yet untrained in the forms of New Zealand vegetation is the *moral beauty* arising out of old associations, for it is sweet to recall in the bush remembrance of Kentish or Buckinghamshire lanes, where the "traveller's joy," known also as the "maidenhair," riots in luxuriance, furnishing the lads of the village with canes for smoking (for they manage to smoke the wiry stems), and the field mice with lining for their nests, and the observant wayfarer and wandering botanist with a thing of beauty that is a joy for at least the day on which it is discovered.

Clematis indivisa is the clematis with undivided leaves, which vary in form, and when deeply lobed are considered characteristic of a variety named "lobata." But this has no proper existence, because in the home of the plant all possible gradations may be found from leaves scarcely marked by lobes to others that are so deeply cut down as to be almost divided. It is a free growing climber, produces a grand annual display of pearly white flowers somewhat like those of C. Montana, while in leafage it is so pleasing as to be a good plant when not in flower.

A cool greenhouse suits this plant well, but it will enjoy a mild warmth if freely ventilated. In places where Marechal Niel rose does not thrive in the open, that and Clematis indivisa are often planted in the same house to make the roof gay with their beautiful spring flowers.



NEW ZEALAND CLEMATIS, *Clematis indivisa v. lobata* (Flowers white, stamens yellow and rose).

Anatomy and Physiology of Plants is to have a prominent position amongst the subjects taught at the University of Pennsylvania. It has been decided to provide a well equipped laboratory for the use of the botanical students, and Professor Wilson will shortly visit the leading laboratories in Europe with a view to securing the best appliances.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Hardy Plants now in bloom include Anemone apennina, A. nemorosa fl.-pl., A. stellata fulgens; Arabis albida; Aubretia deltoides, A. purpurea; Caltha palustris flore pleno; Crocuses; Daffodils; Daisies; Epimedium versicolor; Helleborus atrorubens, H. caucasicus punctatus; Leucojum pulchellum; Myosotis dissitiflora, M. montana; Polyanthuses; Primula acaulis; Tulips, Saxifraga oppositifolia, Scilla bifolia.

THE HOUSE.

Cage birds will now require constant and careful attention. The middle of April is quite early enough to commence the pairing of canaries and other of the small birds usually kept in cages, but it will be necessary for those who may be desirous of increasing their stock to shortly devote some attention to the matter to ensure their plans being well arranged. The best and least troublesome course, where a considerable number of birds are kept, and there is no regular aviary, is to place the birds selected for pairing together in a small room, with a south aspect. The room should contain several large branches of trees fixed in a somewhat natural manner, at suitable distances apart to afford suitable quarters for the nests, and the windows should be kept open and be covered with a strong wire netting of small mesh. For nest building, the birds will require supplies of moss, the hair of cows, fine hay, lint, wool cut up short, and paper shavings. When it is necessary to pair the birds in cages, these should be of comparatively large size, and be placed in as quiet a position as possible. The cages should be provided with nests of turned wood or wicker work, and for lining them the birds must have wool, lint, and cows' hair, placed within their reach. Artificial nests may also be fixed in suitable positions in aviaries and rooms, and supplies of fine stuff for making soft linings only provided for the birds. The food supplies must be carefully looked after, the water changed daily, and the floor of cage or room be well strewed with clean sand. Facilities for bathing must be provided, and the importance of fresh air to both old and young birds should not be overlooked.

CONSERVATORY AND GREENHOUSE.

Liliums in pots must now have a light and airy position, and be regularly watered. If allowed to become dry a good bloom cannot be expected. The shoots ought now to be three or four inches long, and the roots are greedy of moisture. Any liliums not yet potted up for the season must be attended to immediately.

Pelargoniums are now pushing into flower in all cases where they have been some time without a shift. To cure this stop first and shift afterwards. Those shifted a month ago will now want stopping, or flower trusses are sure to appear. The only way to deal with them is to nip out the points of all the shoots, and cut back a few joints any shoots that are pushing out beyond the general circumference. Keep them rather close after the operation, to encourage the pushing of the lower buds.

ORCHID HOUSE AND STOVE.

During the periods of fine weather with which we are usually favoured at this time of year a kindly heat must be kept up, for there is at such times plenty of light to stimulate vegetation, but owing to the prevalence of east winds, the houses soon cool down after sunset unless the heating is well managed. Shut up early—say, at 80 deg. to 85 deg.—and allow a fall to 60 deg., or even lower during the night. Stove plants recently cut back, and now breaking nicely, to be shaken out, and repotted in smaller pots than they were in before, and be immediately plunged in bottom-heat. In case of being in doubt about the proper soil for any stove plant, use equal parts of turfy loam, peat, and leaf mould, and add sharp sand enough to make the whole friable and porous. But this general advice is not to stand in the way of the little trouble needful to discover what is the best mixture for any particular plant.

FORCING AND FRUIT HOUSES.

Cucumbers in bearing to be kept in good health by very careful ventilation and a steady heat. During dull weather water very sparingly, so as to allow of keeping them rather close. Those coming into fruit to be regulated carefully, and the laterals stopped above the second joint. Thin the crop in time if fine fruits are required; but where produce is more important than size and beauty they may be allowed to bear all that set, and they will be sooner over to make room for succession plants. A brisker heat in the frames may be encouraged now by linings; but vermin will abound unless a sharp look-out is kept to fumigate when needed.

Melons begin to require considerable attention to set the blooms; train the vines, thin out the superabundant growth, and ventilate cautiously. The more fully-developed leaves are better if evenly distributed, so as to have a fair share of light; leaves that are overlapped may be removed, and no side shoots should be allowed to push which are likely to crowd the vines and rob bearing laterals. But the other extreme must be avoided; thin plants will never produce fine fruits, and none should be allowed to bear until they have acquired a robustness of character. The smaller kinds of melons may be very successfully grown in pots, and if well managed the fruit so produced is invariably handsome and finely flavoured.

Peaches.—During the period of the stoning of the fruit the temperature must be tolerably uniform, ranging from 55 deg. at night to 70 deg. by day as the extremes either way; the roots to be kept rather dry, and as much air given as possible without causing a chill. When the fruit are as large as cherry-stones thinning should commence, but must not be all done at once. Luxuriant shoots to be stopped back, and a sharp look-out kept now for black fly on the under sides of the leaves at the point of the shoots.

Strawberries under glass require frequent and liberal supplies of water at the roots, and sprinkling over the leaves. They must also have something stronger than water at the roots occasionally while swelling their fruit; but liquid manure should be withheld a few days before gathering.

FLOWER GARDEN AND PLEASURE GROUNDS.

Balsams for bedding out to be sown now. These need not have such high culture as those now coming on for early bloom in pots, as short, sturdy, slow-growing plants are required. Balsams must always have a rich light soil, suffer no check, and be well supplied with water.

Calceolarias for bedding to be freely exposed to the air, but to be covered at night in case of frost.

Climbers for the Garden to be grown liberally, so as to have them a good size by the time they are planted out. It is miserable to see elaborate trellis-works naked until about the middle of July, owing to the microscopic size of the soft-wooded climbers that are planted in May to cover them. Where the plants exist already, now is the time to shift them on into larger pots; and if they do not exist there must be no time lost in obtaining seeds, cuttings, or plants.

Grass Turf requires careful attention now to ensure a good sward during the coming summer. The turf should be well rolled with a heavy roller; any patchy places should be returfed, and all alterations, such as cutting new beds and turfing where beds have been, completed speedily. If the grass is poor throughout, and it is not intended to renew it, spread over the whole surface a thin sprinkling of nitrate of soda or guano. Again in the middle of April give another sprinkle, and again at the end of May another.

KITCHEN GARDEN AND FRAME GROUND.

Broccoli.—Succession plants must be provided in considerable breadths by sowing at once. On cold heavy soils it is much better to sow in pans and boxes, and give them the shelter of a frame, than to sow in the open ground; but in sheltered places seed beds on warm borders will do very well now.

Carrots to be sown for the main crop if the ground is dry and fine. If it is wet or consists of hard clods, wait a bit; another week may improve it much, especially if east winds blow freely. All fine seeds such as carrot, parsnip, and lettuce, that have little substance in them require more care in sowing than seeds that may be described as fat, or that have a decidedly visible bulk, such as peas, beans, and cabbage. The flimsy seeds should be sown when the ground is tolerably dry and the surface well broken, so that the seeds can be covered securely, yet lightly.

Peas in a forward state in situations exposed to the full blast of north and east winds require a little protection, or half their life will be blown out of them. First earth them up well; this will protect the lower part of the stems; next put sticks to them sufficient of height and strength to carry the crop; and, lastly, stick short lengths of evergreen branches along the rows, on the windward side only. Peas so treated now will three weeks hence be a full week forwarder, to say nothing of their superior freshness and health, than those that have to fight it out, though the same sorts, on the same ground, and sown the same time. In the end it may make ten days difference in the date of the first gathering; if it makes only two or three days, the gain in time will more than pay for the extra labour.

Potatos that were planted early, and are now peeping through the ground, must be covered by drawing over them a little fine soil; or if there is a good store of burnt earth, burnt brushwood, or other alkaline and carbonaceous material of a rough kind, turn it to account to cover the young haulm lightly. This will foster the tender leaf, and screen off light frosts, and the washings down of alkalies by the rain will greatly improve the crop.

Rhubarb that has stood long in the same place may be taken up, divided, and planted in fresh soil. This is essential to the production of large, early, handsome stalks. The soil for the new plantation should be a deep loam, abundantly manured. If it is half marshy it scarcely matters, for rhubarb seldom suffers in winter through being in a damp soil, and in summer it always grows the better for it.

VILLA FARM.

Failures to bring off good broods of chickens so often occur that the amateur who has not plenty of time and patience, and a fair amount of skill, will act wisely in waiting until after the middle of March. Unless the raising of chickens early in the season is carried on in a systematic manner, the results will certainly not afford a sufficient return for the anxiety and labour involved in looking after the eggs during the process of incubation, and the care of the chickens until they are strong enough to take care of themselves, with such assistance as the hen affords. Prior to the setting of the eggs it may be well to consider which breed is the most suitable to particular cases when there is no preference for certain breeds. Without recounting the advantages and disadvantages of the whole of the breeds, we will at once state that there are three deserving of special attention, and these are the Dorkings, the Brahmas, and the Cochins. Where there is plenty of room, or where effectual means can be adopted for keeping the birds within bounds, the Dorkings are the best; the chickens are delicate in flavour and of the best possible colour, as also are the cockerels, and the hens lay freely and the eggs are of good quality. But as they can fly to a considerable height it is practically impossible to keep them out of gardens when the runs are contiguous thereto, unless the yards are so enclosed that they cannot get out of them. Brahmas and Cochins are not of such a good colour when cooked, and the old birds are rather coarse, but they are good eating and capital layers, more especially during the winter, when eggs are valuable, consequent on their comparative scarcity, and as the birds do not fly very high they can be easily kept out of the garden. In commencing to rear the chicks, select eggs not more than a fortnight old, and provide for the nest a snug warm corner, on a brick or earth floor if practicable, and make it with clean hay or straw. From nine to thirteen eggs will suffice for a sitting at the present moment, for unless well covered there is a risk of the cold injuring them. A hen that has shown signs of broodiness should be brought to the place where the nest has been made, and if left to herself will soon take to it. Food and water ought to be placed within a few yards of the nest, so that there may be no occasion for her to leave the nest for any length of time to satisfy her cravings of hunger, and a cabbage or broccoli, from which the heart has been removed, may be suspended within a convenient distance for her to peck at.

Anemone blanda and Iris Bakeriana are, writes Max Leichtlin in the *Garden and Forest*, excellent winter-blooming plants. If potted at intervals from August to September and housed afterwards in a greenhouse, they may be had in flower from November to February. Anemone blanda, a near relative of A. Apennina, is a native of the Levant, and has the advantage over the latter of flowering in the open air, four or five weeks earlier—that is, about the second week in March—with me The plants form a low mass of palmate, much-divided leaves, and the deep blue flowers are from three-fourths of an inch to an inch in diameter. Iris Bakeriana, a native of Kurdistan, was introduced by me only two years ago. Treated in the same way as the anemone, it will flower at the same time. It is a near relative of I. reticulata, has lavender standards, white falls blotched with blue, and a deep blue-black tongue. It is powerfully violet-scented when the sun shines upon it, and is very beautiful on account of the harmonious colouring of the flower.

PROGRESS IN HORTICULTURE.

By Mr. George Bunyard, the Old Nurseries, Maidstone.
Substance of a paper read before the Mid Kent Natural History Society.

Horticulture has made great advances during the past 30 years, and this is mainly owing to the fact of a more intelligent and painstaking inquiry into the nature of things in general, and also to the spread of knowledge through the practical teaching of the gardening press and the many interesting and highly instructive books on special subjects which have been printed.

In former times all plants and shrubs which came from abroad, no matter where from, were considered to require a tropical climate, which was not to be had except in advanced gardens where no expense was spared. Heating was done by flues in houses which only kept up the required heat during a severe frost by constant attention day and night, and then they were sure to give off sulphureous gases at some unlucky joint in the brickwork, and a constant watch had to be kept on all the flues to prevent this. As you may imagine, such heat was very different from the moist warmth obtained in the tropics; and as there also existed an idea that such tropical plants wanted rest in the winter, the damping down which is now a constant practice was not carried out to bring the atmosphere into harmony with the wants of the vegetation. I am sure that had things remained thus the enormous development of glass structures for the growth of fruit, vegetables, and flowers would have remained an impossibility. We now have such control over houses heated by hot water that we are enabled to have flowers all the year round, while forced strawberries are in the markets in February, and the Christmas show of cut flowers and plants in the large markets is, I may say, as good as the display that was formerly (say 50 years ago) provided at midsummer. A more reasonable system of ventilation is now introduced, and care is taken that when fresh air is admitted it shall be warmed before it comes into contact with the plants. To show the gross ignorance that then obtained, I recollect having seen the first Wellingtonia (from California) in a hot stove. Now, this remarkable giant among conifers has never been killed by frost at all, and it has the property of growing all the winter through; but it feels our cold east winds, and therefore should not be used as a single specimen except in sheltered places. One of the most remarkable developments is the cultivation of orchids on an enormous scale. One firm has about six acres of glass for this purpose, and the numbers approach to a million. Now, these denizens of the tropics are not all crowded into one hothouse, because special knowledge as to their behaviour in their native habitats has been acquired, and many lovely species can now be grown in cool houses which at times go as low as 40 or 50 deg. Fahr. without injuring the bulbs, though the flowers may suffer if they are exposed to it. Groups are formed of the several families, and floating rafts, hanging baskets, flat surfaces, and suspenders of all kinds are employed as well as pots for the terrestrial species, with special apparatus to prevent insects crawling up, and spraying pipes to be turned on at will. Many other ingenious contrivances to save labour and to promote the same conditions as the plants enjoy in their native habitats are adopted, and the result is seen in splendid results that but a few years ago were not to be thought of.

If we turn to the production of fruit, contrast the hothouse grapes of 30 years ago with those of the present day. Early grapes were then sold at 40s. and 30s. per lb. In the present times grapes are kept over until the new crops come in in properly constructed racks, where they repose in bottles on their own stems, enabling the gardener to rest his vines and to start them months earlier than he could in olden times when left on to draw the vine. Grapes may almost be said to be now grown by the ton where they were produced by the pound, thus adding enormously to the food of the people a specially wholesome fruit at a nominal price. I know one late vinery that covers an acre of land. Take tomatos again. Under the old system they could not have been produced so early or so fine as at present. It is to America we are indebted for the best smooth kinds, and their enormous consumption must tend to the health of the population.

So much for the introduction of hot-water apparatus for forcing and heating of glass structures. On all fours with this advance, an improved system of glass making, and the importation of Belgian glass, has made such structures so cheap that no dwelling of any pretensions is complete without its conservatory and glass structures for all purposes. In many old gardens may yet be seen the original hothouses, with small panes of glass and heavy and awkward timber supports, through which light filtered in small doses. Now we see panes 18 to 24 inches wide, letting in all possible sunlight. Such houses as the market growers use, where the perfection of growth is attained in the shortest possible time, and all the plants in a house so alike that when you take up one you have a perfect embodiment of the whole growth.

To come to a subject where I am more at home, I would refer to the introduction of the French system of culture of fruits. This made headway very slowly, because our insular prejudice was strong; the very name "French" was objectionable. But since 1851 we have learnt better, and horticulture has not been slow to avail itself of the improved system that obtains on the Continent.

Trees on the free pear or wild stock (which was at one time the only stock used) were free in growth and slow to bear. Now on the quince stock pears often fruit at two years old, and trees with heavy crops of enormous fruit are often seen two and three feet high.

In apple culture it is the same. For years botanists were aware of the existence of species of malus of dwarf growth, and on their being introduced into Europe, where the Romans are said to have introduced the apple, skilled vegetable physiologists at once saw the services such species might render as foster-mothers for our best sorts, and success has been achieved in a remarkable degree by the introduction of Malus Paradisaica and its allies. To give you an idea of its effects on the cultivated apples I have only to remark that in case of seminal plants, when fresh grafts are put on Malus Paradisaica (as a foster-mother), the grafted trees will generally fruit before the parent seedlings. This is for the same reason that I have explained in the quince stock. Further research revealed the fact that plums could be made more fertile by the introduction of Prunus myrobalana, the cherry plum of the Continent. A further advantage accrues from the use of this stock, as it will grow and succeed in soils where the other prunus species will not flourish. But the most remarkable junction is that of the common Mahaleb cherry of Roumania, where it is better known as the Perfumed cherry, the root of which supplies the long stems used for the Turkish smoking apparatus and the cherry-wood pipes of commerce. Anything more distinct it is impossible to conceive. It is well known that the Mayduke race succeed best upon it; but the reason that the heart or Bigarreau cherries do not flourish is that vigorous pruning is necessary to bring the trees into shape, and it is this severe cutting they resent more than a quarrel with their foster-mother.

While on the subject of curious "takes" in grafting, the common privet is a successful foster-mother for many evergreen shrubs. For example the Japan Hollies (Osmanthus) very distinct. The Pyracantha is apt to canker when on its own roots, but this is obviated by grafting upon the quince, which is perhaps allied though not closely. Pyracantha belongs to Cratægus, and quince to Cydonia, but nature knows more about alliances than the botanists do. Equally curious examples of grafting in greenhouse and stove plants could be mentioned did time permit, such as daphne, an evergreen on the deciduous mezereum. While on the subject of grafting I will allude to the modern custom of double grafting, in vogue principally for pears. The reason for this operation is that some pears will not succeed (though under certain conditions they may exist) directly upon the quince stock, so that an intermediate mother is required where the quince is used as a root stock. This is supplied by certain well known kinds which are at home upon the quince. When the necessary growth of No. 1 is completed, No. 2 is grafted upon No. 1; the No. 2 becomes reconciled to its new position and a few inches of wood of No. 1 left are sufficient to allow No. 2 to grow without hindrance. Hence we now cultivate fruit upon a scientific, as against the haphazard work of former times. Other more rational systems of pruning are introduced, and this added to root pruning when the trees make too abundant growth (and in consequence cannot form fruit buds) to advantage. Again pears and apples are now placed on much warmer walls than formerly, and thus we get those kinds ripened in this country which were formerly seldom seen in perfection. The reason for root pruning is to keep the roots on the surface, and thus within the solar influence; and again, further, that they more readily absorb those manurial mulchings which are now used with much effect.

The operations of propagation other than by grafting or budding are all the outcome of scientific teaching; for instance, layering (which may at first have been suggested by natural rooting, such as often takes place on the low boughs of Rhododendrons) the modus of the operation is to arrest the returning sap while not obstructing the outward flow. This is done by restricting wires, or by making an incision according to the nature of the species operated on. This returning sap at first flows freely, then forms a few knots at the edge just under the bark: this develops into a callus, from which ultimately the roots are emitted, and when sufficiently advanced, the shoot from the parent is severed and a new and independent plant is produced—a cutting is upon the same principle but more simple.

In case of geraniums and similar soft-wooded subjects the roots soon form especially if assisted by heat; but in some conifers, say junipers, in particular, they frequently take two years to root, and in order to prevent undue evaporation they are kept close in pits or beneath glass shades.

Another interesting operation is grafting by approach. This consists in selecting corresponding portions from stock and scion, removing a portion from each to enable them to join as one, and then uniting them by a ligature, covering the same with a substance to exclude the air. In this case both plants are rooted and the scarce kind is made more plentiful by grafting on a cheaper or more easily procured stock. An excellent example of this is seen in the pretty specimens of ornamental maples which we have imported from Japan, each carrying several kinds upon one stock. Another system of propagation is that done under glass. Several species of trees cannot be successfully grafted in the open air, but with proper care success is certain under glass; the reason being that a rapid stock growth is maintained which speedily communicates itself to the scion and as the small shoots of the stock which form below the graft can be regulated to keep life in the stock, the scion is placed in the best possible condition for "healing over" as we call it. Among the most interesting operations are those of the scientific hybridist among flowers, entirely new species—for such I venture to call them—have been produced among the gesnerworts and more recently among orchids by persistent care in selecting the parents and carrying out the artificial fertilization. Several instances of the florist's work will at once be obvious when I name the Cyclamen, Chinese Primulas, and more recently the new Tuberous Begonias. The history of the begonias of to-day is simply this:—B. boliviensis was found by collectors in Bolivia and a great novelty it was, producing its central female flower with a male attendant on each side. At the same time B. Veitchi, a nearly hardy kind with very large broad scarlet opposite petals, was imported from Japan. It is from these two species that our grand begonias of to-day, both camellia-like double and singles, with five to six inch flowers, have been bred, while the doubling follows, as a matter of course. Where such free seeding subjects were grown in quantity, slowly at first as in the case of the double zonal pelargonium, each year has seen a steady advance, so that now the doubles are perfect rosettes, resembling hollyhocks, camellias, and roses, and are produced with greater ease and certainty than formerly. A particularly interesting example of progress is seen in the production of graft hybrids of the potato. In this case two tubers of similar size are cut and joined together, or eyes are taken from one with a knife or cheese taster and placed in another tube. Curious to say the progeny are greatly altered or improved, and such cases as improved early kinds with the fine flavour of later sorts are produced on any given desired line, and vigour is imparted to the progeny, which of course afterwards reproduce the new characters acquired through the grafting.

By hybridization, the colours of flowers have been remarkably extended. Take one example alone. For many years the old Tom Thumb was our stock scarlet pelargonium for bedding, the introduction of the nosegay species, as heralded by "Stella," has led to a wide range of colour being introduced with flowers as large in the petal as a crown piece. While our parterres sparkle with a range of colour from white to intense crimson with an almost yellow in the variety known as Jealousy, and a vague suggestion of blue in La France and others; while by persistent efforts, varieties have been produced which flower freely the whole of the winter, and their beauty is so much appreciated that they have completely overthrown the New Holland plants of former days which did duty for winter and spring blossom. The great start may be dated from the time when Lord Derby was sent out at five shillings a plant, about 1860.

Did time permit, I could mention equally great advances which have been made in other departments of horticulture such as the selection and improvement in vegetables. As the knowledge of the many interesting facts in the science and practice of gardening are more understood, greater results may be looked for than any obtained as yet. I can safely say that no more elevating pursuit can be taken up for study, amusement, or recreation than the marvellous arrangements of vegetable life in all its forms from the minute organisms, only to be observed under the microscope, to the extraordinary development of the forest trees of our country, all built up day by day by the accretion of cell upon cell, and the conversion into woody fibre of the subtile elements supplied by the atmosphere and light and heat. In my profession

nothing more astonishes me than the almost magical growth of trees from buds. When you consider the section of bark called a "bud" was (say in August 1888) introduced as a thin film to the mother stock, and then laid dormant till April, and from that time until October in the present year, seven feet of growth has been formed true to the form and character of the tree from which the bud was taken, and not debased in any way with the blood or nature of the wild foster-mother, consider this as one of a million equally marvellous facts and we cannot but be struck with utter amazement at the operations of the Creator in what we call nature, and our amazement will not be diminished when we reflect further how much of all this tends to our own advantage, and encourages us to work and inquire that we may know more and more of the matter,

[The paper was illustrated by plants of cool orchids, foliage and shoots of the various fruit trees, &c, assisted by chalk figures on the black board.]

AMERICAN LETTER.

Aquilegia canadensis.

Though this species was introduced to Europe considerably more than two hundred years ago, it does not appear to have met with much favour, as a garden plant, at any time. Perhaps the neglect, to which it seems to have been consigned, may be attributed to the considerable stretch of time that has elapsed since its introduction. It has been forgotten. The roll of years has swept it into oblivion. The plant may now be seen at Kew I believe; but it can hardly be supposed that the fostering care of that watchful establishment has hung around it for all those years. No! Kew, as a home for neglected plants, did not come into existence for a great many years after the introduction of this plant. Its presence now at that institution, and in a few commercial establishments throughout the United Kingdom, can only be explained by its re-introduction some few years ago. Future generations of horticulturists will rejoice at the fact that the "whole stock" of the plant was not placed in the hands of our forefathers. Had such been the case we would, undoubtedly, now be *sans A. canadensis*. We might still possess the name, but, what would there be in that name? In Canada, and throughout the northern parts of the United States, it may still be found growing abundantly in dry rocky situations, mostly adjacent to woods. Even in a wild state, it possesses a charm that seldom fails to attract attention. But under cultivation its charms increase, and its utility is soon demonstrated. It is naturally of a compact dwarf habit, seldom exceeding twelve inches in height. If planted in rich soil, and otherwise encouraged to grow, it will attain a height of about two feet. This treatment is undesirable, however, as it flowers less freely where the growth is free and luxuriant. An elevated and well-exposed position in the rock garden, in imitation of its native habitat, suits it best. If the soil is of a poor sandy character, and not over plentiful—all the better. Under such conditions it blooms with great freedom during the latter months of spring. The flowers of a distinct reddish colour with a tinge of yellow here and there, are very attractive and most useful for decorative work. Its dwarf habit and floriferous character render it a most desirable plant for pot culture. The seeds are produced freely, and if they are gathered when ripe, and sown in a prepared bed in the garden during summer, a nice lot of plants may be obtained. Of course the seed-bed will require water occasionally during dry weather. The plants thus obtained may be taken up in autumn and potted in four-inch pots, using a comparatively poor compost. They should then be placed in a cold frame until established; when, by removal to the greenhouse or heated frame, they can be made to afford a continuous display of their attractive flowers throughout the latter months of winter, and the early months of spring. Such plants will be found extremely useful for intermixing with other subjects in the greenhouse or conservatory. They will light up dull backgrounds, and help to break that monotony of sameness which is characteristic of so many places during the dull months. There is a form of this plant known a *A. canadensis lutea*, with flowers wholly yellow. It resembles the type in general character, but the colour of the flowers renders it less attractive.

Polygonum polystachium.

There are very few plants from Central Asia more worthy of a place in the herbaceous border than this one. The date of its introduction does not come within range of my knowledge, but that is of but little importance, since I am aware that it is an old occupant of botanical gardens. It does not appear in any of the catalogues of hardy perennials that have come under my observation. Messrs. Richard Smith and Co., however, keep a few stock plants in the well-ordered herbaceous department of their nursery at Worcester, and other nurserymen who make a speciality of this class of plants will doubtless keep a supply. I have distinct recollection of seeing a large clump of it in an old-fashioned cottage garden, when strolling through a rural district of Lancashire one Sunday afternoon—several years ago—with some gardening friends. We had considerable argument as to the identity of the plant, but that matter was finally settled satisfactorily by reference to a prominent horticultural journal. My endeavours to ascertain how the plant found its way to that lonely, but lovely, wayside garden, proved futile. I have never noticed it in any other private garden. It grows to a height of about two-and-a-half feet, and each shoot terminates with a loose panicle of small white flowers. The panicle resembles that of *Spiræa* (*Astilbe*) *japonica*, very much enlarged, and with the flowers more loosely arranged. It is one of the last hardy plants to bloom, and that fact, taken with the elegant appearance of the panicles, their fine decorative and lasting qualities when cut, renders it most desirable for every collection. To those especially who grow only hardy plants it will be found most valuable at the latter end of the season, when good white flowers are particularly scarce. It thrives best in a position where it is shaded from the mid-day sun. The soil should be of a good loamy character, but not very rich, as the growth is liable to be rank and unproductive of flowers, where the food is stimulative. Though a native of warm countries, it is perfectly hardy in temperate climates. This may be explained by the fact that it is found at an altitude of two thousand feet.

Tricyrtis hirta.

The Japanese Toad Lily, as this plant is commonly called, has hitherto been regarded as of rather delicate constitution. The shelter of a cold frame during winter is thought to be essential to its vitality. This is a mistake, and a mistake that is, no doubt, largely responsible for the plants' comparative rarity. Plants of the herbaceous section, that have to be taken up every winter, soon become unpopular with the general public, as those only who are fully equipped with proper places for their storage can afford to give them the attention they require. Those who do not possess a single pane of glass, it will be readily admitted, have but poor convenience for the accommodation of tender things during winter. The majority of those who grow hardy plants certainly labour under that difficulty. And it would perhaps be safe to say that a very large majority of those who cultivate plants for ornamental effect do not experiment with those they grow, but simply take for granted what others may say about them. Consequently, one in search of choice hardy plants, would never purchase *Tricyrtis hirta*, with its present reputation, however desirable it might appear. Then we we will shatter the statements that have been made regarding the hardiness of this very deserving plant, and in doing so hope to increase its popularity. The writer has seen large masses of it that have survived year after year, with no other protection than that afforded by a slight covering of leaves, supplied late in autumn after the plants have died down; and that, too, in a climate where the thermometer often registers 15 deg. and 20 deg. below zero. On the strength of that assertion, *Tricyrtis hirta* should be expelled from gardens, if it submits to any coddling in future. For the benefit of those who do not know this plant, it may be said that it was introduced from Japan in 1863. The erect stems are produced in dense masses, and their average height is about three feet. They are generally of simple structure. though sometimes slightly branched towards the top, and thickly clad from base to apex with light green leaves arranged alternately. The bell-shaped flowers proceed from the axils of the leaves, and measure about an inch across. In colour they are white, beautifully marked and spotted with purple. They are freely produced in autumn, and the plant continues in bloom until cut down by severe frosts. A cool and somewhat shady situation suits it best, and the soil should be of a rich loamy character.

It seems a great pity that these and many other fine old plants should be allowed to pine away in the miserable solitude of museum gardens—preserved merely as curiosities. They must, as Gray says, be born to it. Some things are pushed away up into eminence, while others not a particle less worthy of attention, sink down lower and lower into the vale of obscurity. Well, perhaps when tired of this exhausting race after the novel, we may find relief in turning round to look at what is already in possession When the reaction takes place many will be surprised at the comparison of the object of their struggles, with that which might have been enjoyed without an effort and without one pang of disappointment. Pursue ideals if you will, but turn aside at times and let old friends feel the benefit of your society. U. S.

BLENHEIM ORANGE APPLE.

The most fruitful trees of this apple that I have met with are those grown in the form of standards on cultivated land. I do not mean to say that healthy and fruitful trees are not to be found in orchards sometimes, but so far as my observation goes (and I am acquainted with a good number of trees in different places) the most vigorous and fruitful examples are growing where the land is cultivated beneath them. It does not necessarily follow that the ground is cropped close up to the stem, but the greater part of it is that is shaded by the branches. This may be called good or bad management according to the opinions and experiences of different individuals, but I prefer to measure the practice by the results, and I unhesitatingly say the cultivation of the ground amongst the trees is more beneficial than otherwise. It is not difficult to understand why this should be so, because, if the cultivator wishes to obtain a crop of potatos or cauliflowers from the space between the trees, he will be careful to give the land a dressing of manure. As a consequence the trees obtain their share of the rich stuff and are benefited by it, and in return give splendid crops of large handsome fruit, the equal of which is comparatively unknown in worn-out orchard land. It is surprising how well the Blenheim thrives in the well-sheltered market gardens of Somersetshire and Devonshire, yet it is not unusual to see the ground cropped close up to the stem. But it must be understood for the most part that trees are allowed unrestricted room for the branches to extend. It is only when they begin to sweep the ground that they are cut away. As I write I have in my mind's eye three standard trees that occupy a position in a market garden wholly surrounded with trees or high buildings. The aggregate produce of these three trees last year was 25 bushels of selected fruit, while in the two years previous the crops on two out of the three trees were nearly as good. I do not wish to be understood as advocating the indiscriminate planting of this apple in all sorts of soils and positions, but where the soil is deep and the situation sheltered it s quite safe to plant a fair proportion of the space with this sort.

It is too much the practice to plant standards on stems six feet high, which is a mistake. No standard ought to have a stem more than four feet high, and the branches should be allowed to grow their own way until they nearly reach the ground. Standards on stems, the highest I have mentioned, planted 14 feet apart each way in rows six trees deep and the space surrounded with a high thorn hedge, offer the most favourable conditions for the welfare of the Blenheim. The loss of fruit from high standard trees owing to the wind has done as much as anything to prevent the planting of this apple, But that it will pay to set apart a piece of ground specially for it and give it careful attention, no one can doubt who has watched its behaviour under a variety of conditions. J. C. C.

Dr. F. C. Schubeler's Work on the Trees of Norway has just been completed by the issue, at Christiania, of the third volume. In this work, of which the title is *Viridarium Norvegicum*, not only the different species of trees native to the country are described and illustrated, but also a multitude of individuals remarkable for size, antiquity, or abnormal development. The polar limits of all the trees native to, or grown in, Norway are systematically given.

Best Rose Stock.—Herr O. Froebel, of Zurich, records in *Gartenflora*, his opinion as the result of recent experiments, that Rosa laxa is the best stock for roses. This rose is a native of Central Asia, and was raised from seed sent him some twenty years ago by Dr. Von Regel. It makes no suckers, and is thoroughly hardy; moreover, its stem naturally grows straight, smooth, unbranched and almost destitute of thorns to a considerable height, so it is especially well suited for producing standards, while the early ripening of its wood peculiarly fits it for winter forcing.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, March 11.

Floral Committee.

Present: William Marshall, Esq. in the chair; Rev. H. H. D'Ombrain and Messrs. R. Dean, B. Wynne, W. Holmes, T. Baines, C. Jefferies, C. T. Druery, H. B. May, G. Nicholson, W. Herbst, J. Walker, H. Cannell, E. Mawley, T. W. Girdlestone, C. Noble, J. Fraser, G. Paul and H. Turner.

This was in some respects one of the best meetings that has been held at Westminster for some time past, the contributions showing an increase in numbers and the attendance was fairly satisfactory. Chief amongst the contributions was the collection of cut camellias from Messrs. W. Paul and Son, Waltham Cross, to whom the award of the silver Banksian medal was made. The collection consisted of twelve boxes of blooms all in a high state of development, and representing the finest of the varieties at present in cultivation. Especially noteworthy were the blooms of C. H. Hovey, Double White, Comtesse Paolini Maggi, Commendatore Betti, Imbricata, Montironi vera, Lavinia, Maggi, Marchioness of Exeter, and Ninfa Egeria. Daffodils were represented by a large and tastefully arranged collection from Messrs. Barr and Son, 12, King Street, Covent Garden, who were awarded the bronze Banksian medal. The finest of the kinds staged were, perhaps, Horsfieldi, Golden Spur, and Cynosure. Messrs. Barr also staged gatherings of flowers of Anemone fulgens and other plants blooming in spring.

Messrs. J. Veitch and Sons, King's Road, Chelsea, staged a group of seedling Amaryllis which produced a bright effect, and received a full share of attention, several baskets of Azalea mollis and examples of Andromeda Japonica, a handsome species producing a profusion of pure white flowers. Messrs. H. Cannell and Sons, Swanley, exhibited examples of their remarkably fine strain of cinerarias, and were granted an award of merit. Mr. H. B. May, Dyson's Lane Nursery, Edmonton, contributed ferns and ornamental leaved plants which arranged in a bank on one side of the hall presented an attractive appearance. The award of the silver Banksian medal was made to the exhibitor. Boronia megastigma, so valuable for its delightful perfume, was admirably shown by Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, and Messrs. J. Veitch and Son. The last-named firm also presented in excellent condition the more recently introduced and extremely beautiful Boronia heterophylla. Roses were represented by an attractive box of blooms from Messrs. Paul and Son, Cheshunt, who also had specimens of Rosa grandiflora, a robust growing form having large single white flowers, and John D. Pawle, a crimson hybrid perpetual, raised by the firm.

A rather large and very interesting collection of plants and cut flowers was sent from the Royal Gardens, Kew. Amongst other objects of special interest were Acacia pulchella, A. leprosa, A. retinodes, and A. verticillata, four free blooming and elegant species of comparatively small growth; Rhododendron arboreum and its charming rose-coloured form; Strelitzia Nicolai, a stately growing species, bearing large white and pale blue flowers enclosed in large marone bracts; Columnea Kalbreyei, a handsome stove plant with large sickle-shaped leaves, and campanulate flowers of a light yellow colour; Æchmea glomerata, a handsome species, producing medium-sized bright rosy-red flowers arranged in clusters on tall flower stems; and Rhododendron nilagiricum, a Himalayan species, with bright rosy red flowers and Brownea ariza, a beautiful Colombian species bearing large clusters of bright rosy-red flowers.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; Dr. Masters, and Messrs. F. G. Tautz, F. A. Philbrick, L. Castle, H. Williams, E. Hill, J. Douglas, J. Dominy, H. Ballantine, H. M. Pollett, F. Sander, and J. O'Brien.

The contributions to the meeting of this Committee were sufficiently numerous to form an important feature and included several interesting novelties. Messrs. B. S. Williams and Son exhibited a large and interesting collection in which the finest of the odontoglossums now in flower were represented at their best. A silver Banksian medal was awarded the firm. A medal of like value was awarded to Messrs. Sander and Co., St. Albans, for a group in which were some splendidly-flowered specimens of Dendrobium nobile, D. Wardianum, and Phaius tuberculosis, the last named a small growing species of great beauty. Messrs. Paul and Son were granted an award of merit for well flowered examples of several forms of Cælogyne cristata. Several interesting orchids were sent from Sir Trevor Lawrence's collection at Burford Lodge, Reigate, one of which had a first-class certificate conferred upon it. Mr. G. Wythes, Sion House, Brentford, contributed flowers of Cypripedium villosum and Cælogyne cristata. Messsrs. J. Laing and Sons, Forest Hill, staged good examples of Cattleya Trianæ marginata and of carnation Madame A. Warocque, a scarlet flowered variety with broad foliage similar to that of Souvenir de la Malmaison.

An interesting group of hybrid and other orchids was contributed by Messrs. J. Veitch and Sons. Amongst those which had been previously recognised by the committee were Cymbidium eburneo-Lowianum, Dendrobium micans, and Dendrobium Wardio-japonicum.

Fruit Committee.

Present: Sir. C. W. Strickland, Bart., in the chair; Dr. Hogg, and Messrs. R. D. Blackmore, Harrison Weir, T. F. Rivers, G. W. Cummins, W. Bates, G. Cliff, T. J. Saltmarsh, W. Warren, J. Wright, W. Denning, G. Wythes, J. Cheal, J. Hudson, F. Q. Lane, H. Balderson, P. C. Veitch, and G. Bunyard.

The most important of the contributions was the remarkably fine collection of apples and pears from Mr. Cummins, gardener to A. H. Smee, Esq., The Grange, Hackbridge. About thirty dishes of apples, all more or less good, were staged, and conspicuous amongst them were those of Lord Derby, New Hawthornden, Court Pendu Plat, Golden Reinette, Beauty of Kent, and Winter Majetin. Especially good also were the examples of Catillac and Uvedale's St. Germains pears. The silver Banksian medal was awarded the exhibitor. Mr. Miller, Ruxley Lodge, Esher, contributed a good basket of mushrooms, and several miscellaneous objects were shown.

Novelties.

Novelties were plentiful and as the majority obtained recognition the list of certificates and awards of merit is a lengthy one. First-class certificates were granted as under:

To N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne, for

Phaius hybridus Cooksoni.—A beautiful hybrid of which the parentage was not given. The growth is rather robust, the flowers are of comparatively large size, the sepals and petals bright salmon suffused with rose, the labellum rose spotted with crimson and marked with orange-yellow at the base.

To Mr. C. Turner, Slough, for

Camellia La Vestale.—A superb variety which may be described as a greatly improved form of the old Double White. The flowers are about the same size as those of that popular variety, but the petals are larger, more rounded, and perfectly smooth at the edge and regularly reflex. The growth is rather long jointed, and the leaves are comparatively narrow and somewhat pointed.

To Messrs. B. S. Williams and Son and Messrs. F. Sander and Co. for

Phœnix Roebeleni.—A miniature date palm remarkable for its distinct character and great beauty. The stem of full grown specimens is about two inches in diameter; the leaves range in length from ten to fifteen inches, and from three to four inches in breadth. In a small state the plants resemble in general appearance the well-known and extremely elegant Cocos Weddelliana. The specimen shown by Messrs. Williams and Son had two stems, each about two feet in height, and was evidently of great age.

To Sir Trevor Lawrence, Bart., M.P., for

Dendrobium sigatum.—A dwarf growing species with stout pseudo-bulbs and light green foliage. The flowers are borne in short racemes, and are of medium size, the sepals and petals yellow, and the labellum yellow, marked with a crimson blotch.

To R. Young, Esq., Ferringella, Linnet Lane, Liverpool, for

Lycaste Skinneri, Young's var.—A distinct and beautiful variety, the flowers large, and of fine form, the sepals paper white, the petals white tinted with salmon, the labellum salmon, shaded with orange.

To Messrs. J. Veitch and Sons for

Amaryllis The Champion.—A magnificent variety, marking a great advance upon the scarlet varieties previously introduced. The flowers are between seven and eight inches in diameter, the segments broad, well rounded, and smooth at the margin, the colour brilliant scarlet, with small green star in the centre.

Cypripedium Numa.—A handsome hybrid between C. Stonei and C. Lawrenceanum, and intermediate in character between the two parents. The leafage is bold, light green, marbled with dark green, the flowers large, the dorsal sepal broad, and marked with longitudinal lines of purple, on a greenish white ground. The petals long and narrow, and marked with marone on a green ground, the labellum deep bronzy purple, and in shape similar to that of C. Stonei.

Dendrobium Aspasia.—A beautiful hybrid between D. Wardianum, and D. aureum. In growth it most closely resembles the first-named of the two parents, the pseudo-bulbs being stout, and from two to three feet in height. The flowers are rather large, the sepals and petals blush tipped with rose, the labellum white tipped with rose, and marked with a marone blotch surrounded by a yellow zone.

Botanical certificates were granted as under:—

To Messrs. H. Low and Co., Upper Clapton, for

Angræcum sp?—An interesting form similar in growth to A. citratum, and having paper white flowers intermediate in size and form between those of that species and A. hyaloides. Probably a natural hybrid between these two species.

To Messrs. Sander and Co., St. Albans, for

Cypripedium Schomburgkianum.—A distinct species of considerable interest, the flowers similar in form to those of C. Dominianum, and of a pale brown colour.

Awards of merit were made as under:—

To J. Larkin, Esq., for

Oncidium Larkinianum.—A handsome hybrid between O. Gardnerianum and O. Marshallianum. The growth is robust, and the flowers are of large size, the sepals and petals yellow marked with brown, and the labellum bright yellow.

To F. G. Tautz, Esq., Studley House, Hammersmith, for

Odontoglossum Pescatorei melanocentrum.—A beautiful variety, with large finely-formed flowers, the sepals and petals pure white, the labellum pure white marked with a crimson blotch at the base.

To Messrs. J. Laing and Sons, Forest Hill, for

Cattleya Trianæ marginata.—An exquisitely beautiful variety, the flowers above the average in size, and of fine form; the sepals and petals bright rose, the labellum well expanded, and of a rich amethyst purple hue with a well-defined pure white margin.

To Mr. G. Cliff, gardener to H. B. Mildmay, Esq., Shoreham Place, Sevenoaks, for

Cattleya Trianæ fulgens.—A distinct variety, remarkable for the large size and superb form of the flowers; the sepals and petals are bright rose, and the labellum rich amethyst.

To Messrs. Paul and Son for

Cœlogyne cristata vars.—These included the Chatsworth and the Major varieties, which are well known for their large size of the flowers, and C. cristata citrina, which differs from the type in the labellum being marked with a lemon-coloured blotch.

To Messrs. H. Cannell and Son for their

Strain of Cinerarias, which is distinguished by the dwarf, neat habit of the plants, and the large size, superb form, and effective colouring of the flowers.

ROYAL AQUARIUM, EXHIBITION OF SPRING FLOWERS, March 12 and 13.

The series of horticultural exhibitions to be held during the year at the Royal Aquarium, under the management of Mr. William Holmes, were inaugurated on Wednesday and Thursday with a display of spring flowers of great excellence. The schedule of prizes was comprehensive, and included classes for hyacinths, tulips, narcissi, azaleas, primroses, polyanthuses, lily of the valley, cinerarias, and other seasonable plants and flowers, and as the collections generally were of high quality, the exhibition was remarkable both for its extent and interest. That in carrying out the arrangements Mr. Holmes turned the material at his command to the best possible account, followed as a matter of course with the result that the general effect was exceedingly bright and tasteful.

Hyacinths, Tulips, and other bulbous plants, for which specially liberal provisions were made in the schedule, were admirably shown, and produced a rich display of colour. The premier award in the great open class for thirty-six hyacinths was made in favour of Messrs. H. Williams and Sons, Fortis Green, Finchley, who had finely-developed examples of Gertrude, Gigantea, La Grandesse, Von Schiller, King of the Blues, Macaulay, Madame Van der Hoop, Czar Peter, Lord Derby, Grand Lilas, Fabiola, and other popular varieties. There was a spirited competition in the amateurs' class for twelve hyacinths, and the post of honour was occupied by Mr. Turk, gardener to T.

Boney, Esq., Cholmley Lodge, Highgate, who had large well-finished spikes of Hercules, General Havelock, Gertrude, Lord Derby, King of the Blues, La Grandesse, and Charles Dickens; Mr. W. Clark, gardener to W. Soper, Esq., Eversley, Herne Hill, was a very close second; and Mr. J. Horsley, Selwood Place, South Kensington, was third. In competition for the prizes for thirty-six pots of tulips, Messrs. H. Williams and Sons were first with a collection in which the whole of the plants were remarkable for their neat foliage and finely-developed flowers. The principal varieties represented were Proserpine, Vermilion Brilliant, Hector, Van der Neer, Ophir d'Or, the finest of the single yellow tulips; Joost Van Vondel, Duchesse de Parma, Fabiola, and White Pottebakker. The same firm was also first for polyanthus narcissi, with an excellent collection, the principal varieties being Bazelman Major, Her Majesty, Gloriosa, and Newton. Lily of the Valley was splendidly shown by Messrs. H. Williams and Sons in the open class for twelve pots, and the premier award was made in their favour.

CYCLAMENS were staged in immense numbers and excellent condition and produced a rich and highly attractive display. In competition for the prizes for collections the St. George's Nursery Company, Hanwell, were first with about two hundred medium-sized examples, all of which were well bloomed and distinguished by the high quality of the flowers; Mr. J. Odell, Gould's Green, Hillingdon, was a good second. There was a spirited competition for the prizes for thirty-six cyclamens, and, as in the preceding class the post of honour was occupied by the St. George's Nursery Company, who hadsplendidly flowered specimens; Mr. J. Odell was second with good examples. Mr. D. Phillips, Langley Broom, Slough, was a capital first in the amateurs' class for twelve. Mr. Prestridge, Boston Nursery, Brentford, exhibited several semi-double varieties.

DAFFODILS were represented by three immense collections, and formed an important and highly attractive feature. The first prize was awarded to Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, who staged a very tastefully arranged collection consisting of upwards of one hundred bouquets of flowers and comprising about twenty-five varieties. The principal kinds were Golden Plover, Sir Watkin, Rugilobus, Incomparabilis plena, Poeticus ornatus, Princess Mary of Cambridge, Golden Spur, Pallidus præcox, Albicans, Princeps, Ard Righ, and Cyclamineus. Messrs. Barr and Son, 12, King Street, Covent Garden, were a very close second, with an excellent collection in which a considerable number of rare varieties were represented at their best. Especially noteworthy were Annie Baden, Nelsoni Major, Princeps, Rugilobus, Frank Miles, Emperor, Gloria Mundi, an extremely beautiful variety belonging to the incomparabilis section; Beauty, Golden Spur, Cernuus, Cynosure, Edward Leeds, Sir Watkin, Minimus, Maximus, Edward Hart, Autocrat, Figaro, and Cyclamineus. Messrs. Collins Brothers and Gabriel, 39, Waterloo Road, S.E., were third with an attractive collection.

PRIMROSES AND POLYANTHUSES were well represented for so early in the season, and the first prize collection from Mr. R. Dean, Ranelagh Road, Ealing, was exceptionally good. It consisted of some half-dozen boxes of well bloomed plants, all of which had flowers remarkable for their large size, fine form, and rich colouring, and attracted much attention.

GROUPS OF PLANTS formed a large and attractive feature. Messrs. J. Laing and Sons, Forest Hill, were first with a tastefully arranged collection in which the orchids were especially meritorious. Messrs. H. Williams and Sons were second with an attractive group consisting of azaleas, genistas and bulbous plants. Mr. C. Nunn, gardener to J. Soames, Esq., Woodland Lodge, Greenwich Park, was third with a group consisting of excellent callas. The principal prizetakers in the class for twelve azaleas were Mr. C. Nunn and Mr. R. Wells, Longton Nursery, Sydenham. In competition for the prices for six spiræas, Messrs. H. Williams and Sons, and Mr. Wells were first and second respectively, with large and well-bloomed examples.

MISCELLANEOUS CONTRIBUTIONS included a beautiful table of flowering and fine foliage plants from Messrs. B. S. Williams and Son, Upper Holloway, to whom an extra prize was awarded. Especially good were the orchids, cliveas, and lilacs, the last-named including Alba virginalis, an excellent variety of the common lilac bearing pure white flowers and of much value for forcing. Messrs. J. Cheal and Son, Crawley, were awarded an extra prize for a collection of about fifty dishes of dessert and culinary apples, the fruit being good throughout. Some of the finest examples were those of Lord Derby, Norfolk Beefing, New Hawthornden, Alfriston, Dumelow's Seedling, The Queen, Cox's Orange Pippin, Grange's Pearmain, Lane's Prince Albert, Alfriston, and Schoolmaster. Messrs. R. Beale and Co., New Southgate, exhibited a large collection of garden sundries, and received honourable mention. The same recognition was obtained by Mr. George, Putney, for sundries, and by Messrs. Hayward and Co., Brockley, for portable plant houses.

FIRST-CLASS CERTIFICATES were granted to Mr. R. Dean for the under-mentioned primroses: *Mrs. Langtry*, a beautiful variety, the flowers large, stout, and circular in outline and the colour bright rose pink, and *Lord Randolph* an effective variety with well-formed flowers of a brilliant crimson scarlet hue.

The judges were Mr. W. G. Head and Mr. George Gordon.

THE MAYOR OF WORCESTER.

On the 5th instant thirty of the foremen and clerks of the firm of Richard Smith and Co., St. John's Nurseries, Worcester, were entertained at dinner by Mr. Smith Carington, the senior partner, in commemoration of his mayoralty of the "faithful city" this year. The company sat down to an excellent repast, and after doing ample justice to a liberal bill of fare, the rest of the evening was spent in speech-making, songs, and music. The healths of his Worship and of Mr. R. C. A. Carington, the managing partner of the firm, were proposed in eulogistic terms, and suitably responded to by both gentlemen. Altogether a most enjoyable evening was spent, the company separating at eleven o'clock with hearty good wishes for the continued prosperity of the firm. We are always glad to hear of these pleasant reunions, which tend to strengthen the bonds of sympathy between employer and employed.

DUTCH HORTICULTURAL SOCIETY.

FLOWER COMMITTEE, FEB. 12.

For this meeting Messrs. E. H. Krelage and Son, at Haarlem, sent a Narcissus tazetta, called *Grand Emperor*. The committee resolved on paying thanks to the above-named firm, not only for this Grand Emperor but still more for an exhibited collection of bulbous and tuberous plants. An honourable mention was adjudged to the same firm for a collection of cut flowers of different varieties of Helleborus, and for *Helleborus Boccini superbus*. A flourishing *Iris Bornmulleri* of the same firm, Krelage and Son, was rewarded with a second-class certificate.

First-class certificates went to:

(1) Mr. R. Zaadnoordyk, at Limmen, for a new tulip belonging to the group "Duc of Tholl," and exhibited under the name of *Cochenille Duc*. This tulip, flourishing like the Duc of Tholl already in the first days of December, distinguishes itself by a nice dark red colour and an extraordinary large flower.

(2) Messrs. Groenewgen and Co., at Amsterdam, for an *Imantophyllum robustum elegans*, that characterizes itself by a robust development and a big well-shaped dark-coloured flower.

Replies to Queries.

Grafting Vines.—H.C.: The grafting should be done after the vines have commenced to make new growth, but the scions should be only just commencing to move. Short well ripened laterals with prominent buds make the best scions, and they should be long enough to allow between four or five inches below the junction for insertion in the bottle containing the water. The Black Hamburgh makes an excellent stock for the variety mentioned.

Stachys tuberifera.—A. H. R.: This vegetable was introduced from China to France in 1884, by Dr. Bretschneider, physician to the Russian Embassy at Pekin, who sent tubers to the Société d'Acclimatation of Paris. It was first presented to public notice by Sir Henry Thompson, who exhibited a large dish of tubers at the meeting of the Royal Horticultural Society, December 13, 1887, the produce of tubers obtained from France. The vegetable was again submitted to the Fruit Committee of the Society on November 13, 1888, by Messrs. J. Carter and Co., who were awarded a first-class certificate. We have no record of the poppy and lettuce you mention having had certificates conferred upon them in 1888.

Muscat Grapes finishing badly.—A. Short: Yours is a bad case of shanking, caused by a reduction in the temperature and too much atmospheric moisture. You had better have two vines of Muscats at the warmest end of house, when by careful ventiiation you may be able to ripen them by continuing the fire without doing any serious injury to the Hamburghs. It was a mistake to put one Muscat at each end, but if you follow present advice you will to a certain extent overcome the difficulty. If you have the Hamburghs at one end, you will be able to give them more air as soon as they are ripe, while you can keep the other end closer. As recently stated in the G. M., Muscats and Hamburghs do not usually finish properly in the same house. The Muscats require a longer time and a high temperature to ripen them properly. Yours is a case in point, but you are not alone in your trouble, there are many in the same fix as yourself. It is an exception to find Muscats doing thoroughly well with Hamburghs.

Quieting Bees.—Philip: The best instrument for the purpose is Howard's Improved Atomizer, which may be obtained from the manufacturer, Mr. J. H. Howard, Holme, near Peterborough. It is charged with 20 parts water and one part Calvert's No. 5 Carbolic acid, and by the action of the pneumatic



SPECIAL IMPROVED ATOMIZER.

tube throws a fine spray that is immediately effectual and perfectly harmless. The aim of every bee keeper should be to acquire the art of handling his pets without any aid whatever, and confidence will grow with familiarity. There are times, however, when the most expert operators must use a sedative of some kind, and the spray of diluted carbolic is greatly to be preferred to tobacco smoke.

Woodlice in Mushroom House.—F.B. writes with reference to the inquiry of F.P. as to the best means of banishing woodlice from mushroom houses. "Anxious to assist those who are in any difficulty as far as I can, I would like to suggest to your correspondent, F.P., a course of procedure by which he may, in some degree at least, avoid the vexation to which he is now subjected through the destruction of the mushroom crop by woodlice. As the result of experience I am persuaded that the cause of the house being overrun by the woodlice, is insufficient preparation of the material with which the bed was formed. In the course of my experience, I have seen many gardeners, both amateur and professional fail in the preparation of the manure to turn it over a sufficient number of times. When the manure is not properly turned over it becomes hot and dry, with the result that woodlice crowd into it in immense numbers, and are taken into the house with the manure. I would also direct attention to the importance of removing the whole of the soil and manure when the beds are exhausted, and also of thoroughly cleaning the part of the structure from which they are taken, so that there may be no harbour for the woodlice. There are many ways of catching woodlice as you state, but the better way is to prevent their coming into the house.

Perennial Poppies.—Hollyhock : The form known as Papaver bracteatum, which has deep crimson flowers, and Salmon Queen, a variety of the oriental poppy with flowers of a soft salmon scarlet hue are quite distinct from those you have, and are highly effective when in bloom.

Club.—C.F. : Deep trenching, a liberal use of lime and judicious rotation of crops are the best preventives of clubbing. The land on which the winter greens have clubbed should not be cropped with cabbages, cauliflowers, kales, turnips, or other cruciferous plants for at least twelve months.

Correspondence.

ORCHIDS AT CAMDEN WOOD.

IN Mr. Douglass's kind remarks on the orchids at Camden Wood (page 138), there are two slight errors, which I am certain he will not mind my correcting. First, Mr. Douglas speaks of "a curious variety of Cattleya Trianæ" (C. Trianæ Vanneriana) as having "the yellow of the throat transferred to the petals," whereas the streaks of yellow are on the two lower sepals. Again, he mentions "a seedling cypripedium raised from the same parents as C. cardinale, namely, C. Sedeni and C. Schlimi albiflorum, but the reverse cross;" whereas the parents are C. Schlimi (not albiflorum), crossed with C. Sedeni candidulum. I may remark that this plant was only two years and three months old when its first flower opened. W. H. ROBBINS.

Camden Wood, Chislehurst.

TRADE CATALOGUES.

LITTLE AND BALLANTYNE, CARLISLE.—*Farm Seeds.*

HARLAN P. KELSEY, HIGHLANDS NURSERY, LINVILLE, WESTERN NORTH CAROLINA.—*Plants and Flowers of the Southern Alleghany Mountains.*

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H. GEORG, BASLE.—*Botanical Books. Catalogue No. 67, and Supplement.*

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Obituary.

ON the 8th inst. at 7, Lewisham Road, in his eighty-fourth year, CHARLES MARSHALL, landscape painter, formerly principal scene painter with Elliston, Macready, and Lumley.

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Beans, French	per lb.	1s. 6d. ,,	2s. 0d.
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Brussels spr'ts, pr ½ sieve		1s. 6d. ,,	2s. 6d.
Cabbages	per doz.	1s. 0d. ,,	2s. 0d.
Carrots	per bun.	0s. 4d. ,,	0s. 6d.
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SPECIAL SPRING NUMBER

Of the GARDENERS' MAGAZINE.

SATURDAY, the 22nd of MARCH, is the day arranged for the publication and distribution of the ANNUAL SPRING NUMBER of **THE GARDENERS' MAGAZINE**—the distribution, as in former years, to be throughout the United Kingdom and abroad.

This Spring Number will contain a selection of most interesting and seasonable articles, including:—THE BEST APPLE IN THE WORLD—SUMMER CULTIVATION OF THE POTATO—HERBACEOUS BORDERS AND ALPINE HOUSES—RIPENING TOMATOS IN THE OPEN GROUND—CYCLAMENS FOR THE ROCKERY AND ALPINE HOUSE—A BEAUTIFUL WATER SCENE—SOME CURIOUS KINDS OF TOMATOS—NOTES OF OBSERVATION IN GARDEN, GREENHOUSE AND STOVE—A FEW NEW IDEAS FOR THE CULINARY DEPARTMENT, &c., &c.

As stated above, copies will be sent to large gardens throughout the country; successful exhibitors at the various shows in 1889 will be entitled to a free copy; a distribution amongst wealthy Amateurs will be made; and the Horticultural Trade will also be posted.

Thus, there is no class with whom advertisers—whether wholesale or retail—will not be directly brought into communication, and as a considerable demand upon the limited number of advertising pages is expected, an early application for space should be made.

To meet the requests already made for positions in this issue, the number will be arranged with extra pages to face literary matter, at special rates; a few still remain, and may be secured by a prompt intimation.

With this Spring Number will be given

A TINTED PHOTO PLATE

OF

THE HISTORIC GARDENS OF WOTTON,

The Residence of John Evelyn, Author of the Celebrated "Diary."

All Advertisements intended for this Number should reach the Office by Wednesday, MARCH 19*th, at latest, to ensure insertion.*

Advertisement Offices:—148 & 149, ALDERSGATE STREET, LONDON, E.C.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths After Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
23	S	**5th Sun. in Lent.**	5 59	6 40	6 15	7 26	9 37	3 33	3 51	0 38	0 58	43·7
24	M	Henry W. Longfellow died, 1882.	5 57	6 21	6 17	7 47	10 51	4 10	4 28	1 16	1 35	43·9
25	Tu	*Annunciation.* Lady Day.	5 54	6 3	6 18	8 11	Morn.	4 45	5 1	1 53	2 10	44·1
26	W	Duke of Cambridge born, 1819.	5 52	5 45	6 20	8 40	0 3	5 19	5 36	2 26	2 44	44·2
27	Th	Cambridge Lent Term ends.	5 50	5 26	6 22	9 15	1 10	5 55	6 17	3 1	3 20	44·4
28	F	☽ First Quarter.	5 48	5 8	6 24	9 58	2 9	6 38	7 1	3 42	4 3	44·5
29	S	Oxford Lent Term ends.	5 45	4 49	6 26	10 50	2 58	7 30	8 4	4 26	4 55	44·7

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ROYAL BOTANIC SOCIETY. GARDENS, REGENT'S PARK.
FIRST EXHIBITION of SPRING FLOWERS, WEDNESDAY next, MARCH 26th. Gates open at 2 o'oclock. Band from 2.30 to 5.30.
Tickets to be obtained at the Gardens only, by vouchers from Fellows of the Society, price 2s. 6d. each.

CRYSTAL PALACE.—SATURDAY, MARCH 29, ANNUAL EXHIBITION OF SPRING FLOWERS AND PLANTS.
Entries to be sent not later than SATURDAY, MARCH 22. Schedules on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

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For other prizes equally liberal, including Grapes, &c., see Schedules, ready shortly, and to be had post free on application to the Secretary, J. HUGHES, Northwood Villas, Metchley Lane, Harborne, Birmingham.

Exhibitions and Meetings for the Ensuing Week.

THURSDAY, MARCH 6.—LINNEAN SOCIETY.—General Meeting.
SATURDAY, MARCH 8.—ROYAL BOTANIC SOCIETY.—General Meeting.
TUESDAY, MARCH. 11.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral, Fruit, and Scientific Committees.
WEDNESDAY, MARCH 12, AND THURSDAY, MARCH 13.—ROYAL AQUARIUM.—Spring Show.
TUESDAY, MARCH 25.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral, Fruit and Scientific Committees.
WEDNESDAY, MARCH 26.—GLASGOW HORTICULTURAL SOCIETY.—Spring Show.
WEDNESDAY, MARCH 26.—ROYAL BOTANIC SOCIETY.—First Spring Show.
THURSDAY, MARCH 27, AND FRIDAY, MARCH 28.—PAISLEY HORTICULTURAL SOCIETY.—Spring Show.
FRIDAY, MARCH 28.—FALKIRK HORTICULTURAL SOCIETY.—Spring Show.
SATURDAY, MARCH 29.—CRYSTAL PALACE.—Spring Show.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.
ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

TERMS OF SUBSCRIPTION.—Post free from the Office, 4, Ave Maria Lane, London, E.C. to any part of the United Kingdom, One Copy, 2½d.; 3 Months, 3s.; 6 Months, 6s. One Year, 11s. 6d. (including the Christmas Number). To America, Australia, Belgium, Canada, Denmark, France, Germany, Holland, India, Italy, Spain, Sweden, and Switzerland, 14s. per annum.

PHOTO-PRINT SUPPLEMENT.
With this Number is presented a Supplement of
WOTTON HOUSE, DORKING.
Subscribers should see that Newsagents deliver the Supplement with each copy.

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The Gardeners' Magazine.
SATURDAY, MARCH 22, 1890.

THE BEST APPLE IN THE WORLD is inquired after by a correspondent who has taken a special interest in recent discussions, and expresses a fear that some two or three varieties have obtained more than a fair share of attention to the detriment of others that have equal claims to prominence. The question is of too large a nature to be disposed of in the usual way, and for convenience, no less than for the importance of the subject, we propose to offer some remarks upon it in this place.

In respect of the discussion to which the question has reference, it is proper to say that it was opened by a writer who began by professing to know all about fruit culture, and proceeded to make proposals bearing directly on the production of apples for the supply of the markets. The apples deserving of special attention for market purposes were alleged by this writer to be Blenheim, Cox's Orange, and the Ribston. To this another writer objected that for those who had to live by supplying the markets, only one of the three named could be considered in all respects suitable, that one being Cox's Orange. From first to last, although many writers took part in the discussion, and all save one wandered from the primary proposition, there was never a question raised about the claim of this dessert apple to a leading place both in the commercial and domestic garden. What followed is not of great consequence now, save as to the points that were established, and these, of necessity, are of the first importance both to the producers and the consumers of apples; in other words, to the commercial cultivators and the men who have the management of domestic gardens.

We will recall the points that were established, having nothing further to say in this paragraph as to the merits of Cox's Orange. It was agreed, and indeed was never questioned, that the Ribston Pippin stands in the front rank for flavour as a table apple, and equally so as a culinary apple; it is grand in any case, but as a table apple hard in the flesh, and needing a good digestion. It is agreed also that it is so liable to canker, that it should never be planted in any quantity until it is known as the result of observation that the soil and climate of the district are adapted to its constitution, and the intending planter can secure trees well made on a suitable stock. In places where it thrives it is highly fruitful, but where it does not thrive it is more plague than profit; and as there are but few instances of healthy growth to be met with, the Ribston is generally put aside as an apple for amateurs who can afford to be disappointed, and who, moreover, can bestow upon it time and attention that could not be afforded in a commercial garden.

The claims of the Blenheim Pippin are of a peculiar kind. It is singularly handsome in size, form, and colour; it is tender-fleshed and of good but not first-rate table quality, but for culinary purposes it is, perhaps, not surpassed by any. We will not at this time say if we would place it in the second or third rank in respect of flavour, because it will suffice to say that it cannot have a place in the first rank. In respect of growth it is one of the most healthy and vigorous, and in truth its vigour is objectionable when it has been made the subject of an investment with a view to the realization of returns within a reasonable time. The tree matures slowly, and is for that reason but ill adapted for the planter who cannot afford to wait half a lifetime for returns, or is content to hand over to his heirs land and trees for the great future that is the proper fortune of a thriving plantation of Blenheims. For the man who plants his own land, and can afford to wait, this noble apple comes near to the idea conveyed in the portentous word "best," for it is highly valued both for eating and cooking, and the tree is long lived and makes amends in age for the slowness of its youth.

An apple that figured in the discussion as having more claims than were allowed is the well-known King of the Pippins. The book name of this is Golden Winter Pearmain, but the market name has obtained such currency, and the true King of the Pippins is so rarely seen, that it is useless any longer to insist on the original name. The "King" of the market must henceforth be the "king" of the garden, and we may ignore the other king as of no consequence. Nor are we tied to a mere name in this case, for this is a kingly apple for beauty, usefulness, and productiveness. As a table apple it ranks below Ribston and Cox's Orange, and is about the equal of the Blenheim. It is a great favourite with the people of the metropolis, and though the markets are largely supplied in the autumn without fail every year, we never know how long it would keep its quality in the shop windows, because it is bought up so rapidly that the stocks are usually cleared out by the middle or end of November. It is certainly one of the most constant of apples, probably *the* most constant of those that have any special character and distinctive beauty. Moreover, it may be grown equally well as a dwarf free bush, or a full sized orchard standard: in every way it is a King. Were it but one degree better in flavour as an eating apple, we would exalt it to the rank of emperor, but there

stands the fact that, as compared with a Cox which ripens at the same time and lasts a few weeks longer, it is decidedly wanting; but it must rank with the Blenheim for flavour, and it surpasses that and many more good varieties in its early bearing on a dwarfing stock and abundant and constant production. It was truthfully said by a contributor to the recent discussion that there is more money in this than in any other apple.

Two culinary apples that have obtained less than their fair share of attention now confront us, and it is their own fault, perhaps, that they have not obtained prominence in this discussion, for they have but secondary claims to be eulogized as apples for eating. They are Bramley's Seedling, a Nottinghamshire apple that resembles Blenheim; and Lane's Prince Albert, a Hertfordshire apple, equally good-looking, of equal value for culinary purposes, and keeping longer than Bramley's. Where apples are grown in quantity these may prove equal in usefulness, for often the apple we would not place first has the adroitness to place itself, the *very* best in quality sometimes failing to produce a crop in a season when varieties of less merit fruit abundantly. It follows that as between two culinary apples that are so nearly matched in qualities, the final verdict will turn upon one or two points of perhaps secondary importance. As regards appearances, there is not much room for differences of opinion; they are both good-looking, and of fair size, Lane's will keep fully a month longer than Bramley's, and that is a point of importance.

Now it is our turn to ask a question. For what purpose is an apple wanted? If for eating only Cox's Orange must have the first place, because of the high quality of the fruit, and manageableness of the tree. If it be wanted for the double purpose of eating and cooking, the best is Blenheim for those who can wait; or King, for those who must see a crop within a few years after planting. But where the kitchen alone is in view, the two last named, Bramley's and Lane's, have such an equality of claims, that it is not an easy matter to decide for either; but it is expected of us to decide, and as we are accustomed to the splitting of hairs in judging, we vote for Lane's Prince Albert. But the question proposed is at this point only in part answered. We seem bound to keep in view the two distinct purposes for which apples are cultivated, but having again to split a hair, we shall say that as kitchen apples are of vastly more importance than eating apples, and the consumption for culinary purposes far outstrips the consumption for dessert, we may dismiss the eating quality, and finally declare Lane's Prince Albert the best apple in the world. Both this and Bramley's are classed as table apples, but they are certainly not of the first quality as dessert fruit.

By way of supplementary remark, it may with propriety be said that a considerable proportion of mankind eat with evident enjoyment apples that are not by the cognoscenti considered eatable. It will never pain us to see the uninitiated in Appledom put their teeth into the apple that wins the prize in this competition, for it is tender in the flesh, juicy, and briskly flavoured; not necessarily provocative of grimaces, and scarcely inferior to the "King" of the markets. But alas! it has one serious fault; the standard trees bear profusely, and the branches bend with the weight of the fruit. If the cows are then turned into the orchard, they find the apples convenient for eating, and when they have taken toll of the fruit, they proceed to munch the leaves of the trees, and the tender young shoots. The fault calls up remembrance of George Robins in the pulpit, bewailing the fact that the property then to be sold was rendered slightly objectionable by the litter of the rose leaves and the din of the nightingales. There is a shady side even to the best of apples.

SHEFFIELD CHRYSANTHEMUM SHOW, November 14 and 15.

ECCLES CHRYSANTHEMUM SHOW, November 14.

TWICKENHAM FLOWER SHOW, July 2.

SHREWSBURY FLOWER SHOW, August 20 and 21.

MR. JAMES SHAW has succeeded Mr. J. Burnett as head gardener at The Deepdene, Dorking.

MR. A. MCDONALD has been engaged as head gardener to J. H. Darby, Esq., Pen-y-Garth, Wrexham, North Wales.

MR. R. MORSE has been engaged as head gardener to D. A. Thomas, Esq., M.P., Lanwern Park, Newport, Monmouthshire.

MR. J. A. MERCER has been engaged as head gardener at Beechwood, Rochdale, the residence of Mrs. Kemp.

MR. G. JONES has been engaged as head gardener at Benacre Hall, Wrentham, Suffolk, the residence of Sir A. Gooch, Bart.

MR. W. C. GUNTHORPE has been engaged as gardener to Lady Kelly, Shrublands, Earley, Reading.

MR. C. SIMMONS has been engaged as head gardener to B. L. Barrow, Esq., Syndhope Hall, Matlock, Derbyshire.

NATIONAL ROSE SOCIETY will hold its annual dinner at the Hotel Windsor on June 24.

BRITISH FRUIT GROWERS' ASSOCIATION will hold a meeting today (Saturday), at the Town Hall, Ellesmere, Shropshire, the chair to be taken at seven p.m.

EXHIBITIONS OF CYPRIPEDIUMS will be held by the National Horticultural Society of France on April 10, June 12, and September 11, 1890; and January 8, 1891.

REV. F. D. HORNER will read a paper on "An Amateur's Experience With Orchids" at the meeting of the Wakefield Paxton Society, on the 29th inst.

THE WEATHER PLANT is described as of great practical value in a circular issued by Mr. J. F. Nowack, of 2, Forest Villas, Kew. It is therefore offered "as a means of warning against fogs, storms, firedamp, and earthquakes."

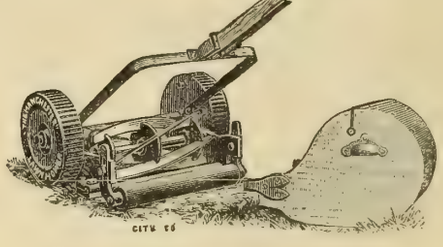
AN ORCHID JOURNAL has been started by Mr. Lucien Linden to appear monthly from the offices at 100 Rue Belliard, Brussels. It should prove useful, and from the appearance of the first number published March 15, it is likely to prove generally acceptable.

HORTICULTURAL CLUB.—A special dinner will take place on Tuesday next, March 25, at Hotel Windsor, when M. Henri de Vilmorin will be the guest of the club. It is hoped that many members who do not usually participate in the pleasures of the evening meetings will be present on this occasion to give a welcome to the distinguished visitor.

HIPPEASTRUMS are flowering gaily in the house customarily devoted to them in Messrs. Veitch's nurseries, King's Road, Chelsea. It is quite as correct to speak of this class of plants as Amaryllis, but Hippeastrum is in fashion at the present moment, on the ground that it is more correct. It is only pedantically so; but under either name these are glorious flowers, and have attained to a perfection that would justify any kind of eulogy.

THE WAREHOUSEMEN AND DRAPERS' TRADE JOURNAL appears in great bulk for the refreshment of the trade appealed to in view of the opening season. A paper that runs beyond sixty pages in one week must be said to be doing some business, and we hope our friends the drapers are in a corresponding state of prosperity. If riches increase they will of course set their hearts too upon orchids and roses, and "all that sort of thing." We can assure them that the real flowers of the garden are even more beautiful than the artificial creations they supply over the counter for the embellishment of the ladies' heads.

MOWING MACHINES appear to run a race with the fashions, for every season brings new patterns forward, and the "latest improvements" are announced as matters of the greatest importance. Messrs. Follows and Bate, of Gorton, Manchester, the winners of innumerable medals, diplomas, and money prizes, by the working of their machines in public competitions, are also foremost in devising new patterns and



THE "MANCHESTER" MOWING MACHINE.

improvements. Justly they urge that attention to little things is the first duty of those who are charged with the carrying out of settled principles, and if the fundamentals of construction remain the same, lawn mowers may yet be susceptible of improvement in matters of detail. The subjoined cut will show that Messrs. Follows and Bate have adopted a special make of machine for use in gardens. It is called the "Manchester." One of its good points is an adjustable handle to suit a person of any stature, and it is adapted either to take up the grass in damp weather or to scatter it in dry weather, the collecting box being readily attached or removed as required.

STOTT INSECTICIDE DISTRIBUTOR promises to inaugurate an epoch in economic horticulture by bringing to our aid a new agency for the repression of the insect plagues that ravage the crops. Of insecticides we have any number that are cheap, effectual, and as regards source of supply, inexhaustible. But to apply them appears always a serious difficulty. We see men and boys employed in orchards and working with a will in the distribution of insecticides, and learn from the imperfection of the mechanical aids in the work that at the best it must be but partial. The Stott apparatus will ensure a more effectual delivery than any engine hitherto applied to such work, as was demonstrated at a recent meeting of R.H.S., and subsequently at the Horticultural Club. A machine will be in use at Chiswick to give it publicity.

AUCTION SALES FOR THE ENSUING WEEK.

MONDAY, MAR. 24.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, and Greenhouse Plants.

WEDNESDAY, MAR. 26.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Palms, Rose Trees, &c.

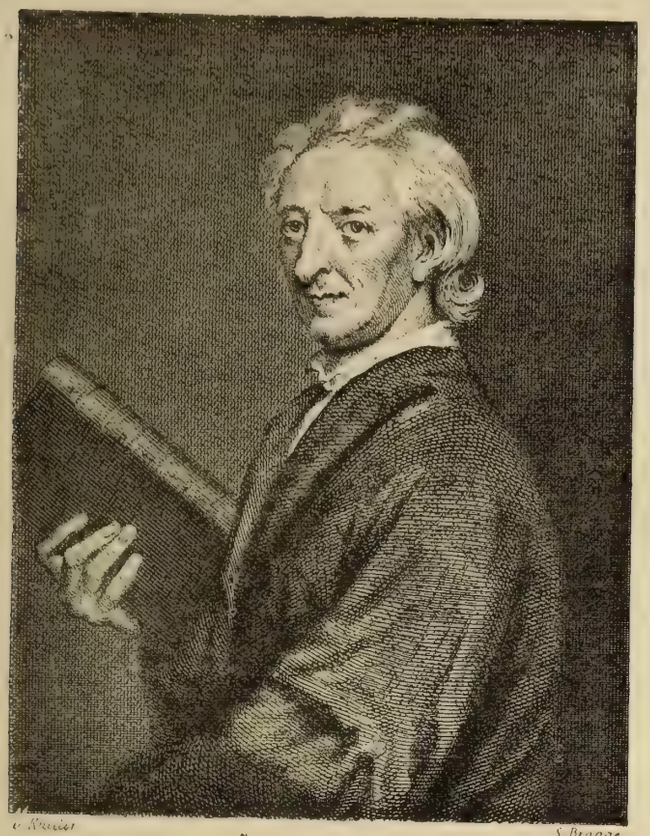
WEDNESDAY, MAR. 26.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, and Bulbs.

THURSDAY, MAR. 27.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids, Lilies from Japan, &c.

THURSDAY, MAR. 27.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38 and 39, Gracechurch Street, Greenhouse Plants, Rose Trees, &c.

THURSDAY, MAR. 27.—Messrs. Protheroe and Morris, at the Royal Nurseries, Ascot; Nursery Stock.

FRIDAY, MAR. 28.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.



JOHN EVELYN ESQR.

My Ld,
Your Lps most Dumt &
most Obedient & most
Obliged Servant
Wotton 14 July 1704 Evelyn.

WOTTON HOUSE, NEAR DORKING.

There is not a more interesting house in the British islands than that of Wotton in Surrey, where John Evelyn was born and bred; and of which he became possessor and occupier after the death of his elder brother whose inheritance it was until, in the course of nature, the younger succeeded to his place. It occupies a fine position in a woodland country, and though on a somewhat low level, and consisting of a mixture of edifices, all of a somewhat homely order of architecture, is not wanting in a certain stateliness; while every indication of its substantial English character derives additional dignity from the association with it of one of the chiefest gentlemen horticulturists of which our national records speak. The gardens, the woods, the hills around, and the horticultural environment are all contributory to its claims on our respect, for the Deepdene and the Denbies are near by, and Bury Hill and Aldbury Park are not far away; while for a special surprise, Leith Hill commands views of woods, parks, farms, and gardens, and its name is a loadstone to draw visitors from afar to taste of the scenic beauties of old England. The present proprietor of Wotton is W. J. Evelyn, Esq., a fact of special interest when we call to mind the changes that have occurred, and that continue everywhere amongst the "stately homes of England," and that thus far have left Wotton intact as a residence differing not greatly from the aspects it bore in John Evelyn's time.

John Evelyn was born in this house, and was buried in Wotton church, an edifice of early English character, embosomed amongst noble oaks and chestnuts. The porch was the school in which the gentleman gardener obtained the rudiments of his education, and in the church is an Evelyn chapel and monumental room commemorating the quiet lives and conspicuous virtues of the Evelyn family. The first of the Wotton Evelyns' was George, who purchased the property, and died there in 1603. Richard, his son, was father of our John, the author of "Sylva," the translator of "Quintinie's Treatise on Fruit Culture"; a man of the largest acquirements of his age, an enlightened connoisseur of architecture, painting, music, and poetry; a patriotic and singularly prudent citizen in a time when patriotism and prudence were put to the severest tests, for John Evelyn moved in the front rank of busy public men, and was often charged with offices of public trust in the reigns of Charles I., Oliver Cromwell, Charles II., James II., and William III; not many men of any such respectable nation as ours can have been known to and trusted by four kings and the master of a revolution. When we survey the events of his busy life, and take note of his multitude of employments in a time when dreadful uncertainties made mockery of caution and prevision, we marvel that he should find time, and the leisurely frame of mind that gardening requires, and yet he was a master of the art, and found many and great opportunities for the exercise of his skill in effecting improvements at Wotton.

But for all his learned treatises, his quaint essays, his curious proposals for the advancement of art and science, and his tree planting and gardening, the work by which John Evelyn is best known and will be best remembered is his "Diary," which sheds light of a peculiar value on the long period of sixty-four years—from 1641 to 1705-6—during which it was continued, including the great Civil War, the Commonwealth, the Revolution of 1688, and the establishment of the Dutch dynasty, by which the Stuarts were brushed from the English throne for ever. The diary tells us much of Wotton, and also of the political and social life of the time even to within three weeks of his death, at the age of eighty-six years. It is an example of constancy, no less than of literary taste and skill; a storehouse of important historical facts recorded as from observation, and a curious and most interesting reflection of the manners of his age, in respect of which we are well supplied with information both in this diary and in that very different work, but not less entertaining or valuable, the diary of Samuel Pepys, Esq.

Although in the most proper sense of the term a popular book, and therefore extensively read, we shall scarcely do wrong in reproducing here a passage which conveys interesting information and admirably represents John Evelyn's style, which is always chaste and usually serious, but occasionally betrays traces of latent humour, suggestive of a very different frame of mind to that which begets the humour of sarcasm. He says, "The place of my birth was Wotton, or Blackheath, in the county of Surrey, the then mansion-house of my father, left him by my grandfather, afterwards, and now my eldest brother's. It is situated in the most southern part of the shire; and, though in a valley, yet really upon part of Leith Hill, one of the most eminent in England for the prodigious prospect to be seen from its summit, though by few observed. From it may be discerned twelve or thirteen counties, with part of the sea on the coast of Sussex, in a serene day. The house is large and ancient, suitable to those hospitable times, and so sweetly environed with those delicious streams and venerable woods, as in the judgment of strangers as well as Englishmen it may be compared to one of the most pleasant seats in the nation, and most tempting for a great person and a wanton purse to render it conspicuous. It has rising grounds, meadows, woods, and water in abundance.

"The distance from London little more than twenty [26] miles, and yet so securely placed, as if it were one hundred; three miles from Dorking, which serves it abundantly with provision as well of land as sea; six [8] from Guildford, twelve [14] from Kingston. I will say nothing of the air, because the preeminence is universally given to Surrey, the soil being dry and sandy; but I should speak much of the gardens, fountains, and groves that adorn it were they not as generally known to be amongst the most natural, and (till this later and universal luxury of the whole nation, since abounding in such expenses) the most magnificent that England afforded; and which indeed gave one of the first examples to that elegancy, since so much in vogue, and followed in the managing of their waters, and other elegancies of that nature. Let me add, the contiguity of five or six manors, the patronage of the livings about it, and what Themistocles pronounced for none of the least advantages — the good neighbourhood. All which conspire here to render it an honourable and handsome royalty, fit for the present possessor, my worthy brother, and his noble lady, whose constant liberality gives them title, both to the place and the affections of all that know them. Thus, with the poet:

> Nescio qua natale solum dulcedine cunctos
> Ducit, et immemores non sinit esse sui.

I had given me the name of my grandfather, my mother's father, who together with a sister of Sir Thomas Evelyn, of Long Ditton, and Mr. Comber, a near relation of my mother, were my susceptors. The solemnity (yet upon what accident I know not, unless some indisposition in me) was performed in the dining-room by Parson Higham, the present incumbent of the parish, according to the forms prescribed by the then glorious Church of England.

"I was now (in regard to my mother's weakness, or rather custom of persons of quality) put to nurse to one Peter, a neighbour's wife and tenant, of a good, comely, brown, wholesome complexion, and in a most sweet place towards the hills, flanked with wood and refreshed with streams; the affection to which kind of solitude I sucked in with my very milk. It appears, by a note of my father's, that I sucked till January 17, 1622, or at least I came not home before."

John Evelyn was a staunch royalist, and a firm adherent to the Church of England. He did not approve of all the acts of Charles and James, and of necessity he did not approve of the desperate measures by means of which Cromwell attained to a leading place in the Government of the country. Yet he appears to have suffered little for his faithfulness, a fact in great part due to his exceeding prudence and his gentlemanly suavity of manner. He was happily married to a beautiful woman of high culture, and his children inherited his tastes, and the only son that lived distinguished himself in literature. It is interesting to note that Evelyn's father was a man of considerable fortune, and yet his son entered upon his education rather late, and acquired his first rudiments in the humble village school in the church porch. Afterwards he was educated at Lewes and Oxford. With the tastes common to young men of culture and means he travelled in France, Flanders, and Holland, one feature of his experience being as a volunteer in an English regiment then serving in Flanders. Returning home he became involved in the political troubles of the time and for a brief space served in the royal cause, having set out to join Charles at Brentford. But the removal of the army to Gloucester determined him to return to Wotton, where he built himself a study and began those improvements of the place that now constitute some of its distinctive features.

It was in the time of Cromwell that Evelyn settled at Deptford—for Wotton was the property of his elder brother—and at Sayes Court formed that holly hedge that is so closely associated with his name as to seem like a part of him. It was 400 feet in length, 9 feet high, 5 feet in diameter, as we find it described in the "Sylva," book 2, chapter 6. Under date January 30, 1698, he says, "The Czar of Muscovy being come to England, and having a mind to see the building of ships, hired my house at Sayes Court, and made it his court and palace, new furnished him by the King." Very soon afterwards Evelyn's servant wrote to him describing "the house full of people, and right nasty," and elsewhere we have the memorable record of Peter the Great gratifying his coarse taste and love of destruction by being driven in a wheelbarrow through Mr. Evelyn's magnificent holly hedge.

His first appointment to a public office was in 1662, as a commissioner for reforming the buildings, ways, streets, and incumbrances, and regulating hackney-coaches in London. In 1664, he was in a commission for regulating the Mint, and in another commission for the care of the sick and wounded in the Dutch war, a position scarcely less than agonising to a man of his generous nature, for the prisoners literally perished in the streets through want of food which the Government failed to provide to the disgrace of the the country and wanton sacrifice of life. In 1671, he was a Commissioner of Plantations; and in 1685, one of the Commissioners of the Privy Seal, and as a Commissioner for Greenwich Hospital, he laid the first stone of the edifice on the 30th of June, 1696.

In October, 1699, his elder brother George died without issue, and he succeeded to the paternal estate, and in the May following he quitted Sayes Court and went to Wotton, where he passed the remainder of his life. In his "Sylva" he mentions that in the great storm of 1703, many trees were blown down within sight of his residence. In a record of the occurrence he puts the number at 2,000, and remarks that "several of them being torn up by their fall raised mounds of earth twenty feet high, with great stones entangled amongst the roots and rubbish." He died at his house in London 27th February, 1705-6, in the eighty-sixth year of his age. Mrs. Evelyn survived him nearly three years and died at the age of seventy-four. Of his family only one son lived to the age of manhood, and he inherited his father's learning and love of art and science. He translated "Rapin of Gardens," and contributed a Greek poem to the "Sylvia," which is prefixed to the second edition. He also translated various works from Greek, Latin, and French, and there are poems of his in "Dryden's Miscellanies," and "Nicol's Collection."

In the gardens and grounds of Wotton are many memorials of John Evelyn, for he impressed upon it his taste and judgment as a lover of trees and picturesque gardening. Much of the wood in the district also is of Evelyn's planting, and his favourite trees appear to have been beech and birch, with an undergrowth of holly. "A viretum all the year long," was one of his especial aims in planting near his residence. The portrait accompanying this report is copied from that which forms the frontispiece to the first volume of "Diary of John Evelyn," published by Bohn in four volumes, 1859.

ROYAL INSTITUTE OF PAINTERS IN WATER COLOURS

The exhibition opened on Monday last in the galleries at Piccadilly more than justifies the brief word we spoke in its praise in our last issue. There is reason for pride in this liberal illustration of the healthy state of a peculiarly English department of pictorial art, not only because of the number of beautiful drawings exhibited, but because they attain to their highest merit in the direction to which water colour is best adapted, the representation of landscape, for here the scenes taken direct from nature are many, and a large proportion of them are of the highest excellence.

In the West Gallery, Mr. Frank Dillon persuades us to begin the inspection in a hopeful frame of mind by his warm presentation of the "Afterglow" (4), at Assouan, and with the rich colours of an Egyptian sunset in the field of vision, we turn to Mr. F. S. Cotman's "Full Tide at Bosham" (52) for a pleasant contrast, and to note how the true artist can accomplish without colour wonders that are all beyond the reach of the colourist who has not made a patient study of the aspects of the outdoor world. Here is a water scene that is truly delicious, and one can scarcely say that the whole of the work carries colour enough for one green leaf in the foreground, were a green wanted there. Mr. Arthur Severn wields a fascinating pencil, and is especially happy in atmospherical effects. Here, in a scene from Coniston (83), he lays on the colour with a heavy hand, showing the bluest of water and frowning rocks in heavy shadow; quite an invitation to us to "drop in" at the lake country and watch for the water that washes the feet of the "Old Man," in hope of seeing it that colour. We have seen it as blue as here painted, and we have seen it blacker than a raven's wing, but from reflections only, for as water it is the purest in the world. Mr. Whymper may be described as Turnerish in his "Bass Rock" (105), superb in its humid atmosphere, softening its angles and mingling sky and sea in an undefinable horizon. Mr. Anderson Hague, in the "Uncertain Glory of an April Day" (110), seems to propound a riddle, for we ask where was the sketch made on which this work was founded? The sky seems to have been made for the occasion. Mr. Edwin Hayes has two sweet things here, "Dalkey Island" (119) and "Dover Roads" (136). Nor should we pass his "Gorleston Harbour" (129), for it is a change from passive hills and rolling waters to see that crowd of anxious faces watching the departure of the lugger; we can almost hear their hearts beat, and we need no interpreter of the subject and its argument. A particularly fine example of English landscape in water colour of high tone is Mr. James Orrock's "Common in Essex" (184). It would be a libel to hint of imitation in this fine work, but its reminder of Constable is instant upon the first view, and we feel the spirit of the great East Anglian to be near us as we scan its features, all so strong as to make deep impressions, as though one could at any time reproduce the drawing by the aid of memory alone. Mr. Orrock has cultivated this positive style, through years of hard work; it is not to be snatched, and it is not easy of imitation, however it may appear so. Mr. G. S. Elgood, in his "Alcove Walk, Arley" (188), gives us a bit of floral colour that makes an agreeable change from the tones that prevail around it; his touch in this kind of thing is singularly happy. The last note we make in this room is of Mr. Shirley Slocombe's portrait of a Guarnerius violin (46), a brilliant example of colour, and a quite novel subject for such careful treatment.

In the Central Gallery Mr. Keeley Halswelle finds a suitable subject for his skill in romantic landscape, his "Royal Windsor" (245) being an admirable example of his style. Mr. G. S. Elgood reminds of Sir J. E. Millais' clipped yews in the Academy exhibition of 1889, in a carefully finished picture of a "Rose Garden" (275). This gives a happy idea for practical purposes, for although topiary work is "out of date,' it is here presented with a freshness and archaic charm not easy to be resisted, as a suitable setting for a garden of roses. Our rosarian friends will enjoy this garden as they may here see it, although they may not instantly begin to form such for themselves. The scene, we take it, is founded on sketches made at Leven's Hall, but it may be anywhere or nowhere, and still be true to the kind of art it so agreeably vindicates. A counterpart of Mr. Orrock's grand sweep of common in Essex is Mr. H. G. Hine's "Fittleworth Common" (317), a scene one may honourably endeavour to "live up to," or to put the case seriously, a scene that is sublime by its simplicity, and a picture of the scene that acquires immense power by its unpretentious reproduction of the truth so far as picture making permits. It is not for us to say that this is the finest drawing in the exhibition, but we must say that when the finest is sought, this must be a candidate for the distinction. A cheerful scene with abundant variety is presented by Mr C. J. Lewis in "A Summer Afternoon" (342), a stretch of water skirted by woodland, a boat with children, a hint of a village, a rainy sky, and a portion of a rainbow; it is the kind of thing that pleases, and one of the purposes of art is to afford pleasure. From this we turn to Mr. J. Aumonier's "Silvery Sunlight" (367) for a lesson in subtleties, and we seem to know the scene of these far reaching plain with the wain in the sandy road, the distant hamlet, and the more distant sea; the harmonising light and vapour remind us of what Pope meant when he spoke of snatching a point beyond the reach of art. A bold change from landscape and all subtleties is Mr. Charles Green's "Pickwick Club" (435). It is well to be reminded of so dear an old friend as Mr. Pickwick; and here he is alive and in action. He stands in his chair addressing the club and the distinguished persons, whether awake or asleep, have contributed their portraits, and the scene is well adapted to start a whole round of joyous remembrances.

In the East Gallery Mr. Joseph Knight presents a sweet idyllic scene entitled "In Sheltered Vale" (639); Mr. Alfred Parsons is happy in a river scene with a tuft of Lythrum in the foreground, it is entitled "Purple Loosestrife" (653), and again we have a noble work in the "Windy Day on the Marsh" (662) of Mr. Wymperis. Mr. Orrock is more emphatic here in suggesting Constable than in the west gallery, his "Breezy Day on an Essex Common" (705) being characterized by great strength of expression, the result of what may be termed a fierce view of the hard features of a scene that would be sordid if contracted, but being expanded with a great sky and apparently illimitable range of broken ground acquires grandeur by its vastness. Mr. Henry Hine is happy in "Lincoln Cathedral" (776), with its noble towers, and the scenes from the Acropolis at Athens that presently follow are full of interest.

The flower pictures are many, and a fair proportion are good. In the West Gallery, Madame Teresa Hegg de Lauderset gives us a delightful group of "Chrysanthemums" (45), with sufficiently definite expression and a near approach to positive colour. Mrs. Henry D. Shepard's "Japan Anemones" (128) is a clever drawing, the white flowers having the texture and tone that speaks of careful study and minute observation. Mr. Elgood's "Rose Garden" (275) we have spoken of above, but it is worthy of mention again here for the advantage of those who make special note of floral subjects. The Flower Garden at "Compton Wynyates" (376), by E. Arthur Rowe, must rank with the gems of the exhibition. An exquisite bit of truth is "Autumn Leaves" (503), by Miss H. Louise Conder, a window draped with ampelopsis, simple enough, but rich in truth and beauty. Mrs. Duffield contributes a group of "Japanese Roses" (544), and "Hydrangea and Azaleas" (615); and Madame de Lauderset makes a kind of pictorial sonnet of the Eucalyptus (766), showing how, for those who can but see it, there is poetry in every plant, and in all the most commonplace events that are usually dismissed as destitute of interest.

CANKER IN THE MARECHAL NIEL ROSE.

The remarks on the above by "J. C. C." in your issue of March 8 suggest the possibility that a few notes founded on my experience might prove not uninteresting to your readers.

That this superb rose is peculiarly liable to this disease is beyond question. One reads and hears sad complaints of it from all quarters, yet it is at the same time true that old plants are to be met with in perfect health, producing annually immense crops of perfect blooms.

Nevertheless, no one can explain these varying results. I do not think many have been more bothered and confounded by this canker than myself. I have tried the rose on all sorts and conditions of stocks, on its own roots, in various soils with and without manure, charcoal, lime, sulphur; in fact, I have tried it in every way I could think of, but up till about two years ago the results were, in each case, pretty similar, viz., splendid growth for a season. Some plants on the highly recommended "de la Grifferaie" stock made rods over twenty feet in length, and proportionately strong. Then follows canker and speedy death. Some of them I renovated in the way Mr. Thomas has done his, but I invariably found them canker again above the new roots. If this were all I had to say it would not be worth printing, but better follows.

Some two years ago I was advised by Mr. Douglas to try scoring the bark of the roses with the point of a knife, as being the practice of Mr. George Paul, of Cheshunt, whose grand blooms of the Marechal are so well known to visitors of the R.H.S. meetings.

This I did on two plants not so badly affected. However, I happened to visit Mr. Paul's nursery soon after, and saw that I had not done nearly enough in the scoring way, having always carefully avoided cross-cutting, only scoring straight up and down. Mr. Paul's plants looked as if some juvenile had been amusing himself upon them with a carving knife. I gave our trees a "good doing" forthwith, ripping the bark in every direction. Glad I am to say that this has more than saved them, for we had last year the best lot of these roses by far than we have hitherto seen here.

After blooming I again cut back the rods to dormant eyes and again scored them all over (avoiding, of course, the buds), and now (March 10) the plants are covered with as fine a crop of fast-opening buds as one could wish to see. Indeed, two-thirds of the lean-to roof, nearly thirty feet by ten feet, is covered with the fine growth of a single Marechal.

The disease is not banished, as it constantly appears here and there, but as soon as it is visible I cut the unhealthy parts clean out. It is something to be able to keep it under a bit, until some infallible remedy is discovered.

And for this reason I should always choose standards or half-standards, as they are more easily examined and observed than dwarfs or own root plants.

I find, too, that moderately strong growth produces better results than large sappy growth, the buds of the latter seldom breaking freely.

George Duffield.

Provence Roses.—A German journal, discussing the complaint of a French amateur that the Provence Rose, beloved of his ancestors, is sadly neglected to-day, states that 200 varieties of this rose were once in cultivation, while hardly more than a dozen are familiar now. One of them was La Belle Villageoise, which was brought from Egypt in the time of the First Empire by the court surgeon, Antoine Dubois, a famous rose grower. He gave it to the Tilly family in Halliée, where it may still be seen, while—so the statement goes—it cannot be seen elsewhere. It is described as having pure white petals streaked with a brilliant rosy red.

A CHEAP SURPRISE.

At this time last year I made a sad discovery, a bed of two hundred varieties of pyrethrums had been top dressed with a good body of stable manure at the same time that certain lily borders and mixed plantations had been similarly treated. Not having seen the garden during the winter I was ignorant of the way in which the work was done, but missing the bright green of the new growth as I saw the ground from certain windows, I ventured out on a sunny morning to have a look at them. I soon found they were utterly dead and gone, and for a few moments I felt just a trifle unfriendly towards the man who put on that dressing, in a reckless way covering the crowns as though light and air were poison to them. But I soon got rid of my temper and asked for an explanation. It was very simple. I had required a strawberry plantation to be treated in some such way, and the result was that the crowns soon pushed through and made a grand growth and a heavy crop, and so justified the practice.

Time passed, and business of various kinds prevented attention to that little matter, and when at last it was necessary to do something, I sent to Messrs. Nutting for two ounces each of all the varieties of dwarf tropæolums they could supply, and a very considerable packet soon came to hand. I had resolved to mix them, but I was perplexed how to do it over so large a piece, for I did not want the dot and go one sort of display, but a sort of melting mixture, rich and harmonious, free from the diaper or spot system, like a sort of effect you will sometimes see on a painter's palette when several rich colours have become associated by pure accident. I saw that I must do the work myself, for to mix a dozen sorts over a large bed measuring some eighty feet by thirty is not so simple a matter as may at first appear.

In the first week of April I sowed all the seeds in rows on a border, putting a label to each. In the meantime I had the great bed pricked over and made somewhat fine on the surface. When my plants were large enough to handle I began to plant out with the aid of a trowel. I began, say, with Tom Thumb scarlet, putting in patches of threes, one foot apart, in a certain number of places. Then, far from these, I put threes of Cerulean; and again threes of Crimson, Ruby King, Empress of India, and Yellow. I could tell by the leaves the blues, the scarlets, and the crimsons, and now with the orange I went amongst the blues and crimsons. In this way I mixed, as I thought, sufficiently, but occasionally two or three clumps of the same came near to each other. The Pearl and Crystal Palace Gem I did not mix with the strong colours, and very glad I was that I did not, for a few got in as rogues and were so discordant that I had to root them out, as soon as by flowering they disclosed themselves. But the light kinds I mixed together for a margin, and this proved a capital arrangement.

The story seems very simple, but the work was not. I was tinkering at that great bed the whole summer long; in fact, from April until September. If you ejaculate, "How dreadful!" I must tell you that I enjoyed the task so much that I have secured seeds for a repetition, and it will be proper to add that no matter how perfectly the work may be done in the first instance, there must be a lot of subsequent tinkering to make a perfect success of it.

Let me endeavour to describe the business. I discovered when a boy that dwarf tropæolums could be transplanted into a moist soil, and left to manage their affairs, without having one drop of water. This knowledge I turned to account, and not one drop of water did I bestow on my plantation throughout the whole of the season. When rain occurred I worked for an hour or two as soon afterwards as possible, lifting my plants with care, opening a hole large enough, and filling in neatly, so as to cover the roots somewhat firmly without the slightest damage to them. Even when the plants that were taken latest from the seed bed were large enough to be showing their first flowers, I still transplanted in the same way, and gave no water. I did not see as a consequence so much as one yellow leaf or one failure through transplanting.

In many cases where I found spaces needing plants I transferred from the clumps, for I soon found I had many more plants in the bed than were needful, and I did not allow them to mix; I kept them apart and as a rule they formed round compact bushes, eighteen inches to two feet across, the dark colours being the neatest in form and exceedingly beautiful in leaf as well as in flower. Thus in the early stages I drew out and destroyed a large number of thriving plants, for to have them run together in masses as they are usually allowed to do in gardens, is to render them comparatively useless, for when thus treated they are coarse weedy things, but when kept to single plants, meeting, perhaps, but never overlapping, they are superbly beautiful; in fact, I venture to doubt if any but the seed growers know how to manage these plants, and as they must have seed they do not grow them for rank leafage as the custom in gardens appears to be.

As the plants came into flower they made more work for me. The object I had in view was to ensure a few bold blotches of deep gold to light up the crimsons and blues and scarlets, but much of this colour would spoil the tone. It follows that the Yellow plants had to be rooted out pretty freely, and for another reason besides their frequency. This variety is of stronger habit than the rest, and often proved oppressive by its robust, spreading growth. In some cases cutting-in answered, but often large plants were dragged out, and the gaps at once made good with reserve crimsons and scarlets; and this went on even so late as August, and it never failed, because we had several heavy falls of rain to suit the business. In a very dry summer, perhaps, the water-pot would have been needful to prevent disaster; but the fact must suffice that it was not used, and was not wanted. The Empress of India and King Theodore are the slowest to grow, and may be transplanted latest, therefore are of special value for tinkering. Some of the later planted of these varieties made round, compact plants of a foot or more diameter, with the most beautiful leafage evenly covered with splendid flowers over the whole of the convex surface; they were models of form and neatness, with a richness of colour nothing could surpass. As rarities, costing more in gold than they were worth in coppers, they would have been appreciated more thoroughly than they were; and yet the truth must be told, that all who saw this great bed, with its glowing mass of modulated colours—the shades of crimson, scarlet, and purple, lighted with a few far-separated blotches of the richest gold—declared it one of the most surprising, agreeable features of a garden which is not wanting in good things of a higher grade than tropæolums.

While severe thinning out and patching and mending went on all the summer, the weather made occasional work, for a smart breeze would now and then snap off a plant at the collar, and to plant another in its place was a matter of necessity. One little storm of wind snapped off a dozen one morning. I might have left the blanks to be filled in by the adjacent plants—for they were always spreading and encroaching on each other—but I so enjoyed the tinkering that wherever a gap occurred I soon made amends, always aiming to obtain an even growth without any mixing anywhere of the plants, and without any decided gap being visible. On two occasions heavy rain and cold spoilt the scene, which became suddenly little better than the crowded nasturtiums commonly seen in gardens, for these cheap plants are but rarely properly grown, the defect in management being crowding a dozen plants in the space required by one, and then they are coarse, leafy, common looking things, whereas in my way of management they are superbly beautiful, and flower continuously from the middle of June until actually stopped by frost. Even then, as noted above, a cold rain reduces them to a leafy state, but a few days sun restores the splendour, provided they are not crowded. Provided there is just a visible space between the individual plants all through, the result of successive thinning as they spread and spread, the flowering does not cease and it is with especial interest that I note this fact, that it is not necessary to remove the berries in order to ensure continuance of bloom; were this necessary the fun would be over, for who could do it? No one with a back certainly; and besides, suppose you abolish the back, even then you must get among st the plants more than will be good for the display; for it is needful sometimes to allow a few blanks to fill themselves up rather than blunder in to insert plants, because the slightest touch is damaging to these soft things, and small gaps in the central parts are not noticeable.

For a cheap splendour and to tide over a difficulty these dwarf tropæolums are invaluable, but only those who have seen them grown properly can have any just idea of their capabilities.

J. E. Saunders.

Literature.

Ladies' Gazette of Fashion for March contains a large copy of the beautiful picture of the casket scene from the "Merchant of Venice," this engraving by Schubeler bringing out the details admirably. The paper on Decorations in Hampton Court Palace, directs attention to some features of interest there that are but little known to the general public.

Ladies' Treasury for March, contains a humorous sketch of a boy's first trial of a mild cigar, and interesting papers on cities of Dalmatia, famous pottery and porcelain, the Taouist religion, and the usual budget of work for ladies, the fashions, and household management.

Heating by Hot Water. By Walter Jones (Lockwood).—Into a neat compact volume, Mr. Jones, of Stourbridge, has packed a world of wisdom on the subject of which he is a master, and has done it so well as regards lucidity of statement and directness of purpose, that we must speak of this as a model treatise that all hot water men will find it needful to keep at hand for consultation and reference. The high and low pressure systems are treated in detail, and contrasted fairly to the advantage of the low pressure system as the simplest, most generally useful, and by very many degrees the cheapest. Those who have to manage, not less than those who manufacture hot-water apparatus will find herein a budget of valuable information; the tables of temperatures, consumption of fuel, and pressure of water are invaluable. In his descriptions of boilers the author may have felt himself somewhat fettered, being an interested party, but he is fair and steers his course prudently. The chapter on waste of fuel is too short, but what there is of it should have a salutary effect.

Quinine as a Preventive of Malaria Fever.—Messrs. F. W. Heulgers have favoured us with a copy of a pamphlet signed by C. F. Boehringer and Son, of Waldhof, near Mannheim, on this important subject. In these islands where malaria is not often heard of, quinine has its uses and has proved of great service in the recent visitation of influenza. But for men who travel, and especially for such as enter upon botanical exploration, it is a kind of life belt or magic medicament that may be trusted where and when no other is of any service for protection against malaria fever. Stanley tells of escaping several times from the jaws of death by the aid of quinine. As regards the preparation and uses of this potent medicine, the pamphlet before us is full of the most valuable information.

Lippincott's Monthly (Ward and Lock) appears very gay for March with a story by Captain King, and sketches by Marshall P. Wilder, Julian Hawthorne, Rev. Dr. Clifford, Wm. McGeorge and other "big wigs" of the literary world. Marshall Wilder's paper on the English people is delightfully entertaining.

Potato Planting is reported by the *Cornishman* to have been finished under favourable conditions, the weather having aided in promoting a fine tilth. Experience proves that the crop is generally better in quality when the planting has been done in dry weather, as happened this year. The potatos selected for seed are sound and firm with strong healthy sprits, and in all the more important places the broccoli was cleared off in time for the ground to be well made and sufficiently manured, for the plant demands good conditions to give an early and profitable crop, earliness being a matter of the very first importance.

RIPENING TOMATOS IN THE OPEN.

TOMATO culture under glass has undergone such a remarkable development of late years that there is a tendency to regard the aid of properly constructed houses as essential to the production of good



TOMATO PLANT TRAINED TO POLE IN OPEN BORDER, ALL LATERAL GROWTH SUPPRESSED.

crops of well-ripened fruit. In certain cases glass structures are undoubtedly necessary to ensure success, as, for example, when the supplies are required over as long a period as possible, and in districts in which the temperature is not usually sufficient to bring the fruit to maturity. There is, on the other hand, a wide area over which tomatos may be successfully cultivated in the open and excellent crops be gathered, excepting, perhaps, in such cold and sunless summers as that of 1888. Fortunately summers so unfavourable as that of the year mentioned are comparatively rare, and therefore in districts in which the climatic conditions are fairly favourable tomatos may be planted in the open with a fair assurance of success.

Simple as is the outdoor culture of the tomato, the principal details are so important that they must have the most careful attention. It is necessary to fully recognize the fact that the plant is a native of a country much hotter than the United Kingdom, and that it should, therefore, be placed under the conditions most favourable to its deriving the fullest possible advantage from the warmth of our summers. One of the first points to be considered is the selection of varieties, and it is obvious that it is of primary importance to give preference to those which bring their crop to perfection comparatively early in the season. A good selection from the Large Red has much to recommend it, as proved by the fact that this old and well-known variety is largely grown in the open for the production of market supplies. Hackwood Park Prolific is an excellent type for outdoor culture where a wall or closely-boarded fence having a southern aspect is available. One of the best, however, is Laxton's Open Air, a heavy cropping and rather early variety, producing medium-sized and brilliantly coloured fruit of high quality. Either of the three varieties may be grown in the open quarters or against walls and fences, but I would suggest as the best selection that could be made Hackwood Park Prolific for training against walls and fences, and Laxton's Open Air for planting on borders and in the open quarters.

Not less important than selecting the best possible varieties is having strong plants for putting out immediately the season is sufficiently advanced for it to be done with safety. There is some risk of frosts until quite the end of May, and excepting where they will be planted against a wall or fence and have protection from frosts, they should not be put out until the last week of the month mentioned. Strong plants are necessary, but as they can be obtained in about eight weeks from the time of sowing the seed there is no occasion to sow until nearly the end of March. When, as is sometimes the case, the plants are raised in February or early in March they become more or less drawn, and are decidedly inferior to those raised several weeks later. Commencing in the last week of March, there is no better practice than to sow the seed thinly in pans filled with a light rich mixture, and place it in a cucumber house, melon pit, or other structure in which a temperature between 60 deg. and 70 deg. is maintained. From the time the seedlings make their appearance above the surface till they are removed from under glass, they should have a light position, as a firm, short growth from the first is desirable. When the seedlings are between two and three inches in height pot them off singly, using three-inch pots and a moderately rich compost, and return to the same structure and allow them to remain there until they have filled the pots with roots, and are growing freely. The next step will be to remove to rather cooler quarters, a heated pit being in every way adapted to their requirements. When they are well rooted, and before they have become pot-bound, shift into six-inch pots, and use turfy loam to which a small proportion of old hot-bed manure has been added. Some growers recommend their being shifted into eight-inch pots on those six inches in diameter having become well filled with roots, but a further extension of pot room is not necessary. Raised from sowings late in March there is not much risk of their receiving any material check from insufficient root space, and those started earlier can be assisted with liquid manure or a top dressing of some artificial fertilizer. After they have recovered from the shift the ventilation should be increased, and for a week or ten days previous to their being transferred to their summer quarters they ought to be fully exposed, excepting when frost is apprehended. As showing the importance of putting out strong examples, I would mention that in 1888 I filled one part of a wall with plants in six-inch pots and the other part with examples in pots two sizes smaller. From the first we had a very good crop considering the unfavourable character of the season, but the others failed completely. Even in more favourable seasons there will be a marked difference in the bulk of the crop.

Warm, sheltered parts of the garden should, as far as possible, be taken advantage of in selecting positions, and all vacant wall spaces should be utilised to the fullest extent. A south aspect is the best, but south-west and south-east aspects will give good results. The soil should in all cases be well broken up, and if in an impoverished state a moderate addition of manure will be beneficial; but any excess of manure favours the production of a luxuriant growth rather than an abundant crop. Hence the necessity for the sparing use of fertilizers. On the other hand, the plants must not be starved, and should they appear to require assistance after they have set a good crop it will be an easy matter to give them a top dressing of some quick-acting



TOMATO PLANTS TRAINED AS CORDONS, THE FRUIT FULLY EXPOSED TO PROMOTE RIPENING.

artificial manure, or to supply with a stimulating liquid. As they should in all cases be trained to a single stem, they should be put just far enough apart for the full development of the foliage without being overcrowded. Two feet apart is a good distance at which to put those to be trained to walls, and those to be grown in the open quarters should be arranged two feet apart in rows, having three feet spaces between them. As they produce roots freely from the stem, examples that may have become drawn during the preparatory process may be planted deep enough for a few inches of the stem to be below the surface. I have in the course of my experience had to put out plants with bare stems twelve inches or so in length, and have laid them on their sides so as to bury nine or ten inches of the stem, and the results have been most satisfactory.

The summer management consists chiefly in giving support to the main stems as it becomes necessary, the removal of lateral growths, and supplying with water during periods of dry weather. Those to be trained to walls will, as a matter of course, be secured in position by shreds and nails. In consequence of the liability of the stems to be injured by the wind when loose, it is important to nail them in as fast as it becomes necessary. The shreds should be large enough to allow plenty of room for the stems to swell, and it will be well to have them of a greater breadth than would be advisable for fruit trees. For those planted in the open rather stout stakes, of a sufficient length to



TOMATO PLANTS TRAINED TO A SUNNY WALL, ALL LATERAL GROWTH SUPPRESSED.

stand about three feet six inches above the surface, will be required It will be prudent to put the stakes to them within a short time of their being planted, and to commence the training immediately afterwards. This consists simply in tying the main stems to the stakes with stout bast or strong string as growth proceeds. In all cases the laterals must be nipped off as they make their appearance, as the fruit produced by them seldom reaches maturity. Moreover, by planting at the distances mentioned and keeping them to a single stem a much heavier and finer crop is obtained from a given space.

Tomatos planted along side walks or in single lines across the quarters, and trained to horizontal rods or wires, produce excellent crops. When they are to be trained horizontally they should be planted three feet apart in the rows, and if there are several running parallel to each other they should have three feet spaces between them. A trellis to which to train them may be readily formed with moderately stout stakes of sufficient length to stand two feet out of the ground, and hazel or other rods or strips of deal. The uprights are driven into the ground at a distance of about three feet apart, and connected together by the strips of deal or rods of wood which are fastened to them by tar twine or string. One of the heaviest crops of tomatos in the open that I have yet seen was produced by plants trained horizontally to a rough and ready trellis.

So far nothing has been said about the removal of leaves, and I now allude to it for the purpose of saying that the practice which obtains in some gardens of stripping the plants of the greater proportion of their foliage should be avoided. To remove a few of the leaves towards the end of the summer for the purpose of exposing the fruit to the sun is beneficial, but wholesale defoliation is decidedly injurious in its effects upon the crop.

CHRYSANTHEMUM MRS. NASH.

With reference to Mrs. Nash chrysanthemum mentioned in Mr Gordon's note, I should like to say that it was raised by Mr. Valentine Down, sixteen or seventeen years ago, when he was gardener to C. Nash, Esq., Clifton, Bristol. It was found growing in an orchard house under Mr. Down's charge and was probably a chance seedling from Mrs. George Rundle, to which it bears such a striking resemblance. Mr. Down was at that time a very successful cu tivator of chrysanthemums, especially of trained specimens, and was for several years one of the leading exhibitors at the Bristol shows. The first time Mr. Down exhibited Mrs. Nash was as a standard with Mrs. George Rundle and another variety the name of which I do not remember at the present moment. The results of his staging it were not very satisfactory, for although there is a difference as Mr. Gordon states in the blooms, the judges thought it their duty to disqualify Mr. Down. In consequence of this Mr. Down did not think enough of his seedling and he distributed plants and cuttings by way of exchange amongst the gardeners in the Bristol district. The blooms as grown, both by myself and others are quite distinct from those of Mrs. George Rundle, nevertheless I am of the same opinion as your able coadjutors Mr. E. Molyneux and Mr. G. Gordon, that the two should not be shown in the same collection whether of plants or cut flowers, I would however advise growers to give Mrs. Nash a trial as it is a very useful white variety.

The Gardens, John Aplin.
Hasfield Court, Gloucester.

KNIPHOFIAS, OR TRITOMAS.

As a grand plant for massing and general display, in form or size somewhat intermediate between shrubs and the general run of herbaceous plants, well adapted for mixing with the former, and as central plants in miscellaneous beds or borders of hardy subjects, tritomas stand pre-eminent. It is an unfortunate fact, however, the generic name too generally does duty for the family, hence ordinarily the common old species, *Tritoma uvaria*, first introduced, tacitly does duty for the whole, even though it be the least meritorious of all. That it is very hardy and enduring goes without saying. I know a bed which has occupied an exposed site upon a lawn for at least twenty years, the plants in which are still green and flourishing, sundry indifferent pikes of bloom forming annually thereon. Nevertheless, probably as greater waste of space and real beauty of display could not well be imagined if by contrast this bed were compared with others of similar size and planted with improved species or varieties. Say, for instance, *Tritoma glaucescens*, with its more upright and compact foliage, and its larger, bolder spikes of more brightly-coloured blooms. And yet identical treatment, &c., suffice for each alike. Happily, there are good varieties beyond to select from, to say nothing of the interest attached to growing together the limited collection, comprising all existing forms.

Apart, however, from these considerations the various species vary considerably in time of flowering, a great drawback in regard to the old *T. uvaria* being that it does not expand its first blooms until the advent of the month of September, with the result that early frosts often destroy the main display bodily. On the other hand one or two species, as the following list shows, not only bloom much more freely, having equal or greater beauty, but are in full flower in the months of June and July. The species or varieties held by the trade are: *Tritoma nobilis*, which, when obtained true (as there is an inferior form so labelled), is very desirable, height five to six feet, colour scarlet, blooming June to August inclusive; *T. grandis* is a dwarfer form averaging but four feet in height, scarlet in colour, but unfortunately late blooming, or between August and October. A fine showy form is *T. Saundersoni*, the tallest of all, scarlet and orange-coloured flowers, blooming from June to September. *T. Macowani*, a dwarf species, which produces a crown of dark foliage, from the centre of which push up numerous golden orange and orange red flowers, height only sixteen inches. *T. Quartiniana* from Abyssinia, also dwarf, with large recurved leaves and orange and yellow flowers. Finally *T. caulescens*, in habit somewhat arborescent, flowers crimson and orange height six feet and free.

William Earley.

RED CURRANT TOMATO.

It should be said of the curious tomatos, of which this is one, that they are all useful, though commonly described as adapted only for garnishing and such purposes. Taking this red currant or grape tomato as an extreme example, it will be found that, when a suitable use has been named for it, there will be no further question of its usefulness. As regards growing it there is no difficulty whatever, and it makes an



RED CURRANT OR GRAPE TOMATO.

interesting pot plant. Given a crop of ripe fruit, what shall we do with it? should there be a great quantity it may be used to make soup or sauce at discretion, and the fruits may be eaten as other tomatos are, as a mild and amusing relish. But the legitimate use for it is of a more substantial nature. Prepare by removal of stalks and tops a sufficient number of these pretty fruits, and when the tomato soup is about to be served throw them into the pot and let them have three minutes cooking, then serve the soup with these little berries floating in it and you ensure a new delight for your table and accomplish a novel feat in tasteful cookery.

X. Y. Z.

A List of Pompon Chrysanthemums has long been needed, and the want is rendered urgent by the approaching centenary celebration by the National Chrysanthemum Society, when historical studies of the flower will obtain special encouragement. We have had such a list in hand for some time past and it is so far completed that we can announce its publication in our issues for April 5, 12, and 19. That no such list has ever been compiled does not now surprise us, for we have experienced considerable difficulty in obtaining the material needful for the fulness and accuracy that are the life of such things. We have had the best of help, but many matters of importance, even now, remain undetermined. As an example of the difficulties, we are actually in want of material for a proper record of Cedo Nulli, one of the best known varieties, and through a run of years the most popular of its class. Who can tell us whence it came and when? Many can tell us where to look for particulars, but that is only another way of saying "we cannot help you." Nor is that the only curious example of the frailty of floral records, for the origin of several popular pompons is not the less obscure. But our list is a large one and it will give names of raisers and dates of distribution with other useful particulars.

SUMMER CULTIVATION OF POTATOS.

Writers on the cultivation of potatos invariably direct special attention, and properly so, to the importance of a thorough preparation of the soil, the judicious use of fertilizers, the selection of suitable sets, and the taking advantage of favourable opportunities for planting operations. Strict attention to these details is essential to the production of heavy crops of first-class quality, but they do not comprise all that must have consideration. When the sets have been planted, other work of importance remains to be done, and upon the skill and application that is brought to bear upon the summer management depends in no small degree the measure of success. This phase of potato culture appears to deserve more attention than it usually receives, for in many cases the system adopted is unsatisfactory, and in others the details are indifferently carried out.

From the time the sets are planted till the shaws begin to push through the soil but little, if anything, will require to be done amongst the potatos. Immediately, however, the shaws are visible, the cultivator must be on the alert. The tender shaws are susceptible to injury from spring frosts, a few degrees being sufficient to cut them down to the ground line. They will, no doubt, break again from below the surface, but the injury received is sufficient to weaken them to an appreciable extent. Means should therefore be adopted to protect them as far as possible from the effects of frosts. There are several methods of doing this, but there is no occasion to enumerate them, and there is none more simple or effectual than that of drawing a little of the surface soil over the shaws with the hoe. In a very short time they will push through their covering, and they must again have soil drawn over them if there is any further risk of injury from frost. This may appear tedious to many readers, but it is not so, as proved by the fact that one or two men will cover all the shaws that have made their appearance in a large breadth in a comparatively short time. The soil thus drawn about them will help to support the stems, as well as protect from frost, and be thus useful in two ways.

To have the soil between the rows well tilled is a point of considerable importance in the summer management, and as soon as the growth is sufficient to show where the rows are the intervening spaces should be broken up with a steel fork. It will be an advantage to stir it to a depth of twelve inches, but care must be taken not to dig so near to the rows as to injure the delicate fibrils which will be pushing freely on all sides. It will be advisable also to well break up the soil as it is turned over, and if it cannot be made so fine on the surface as could be wished allow it to remain until it has been exposed to a few showers, and on its becoming dry break it down with the hoe. In the field the horse-hoe will, as a matter of course, be substituted for the fork, and if set to a depth of six or eight inches and employed when the soil is moderately dry will give excellent results. The spaces between the plants in the rows should be hoed over previous to the fork or horse-hoe being brought into requisition or whilst they are at work. Top-dressings of suitable artificials have a highly beneficial effect upon the crop, and the best time to apply them is before the ground is forked over, as in the process the manure is intimately mixed with the staple. The extent of the dressing must to a certain extent be regulated by the quantity of manure applied before or at the time of planting. For soils that received a moderate application of farm-yard manure, a top-dressing, consisting of three quarters of a cwt. each of sulphate of ammonia and kainit and one cwt. of superphosphate, will be the most suitable. The several manures should be incorporated together, and the mixture be distributed evenly over the intervening spaces and without being scattered over the foliage, to which it will be more or less injurious. In the course of two or three weeks subsequently the spaces should be again stirred, this time with a hoe, care being taken to keep further from the rows than at the first stirring. This precaution is necessary because the roots will have extended much further, and it is essential to avoid injuring them, as any check to their activity will be reflected in the growth.

Equal in importance to the summer tillage is the earthing up, about which there is some difference of opinion. In many places the practice which obtains most favour is to allow shaws to rise to a height of eight inches or so and then to earth up at one operation. Why it should be adopted is difficult to understand excepting on the ground of a saving of labour. When potatos are allowed to remain until they have attained the height here mentioned before they are earthed up they fill the soil on either side with a ramification of roots. Consequently when the soil is drawn about the shaws large numbers of the roots are completely destroyed, and this it must be conceded cannot be done without the plants receiving an injurious check. In proof of this it will suffice to point to the fact that potatos earthed up at an advanced stage of growth will flag more or less for two or three days after the operation should the weather be hot and dry. It is much better to commence the earthing when the shaws are from three to four inches and to draw a little soil from between the rows about the plants and to repeat the operation at intervals of twelve or fourteen days until the ridges are of a sufficient height to bury the old tubers to a depth of eight or nine inches. By taking this course all the soil forming the ridges will be in a finely divided state and in the best possible condition for the development of the tubers. Earthing up in a gradual manner is especially necessary when the soil is close in texture, for when the whole of the soil is drawn about the shaws at one operation it is difficult to avoid its being more or less lumpy, and unless the greatest care is exercised the stems will be injured as well as the development of the tubers interfered with.

Practical Cultivator.



Photograph by Franz Baum, 12, Old Bond Street, W.

W. H. & L. Collingridge, London.

WOTTON HOUSE, DORKING, SURREY, RESIDENCE OF W J EVELYN, ESQ.

DESSERT APPLE, COX'S ORANGE PIPPIN.

This apple having been much eulogized of late it is but meet we should present a faithful figure showing typical form and size, for it is often under size and wanting in its proper beauty. Our first business in this note is to dispel an illusion that arises out of the name. This apple is commonly spoken of as raised by the late Mr. Cox of Redleaf Gardens. That is an error; the raiser, both of this and Cox's Pomona, was Mr. Cox, of Colnbrook Lawn, near Slough, a gentleman formerly in business in Bermondsey who retired to Colnbrook and devoted his days of ease to the pursuit of horticulture. Cox's Orange is understood to have been raised from a pip of the Ribston pippin, which it equals in flavour, and has the advantage of being tender-fleshed and the tree a healthy and constant bearer. The variety first fruited or was made known in 1830. It is not figured in Lindley's British Fruits, but in Catalogue of Société Van Mons, 1858, Bivort's Annales, 1859, Oberdieck's Handbuch, 1869, and the Herefordshire Pomona figures may be found. Leroy, under Orange de Cox figures it in true form, but under size, this being a common fault of the cultivators who have not yet mastered the fact that this apple requires good cultivation to secure a proper standard of quality.

The samples here figured were selected from a garden crop grown at Tuqvor House, Kew, the residence of F. Knighton, Esq. The tree producing this sample is a thriving standard on short stem standing in a sunny situation on a sandy soil. It is wholly unpruned and bears freely every year, the quality being invariably of the first order. The fruit selected from these figures measured 4 inches in diameter and 3½ inches deep, the weight being over 6 ounces.

This fine apple is of regular form, roundish ovate, smooth, with



DESSERT APPLE, *Cox's Orange Pippin*. From samples supplied by F. Knighton, Esq., Kew.

smallish eye very neatly placed in a shallow basin. The stalk is half an inch long, rather deeply inserted in a cavity lined with russet. The skin is greenish-yellow, sometimes clear orange-yellow with many red streaks of various shades, and often a rich red cheek on the side exposed to the sun with patches of thin grey russet. The flesh is yellowish, tender, crisp, rich in flavour and perfume. As a dessert apple it is perfect, but does not cook well, although in this respect it is of better quality than many apples that are commonly grown for culinary purposes. Its season is October to March, and it thrives on any of the stocks commonly employed in grafting apples, and the tree makes a free, handsome, and fruitful pyramid.

Lord Rothschild has consented to become a vice-president of the National Chrysanthemum Society.

Produce of West Cornwall has been plentiful, but has not greatly enriched the producers. A short spell of cold weather improved the price of broccolis, but it came late when crops were well nigh cleared out, and previously a cruelly low figure had ruled. Lately the price has been from 5s. to 6s. per crate with an upward tendency. The *Cornishman* reporting on the past season says the consumer has not derived any fair share of the advantage of low prices. Letters from the midlands and the north state that at no time during the past season has broccoli been retailed at less than 3d. per head, which clearly proves, when it is remembered that less than 6d. per crate has been often returned, that the middlemen secure more than a fair share of the profits.

PRUNING ROSES.

The condition of the roses at the end of January began to be alarming, as they were on every hand bristling with young leaves and new-made growth. What effect such undue excitement may have on the number or quality of the blooms in the coming season time only can tell, but it is very clear that they will be none the better for it. Had the weather been such as would have forced them to rest they would have been in better case now, with stamina left to battle against the cold wind that usually occurs in the month of May. Thanks however to the changed conditions the roses are now getting the rest they needed, and if cool weather continues for a week longer it will be all the better for them. I notice as I go about that in every case where the plants were well cared for last season they made a vigorous growth, and there was less mildew and red rust on the plants than usual, which was well in their favour. As a consequence they made a good second growth early enough to get well ripened before winter. I fear we do not always set a proper value on well ripened wood on our rose trees. Long years of observation have, however, shown me that hard, well matured shoots give much the greatest number as well as the largest flowers. For that reason I do not value late made growth. It is the first to suffer in a hard winter, and even if it escapes injury from frost, never produces the same high quality blooms as that which was made earlier in the season.

Soft and sappy tops on the growth of our trees there always will be in the autumn, but it is not of them I write; the kind of growth I most value is that which is firm and strong within one foot or so of the stem or main branches.

If, as remarked above, the cultivator will but defer the pruning until the time I have advised, there is every indication in the present condition of roses that we shall have no reason to regret having the short spell of wintry weather that occurred early in the month. As I write, they are making no effort to grow: the sleeping buds near the base of the shoot show no signs of activity, and as it is most desirable to keep them in that condition for a week or two longer the pruning knife or nippers should be allowed to rest for a short time longer.

The pruning of newly-planted roses is a subject that we can advantageously deal with just now, as it is a question that often perplexes the mind of the inexperienced reader. Whatever may be the plans it is intended to follow with regard to pruning, there cannot be a doubt, whether the plants are standards or dwarfs, that the first year they should be cut back hard; by which I mean all the shoots should be cut back to within three buds of the old wood in the case of standards, while dwarfs should be cut down to within three inches of the ground. This will ensure that the buds nearest the stem start into growth, and so secure the foundation of the tree, so to speak. In subsequent years the grower may work out his own ideas in any way he likes. If he prefers to have what are known as exhibition flowers he must follow up the close pruning, but if he would prefer for his dwarf plants to grow into large bushes very little pruning must be done. On the whole, for garden decoration, this plan is much the best, as the grower thereby secures a greater number of flowers. In a word, very moderate pruning means quantity before quality, and, what is equally important, rose trees, under what I may call a free and easy system of pruning, invariably live longer and are altogether more vigorous than those that are cut hard back every year.

I must remark here that the character of the soil should, to a certain extent, be taken into consideration before deciding on the system of pruning to be adopted.

Roses growing in a deep and favourable soil will bear close pruning much better than those that are insufficiently nourished in poor and naturally dry ground. If there is one other point in the work of pruning roses that deserves mentioning here more than another it is that the operator should have some knowledge of the behaviour of the different classes of roses upon which he is called upon to operate. The hybrid perpetuals proper may all be dealt with in the same way, but the noisettes and some others which make vigorous growth require very different treatment. To mention a few that require separate treatment I may name Gloire de Dijon, Souvenir de la Malmaison, Celine Forestier, Madame Plantier, and Aimée Vibert. Amongst the teas that are often grown in the form of standards I may include Madame Falcot, Homere, Safrano, Madame Berard, Souvenir d'un Ami, and Marie Van Houtte. All these make more or less vigorous growth, frequently pushing three or four long stout shoots every year. These shoots should be left from one foot to 13 inches long, according to the strength of the plant. As standards these roses are never satisfactory unless the head is allowed to increase in size every year. For this reason the strong growths that are usually made by them every year constitute the very life of the plant; to cut them back in the ordinary way is to thwart nature in its endeavour to furnish a long-lived tree. When the plants are well established in a good soil the branches will become too much crowded as the tree attains age. When such is the case, the oldest growth must be cut clean away, preference being given to the young and healthy shoots which should be retained. Under this treatment they will go on increasing in size and usefulness every year and live to a good old age. But if anyone wants to see how short-lived they are, and how unhappy and disappointing it is possible to make this class of roses he has only to plant them in a poor dry soil, and to prune them in the orthodox fashion—*i.e.*, cut all the young shoots hard back every year, and I can promise there will be no disappointment, for they will be equally unsightly and useless. J. C. Clarke.

A COMBINATION GARDEN FOR HARDY HERBACEOUS AND ALPINE PLANTS.

Your request for particulars of my "combination" garden puts me to the difficult task of appearing to praise my own work, but as you say the description would be useful to many of your readers, I will endeavour to comply.

The term "combination" is not of my inventing, but I cannot object to adopt it because it is undoubtedly appropriate. It combines rockeries and borders which are mixed indiscriminately, the usual plan of keeping them separate being in my opinion quite a mistake. In the space allotted to this garden there appears to be no plan whatever, but that is part of the plan; it is an endeavour by means of art, to conceal art. But the thing grew out of the accident of a little rockery having been formed in the rear of a border to accommodate a few plants, and this being added to the idea was carried out of borders and rockeries inextricably intermingled, and few printer's lines will show the nature of the thing in its ultimate elements. But the effect as a garden scene will depend on the artistic skill of the arrangements, and there is just no reason in the world, why, for hardy plants such a garden should not be the most beautiful conceivable; for water can be added without any deviation from the idea of a close association and mutual dependence one on the other of the several features of hills, hollows, plains, and paths. Let the subjoined lines represent B, borders for herbaceous



plants; R, rockeries three to ten feet high; G W, grass walks; M W, moss walks. The rockeries wind about and occasionally throw out headlands to the walks so as to display such subjects as androsaces, dianthuses, sedums, saxifragas; but where they recede behind the herbaceous borders they rise higher and display larger subjects, such as tritomas, arundos, funkias, lilies, the larger polygonums and the like, the borders in front being furnished with aquilegias, irises, delphiniums, and other proper herbaceous plants of not gigantic character. The grass walks are in many cases carried close to the rocky banks, which in some places are draped with ivies (mostly small leaved kinds), but where the rock plants are of kinds that require frequent attention the moss walks are carried next to the rocks, as the wheelbarrow and the feet during wet weather do no harm to the moss walks, whereas on well-kept turf, rough traffic in bad weather is seriously injurious.

The moss walks demand a special word. The name they bear is proper enough for they are beautifully mossed and the manner of doing the thing is particularly interesting. It is absolutely necessary to have a hard walk next the rocks in many places, and this is often only one foot wide but usually two. Gravel walks would be unpleasant, soft walks or mere trampled earth would be sticky in wet weather and inartistic at all times. A trench is taken out and filled in with brick rubbish, and is then coated with a thick surfacing of clean sifted coal ashes. That is really all that is done; the moss appears very soon afterwards as a natural growth, and is of a richer colour and more densely velvety than moss that comes spontaneously on gravel. Finely broken bricks of rather soft texture are equally favourable to a growth of moss. The sunk path is also made in the same way and the rocks on either side are clothed with ferns, primulas, the beautiful ramondia, the smaller daffodils, and occasionally sheets of small leaved ivies.

The grass walks are varied in width, in a few places spreading out into miniature lawns, adorned with clumps of gynerium, bambusa, bocconia, polygonum, funkia, and a few of the more stately lilies. In a few places, crocuses, daffodils, and primulas are scattered on the turf, but there is not much of this, for it is found that flowers in turf increase the labour of keeping considerably and necessitate a rough state of the grass at times when perfect keeping is desired. A few spots have been for several years allowed to run riot in grasses and the herbage that usually appears in neglected grass, and it is admitted that this is a mistake; in fact overdoing the "wild" notion. But I must confess that an attack of hay fever consequent, I believe, on having frequented these places when the grasses were in flower first made me doubt the policy of the proceeding, and for the future careful keeping of the grass will be a rule throughout. Walks we must have, for in fact this garden is like a maze, and a stranger is soon lost in it. Gravel walks would be most unpleasant, and I would gladly exchange the grass for turfing plants of other kinds, such as arenarias for example, but thus far I have not succeeded in such endeavours.

The rockeries are in part fashioned on the notion of those "roches' at Ludchurch, in the moorlands by Gradback. The village of Flash is the key to the situation. The idea derivable from the scene is that of rocks scattered without order, pushing through the turf in all directions and in all kinds of shapes and sizes. When I had seen these several times I put Robin Hood out of my head and asked why should I not make a garden on this plan, and instead of a wild moorland have my rocks amidst the brightest of green verdure lighted with a sparkle of flowers. And the thing was done a little at a time, but as I could not obtain stone, I was content, as I have always been, with the largest burrs from the brick kiln, for though these are "bricky" when first built up, they soon become mossed and acquire a quite antique and peculiarly rocky appearance, while the square angles that occasionally appear amongst them are easily softened by adapting the planting to them. These banks are in some places spread out at a low angle, with a great body of sandy loam for a basis; in others they are narrowish and rise abruptly, being in such cases clothed with ivies, and other plants that have their roots in the soil at their base. All the peat plants and special things that are in the jewellery department of the alpinery are planted on the headlands and crags that are brought forward to the grass walks or through them and form bold divisions. Thus we ensure full display of our cyclamens, small anemones, small campanulas, prostrate phloxes, myosotis, lithospermums, sempervivums, and crocuses, the plants that lie farther back being such as declare themselves at a reasonable distance by their distinctive forms or by masses of bold colour.

The garden is in great part enclosed by shrubbery and therefore the outlook is nowhere marred by incongruities. The absence of water is a serious defect, but there is so much beauty and variety and the apparent complexity is, after all, one of its charms, for it seems to have no end, the rocks and the walks winding all sorts of ways and affording every possible aspect and condition for a small place, save that, as remarked above, water has no special part in the scene, as it should have to make it complete according to my own ideas.

J. E. Saunders.

SLUGS AS AERIAL PERFORMERS.

Amongst the multitude of garden pests, there can be little doubt that the slug is by no means an insignificant individual. It is, moreover, sometimes difficult to deal with, especially in plant houses, by reason of its habit of paying unexpected and undesirable visits, generally nocturnal; the only, but too ample evidence of which is found in the absence, on the following morning, of some cherished bloom or, perchance, the foliage of some favourite plant; and the presence of the unmistakable iridescent track.

But occasionally it succeeds in securing its supper and our discomfiture, without the usual indications as to the route by which it has come and gone. This sort of thing is sorely perplexing to the careful cultivator, but the following will show the *modus operandi* as witnessed by the writer on two occasions during the last few months, though never noticed by him before. It would seem that the slug has, to a certain extent, the power of imitating the spider in one respect, though it certainly does not avail itself of it so frequently.

Entering a plant house one morning I was not a little astonished to see a fine specimen suspended from the roof by a length of thin rope, formed of the mucus fluid, secreted for lubricating their soft skins, drawn evenly from the whole surface of its body, and by which it was slowly descending towards the plants on the stage beneath. This was continued to the extent of some eighteen or twenty inches, when, as if the slug had suddenly changed its mind, or from its stock of rope-making material becoming exhausted, it slowly turned its head upward and to my still greater surprise commenced the arduous task of ascending, regaining the rafter in about twenty minutes. As it drew itself up the slimy rope accumulated in a mass at the extremity of its body. This seems to me to suggest an explanation of many of the mysterious disappearances which so often occur without any indication as to the perpetrator of the mischief. Gasteropoda.

Mr. W. B. Upjohn, honorary secretary of the Manchester Horticultural Improvement Society, was, at the closing meeting of the winter session, presented with a timepiece and a purse containing £20, in recognition of his services.

The Household.

TOMATO SOUP AND SAUCE.

Our advices in this department have reference usually to the products of the garden, but it is occasionally urged by our friends that we might sometimes consider the case of those who have no gardens, or who, having them, may nevertheless be under the necessity of using tinned tomatos and other such things at certain seasons. Now it must be confessed that tinned tomatos are of serviceable quality for soup and sauce, and the "puree" is the best form for these purposes. Tomato soup as commonly made from tinned fruit is a poor article and the reason is there is almost nothing in it. The first preliminary to the making of good soup is a well-stocked store room, and where there is no such thing soup making is but a poor business. What the store should contain for the purpose now in view will appear as we proceed and we shall only premise in a general way that there is to be nothing but what is good put into the soup that is now in hand.

Put the contents of two tins of tomato puree or of whole tomatos in an iron pot with one middling sized turnip and one or two onions—if large one will be enough. It is not necessary to remove the outer coats of either onions or turnips for soup making, as there is more flavour in the outsides than the insides. But we must ever be safe against dirt, and the outer skins of onions being useless it is sufficient to remove them while a washing is sufficient for the turnips which may then be cut up roughly and thrown in. Boil for half an hour and then mix a tablespoonful of flour with water and beat smooth and add to it one dessert spoonful of Worcester sauce; the like measure of sugar; a very small pinch of salt, a lump of Liebig extract the size of a walnut, and four leaves of leaf gelatine. Mix and boil up and strain into a porcelain lined pot. Return contents of drainer to the pot first used and add to it one pint of water and boil half an hour, then strain into the porcelain lined vessel and the soup is completed save the finishing touches. When to be served add a teaspoonful of white wine vinegar; more than this quantity must not be added, and common vinegar is really unfit for the purpose. If possible add a handful of fresh raw tomatos of the "grape" or "red currant" or other small kind, boil three minutes and serve. Croquets of buttered toast are allowable as an additional embellishment, but are apt to make the soup too substantial for the dishes that are to follow.

If these directions are faithfully followed a rich, bright, and artistic soup will be secured and the small fresh tomatos floating in it will be greatly relished. We have found them fully appreciated both as a delicacy and a novel feature.

Tinned goods never do and never will equal the genuine fresh article, and the most perfect tomato soup is made with fresh tomatos stewed down in strong beef stock with a moderate amount of onion and turnip, but the less of these and the greater the proportion of tomatos the better. When the fruit is ripe and in sufficient plenty additional flavourings are not wanted, for there is no improvement possible of the flavour of ripe tomatos in sufficient plenty.

Tomato Sauce is made in nearly the same way as the soup but with more thickening, but the life of the thing is in the tomatos. Use plenty of these and discard all flavourings and you and your guests will be well satisfied.

Fish with Tomatos is a capital harmony and a sort of "happy thought." Provide a good sauce or strong soup rather thick. Take fillets of sole, turbot, halibut, or plaice; put them in when the sauce is boiling and let them cook five to ten minutes according to thickness. Very little cooking usually suffices. Serve in a tureen with croquets of buttered toast and you will gratify the most critical palate. Plaice cooked in this way are superb, and what is left of the fish when the fillets are taken will make a good fish soup. X. Y. Z.

HARDY CYCLAMENS.

Notes on these appear occasionally, but not often do the writers tell us of the very best way to grow them, for it is not in the open border or sunny rockery they are to be seen at their best. Twice in my time I have had plantations of surprisingly fine character, the product of suitable conditions, and I have had many of the ordinary kind such as may be seen in any garden where choice hardy plants obtain attention. Plant them anywhere in half shaded borders in sandy loam and peat and help them with water when needful if the situation is somewhat dry, and they are so far accommodating that you may count upon a pleasing display of flowers when the time for them arrives. There must be no digging of borders where such things are planted or farewell for ever to all such things. These cyclamens appear to die out, and the ground seems to ask for new occupants. But leave all alone and as the dull days of October come your border will begin to sparkle with vegetable jewellery and for having exercised faith and patience you will have your reward.

But between the fairly good average examples and the very best possible there is a great difference when we come to a critical consideration of hardy cyclamens. The best lot I have had were in the garden at Hermitage which was cold enough, and the cyclamens were in the coldest place that could be found for them Adjoining the damp north wall of a stable was a deep border of peat that was always moist even in the driest summer weather. The sun reached this border only for an hour or two daily in summer and not at all for fully nine months of the year. A flagstone pavement laid on the native clay led past the border to the plant houses, and thus our cyclamens were fully enjoyed for we were compelled to see them several times a day when they were in flower. There was no shade of trees on the border: it was open to light, to wind, and rain, and the wall was clothed with two great sheets of ivy, the bold-habited Emerald-green and the splendid Marginata grandis, the finest of the silver-leaved climbing ivies.

On this border the hardy cyclamens made a free growth, with large leaves of more than average richness of colour and with flowers more brilliant and more abundant than I have had them under any other circumstances, and I am inclined to say finer every way than any I have elsewhere seen them.

It is my happy experience to find myself in nearly as good case at the present time. I cannot indeed say that my present growth is equal to that at Hermitage, and to speak the truth I do not deserve it should be, for I have done absolutely nothing beyond putting in the plants and keeping them clean; but after three years from the time of planting I am bound to record my complete satisfaction, for in respect of the present I am enjoying more than I have earned. In this case also the plants are on a north border; it is very much shaded; it is so damp that watercress thrives on it without aid from artificial watering, and the soil is a poor sandy loam, in which there is intermixed a considerable proportion of calcareous stuff which I suppose to be old mortar shot there by a benevolent builder whose only object was to get rid of it. During the recent frost the flowers continued to appear in their cold damp situation with the greatest freedom and with abundant colour. Some other clumps on a sunny border, in a much better, but much drier soil are thriving, but do not equal the lot that appear so happy in their cold damp situation on the border that sees the sun for but a brief hour or so daily in the very height of summer and not at all at other times.

It may be proper to add that although the two instances cited in which the cyclamens were peculiarly successful were decidedly moist, they were not water-logged: were in fact, not at all boggy. In a boggy soil I should not expect these plants to prosper; I am also quite satisfied that the bulbs should be covered with one or two inches of soil, but not more. Often they produce roots from the crown, and if exposed such roots must perish. Nor, although in both cases the aspect was northerly and fully exposed, was there any rough wind possible; for buildings and walls adjacent gave much shelter, and thus the beautiful foliage was not liable to injury. H.

LILIUM AURATUM.

Visiting two small gardens recently suggested to me that the treatment of these bulbs, when in a dormant state, or more properly speaking, when not in growth above ground, is not sufficiently understood. Were it so they would not be placed on a dry open stage over hot-water pipes as they were in one case; or as in the other on a border within a few inches of the hot-water pipes; in both cases very dry positions and such as would necessitate frequent waterings, and according to my experience the very worst position that could be found for them. The treatment of these bulbs after they come to hand should be very similar to the treatment given to such bulbs as Hyacinths and Tulips; that is, they should be plunged in moist ashes or cocoa-nut fibre refuse until the growth commences to push up through the plunging material. It may be rather late to detail the treatment of these bulbs when they first come to hand, but a few words of advice may not be out of place, for knowledge of such things is not inherited. Care should be taken that the bulbs are never allowed to lay about till they become dry, but should be potted at once into suitable sized well drained pots in a mixture consisting of equal parts fibrous loam and peat, with a good sprinkling of sand. In potting, the bulbs should be put sufficiently low to admit of a quarter of an inch or so of soil being placed over them when finished. Each bulb when placed in position should have a small handful of clean sand placed over it; and the filling up of the pot be then proceeded with. After all the bulbs are potted they should be carried to some pit or frame where no artificial heat is afforded, and stood on a cool bottom, and given a good watering to thoroughly settle the soil about the bulbs. As soon as the surface of the pots has become a little dry, they should be covered over two or three inches thick with either coal ashes or cocoa-nut fibre refuse. Under this treatment they will not require any more water until growth commences to push through the plunging material, when they should be removed to a cool light greenhouse. When treated after this manner, the roots soon take possession of the soil. These lilies are never thoroughly dormant, for when the stems die down root action commences and is continued if undisturbed the whole winter.

C. Warden.

Exports of Apples from America during the current season have reached a total of 637,481 barrels, as compared with 1,209,548 barrels exported during the season of 1888-89.

Chinese Primulas appear to be the subjects of ever-increasing competition amongst raisers and seed growers, and samples reach us from all quarters illustrating the present high position of these flowers in the order of floral merit, and suggestive somewhat of the changes and improvements that will be effected provided they retain the popularity they now enjoy. A remarkably fine lot is now before us, sent from the Victoria and Paradise Nurseries, Upper Holloway, by Messrs. B. S. Williams and Son. The forms of the flowers conform to the model the florists insist on, which is an amusing circumstance, seeing how customary it is to abuse the men and their model as though there should be special merit in weedy things. These finely-formed primulas show a series of distinct and splendid colours—scarlet, crimson, ruby, marone, and blue. Nor are the paler flowers less beautiful; the whites and blush-tinted being exquisitely pure and perfect.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Orchids in bloom of special importance include Cattleya amethystoglossa, C. Mendeli; Chysis aurea; Cymbidium eburneum; Cypripedium caudatum, C. hirsutissimum, C. Lawrencianum, C. Spicerianum; Dendrobium Wardianum, D. macrophyllum giganteum, D. pulchellum purpureum, D. densiflorum, D. Pierardi, D. aggregatum majus; Epidendrum crassifolium, E. aurantiacum; Phalænopsis amabilis, P. grandiflora, P. rosea; Phaius Wallichi; Trichopilia suavis; Lycaste cruenta.

THE HOUSE.

As there is now an abundance of spring flowering bulbs, the window-boxes and vases in balconies and other positions near the house may with but little trouble be made exceedingly bright and attractive. In arranging the bulbs it is preferable to fill each box or vase with one class, more especially is it desirable to keep the hyacinths and tulips separate, for not only is there a considerable difference in the duration of the flowers, but the colours of the tulips are in some instances so brilliant that they overpower the more delicate tints of the hyacinths. If it can be conveniently done, the bulbs should be placed in the boxes or vases in the pots in which they are growing, as they can then be more readily removed for replacement with bulbs or other decorative plants. But, as before explained, hyacinths, tulips, and narcissi can be turned out of the pots and have the soil removed from about the roots when the flowers are expanded without being materially injured; therefore, if it is desired to pack the bulbs closer together in the boxes than is possible when they are in the pots, there need be no hesitation in removing them from the pots, and reducing the ball of soil according as may be found necessary. The evergreen shrubs which have formed the winter furniture of the boxes should be at once planted for the summer in a suitable situation in the reserve ground, and not be allowed to remain with their roots exposed to atmospheric influences for any length of time. Previous to their being planted, all straggling shoots should be pruned moderately, and in many instances a slight reduction of the roots will be a decided advantage.

CONSERVATORY AND GREENHOUSE.

Balsams and Cockscombs must be shifted on and kept warm. Any check through becoming pot-bound, or for want of water, will spoil the bloom. In repotting have the soil and pots warm; let the shift be made quickly, and without leaving the plants about to get chilled, and water with tepid water. Many of the failures in growing these annuals arise through neglect of these small matters.

Camellias, Azaleas, and Rhododendrons going out of bloom in the conservatory to have all the remaining flowers clipped off, all seeds removed, and after being well syringed to be shut up close and warm, to promote a vigorous growth. Camellias inclined to be leggy should be pruned and placed in a close warm atmosphere to induce them to start freely.

Fuchsias for exhibition must now have large shifts. Pot off cuttings as soon as rooted; never suffer them to starve in the cutting pans, and place them in moist heat to have a good start.

Liliums growing freely should have a top-dressing of half-rotten cow-dung. Give plenty of water and take care the pots are not exposed to hot sun.

ORCHID HOUSE AND STOVE.

Orchid House must not be neglected, for the plants will require an abundance of atmospheric moisture now and general attention to plants newly potted and those coming into seasonal growth. Give water cautiously to such as are yet dormant; but encourage growth by sprinkling water about the floors, and keep an average day heat of 80 deg. Increase the temperature and the amount of atmospheric moisture to encourage growth. Be careful to water so that there is no lodgment of moisture about the crowns of plants that have not yet started. Every plant in the house should be examined now; those on blocks require fresh dressing with moss; those in pots with peat. On bright mornings raise a good steam by sprinkling the pipes.

Stove Climbers must be encouraged to grow fast, and training must be delayed as long as it is safe to do so, as training checks the growth. A large shift, and the use of rich soil, then to put on a good bottom heat of 70 deg. to 80 deg., and have plenty of moisture, are the conditions under which specimen stove plants will best progress. There must now be abundance of atmospheric moisture in the stove, and this with proper shifting, good rich soil, and a regular temperature, will effectually keep down fly and red-spider.

FORCING AND FRUIT HOUSE.

French Beans must be kept near the glass, have as much air as possible, and while bearing have regular supplies of liquid manure.

Melons that have suffered a check will now be showing fruit, which must be removed unless the plants are evidently sufficiently vigorous to bring it to maturity. If a few fruits of any small variety are wanted early, the plants may be thrown into a fruiting state by letting them get a little pot-bound in six-inch pots on a warm tank or flue. Melons newly planted to have a generous heat, and as much moisture as cucumbers; but those established and in vigorous growth to be kept drier than young plants, and to have all the sunshine. Night temperature, 65 deg.; day, 70 deg. to 75 deg. Sow now for a good crop to fruit late in the summer.

Orchard House.—Trees in bloom to have air in abundance. Some slight agitation amongst the blossoms will help to set them. Keep the air as dry as possible till the fruit is set, and while stoning be very careful not to let them get either too wet or too dry at the root.

Pines, Vines, Peaches, and other subjects in the forcing house: see notices of the last few weeks. Vines will require special attention now, as they are in full vigour; those colouring their bunches to have plenty of air and a brisk heat. Those newly started to be frequently syringed, and the borders kept warm and moist. Newly-set bunches to be thinned with great care; the less handling the better. Remove useless growths and stop laterals.

KITCHEN GARDEN AND FRAME GROUND.

Asparagus and Seakale.—This is the best time in the whole year to sow, where new beds are required. The ground should have been prepared long since, and be now in a friable mellow condition. Dress asparagus beds with manure, and make all ready for the crop of the season. Seakale that has been forced should now be allowed to grow, to gather strength for next season. Remove all the coverings from the stools, lightly fork between the rows, and dress with strong manure.

Beans and Peas.—Sow for succession as required. The marrow peas are the kinds which answer best for present sowing. If any accidents have happened to early sowings, get in a few rows of a first early sort at once; they will come in usefully just before the marrows. Dress the rows of beans and peas with wood-ashes or soot before moulding up.

Capsicums and Tomatos sown early to be potted off and put in a moderate heat to encourage new roots. Use light rich soil. Tomatos wanted early may be thrown into a blooming state by allowing them to get pot-bound in sixties; as soon as they show for bloom shift to thirty-twos; and when they fill those pots with roots shift into eight-inch pots.

Cucumbers.—Newly established beds should be carefully aired every morning, to let off rank steam and prevent damping. Stop regularly before the fruit; never allow any runner to go away neglected, or the distribution of the sap will be unequal, and the fruiting unsatisfactory Plants that are worn out should be destroyed; it is a folly at this time of the year to attempt to renew their vigour by cutting back.

VILLA FARM.

Hedges of all sizes and descriptions fully merit the attention and labour requisite to maintain them in good condition, but those on farms forming part of a small country estate, and those contiguous to the mansion on estates of large size, should receive special consideration. The primary object of providing hedges, is, of course, to efficiently separate field from field, and keep the various animals that have a place on the farm within due bounds; and in outlying districts so long as they do not occupy too much space, injure the crops on the headlands by depriving them of light and air, or afford shelter for vermin, it is not a matter of great importance whether they present a tasteful appearance or not. But in the case of the hedges that are constantly under the eye of the owner of the demesne and his friends, appearance is not less important than strength, and fortunately the neatest hedges are the best in every respect, and therefore the most suitable for the fields far removed as for those which adjoin the pleasure grounds. Hedges from six to eight feet high, and occupying a space four to five feet in width, are undoubtedly picturesque, but they afford such unmistakable signs of indifferent farming that they ought to be avoided. The most suitable hedges are those four feet in height and from thirty inches to three feet in width; and those, whether of quick or holly, will be at all times pleasing to the eye, and when once formed can be kept in proper trim with a very small amount of labour. Holly hedges have much to recommend them, but unfortunately the progress made at first is so very slow, that they cannot be recommended for other than special enclosures. Quick hedges, on the other hand, are cheaply made, and the progress, even at the earliest stage, is by no means slow. New hedges ought not to be made on the sites of old ones if it can be avoided, and in all cases the soil should be well stirred to a depth of eighteen inches or so and have a moderate quantity of half-rotten manure incorporated with it to secure a good start. A very important point in the management of quick-set hedges is to avoid cutting them during the summer season until the third year after planting.

ORCHIDS IN FLOWER.

Cattleyas in flower, as for some time past, consist chiefly of the forms of the variable and extremely beautiful Cattleya Trianæ, and of these there are sufficient to produce a rich display of colour, and to give much interest to the Mexican house. Amongst the numerous fine varieties now flowering, special mention may well be made of C. Trianæ fulgens, which has made its appearance in the collection at Shoreham Place. The flowers are remarkable for their fine form, but the distinguishing characteristics are the large size and the rich amethyst colour of the labellum, the latter extending to the base and producing a striking effect. C. Trianæ marginata, a beautiful form presented at the meeting of R. H. S. by Messrs. J. Laing and Sons, with large brightly-coloured flowers, the labellum well expanded, and with a sharply defined pure white margin. At the same meeting a beautiful form in the way of C. Trianæ Normani was exhibited by Mr. G. Firth, of Bradford. C. Schroderiana, of which but little is heard, is now in perfection, and must be referred to for the purpose of saying that it is so beautiful as to justify its having a place in the smallest collection of Mexican orchids. This species is of moderate growth, and has flowers somewhat similar in size and form to those of C. Trianæ, but the petals and sepals are rather shorter and of greater breadth, the sepals and petals blush rose, and the labellum pure mauve with large orange blotch. C. Schroderiana alba now flowering in Messrs. Veitch's collection is a rare and beautiful variety, of which the flowers are pure white, with the exception of a large golden blotch on the labellum.

Cymbidiums do not form a very large group, nevertheless they contribute materially to the attractions of the East India house, for those in bloom are all beautiful and highly interesting. Of the older kinds we have in perfection Cymbidium eburneum and C. Lowianum, which differ in the widest possible manner from each other. The first is neat in growth, and has pure white, fragrant flowers, borne on erect stems. The other has a robust habit, and the flowers are green, marked with crimson on the labellum, and borne on long, gracefully-arching stems. Very beautiful also is the hybrid raised in Messrs. Veitch's collection from a cross between the two species mentioned, and known as C. eburneo-Lowianum. In habit and in the size and form of the flowers this hybrid bears a close resemblance to C. eburneum, but the flowers are of a pale fawn or buff colour, and the labellum is marked with crimson as in the case of C. Lowianum, these markings adding greatly to the attractiveness of the flowers.

Cypripediums now flowering form such a large contingent that to do more than to refer to a few of the most important is out of the question. Especially interesting is Cypripedium numa, a hybrid between C. Lawrenceana and C. Stonei, exhibited the other day by Messrs. J. Veitch and Sons, at Westminster, when it received the distinction of a first-class certificate. This hybrid was obtained as a cross from C. Lawrenceanum and C. Stonei, and the foliage most closely resembles that of the first-named species, and the flowers are similar in character to those of C. Stonei. The petals are narrow, and spotted with marone on a greenish ground, the labellum rich bronzy purple, and the dorsal sepal white, with longitudinal stripes of purple. The ground is hardly so clear as could be desired, and the stripes are somewhat wanting in brightness. Nevertheless it is a valuable addition to the lengthy list of lady's slippers. S. selligerum rubrum, now in perfection in the Studley House collection, is a beautiful form of this fine hybrid, remarkable for the rich colouring of the labellum. C. Boxalli superbum is a handsome form, with flowers somewhat above the average in size, and specially rich in colour. C. Germinyanum, which has been flowering freely in Messrs. Veitch's collection for some time past, is one of the most highly-coloured of all the lady's slippers, and also one of the finest of the many good hybrids that has been raised. The flowers are of large size and fine form, and the sepals, petals, and labellum

are alike suffused with bright purple. C. Sedeni candidulum and C. Lathami are also especially good in the same collection. C. Schomburgkianum, now in bloom in Messrs. Sander and Co.'s collection, is remarkable more for its interest than its beauty, but it will probably find favour with many cultivators The flowers are rather small, with narrow, drooping petals, and of a pleasing shade of colour.

Dendrobiums are in strong force, and very beautiful is the effect they produce. Dendrobium nobile and D. Wardianum necessarily contribute very liberally to the display produced by the dendrobes, but so well are they known that to refer to them even in the briefest possible manner is quite unnecessary. D Farmeri, although it has long been in collections, is less generally cultivated than either of the foregoing species, and there is full justification for directing attention to the fact that it is one of the most beautiful of the dendrobes flowering at this season of the year. The growth is dwarf, and the flowers are produced in large pendulous racemes, the sepals and petals coloured delicate rose and the labellum white. Similar in character to the last named is C. densiflorum, which has bright yellow flowers produced in large drooping racemes. Other of the older kinds that now claim attention include C. macrophyllum, C. luteolum, and C. lituiflorum. Turning to the newer kinds, mention must be made of D. aspasia, a beautiful hybrid between D. aureum and D. Wardianum, described in the recent report of the meeting of R.H.S. The flowers are nearly as large as those of Ward's dendrobe, the petals and sepals are pure white, and the labellum is coloured marone, yellow, white, and rose. When fully developed, it will probably take a prominent position amongst dendrobes, and prove one of the finest of the hybrids yet raised. D. signatum, now flowering in the Burford Lodge collection, is interesting and not without beauty, but is not likely to acquire a high degree of popularity. The growth is dwarf and neat, the foliage light green, and the flowers primrose yellow, with a crimson blotch on the labellum.

Epidendrums flowering at the present moment are not numerous, and the most noteworthy are Epidendrum lanipes, an interesting and comparatively attractive species, and E. Wallisi, one of the finest species yet introduced to cultivation. The fragrant flowers are freely produced in medium-sized clusters, and have yellow petals and sepals spotted with crimson, and the labellum white marked with purple lines.

Lycastes in bloom include several good things, foremost among them being the varieties of Lycaste Skinneri. Attractive as have been many of the forms that have flowered, we have none to surpass in beauty "Young's" variety, which created so much interest at Westminster the other day, by Mr. Young, of Liverpool. The flowers are equal in size and similar in shape to those of a first-class form of L. Skinneri alba, and the sepals and petals are delicate salmon pink, and the labellum bright rose. Very different in character and also in attractiveness is L. Barringtoniæ, now flowering freely at Kew. It is, however, so distinct in character and pleasing in appearance as to well deserve the attention of orchidists. The flowers are greenish white and very freely produced.

Odontoglossums now render the cool house very attractive, as the species in bloom are numerous, and include a considerable proportion of the finest kinds at present in cultivation. The varieties of Odontoglossum crispum abound, and especially deserving of mention is O. crispum Warneri, represented in the group of orchids staged by Messrs. B. S. Williams and Son at the meeting of R.H.S. on the 11th inst. This, as so well shown in "Select Orchidaceous Plants" (vol. 2, t. 23), has large flowers, with petals and sepals of great breadth, and tinted rose, the labellum white marked with yellow and brown. O. facetum, a handsome form, with rather large flowers freely blotched with brown on a yellow ground, and O. triumphans, one of the most richly-coloured of the numerous species, and now at its best. Other species that afford material assistance in rendering the cool house attractive are O. Cervantesi, O. maculatum, O. hystrix, O. luteo-purpureum, O. Sanderianum, and O. Andersonianum.

Oncidiums have for their principal representative Oncidium sarcodes, a handsome species bearing rather large flowers attractively coloured brown and gold. O. Larkinianum, flowering in Mr. Larkins' collection at Highbury New Park is deserving of attention as a welcome addition. It is supposed to be a hybrid between O. Gardnerianum and O. Marshallianum, the flowers are of medium size, the sepals and petals yellow marked with brown and the labellum bright yellow.

Phaius are very attractive at the present time, and the most noteworthy of the kinds in bloom is Phaius hybridus Cooksoni, an extremely beautiful hybrid, raised by Mr. Cookson, of Wylam-on-Tyne, from a cross between P. tuberculosus and P. Wallichi. The growth is in the way of P. tuberculosus, but more vigorous, and the flowers are intermediate in size and shape between those of that species and P. Wallichi. The petals are rose suffused with fawn, and the labellum is rose purple marked with yellow at the base. P. tuberculosus is also now at its best, and it is to be regretted that it should be so far difficult of cultivation, that the general body of orchidists are not able to enjoy the beauty of its flowers. At St. Albans it is grown with much success on rafts suspended near the roof of a house devoted to tropical aquatics. It appears to require an abundance of moisture at the roots during the season of growth, and to have the foliage sponged at rather frequent intervals, because of the susceptibility of the plant to the attacks of red spider and other pests.

Protection for Fruit Trees is always in demand, and opinions differ as to the cheapest and most effectual material. In the search for novelties, it happens occasionally that serviceable articles of ancient date are forgotten. Thirty years ago we used Haythorn's Hexagon Netting, and at this day we know of nothing cheaper, more effectual, more lasting, and—observe the last point—more variable in usefulness. When the peach crop is assured by the use of nets on walls, the nets come in for shading plant-houses, and even to hang in the open where the full force of the sun needs to be somewhat subdued in aid of flowers that are peculiarly sensitive. And later on they come in for protectors to fruit that birds have a liking for, and one form of the net of strong make and large mesh is used to exclude wasps, and it is effectual for the purpose. The special virtue of these nets tells against their use with persons of small experience. They ask how is it possible a net can exclude frost, for the cold air can pass freely through it? But the fact remains that the net *does* exclude frost, and while doing so it admits air and light, and the trees are kept hardy and strong that would be made tender and weak if closely muffled up in the impenetrable materials that are sometimes employed. We may search far even now for a better protector for the fruit-wall than the Hexagon Netting.

Replies to Queries.

Strawberry Beds.—M. B. : The plants that have been forced may be utilised in the formation of beds in the open, provided they are in a healthy condition and the varieties are suitable. The plants must be well hardened before they are put out, and they should as a rule be placed in a frame when they are removed from the forcing pit and remain there for a fortnight or so.

Ivies.—Villa Gardener may now trim in and clip ivies of all kinds, but the work must be done with judgment. Leave on the wall an even furnishing of stems and cut away cross growths and redundancies, more especially where training has been neglected and large masses of loose herbage have been torn by the wind.

Books.—F. R. : Johnson's "Gardener's Dictionary" is published by Bell, price 7s. Hibberd's "Kitchen Garden" is published by Groombridge, price 6s. Deakin's "Florigraphia" is in three volumes; it is out of print, but occasionally appears in secondhand catalogues, priced at from fifty to sixty shillings.—Rundle : There are two sets each of two volumes of "The Native Flowers and Ferns of the United States." Professor Meehan is the Editor.

Exhibitor.—It does not appear to us that any good would result from a discussion of the matter to which you refer. It is simply a question for the society and the exhibitors to determine. The prizes as you state are very low, but the society has a perfect right to offer them. On the other hand there is no compulsion for anyone to take part in the competition and you are therefore not "compelled to expend £5 in van hire, with a chance of obtaining a prize of £2."

Newly Planted Vines.—Young Gardener : Vines that have been recently planted ought not to be supplied with liquid manure at the present time, or indeed during the first year. They will be able to obtain all the nourishment they will require from the border, and moreover the use of powerful stimulants at this stage will promote an excessive luxuriance which is most undesirable in young vines. They should for the present have a temperature of about 70 deg. and a moderate degree of atmospheric humidity, the sun heat being utilised to its fullest extent by early closing.

Rhubarb.—Evershed has planted rhubarbs on a cool shady border and is troubled to see plenty of rhubarb in the gardens of his neighbours and none in his own. Perhaps if he will observe again he may find that his neighbours have planted in sunny spots and have used old boxes, baskets, or coverings of clean straw to help the early growth. We have had supplies of Hawke's Champagne, one of the earliest and best of rhubarbs, from a sunny border from February onwards, and could have had supplies of a dozen other sorts equally well without forcing; but not from cool shady borders.

Narcissi.—Feathers : It would be to the advantage of the stock to lift and replant in August, for after remaining undisturbed seven years the soil is exhausted, and accounts for the small show of flowers you complain of. To move them now as you propose would be bad practice. But you must get them named while they are in flower, and it should be done on the ground. As they are all old varieties there will be no great difficulty in naming them, but you must ensure the aid of a person who can be relied upon to give you the correct names. Prepare for the new plantation a sufficient breadth of fresh ground. Nothing suits the narcissi so well as a moist deep sandy loam, which should be in good condition, or if not so, must have a liberal dressing of manure when prepared for the planting.

Specimen Plants of Scandent Habit.—A. B. W. : As we have frequently stated the new shoots of lapagerias, dipladenias, and other climbing plants grown in specimen form, should not be trained to the trellis until within a short time of the plants coming into bloom. When the growths are trained to the trellis from the first in accordance with the practice which still obtains in many gardens, they are necessarily so crowded that they cannot attain their full strength, and in consequence fail to bloom satisfactorily. The proper course is to take pieces of moderately strong string four or five feet in length and secure one end to the trellis and the other to one of the roof wires or nails. Then train the shoots to the wire, and when flower buds are in process of development take them down from the roof by cutting the upper end of the string, and then train to the trellis. The training must be done from a fortnight or three weeks before the date of the exhibition to allow time for the foliage to right itself.

Asters.—Amateur : The best of the asters for the flower garden are the Victoria, Chrysanthemum flowered, and Pœony flowered, as they have a good habit, are free in blooming and produce large effectively coloured flowers. The Quilled or German asters are by no means wanting in beauty, but they are less effective when arranged in masses and groups as are the reflexed and incurved sections. Asters should be subjected to as little artificial heat as possible, and when they are not required in bloom early in the summer it is a good practice to sow the seed in an unheated frame. In your case this would be the preferable course. Make up a bed of rich soil in the frame to a depth of eight or nine inches, and sow the seed in shallow drills six inches apart. Keep the frame closed to husband the solar heat until the seedlings are making their appearance, when the ventilation must be commenced, and be increased as the plants acquire strength. The soil must be maintained in a nice moist state and the plants be fumigated if attacked by aphis. It will not be necessary to prick off asters raised in this way, as they can be transferred direct from the frame to the beds and borders.

Early-flowering Chrysanthemums.—R. Simpson : In the cultivation of the early flowering chrysanthemums for the decoration of the flower garden and the production of flowers for filling vases and other uses in a cut state, it is not necessary to take a course involving much labour. The old plants should as a rule be lifted in the autumn and placed in an unheated frame with fine soil packed about them because of the risk of their being more or less injured by severe frosts. This precaution should invariably be taken with Madame C. Desgrange and its several sports because of their susceptibility to injury from severe weather. In leaving the whole of your stock in the border throughout the winter you incur considerable risk of losing a considerable proportion of it. As the stools have been fully exposed and the growth is in consequence very hardy you may proceed at once to replant them. In doing this lift the stools with a fork, and then break them up into one or more portions, each having three or four growths. The soil should be well prepared by being liberally manured and dug over to a depth of twelve inches. Even when it is not desired to increase the stock chrysanthemums in the borders should be replanted annually, both for the purpose of giving them fresh soil and reducing the number of stems.

Plant Labels.—J. Harding: The common wood tallies are cheap and useful, and their perishability is an advantage where the collections are carefully kept up, because it necessitates an annual renewal, and this means a general review of the plants to make good all losses and to refresh the memory as to species, varieties, &c. Of permanent labels there are many, but the choice amongst them is not a matter of taste, but of judgment. The metal labels with raised letters are indelible and everlasting, and, therefore, are not adapted for subjects that are likely to pass out of interest in a few years. But for coniferous trees, and such substantial subjects, large, handsome, imperishable labels are much to be desired. In places where large collections are grown, it is the rule never to attach the names to any, but to mark them by numbers only, the names being entered in the curator's books. Those who have had experience of collections have long since discovered that very scarce and choice things have a way of disappearing when their names are attached, but to put them under numbers increases the probability of keeping them.

Manures.—Everard: You do not give us any particulars of the case, and a general question can have only a general reply. Between the manure from the farmyard or the stable and the prepared manures there is this difference to begin with—that the first adds to the bulk of the soil and modifies its texture, generally speaking, rendering it mellow and friable and amenable to the beneficial action of the atmosphere. So much in praise of the natural, as compared with the artificial article. There are other differences, of course; and it may be added that the natural or animal manure suits almost every kind of plant in cultivation as a "complete" manure. Artificials may be "complete" also, but often they have a special quality, as for example manure A may be highly phosphatic, and manure B highly alkaline. In places where stuff from the stable cannot be conveniently carted in or laid up to ferment, artificials may be advantageously substituted, and should be such as the soil and crops require. There is one immense difference that should never be lost sight of: Stable manure will often fill a place with weeds. Artificials do not "breed weeds," and the preparations now current are skilfully prepared, with a view to completeness, and may be used with safety and advantage. They are, in fact, of considerable importance, and are growing in favour daily.

Exhibitions and Meetings.

BRUSSELS AMATEUR ORCHID SOCIETY.

The March meeting of the Brussels Amateur Orchid Society was in some respects the best gathering that has taken place under the auspices of the society. The jury included MM. R. Martin-Cahuzac, E. Rodigas, Massange de Louvrex, Comte de Bousies, Miteau, Wallaert, and J. Hye-Leysen, with M. J. van Lansberge in the chair.

M. G. Warocqué exhibited an attractive group in which were fine examples of Odontoglossum Ruckeri superbum, a distinct form distinguished by the rich colouring of the flowers. O. Pescatorei maculatum, the flowers large and finely blotched with bright rose. O. cristatum argus and Catasetum Bungerothi. M. van Imschoot contributed well bloomed examples of Odontoglossum triumphans, Dendrobium nobile pendulum, distinguished by its bright colour, and Epidendrum Wallisi. Madame Block presented Cypripedium œnanthum superbum, C. Lawrenceanum, Odontoglossum Edwardi, O. sceptrum, and O. crispum. M. G. Miteau had an excellent group in which were well developed specimens of Cœlogyne cristata, Lemoneana superba, a large flowered form of the lemon coloured variety. Cattleya Trianæ, Cymbidium Lowianum, bearing several fine racemes, Odontoglossum Pescatorei latimaculatum, a well-marked form, Cypripedium barbatum and C. superciliare. M. le Dr. Capart exhibited Cypripedium Boxalli and Odontoglossum rubescens. From M. Wallaert came Cypripedium Boxalli superbum, a very richly coloured of this superb species and a handsome variety of Cattleya Trianæ distinguished by the bright purple markings on the petals and sepals. M. Vuylsteke contributed several richly coloured forms of Odontoglossum triumphans, and O. tentaculatum, an interesting species and Lycaste Skinneri alba. An exceptionally good collection came from M. J. Hye-Leysen, and conspicuous amongst others were Odontoglossum Ruckerianum Albertianum which has large and richly coloured flowers, Cypripedium Elliottianum superbum, a highly coloured form of this handsome lady's slipper, C. macropterum and Cypripedium Harrisianum superbum, a dark form of great beauty.

The trade cultivators contributed liberally from their collections, one of the largest of the exhibitors being M. Linden. In his collection occurred specimens of Oncidium maculatum, Odontoglossum crispum in variety, O. rubescens, and several varieties of Cattleya Trianæ including C. Trianæ alba. Messrs. Vervaet and Co. also had several beautiful varieties of Cattleya Trianæ, and Ada aurantiaca and Odontoglossum Andersoni.

From Madame Gibez came Grammatophyllum Fenzlianum, a rare species with large green and brown flowers, Phalænopsis casta and P. Schilleriana.

The following awards were made: Diplomas of honour of the first class were awarded for

Odontoglossum Ruckeri Albertianum, from M. J. Hye-Leysen;
Odontoglossum species, from M. G. Warocqué;
Zygopetalum Jorisianum, from M. Linden;
Odontoglossum species, from M. Vuylsteke;
Cattleya Reine des Belges, from Messrs. Vervaet and Co.;
Grammatophyllum Fenzlianum, from Madame Gibez.

Diplomas of honour of the second class were awarded for

Odontoglossum Pescatorei maculatum, from M. G. Warocqué;
Odontoglossum species, from M. J. Hye-Leysen.

Certificates of merit of the first class were granted for

Cypripedium Harrisianum superbum, from M. J. Hye-Leysen:
Cypripedium macropterum, from M. J. Hye-Leysen;
Cypripedium Elliottianum superbum, from M. J. Hye-Leysen;
Cœlogyne Lemoneana superba, from M. G. Miteau;
Cattleya Trianæ var. Madame R. Martin-Cahuzac, from M. Linden;
Cattleya Trianæ alba, from M. Linden;
Cattleya Trianæ var., from M. Wallaert;
Odontoglossum triumphans Lindeni, from M. Linden;
Odontoglossum Pescatorei latimaculatum, from M. Miteau;
Epidendrum Wallisi, from M. V. Imschoot.

Certificates of the second class were granted for

Cypripedium Boxalli superbum, from M. Wallaert;
Cattleya Trianæ, from Messrs. Vervaet;
Odontoglossum triumphans, from M. Van Imschoot and M. Linden;
Oncidium maculatum, from M. Linden
Odontoglossum rubescens, from M. Linden;
Odontoglossum species, from M. J. Hye-Leysen;
Phalænopsis casta, from Madame Gibez;
Cœlogne cristata alba, from M. J. Hye-Leysen;
Lycaste Skinneri alba, from M. Vuylsteke.

Cultural certificates were awarded for

Odontoglossum cristatum argus, from M. G. Warocqué;
Cymbidium Lowianum, from M. Miteau:
Cattleya Trianæ, from M. Miteau;
Dendrobium nobile pendulum, from M. Van Imschoot;
Cattleya Trianæ splendida, from M. Linden.

RICHMOND SPRING FLOWER SHOW.

The exhibition of spring flowers held under the auspices of the Richmond Horticultural Society on Tuesday and Wednesday proved in every way a great success. The competition was remarkably keen in the majority of the thirty-six classes provided in the schedule, the productions generally were of high quality and the arrangements admirably carried out. The latter were, indeed, so well carried out as to reflect much credit upon Mr. J. H. Ford, the courteous honorary secretary, and other members of the executive. The great excellence of the exhibition is especially noteworthy from the fact that with the exception of two or three miscellaneous contributions it consisted exclusively of the collections staged in competition for the prizes.

Bulbous Plants formed a large and attractive feature, the hyacinths being especially well shown. Three classes were provided for hyacinths and in that for eighteen, Messrs. H. Williams and Sons, Fortis Green, Finchley, was first, with finely developed examples of well-known varieties. Mr. Lonsdale, Shepperton, followed closely for second place with a well balanced collection. Messrs. H. Williams and Sons and Mr. Lonsdale were first and second respectively for twelve hyacinths, and Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, was a good third. There was also a spirited competition for the prizes for six hyacinths, and the premier award was made in favour of Mr. White, gardener to Mrs. Farnell Watson, Redlees, Isleworth, whose specimens were remarkable for their massive spikes and neat foliage; Messrs. H. Williams and Sons and Mr. Lonsdale were second and third. Messrs. H. Williams and Sons occupied the first place in the class for six pots of narcissi, and also in that for six pots of tulips, and Mr. Lonsdale was second in the second of these two classes. Lily of the Valley was well shown by several exhibitors, and the first prize was awarded to Messrs. H. Williams and Sons.

Clivias were splendidly shown and the specimens, for which Henry Little, Esq., Baronshalt, Twickenham, was awarded the first prize in the class for six, formed one of the most attractive features of the exhibition. The whole of the specimens were furnished with finely developed flower heads, and the varieties comprised Mrs. Laing and others of recent introduction; Mr. W. Brown, St. Mary's Nursery, Richmond, was second.

Cyclamens and Cinerarias were presented in large numbers and in excellent condition, the first named being so good as to form one of the most attractive features of the show. In the class for twelve cyclamens the entries were numerous, and there was a very sharp contest for the first place. In the result Mr. White was placed first, and H. Little, Esq., second, both staging collections remarkable both for the high quality of the strains and the cultural skill that had been brought to bear upon them. Mr. W. Hubbert, gardener to W. Clay, Esq., Kingston-on-Thames, was third. The last-named also staged a large collection of cyclamens not for competition. Mr. D. White occupied the post of honour in the class for six cinerarias with large densely flowered specimens, and Mr. Barnes, gardener to Sir J. Brunlees, Argyle Lodge, Richmond, was second with well-flowered plants. Mr. Brown was awarded the first prize for six double primulas, and in the special class for twelve single primulas the premier award was made in favour of Mr. Hubbert.

Orchids were represented by a beautiful collection from H. Little, Esq., to whom was awarded the first prize in the class provided for these plants. Especially good in the collection were the superbly-flowered specimens of Veitch's variety of Vanda suavis, Cypripedium Boxalli, C. villosum, Cymbidium Lowianum, and Cattleya Trianæ.

Azaleas and Deutzias were both well represented. For six azaleas H. Little, Esq., and Mr. W. Brown were first and second respectively, with neat well-flowered plants. Mr. Brown was first for twelve Azalea mollis with an attractive group, and in the class for single specimens the first and second prizes were awarded to Mr. White and Mr. A. Howell, gardener to C. Boursot, Esq., Newark House, Richmond. In competition for the prizes for six deutzias, H. Little, Esq., and Mr. White were first and second with large, densely-flowered bushes, and Mr. W. Brown was third with smaller examples liberally furnished with the pure white flowers. Messrs. Williams and Sons were first for spiræas, Mr. Brown first for dielytras, and Mr. Barnes first for cytissus.

Collections of Plants were admirably shown, and the first place was occupied by H. Little, Esq., with a tastefully arranged group, in which the orchids, clivias, and cyclamens were exceptionally good. Messrs. H. Williams and Sons and Mr. H. E. Fordham, Twickenham, were second and third with attractive collections. Table plants were well represented, and the first and second awards were made in favour of Mr. Sullivan and Mr. Bray, Richmond.

Bouquets, Sprays, and Table Decorations were so numerous and good as to constitute one of the most attractive of the many good features. The principal awards were made in favour of Mr. Newman, Bromley; Mr. J. R. Chard, Mr. Bray, Mr. Wadham, and Mr. Clarke.

Daffodils were plentiful and good, the most noteworthy collection being that contributed to the miscellaneous class by Mr. J. Walker, of Ham Common.

Apples were represented by several excellent collections, the best being that from Mr. W. Bates, Poulett Lodge, Twickenham, who had the premier award made in his favour.

The prizes were awarded by Mr. A. F. Barron and Mr. George Gordon.

BATH BULB AND SPRING FLOWER SHOW, March 19 and 20.

The sixth annual spring exhibition, held under the direction of Bath Floral and Band Committee, was arranged in two of the spacious halls of the Assembly Rooms, Bath, on the above dates. The weather on the opening day was cold and extremely dull, but the show-rooms were very gay with an almost matchless collection of flowering and foliage plants, orchids, roses, hyacinths, and other flowering bulbs. In addition several trade firms contributed freely of their stores of vegetable beauty. The schedule provided thirty-six classes for plants and blooms, and eight for fruit and vegetables.

Hyacinths.—Of these nearly two hundred specimens were staged in competition, and included a goodly percentage of premier spikes, but as a whole we have seen better. For eighteen distinct, Messrs. R. Veitch and Son, Exeter, were placed first for a very level lot of plants bearing stout spikes of Grandeur à Merveille, pale blush; Lord Macaulay, rose, carmine striped; Czar Peter, pale lavender-mauve; King of the Reds, bright red, grand form; King of the Blues, rich dark blue; Lord Derby, azure blue; President, clear pink; Obelisk, clear yellow; Queen of the Blues, sky blue, large spike; Vuurbaak, very bright crimson, compact; Miss Nightingale, white, large bells; Marie, dark blue shaded; Von Schiller, salmon-pink, striped crimson, very effective; King of the Yellows, clear yellow; Gigantea, delicate rose; Nectar, Marchioness of Lorne, and Lord Percy. Mr. G. Garraway, Bailbrook, second, his leading spikes were Charles Napier, Cosmos, Captain Boynton, Queen of the Blues, Mont Blanc, La Grandesse, Mrs. Beecher Stowe, Czar Peter, Von Schiller, and L'Ornement de la Nature. The third card was awarded to S. P. Budd, Esq., for strong spikes (rather tall), the best being Charles Dickens, Grandeur à Merveille, King of the Blues, and Von Schiller. For twelve plants (in pairs), Mr. G. Garraway was to the fore, his best being Von Schiller, King of the Blues, Mont Blanc, Ida, and Sir C. Napier; S. P. Budd, Esq., second, his best pairs were Lord Derby and Von Schiller. Mr. Budd was awarded first in the next class for a dozen distinct, very good were Grandeur à Merveille and Von Schiller; J. M. Dunlop, Esq., Bristol, taking second place for a well-selected group, the best spikes were Princess Mary of Cambridge, Lord Derby, and King of the Blues; J. Wall, Esq., Bristol, third, his premiers being Lady Clinton and Princess Mary of Cambridge. For six S. P. Budd Esq., led off with a fairly even set, Lord Derby, Von Schiller, and King of the Blues being fine spikes; J. Wall, Esq., second, his champion a spike of Madame Van der Hoop, white.

Tulips.—About seventy pots (three in a pot) were in competition. For a dozen Messrs. R. Veitch and Son were accorded the post of honour for a group, including Tournesol (yellow), Joost VanVondel, rosy crimson, white pencillings; Vermilion Brilliant, vermilion, very showy; Keizers Kroon, crimson-scarlet, yellow margin; La Reine, white, tinged rose; Royal Standard, white, feathered crimson; Pottebakker, white; and Tournesol, red and yellow. The second card fell to J. M. Dunlop, Esq., who had good sized examples of Proserpine, dark rose; Keizers Kroon, Joost Van Vondel, and Tournesol, red, and ditto yellow. For six J. M. Dunlop, Esq., was first with fine developments of varieties in the previous class; S. P. Budd, Esq., second; he likewise winning the only card awarded for double tulips, his best forms being yellow and red Tournesol, and Murillo, pale rose and white.

Polyanthus Narcissi proved a limited competition, E. B. Titley, Esq., taking the only award for a fine group, including Grand Monarque, pure white, citron cup, very handsome; Jaune Supreme, clear yellow, large; and Soleil d'Or, rich yellow, dark orange cup.

Daffodils.—The Trumpet section was largely represented. For a dozen pots (three bulbs each), the card went to the Rev. E. Handley, for sturdy examples of Countess of Annesley, bold flower, rich yellow; Princeps, large, yellow, sulphur-white perianth; Dean Herbert, white trumpet, white perianth; Empress, golden-yellow trumpet, with stout white perianth; Emperor, a noble form, clear golden-yellow, broad, primrose perianth; General Gordon, very large and distinct, short yellow trumpet, spreading primrose perianth; Sir Watkin, tube fringed, rich yellow, stout broad perianth; Golden Spur, immense golden trumpet, reflexed slightly, broad twisted perianth; James Walker and Frank Miles; S. P. Budd, Esq., second, his choicest developments being Horsfieldi, Emperor, Empress, Sir Watkin, Golden Spur, and Grandis (bicolor). There were a few pots of crocus, in three varieties, S. P. Budd, Esq., and E. B. Titley, Esq., taking the cards.

Amaryllis were beautifully presented. Mrs. Jolly first for three pots, the several specimens being furnished with six, twelve, and nineteen flowers respectively; C. H. Gabriel, Esq., taking second honours with very attractive but small plants.

The last-named was strong with a group of cinerarias, and S. P. Budd, Esq., had the premier card for a dozen cyclamens, and three large pots of Lily of the Valley, in which classes the competition was limited; and Mr. W. Evry was the only competitor with violets.

Rhododendrons (hardy) proved interesting, the card going to Messrs. Cooling and Sons, for well-flowered examples of Omar Pacha, John Waterer, and Currieianum; Mr. W. C. Drummond second.

Roses.—These were in plenty, and all round good; the bushes carrying from thirty to fifty blooms each, medium-sized, but fresh. Rev. E. Handley first for well-furnished specimens of General Jacqueminot, Anna Olivier, Abel Grand, Reine Marie Henriette, Marie Van Houtte, and John Hopper; R. B. Cater, Esq., second with La France, Celine Forestier, Anna Olivier, Souvenir d'un Ami, Madame Bravy, and Madame Lacharme; S. P. Budd, Esq., third with Alba Rosea, Magna Charta, Madame G. Luizet, Pauline Laboute, Souvenir d'Un Ami, and Caroline Kuster.

Orchids.—A good display of these popular plants may always be relied on at Bath shows, and the present occasion fully justified the expectation. For six, Rev. E. Handley, was head of the poll, his group containing examples of Denbrobium nobile D. n. pendula; Odontoglossum triumphans (15 flowers); and O. Edwardi (80 blossoms); Cymbidium Lowianum (50 flowers), and Cattleya Trianæ Leeana (6 flowers). For three plants R. B. Cater, Esq., was a good premier, with a grand specimen of Cypripedium villosum (9 slippers) in fine condition; Cattleya Trianæ (4 flowers), and Dendrobium Wardianum (four growths 50 flowers); C. W. Mackillop, Esq., second, his best plants being Dendrobium crepidatum (120 flowers); and Phalænopsis Schilleriana (one raceme 30 flowers). An unplaced group had Dendrobium nobile, D. fimbriatum (eight growths 100 flowers), and D. Wardianum; while for a single specimen Rev. E. Handley took the card for a grand cattleya; J. J. Holmes, Esq., being placed second for a Cœlogyne cristata.

Azaleas.—This section was represented by small numbers but generally good-sized examples. For three C. W. Mackiloff was first for Duc de Nassau, rosy-salmon; Magnifica, white; and Souvenir de Prince Albert, bright rose, margined white. Mr. H. Jones, second with Fielder's White, a good white; Daphne, white crisped edges, striped pink; and Criterion, salmon pink, white margin; while for one specimen, C. W. Mackillop, Esq., put up a fine Duc de Nassau, the second card going to Mrs. Jolly, for Sinensis splendens, pale yellow.

Stove and Greenhouse Plants formed an agreeable accompaniment to the general surroundings, the specimens staged being most compact and well bloomed. For four C. W. Mackillop, Esq., was first with Anthurium Scherzerianum, A. S. densiflorum (each furnished with a mass of fresh spathes); Azalea Charles Lierens, dark salmon, semi-double, large; and Erica Kingstoniensis; Mr. H. Jones a close second with Erica Cavendishi, Pimelia spectabilis, Rhododendron Gibsoni, and Eriostemon buxifolium. For six ornamental plants Mr. W. C. Drummond led with large examples of Cycas revoluta, Latania borbonica, Croton Queen Victoria, Encephalartos horrida, and Pandanus Veitchi; Mr. H. Jones second.

For six greenhouse ferns Mr. H. Jones was well to the front with large pieces of Alsophila excelsa, Pteris cretica albo lineata, P. serrulata cristata, Gymnogramma Mertensi, Adiantum decorum, and Blechnum gracile; Mr. W. C. Drummond second, with Asplenium nidus avis, Adiantum farleyense, Gymnogramma tartarica, and Cheilanthes elegans.

Cut Roses were limited to a couple of boxes of a dozen each, the cards going to S. P. Budd, Esq., and R. B. Cater, Esq., whose blooms were of fair size and quality.

Groups of Plants Staged for Effect were in plenty in the big class. Messrs. Cooling and Son were placed first, with an arrangement comprising all the leading varieties of stove plants, including a large percentage of orchids, Mr. C. W. Mackillop deservedly taking the second card. In the amateur section, R. B. Cater, Esq., and W. Pumphrey, Esq., divided the honours.

Fruit.—This was necessarily a small display, yet firm high-coloured dishes were in plenty. For apples Mr. S. King was premier with a dish of Fearn's Pippin, large and showy; and Mr. J. Lewis, Bristol, second, with Reinette du Canada. There were also very good dishes of Blenheim Orange and Lady Henniker. For pears, R. H. Taylor, Esq., was first with Beurre Rance; Mr. E. Hall, second with Easter Beurre.

Vegetables were excellent all through. Mr. W. Evry was premier in the classes for sea kale, basket of salad, asparagus, and collection of vegetables. In the latter he had Magnum Bonum potatos, Newington Wonder beans, Snow's Early White brocoli, Milltrack mushrooms, Giant asparagus and seakale. Mrs. Jolly produced the best dish of mushrooms, and S. P. Budd, Esq., the best brace of cucumbers (Telegraph.)

Miscellaneous Exhibits.—These, as stated above, formed a great aid to the display, and "certificates of merit" were awarded to R. B. Cater, Esq., for a basket of hybrid polyanthus and coloured primroses, representing a good strain; to Mr. A. A. Walters, for a bank of hardy border plants in flower; to Messrs. R. Veitch and Son, for bank of bulbs, orchids, and general flowering subjects; to Messrs. Cooling and Sons for a bank of primulas, forget-me-nots, violets, and hardy border flowers; also collection of daffodils in sixteen varieties tastefully arranged; the largest group coming from Messrs. Cypher and Son, Cheltenham, who had several hundred plants harmoniously grouped for effect, including a host of orchids, and received first-class certificates for interesting examples of Dendrobium nobile Cypherii, a large form of nobile, the ground colour a pure white, and the markings beautifully defined; and also for Phaius tuberculosus, the flowers small at present, but very richly veined in the throat and labellum. Included in the group were examples of Dendrobium nobile, D. n. splendens, D. n. pendula, D. n. pulcherrimum, D. Farmeri, D. Brymerianum, D. Jamesianum, D. Cambridgeanum, D. Wardianum giganteum, D. crassinode, Cypripedium villosum aureum, C. Roezli, C. Boxalli, C. biflorum, C. Dautheri, C. hirsutissimum, C. Argus, C. Sedeni candidulum, C. Harrisianum, Odontoglossum Pescatorei, O. Cucullatum majus, O. Roezli, O. R. majus and alba, O. triumphans, O. maculatum, O. gloriosum, O. cirrhosum, O. baphicanthum superbum, O. prionopetalum, O. Alexandræ, Ada aurantiaca, Sophronitis grandiflora, Masdevallia Shuttleworthi, M. bella, Chysis Chelsonii, Cymbidium eburneum, Cattleya Trianæ magnifica, C. amethystoglossa, Brassovola glauca, Cœlogyne cristata Lemoniana, C. c. maximum, Oncidium divaricatum, Phalænopsis grandiflora, and the beautiful Lycaste Skinneri and L. Skinneri delicata.

Judges: Messrs. R. Dean, Ealing; W. A. Garraway, Bristol; T. Challis, gardener to Earl of Pembroke; and Geo. Bethel, gardener to Sir Greville Smythe.

MANCHESTER SPRING FLOWER SHOW,

March 18.

The exhibition of spring flowers held by the Manchester Royal Botanical Society on Tuesday was so thoroughly good in all its principal features that there was a general concurrence of opinion as to its being one of the best of the spring shows that have been held in the city. The contributions were numerous, and comprised stove, greenhouse, and hardy plants and flowers, and the display produced in the Town Hall was at once rich and varied. The attendance, it is satisfactory to state, was remarkably good, both during the afternoon and evening.

The two most important features were unquestionably those produced by the hyacinths and orchids, both of which are invariably well shown at the March meetings in Manchester. Especially good was the collection of about one hundred hyacinths from Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, who were awarded a special certificate. The collection consisted exclusively of specimens having large massive spikes and short, stout leafage, and amongst other varieties represented were La Grandesse, Koh-i-noor, Czar Peter, Madame Hodgson, Von Schiller, King of the Blues, Vuurbaak, Charles Dickens, and Macaulay. Messrs. Dickson, Brown, and Tait, of Manchester, also exhibited an excellent collection of these bulbs; and good examples were staged by Mr. James Marson, Warrington, and Messrs. W. Cutbush and Son, Highgate. Messrs. Dicksons, of Chester, exhibited a large and thoroughly representative collection of daffodils, which was arranged with much taste, and received a full share of attention. Conspicuous in the collection were the blooms of Sir Watkin, Horsfieldi, Golden Spur, Emperor, Empress, Rugilobus, Minimus, and other fine kinds. The award of a certificate was made to the firm. Mr. W. Hooley, Stockport, staged an attractive collection of miscellaneous plants; and a group of hard-wooded plants was contributed by Messrs. Cutbush. Lilacs were represented by well-flowered examples from Messrs. Williams, the best kinds being Charles X., Virginalis, and the Persian, the flowers of the last-named retaining their distinctive colour when developed in the forcing-pit. Chinese primulas were well shown, the finest examples being those from Mr. Marson.

The group of orchids from Mr. Statter, of Stand Hall, was of great excellence, and contributed very materially to the interest and attractions of the exhibition. The collection comprised between forty and fifty specimens, and included admirably flowered examples of Dendrobium Ainsworthi, D. Wardianum, Angræcum Ellisi, Odontoglossum aspersum, O. crispum, Cælogyne cristata alba, Cypripedium villosum, and Cattleya Lawrenceana, the rich purple flowers of the last named being singularly effective. A highly interesting collection of flowering and ornamental leaved plants was sent by Mr. Bruce Findlay, from the gardens of the society at Old Trafford, and this, tastefully arranged in front of the organ, presented a very attractive appearance. The collection included a good example of Cattleya Trianæ, two densely flowered specimens of Dendrobium Wardianum and several clivias.

The contributions of hardy flowers were liberal, and included a large collection from Mr. Joseph Broome's gardens at Llandudno. This included chionodoxas, doronicums, anemones, primulas, Pasque flower, violets, wallflowers, and scillas, and received a full share of attention from the visitors. Mr. S. Barlow exhibited from his garden at Stakehill several varieties of Hepatica angulosa and H. triloba, and was awarded a special certificate. Wreaths and other arrangements of flowers evincing much taste were shown by Mr. J. Mason, of Manchester, to whom a certificate was awarded.

THE GARDENERS' ORPHAN FUND.

On Friday, the 14th inst., the committee of the Gardeners' Orphan Fund convened a meeting of standholders in the Flower Market, Covent Garden, to confer with them as to the expediency of holding a floral fête in aid of the fund in May next. This meeting took place at the Hummums Hotel, Covent Garden, and was well attended by the standholders, among them being Messrs. G. Messer, G. Poulton, E. Sawyer, H. Hawkins, S. Plumley, jun., G. May, G. Wermig, J. Lewington, W. G. Williams, W. Gregory, J. Walton, H. R. Wright, J. W. Baker, G. Bannister, A. Catteano, &c. Mr. George Deal, the chairman of the fund, presided, supported by the following members of the committee: J. Wright, R. Dean, W. G. Head, J. Walker, J. Asbee, B. Wynne, and A. F. Barron, hon. secretary.

The chairman said they were met together to consult as to the expediency of carrying out a third floral fête in aid of the above fund, and read a letter from Mr. Bourne, stating that the Duke of Bedford will be very pleased if the committee make use once more of the flower market in promoting a fête in aid of the fund at such a season as may prove convenient; also a letter from Mr. W. J. Soulsby, the secretary to the Lord Mayor, informing the chairman that the Lord Mayor and Lady Mayoress will be happy to become patrons of the fête, and, if possible, attend the same. The opinion of the meeting being decidedly favourable to carrying out another fête, it was proposed by the chairman, seconded by Mr. J. Walton, and carried unanimously, "That this meeting cordially endorses the proposal to hold a third evening floral fête in aid of the Gardeners' Orphan Fund, and having learned with pleasure that his Grace the Duke of Bedford has kindly granted the free use of the market for this purpose, hereby pledges itself to render the best assistance in its power to successfully carry out the same, and to co-operate in general with the committee of the fund." It was then proposed by Mr. W. Gregory, seconded by Mr. Jas. Walton, and carried unanimously, "That the following gentlemen co-operate with the committee of the Gardeners' Orphan Fund in carrying out the same, viz., Messrs. W. Baker, G. May, W. Gregory, James Walton, G. Messer, G. Bannister, G. Poulton, J. Lewington, H. B. May, E. Sawyer, T. A. Dickson, A. Cattaneo, E. Rochford, A. Bullen, G. Wermig, and James Williams." The best day of holding the fête was then considered, some advocating May 21, and others the later date of June 4. Eventually it was resolved that it take place on Wednesday, May 21. It was resolved that the joint committee meet at the Caledonian Hotel on Friday, the 28th inst. A hearty vote of thanks to the chairman closed the proceedings.

Obituary.

Recently, at his residence, The Cliff, Broughton, Manchester, Dr. Ralph Ainsworth, in his 79th year. Dr. Ainsworth for many years occupied a seat on the Council of the Manchester Royal Botanical Society; he long took a special interest in orchids, and the beautiful Dendrobium Ainsworthi was raised in his collection.

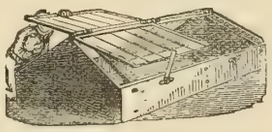
Recently, after a short illness, Mr. Thomas Harrison, sen., until within the past few years head of the firm of Harrison and Sons, Leicester, in his 75th year.

Recently, after a short illness, Mr. John Webster, during the past forty years head gardener to the Duke of Richmond, Gordon Castle, Fochabers, Banff, in his 76th year.

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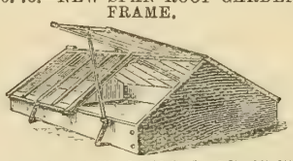
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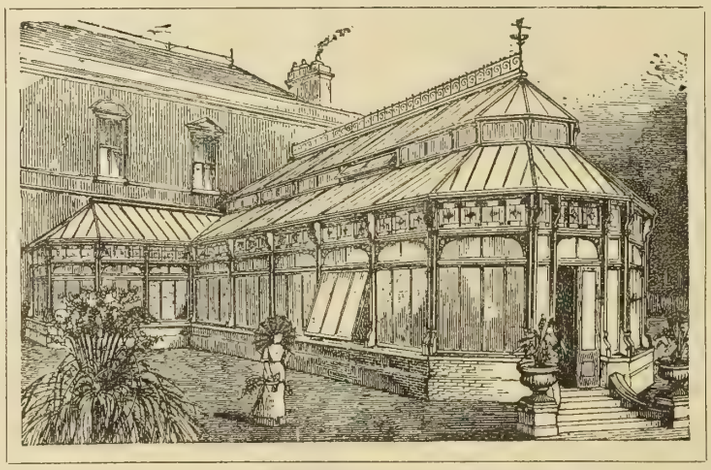


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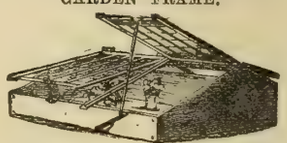
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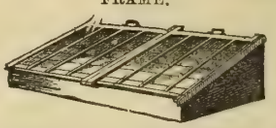
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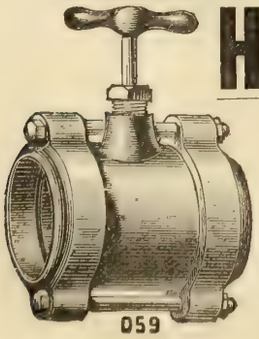
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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
30	S	**Palm Sunday.**	5 43	4 31	6 28	11 47	3 40	8 42	9 29	5 27	6 17	44·9
31	M	Treaty of Paris, 1856.	5 41	4 13	6 30	After.	4 14	10 17	11 0	6 54	7 42	45·3
		April.										
1	Tu	Prince Bismarck born, 1815. [Sittings end.	5 38	3 54	6 31	2 0	4 41	11 38	——	8 25	19 3	45·5
2	W	Richard Cobden died, 1865. Hilary Law	5 36	3 36	6 33	3 12	5 3	0 10	0 36	19 35	10 1	45·7
3	Th	*Richard, Bishop.*	5 34	3 18	6 35	4 21	5 21	0 56	1 16	10 21	10 41	45·9
4	F	Good Friday.	5 32	3 0	6 37	5 34	5 39	1 34	1 51	10 59	11 16	46·2
5	S	● New Moon.	5 29	2 43	6 38	6 48	5 57	2 9	2 24	1 34	1 49	46·5

Orchids in Flower.		Day of Yr.
		1890
Cœlogyne cristata alba	East Indies.	89
Cattleya Mendeli	S. America.	90
Dendrobium luteolum	Moulmein.	91
Dendrobium nobile	Assam.	92
Epidendrum vitellinum majus	Mexico.	93
Phalænopsis Schilleriana	Manilla.	94
Vanda suavis	Java.	95

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Exhibitions and Meetings for the Ensuing Week.

Tuesday, April 1.—Haddington Horticultural Society.—Spring Show.
Wednesday, April 2, and Thursday, April 3.—Royal Caledonian Horticultural Society.—Spring Show.
Thursday, April 3.—Linnean Society.—General Meeting.

Auction Sales for the Ensuing Week.

Monday, Mar. 31.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies and Plants.
Tuesday, April 1.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C.; Roses, Greenhouse Plants, &c.
Tuesday, April 1.—Messrs. Protheroe and Morris, at their Central Sale Rooms 67 and 68, Cheapside; Orchids.
Wednesday, April 2.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Greenhouse Plants, &c.
Wednesday, April 2.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, &c.
Thursday, April 3.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids, Lilies from Japan, &c.
Thursday, April 3.—Messrs. Protheroe and Morris, at the Central Sale Rooms, 67 and 68, Cheapside; Nursery Stock from Sample.

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No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.
ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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SPECIAL NOTICE TO ADVERTISERS.

Next Friday being Good Friday, the GARDENERS' MAGAZINE will be published on Thursday, and all advertisements for this issue must reach the office by five o'clock on Wednesday evening.

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The Gardeners' Magazine.

SATURDAY, MARCH 29, 1890.

THE SEASON OF SPRING is so far indefinable that no one can say when it begins or when it ends; and the same may be said of other seasons. We can only speak with definiteness of their more characteristic phenomena. The first appearance of green leaves gives assurance of the awakening of nature; the appearance of poppies and ears of wheat tell us of the arrival of summer; the ripening fruits and reddening of leaves are indicative of autumn; and when there is ice stout enough for the skater we can say that, without doubt, the winter has set in with proper earnestness. The *Garden Oracle* declares that Spring commenced on March 20, at 4 p.m.; which means that certain astronomical conditions were at that time accomplished; and for a proper reckoning a figure with a reason are supplied. This is convenient for the regulation of human affairs; but in nature the progress of the seasons is continuous, and actual divisions of time are absolutely unknown. We had spring temperature in January, with accompaniments of sunshine and flowers; and we had winterly east winds in February, that put a stop to advancing vegetation; and now that we have reached March 29, we can only say that spring has come according to the book, for the weather at this time of year is so uncertain that we may have winter in April, and may be seriously disadvantaged by frost so late as the 23rd or even the 25th of May.

Gardeners have to keep these facts in mind as of the utmost importance in the general scheme of management; and, indeed, as affecting, for better or worse, every day's work. One of the first objects of the practical cultivator will be to secure as long a season of growth as possible. Our summers are short, as compared with the requirements of many of the plants we cultivate; hence the necessity for sowing many kinds of seeds while winter still prevails without, and of securing thereby strong plants that may be trusted to the open ground when reasonable expectation of safety from frost will justify planting them. There is no department of practice that needs more care and caution, for great things may be done by judicious employment of artificial heat under glass in pushing forward stock of various kinds for planting out; and, correspondingly, great mistakes may be made, resulting in loss of labour and the substitution of a weak for a strong plant for the summer work. To sow seeds before time is, in one sense at least, a greater mistake than to sow after time. A general statement of this kind admits of many qualifications, but the essence of it is, that when plants have attained to a certain stage of growth, they require to be planted in their permanent quarters; and if this stage is reached before the temperature of the earth has risen to the point requisite for safety, the plants deteriorate, and we learn too late that the seed was sown too early. This consideration applies with more force to sowings made in January and February than to anything that may be done now. But at all seasons, and more especially in spring, it is necessary to effect a proper correspondence between work under glass and the progress of the year, that planting may be safely done at the very time to suit the plants and secure that extension of the growing season on which success so much depends. By this fourth week of March we expect to see in suitable structures, with a quite moderate temperature, good stocks of tomato, vegetable marrow, celery, and other useful things that are required for planting out, and with them perhaps selections of half-hardy annuals and many kinds of bedding plants. It is a good time, however, to sow all such seeds, for growth will progress rapidly now, and many things that begin late will be but little later in the end than earlier sowings, because the growth will be vigorous from the first. The light being abundant, and the natural temperature favourable to growth under glass, but little fire-heat will be needed except for such things as require a high temperature in all their stages of growth, such as melons and cucumbers for example. Young gardeners will do well to give their minds to this interesting and important matter of establishing a perfect correspondence between growth under glass and the augmentation of light and warmth now in progress in the world without, for on that will greatly depend the success of the whole year's work. As for the outdoor work of the season, nearly every kind of seed that is recognized in gardening may be sown in open beds in the month of March, and the exact date of sowing is very much a matter of convenience, for in truth a good seed-bed is of the first importance, and, therefore, the weather is the best of all almanacs to give a date for operations. When the spring is late, April sowings will often prove as early as those of March; and in respect of broccoli, April is early enough for sowing the main crops.

A difficulty in respect of seed sowing appears in front of the inexperienced in the exceeding variability of seasons. The men of experience have learned that the work must be done nearly to time, whatever the time may be for the district, and in a run of seasons, all will be well. The seasons are, in fact, more constant than we imagine them to be, especial'y when we shiver with cold in April, and call to mind that in January we complained of the heat. The fluctuations correct or compensate one another, and it is commonly observed that whether the season be early or late, all things are found to be in a normal state or nearly so, on the first of May; for by that time losses and gains have pretty well balanced each other, and we seem to start fair as regards the prospect of a reward for our labours.

No conditions are so favourable to human interests as those that may be termed seasonable. What is not seasonable is usually attended with disadvantage however agreeable it may be while it lasts. Early flowers and green leaves are pleasing, but they often appear only to be destroyed by subsequent frost; and it is but the teaching of experience that makes us welcome frost and snow in the season to which it is appropriate, for undue warmth will have to be paid for at a time when the payment may prove inconvenient. The lesson has a practical bearing; for, although we cannot regulate the seasons we can regulate our work, and we make it a rule to advise the young men to observe the seasons as nearly as may be convenient, for to be led into exceptional practice by exceptional weather, is to be in a position to fall into a trap; and this especially applies to all seed-sowing and planting out; all such work, in anticipation of the proper time, being accompanied with risks that are rather to be avoided. None can say what the summer will be, but all may with reasonable prospect of success discharge the duties of the season whatever they are; and to deviate in any serious degree from rules that are founded on averages is to import into the business an element of danger. Never within recent years have we had a more impressive lesson than now of the inconvenience of unseasonable phenomena. The year came in with undue warmth, and during January we were basking in the sunshine, so that London was comparable to Nice for the amenities of out-door life. This was the state of things throughout the whole of the northern hemisphere. There followed immediately an outbreak of disease, which has not yet expended its virulence, although it appears to be passing away. The old proverb that tells of a green Christmas making a fat churchyard has been painfully illustrated; and we know now something of the price to be paid for the warmth of January, the payment being probably not yet completed. The gardener cannot have it too firmly fixed in his mind that averages will in the end prevail, and all our speculations should be made in view of that governing fact. In what way compensations and balancings will be effected we do not know, but the fundamental truth remains, and should have due weight in the regulation of all garden work.

Sherborne Flower Show, August 27.

Shrewsbury Chrysanthemum Show, November 20.

Leicester Flower Show, August 5.

Clay Cross Flower Show, August 12.

Wimbledon and District Horticultural Society's annual exhibition July 9.

Liverpool Horticultural Association will hold its summer exhibition July 16 and 17.

Mr. G. Potts, jun., has been engaged as head gardener to D. Palmer, Esq., Heronden Hall, Tenterden, Kent.

Mr. Phippen, of Reading, announces his annual show of spring flowers to be held in the Town Hall, Reading, on Wednesday, April 2.

Mr. Richard Milner has been engaged as head gardener to Miss Talbot, Penrice Castle, Swansea.

Mr. G. L'Anson has been engaged as head gardener at Orchard Leigh Park, Frome, Somerset, the residence of W. A. Duckworth, Esq.

National Chrysanthemum Society has published report and financial statement, with schedule for 1890, in a compact pamphlet, obtainable in the usual way.

Primroses at Wantage will doubtless undergo a change consequent on the death of Mr. Caudwell, but for the present they remain as he left them and are likely to be in their best exhibition state during the month of April.

*** Good Friday being in view, we must ask our friends to forward whatever needs immediate attention as early as possible. Practically the week closes on Thursday next for all that concerns the business of a weekly paper.

Ancient Society of York Florists.—The exhibitions of this society will be held April 23, May 28, July 9, August 6, September 10, November 19, 20, 21.

Messrs. Sutton and Sons' offer prizes to the value of fifty guineas for competition at the exhibitions of the Reading Horticultural Society, to be held June 4 and August 27. The prizes at the June show are offered for tuberous begonias, calceolarias, and gloxinias; and at the August show for collections of vegetables.

Mr. D. P. Scott, for the past twelve years secretary of the Dundee Horticultural Society, was, on the 17th inst., presented with a gold watch and a drawing-room timepiece in recognition of his labours. At the same time Mrs. Scott was presented with a diamond brooch and pearl pendant.

Chiswick Gardeners' Mutual Improvement Association.—Liberal prizes were, as for several years past, offered by Mrs. S. A. Lee for essays on horticultural subjects, and the result of the competition has recently been made known. The successful competitors for the prizes for essays on the cultivation of herbaceous and alpine plants were Mr. J. Addison and Mr. T. Bones; for subjects at the discretion of the competitors, Mr. A. Wright, Mr. E. Booker, and Mr. J. Barry, the subjects being orchids, ferns, and gardeners' associations; and for reports on the work of the session, Messrs. Belcher, Miller, and Smith.

Schedule of Daffodil Exhibition and Conference at Chiswick, April 15 to 18, has been issued. At the hour of 3 on the first day the show will be opened by H.R.H. the Princess Mary, Duchess of Teck.

Injurious Insects are reported on in a report (the 13th) by Miss E. A. Ormerod, published by Simpkin and Co., and Mr. Charles Whitehead in a "third report" to the Board of Agriculture, published by the Queen's Printers.

Meeting of R.H.S. on Tuesday last was one of the most successful of the season, and it deserved to be, seeing that M. H. Vilmorin left his pleasant home on the Mediterranean expressly to discourse on salads, a subject that above all others demands the taste as well as the knowledge of a Frenchman learned in domestic horticulture.

Gardeners' Orphan Fund.—The election of ten children to the benefit of this fund will, as already announced, take place on Friday, July 18, and it is now necessary to remind the friends of candidates that applications must be made, on the proper printed form, to Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, not later than Wednesday, April 23. The forms can be obtained from Mr Barron, or any of the local secretaries.

The Progress of Vegetation has been of a spring-like character in the past week. In southern and western counties peach walls are gay with bloom; in orchards there is much show of plums and pears in flower. Near London the change is less marked; for while we may report, as we did last week, that trees may be seen in bloom here and there, the general display has still to be waited for. At the time of writing the temperature is high for the season, and trees that leaf early are in full spring costume.

Dorsetshire is entering upon a mad career of Passericide. In plain English at a meeting of farmers and others at Dorchester it was resolved to pay fourpence per dozen for all old sparrows killed, and twopence per dozen for young ones; and three-halfpence a dozen for eggs. And when this game has been carried on for ten years there will be as many sparrows in Dorsetshire as now, while not a few "lads of the village" and "loafers of the town" will have been confirmed in vagrancy and ne'er-do-well-ism by sparrow hunting.

Cut Flowers of Hyacinths are appearing in the London markets as imports from Holland. It is a question if in the end our friends at Haarlem will gain by the commercial view they are developing in respect of hyacinth flowers. Many persons who formerly purchased bulbs by an expenditure of gold and silver to obtain the flowers, now find they can obtain them without trouble for an expenditure of pence. But an increase of the total number of admirers of the hyacinth may prove a justification for the new commerce in the end.

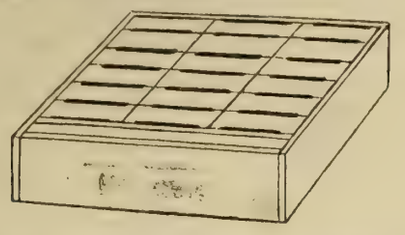
Mr. Martin Sutton's experiments on grass manuring at his Dyson's Wood Farm are now completed, and he has left the farm and taken Kidmore Grange, where his inquiries and experiments will be renewed under altered circumstances. He has published the results of his important labours in a pamphlet, issued a few days since by Messrs. Simpkin and Co. The chief results of his experiments are that "mineral manures, especially potash salts, have been found to favour the growth of leguminous herbage to such a degree that in some cases the clovers and their allies almost smother the grasses. On the other hand, the true grasses are specially encouraged by nitrogenous manures, and under the influence of fertilizers rich in nitrogen they come to the front."

Vienna Agricultural Exhibition, to be opened in May, has grown to gigantic dimensions, and will include many horticultural features of importance. It may be of service to many of our readers to give here a list of the special exhibitions that will be held in connection with this great affair during the six months of its continuance—Poultry, May 15 to 18; Early Vegetables, May 15 to 20; Dogs, May 16 to 18; Horses, May 17 to 21; Early Fruit, May 18 to 20; Horses, May 24 to 28; Pigs, May 24 to 27; Asparagus, May 25 to 30; Horses, May 31 to June 4; Pigs, June 1 to 4; Horses, June 7 to 11; Sheep, June 8 to 10 and June 12 to 15; Horses, June 14 to 18; Horned Cattle, June 28 to July 30; Cauliflowers, Aug. 9 to 13; Horses, Aug. 16 to 20; Melons, Aug. 20 to Sep. 25; Horned Cattle, Aug. 30 to Sep. 10 and Sep. 13 to 24; Vegetables, Sep. 20 to 25; Dairy Produce, Sep. 18 to 22; Potatos, Oct. 1 to 10; Fruit, Oct. 5 to 15. An International Congress of Agriculture and Forestry in September.

Mitcham Common is being carted away visibly and tangibly, and if the business continues as at present the situation will be identifiable only by a hole in the earth. A few representative commoners, notably Mr. G. P. Bidder, Q.C., Mr. H. Bonsor, M.P., Colonel Jones, and Mr. Burkett, the solicitor to the Commons Protection Society, have commenced a movement having in view to protect what remains of the Common and secure it for the use of the public for all time to come. One of the troubles the movers have to contend against is the digging of gravel. Now, the world wants gravel and must have it, but a common may be kept to something like a common level and a quite decent condition by carting in as well as carting out. It happens sometimes that in the construction of railways the greatest difficulty is experienced to find a "shoot" or place of deposit for the earth removed; and where it might be convenient for transit and the like, an exchange of soils might be made in such a case with advantage all round. There are other materials, as innocuous, as ready, and even more ready to hand, that are in the nature of dirty white elephants that nobody wants, that might with a certain amount of management be worked into such a system of exchange, for the treasures that lie beneath the surface of the earth, whether gravel or gold, need not be kept from use and service because of public rights to the air and light and space that cover them.

WORK FOR THE BEE-KEEPER.

While on the subject of sections and section trays, as mentioned in my last paper, it may be advisable to mention that those who have section trays in use, with a lath dividing each row of sections in the tray, will find it necessary to alter them by removing this strip when using the four-way bee sections, if they are to reap the full benefit of them. We have never used this strip, as we have always endeavoured to keep the whole of the sections as compact and warm as possible over the hive. The accompanying illustration shows an ordinary made section tray filled with 1lb. sections.



In my last paper reference was made to full sheets of foundations for sections, but full sheets for these are by no means necessary, nor are they desirable in many cases. It is preferable to use small pieces, either cut straight or in triangular form, like the two illustrations here





given, and for home consumption where the highest finish is not so important this plan will be found to answer best. For fixing these small pieces of foundation guide a small block made after the accompanying illustration will be found to answer well.



It consists of a block longer than a section, or rather longer than the top of the section where the foundation has to be fixed, and this is carved out at the ends so as to allow the deepest part just to drop into the section one inch deep or so, as to form a rest in the middle for the guide comb. (I am taking it for granted that 1lb. American sections are used.) The section block is then placed in position in the section, and the section and block held together in the left hand. The small strip or three-cornered bit of foundation is then laid on the resting block, and so that the one edge rests against the top of the section inside. A little melted wax is then run along the top edge, which securely attaches the strip of foundation to the section. The sections may be prepared very quickly in this way, and less than a square inch of foundation guide used for each section. Apiarist.

Mr. Ewart is referred to in our report on Eastwood Park as being still in employ there. This is an error; Mr. Ewart, who was head gardener at Eastwood Park, left in June last year, and is now in a garden near London. He was nearly twenty years with Mr. Tod, entering the garden as foreman in the first instance. Mr. Andrew Rae served under Mr. Ewart until June last, when he succeeded him as head gardener, and is still in command.

Stanley and African Exhibition in the Victoria Gallery, Regent Street, was opened to the public on Monday last, and appeared to give promise of becoming the great attraction for the sight-seeing and holiday-making class throughout the season in London. It has great attractions for the most diverse tastes, and a high claim on the serious attention of geographers, naturalists, botanists, and those business men who are looking to Africa for a solution of pressing social and commercial problems. The maps are of peculiar value, the collections include many beautiful things, with curiosities and "horrors" that demand recognition by such as would "survey mankind from China to Peru."

Inquiry into Railway Rates by Board of Trade has been for some time past in operation in Edinburgh, the subject of coal conveyance having been prominent in the routine of business. Within the past few days the Aberdeen Traders' Defence Association has put forward Mr. Alexander Copland as a witness of carriage of salt, gas-lime, and manures. much of the evidence being of importance to the final issue. The Highland and Agricultural Society has been represented by Rev. John Gillespie, of Mouswald, Dumfriesshire, who also spoke for 46 other agricultural societies. The inquiry in Edinburgh is concluded and the commissioners will proceed to Dublin to collect evidence as to rates and charges in Ireland.

The Trade in Flower Pots makes an interesting figure in statistics of British commerce. We see occasionally in the streets of Continental cities, more especially in the low countries, street hawkers with barrows, buying and selling second-hand flower pots, a fact that speaks for their importance as articles of export. We learn from Messrs. Sankey and Son, of Bulwell Potteries, Nottingham, that they sold and loaded by rail last week the remarkable quantity of 719,000 garden pots. Their weekly output averages 217,000. They recently forwarded to Hull a special train of 48 waggons of garden pots for export. So rapidly is the demand for their pots increasing that they have been compelled to purchase upwards of fifty acres of land on which to erect new and enlarged works.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, March 25.

Floral Committee.

Present: William Marshall, Esq., in the chair; Rev. H. H. D'Ombrain and Messrs. A. Truffaut, R. Dean, H. Herbst, B. Wynne, T. Baines, C. T. Druery, C. Jefferies, J. Walker, F. Ross, H. Turner, W. C. Leach, R. B. Lowe, J. Fraser, H. Cannell, W. Holmes, and L. Castle.

The meeting on Tuesday was one of the most satisfactory the society has yet held at Westminster, the contributions being numerous and highly interesting, and the attendance considerably above the average. The great increase in the number of visitors was one of the most marked features of the gathering, and there was a large gathering of the Fellows and their friends at the afternoon meeting, when Mr. Henri Vilmorin read a paper on "Salads."

One of the most important contributions to the meeting of the committee was the collection of plants staged by Messrs. B. S. Williams and Son, of the Victoria and Paradise Nursery, Upper Holloway, to whom the award of the silver gilt Banksian medal was made. The collection was sufficient to form a broad bank extending the whole length of the hall, and comprised hyacinths, clivias, lilacs, and the guelder rose in the best possible condition. It also included good examples of Boronia megastigma, remarkable for its delicious fragrance, and B. heterophylla, a now well-known species of great beauty. The firm submitted Epiphyllum Russellianum Gaertneri, a distinct variety bearing medium sized drooping flowers of a brilliant orange scarlet hue. Messrs. W. Cutbush and Son, Highgate and Barnet, exhibited an attractive collection of epacris and well bloomed examples of Boronia heterophylla and were awarded the bronze Banksian medal. A medal of similar value was awarded to Messrs. Barr and Son, 12, King Street, Covent Garden, for a large and tastefully arranged collection of daffodils with anemones, chionodoxas, and other hardy flowers. A basket of hardy flowers was sent from the Royal Gardens, Kew, amongst other kinds represented being Anemone apennina, Cyclamen repandum, saxifraga oppositifolia, Iris persica purpurea, a distinct variety with rich purple flowers; Primula marginata, P. pubescens alba, and Sisyrinchum grandiflorum. Mr. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallington, submitted well-flowered examples of Velthemia viridifolia, a handsome stove plant, bearing rose coloured flowers.

New hyacinths in a high state of development were staged by Messrs. J. Veitch and Sons, King's Road, Chelsea, the most noteworthy being Bouquet Blanc, a single white variety with finely formed bells and massive spike, and Admiration, a single red, the spikes large and well arranged, the bells of fine form, the colour delicate pink with deep pink line down the centre of each segment.

Mr. Charles Turner, Slough, staged a box of blooms of tree carnations and was accorded a vote of thanks. Especially noteworthy were Lord Rothschild, an excellent variety with large finely formed flowers of a rich crimson hue; Aylette, white tinted with rose; Amethyst, the flowers of superb form and richly-coloured rose carmine; Vestale, an excellent white variety, and Herald a distinct variety with rose purple flowers.

Messrs. Paul and Son, Cheshunt, contributed a large and attractive group of roses in pots, and were awarded the silver Banksian medal. The specimens were admirably flowered and the varieties represented included Innocenta Pirola, one of the best of the teas for pot culture; Alphonse Soupert, The Puritan, which is proving of more value for forcing than for out-door culture; Gloire de Margottin, a superb crimson hybrid perpetual; Silver Queen, a beautiful hybrid perpetual of recent introduction; Madame Hoste, an excellent yellow tea; Marquis of Salisbury, a promising variety, but evidently not at its best, and Souvenir de S. A. Prince, an exquisitely beautiful white tea, which originated as a sport from Souvenir d'un Ami, from which it differs in colour only. Messrs. J. James and Son, Woodside, Farnham Royal, exhibited a group of well-grown cinerarias, which admirably represented their strain and secured for them the award of the silver Banksian medal.

From Messrs. H. Cannell and Son, Swanley, came a magnificent collection of zonal pelargoniums, which staged with much taste and judgment produced a brilliant effect and attracted much attention. The firm also had a collection of double cinerarias to the cultivation of which they devote much attention, and were awarded the bronze Banksian medal. Mr. Froud, Chase Park, Enfield, exhibited several boxes of camellias chiefly semi-double varieties, and sprays of Acacias retinoides, one of the most beautiful of the small growing species. Messrs. Charlesworth, Shuttleworth, and Co., Heaton, Bradford, contributed examples of Pteris Harrisoni, which has the appearance of having originated from Pteris cretica albo-lineata, and is deserving of attention for its elegant appearance. Mr. R. Dean, Ealing, staged a large and highly-attractive collection of primroses and polyanthuses.

Orchid Committee.

Present: Sir T. Lawrence, Bart., M.P. in the chair; Dr. Masters, and Messrs. S. Courtauld, T. B. Haywood, H. M. Pollett, H. Ballantine, J. Dominy, C. Pilcher, E. Hill, H. Williams, L. Castle, F. Moore, F. J. Tautz, A. H. Smee, and J. O'Brien.

The contributions to the meeting of this committee were less numerous than on the occasion of the meeting held on the 11th inst., nevertheless sufficient orchids were staged to add materially to the attractions of the gathering. Messrs. Sander and Co. exhibited Angræcum Germinyanum, an interesting species of slender growth, and bearing medium-sized white flowers; Oncidium bifolium majus, well flowered and attractive; Dendrobium nobile nobilius, Odontoglossum vexillarium, and several good varieties of Cattleya Trianæ. N. Cookson, Esq., Oakwood, Wylam-on-Tyne, exhibited Phaius Cooksoni, for which he was awarded a first class certificate at the previous meeting. Messrs. Low and Co., Upper Clapton, exhibited a form of Phalænopsis Schilleriana, with the labellum marked in much the same manner as that of P. gloriosa. Mr. G. Elliot, gardener to W. F. Darnell, Esq., Downshire House, Stamford Hill, presented a well-grown specimen of Angræcum citratum bearing four racemes, and was awarded a cultural commendation. Mr. Glover, gardener to Ellis, Esq., Manor House, Wallington, exhibited a highly coloured form of Odontoglossum Andersonianum, and flowers of Lycaste Schilleriana. Messrs. Pitcher and Manda, Hextable, Swanley. contributed a group of lady's slippers, in which were some excellent forms of Cypripedium Boxalli and C. villosum. Mr. Rogers, Mornington Lodge, West Kensington, had a splendidly flowered specimen of Dendrobium nobile, and Mr. Ballantine, gardener to Baron Schroder, The Dell, Egham, staged an example of the chaste Cattleya Schroderiana. Cyrtopodium Saintlegerianum, and its variety Superbum were represented by large finely flowered specimens from Mr. Cummins, who received the compliment of a cultural commendation, but the award of a medal would have been well-deserved. From the Royal Gardens, Kew, came a good specimen of the green

flowered and handsome Cœlogyne pandurata. Mr. Cowley, gardener to F. G. Tautz, Esq., Studley House, Hammersmith, exhibited a charming group of orchids, comprising Lycaste cruenta, Odontoglossum blandum, Dendrobium Freemani, and Cattleya Trianæ Tautziana.

Fruit Committee.

Present: Sir Charles Strickland, Bart. in the chair; Dr. Hogg, Messrs. H. L. Vilmorin, P. Crowley, R. D. Blackmore, Harrison Weir, J. Cheal, C. Ross, G. W. Cummins, J. Smith, J. Willard, W. Warren, J. Wright, A. H Pearson, G. Wythes, J. Hudson, F. Q. Lane, P. Balderson, G. Bunyard, A. W. Sutton, A. Watkins, A. Moss, and T. F. Rivers.

The duties of the committee on this occasion were by no means onerous for the objects were few, and in two or three instances only were they of special interest. Mr. C. Ross, Welford Park, Newbury, exhibited a new dessert apple for which he received an award of merit. Mr. W. C. Leach, Albany Park Gardens, Guildford, contributed Standard Bearer celery, in excellent condition for so late in the season. Mr. J. Smith, Mentmore, and Mr. Lockie, Oakley Court, Windsor, contributed excellent cucumbers. Mr. Simms, gardener to W. Eastman, Esq., Englefield Green, staged large well-coloured fruit of La Grosse sucrée strawberry. W. Roupell, Esq., Harvey Lodge, Streatham, exhibited baskets of exceptionally fine fruit of Annie Elizabeth and the Melon apples, both of which he regards with much favour, being good croppers and the fruit large, handsome, and of high quality. Mr. Roupell also exhibited excellent fruit of Bismarck and Striped Beefing apples. A seedling apple of good appearance was exhibited by Messrs. R. Veitch and Son, Exeter, under the designation of Ashford seedling. The variety belongs to the culinary section, the fruit is of medium size, regular in outline, and of a deep yellow colour suffused with orange red. Salads were contributed by Messrs. Webber and Co., Covent Garden, and Mr. G. Norman, gardener to the Marquis of Salisbury, Hatfield House, Hatfield. Especially good in Messrs. Webber's salad were the curled endive and cos lettuce.

Novelties.

First-class certificates were granted as under :—

To Messrs. J. Veitch and Sons, Chelsea, for

Lælio-cattleya Hippolyta.—A very distinct and beautiful hybrid raised from a cross between Lælia cinnabarina and Cattleya Mossiæ. In general character and the colour of its flowers it bears the most striking resemblance to the first-named of its parents, but the influence of the cattleya is plainly apparent. The flowers are about four inches across, the sepals an inch in breadth and of a rich orange colonr, the petals of rather greater breadth, deep orange suffused with rose, the labellum narrow, painted with purple at the margin, which, as in the labellum of Cattleya Mossiæ is distinctly frilled.

To Baron Schroder, The Dell, Egham, for

Dendrobium Wardianum, Schroder's Variety.—A handsome form, distinguished by the large size and rich colouring of the flowers. The sepals are rose purple, deep purple at the tips, and the petals and labellum are marked with rich amethyst purple at the tips.

Awards of merit were made as under :—

To Messrs. Barr and Son, for

Iris Sindjarensis.—A beautiful species with bright grass green foliage and medium-sized pale blue flowers.

To Messrs. J. Veitch and Sons, for

Trillium discolor atratum.—A dark variety of this interesting species.

To Mr. W. C. Leach, Albury Park, Guildford, for

Deutzia candidissima, fl. pl.—An old but beautiful hardy shrub, bearing short racemes of pure white double flowers, which can be employed to great advantage in dressing epergnes, filling vases, and in other arrangements of flowers in a cut state. Mr. Leach describes it as of greater value for forcing than the D. gracilis. This deutzia was certificated by the society some ten years since when exhibited by Mr. A. Waterer.

Philadelphus inodorus.—A hardy shrub introduced to this country upwards of one hundred and fifty years since, and figured in *Botanical Magazine*, t. 1478. The flowers are pure white with bright yellow stamens, and have an attractive appearance. It was described by Mr. Leach as well adapted for forcing.

To Mr. E. Morse, Epsom, for

Lily of the Valley, Fontin's Variety.—A handsome variety remarkable for the large size of the flowers.

To F. G. Tautz, Esq., Studley House, Hammersmith, for

Cattleya Trianæ Tautziana.—A handsome form with flowers above the average in size and a broad well expanded labellum of the richest amethyst.

To. Mr. C. Ross, Welford Park, Newbury, for

Apple Armorel.—A dessert variety in the way of Sykehouse Russet. The fruit is of small size, roundish and slightly depressed at the eye, the skin bright yellow partly covered with thin cinnamon coloured russet.

ROYAL BOTANIC SOCIETY, Spring Show, March 26.

The first of the two exhibitions of spring flowers arranged by the Royal Botanic Society was held on Wednesday, and the contributions were sufficiently numerous and varied to form a large and interesting display. Hyacinths, narcissi, tulips, cyclamen, azaleas, deutzias, and other classes of plants invited by the schedule were well represented, and the miscellaneous contributions were plentiful and contained many interesting objects.

Azaleas and Deutzias formed an important part of the exhibition for the classes provided for them were well filled, and the whole of the collection more or less good. In the trade class for six azaleas, Mr. R. Wells, Longton Nursery, Sydenham, was first with neat well bloomed specimens, and Mr. H. James, Castle Nursery, West Norwood, was second. In competition for the prizes for azaleas, in which the competition was limited to private cultivators, Mr. H. Eason, Mr. C. Nunn, gardener to J. Soames, Esq., Maize Hill, Greenwich, and Mr. R. Scott, gardener to Miss Foster, The Holmes, Regent's Park, were first, second, and third respectively. Deutzias have seldom been so well shown as on this occasion. Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, was first with huge densely-flowered bushes; and Mr. H. Eason and Mr. R. Butler, St. Dunstan's, Regent's Park, were second and third respectively with examples somewhat smaller but well flowered.

Hyacinths, Tulips, and Polyanthus Narcissi produced a rich display of colour, as the competitive collections were supplemented by several hundred examples contributed to the miscellaneous class. Mr. J. Douglas occupied the post of honour in the amateurs' class for twelve hyacinths, with exceptionally fine specimens of Vuurbaak, La Grandesse, Mont Blanc, Souvenir de J. H. Veen, a fine blue variety in the way of King of the Blues; Koh-i-Noor, The Sultan, a deep blue variety; Electra, and King of the Blues. Mr. H. Eason, gardener to B. Noakes, Esq., Hope Cottage, Highgate, was a capital second; and Mr. R. Scott was third. Mr. J. Douglas was first also in the amateurs' class for twelve tulips, staging good examples of Keizerskroon, Vermilion, Brilliant, Van der Neer, Joost Van Vondel, and White Joost Van Vondel. Messrs. H. Williams and Sons, Fortis Green, Finchley, were first in the trade class for tulips, and also in the open class for polyanthus narcissi, Mr. J. Douglas being second for the latter. Large and beautiful groups of hyacinths, tulips, and polyanthus narcissi were staged by Messrs. H. Williams and Sons and Messrs. B. S. Williams and Son, Upper Holloway.

Roses in Pots were admirably shown by Messrs. Paul and Son, Cheshunt, who were first in the trade class for six, with finely-flowered specimens of Alba Rosea, Magna Charta, Innocente Pirola, and other well-known varieties. The firm also contributed a charming group of pot roses to the miscellaneous class, the latter including good examples of Paul's Single White, Lady Alice, Madame Hoste, and Souvenir de S. A. Prince. Mr. H. Bennett, Shepperton, staged in the miscellaneous class a box of blooms of Princess Beatrice rose, one of the most beautiful of the teas.

Amaryllis were presented in capital condition, Messrs. Paul and Son obtained premier honours in the class for twelve specimens with finely developed examples, those of Her Majesty and Colonel Burnaby being especially good. Mr. J. Douglas was a close second, his best specimens being those of Empress of India, and Mr. R. Butler third with a good collection. Messrs. B. S. Williams and Son staged an excellent collection, not for competition, and Messrs J. Veitch and Sons, Chelsea, presented several seedlings.

Cyclamens and Primulas had several classes provided for them, and the first-named were so strongly represented as to constitute a very attractive feature. Mr. D. Phillips, Langley Broom, Slough, was first in both classes for cyclamens in each case with large splendidly-flowered specimens. The St. George's Nursery Company, Hanwell, and Messrs. J. James and Son, Farnham Royal, were second and third respectively in the open class. In competition for the prizes for Chinese primulas, Messrs. H. Williams and Sons, and Mr. J. Odell, Gould's Green, Hillingdon, were first and second respectively. Mr. Odell and the St. George's Nursery Company exhibited large collections of cyclamens not for competition.

Hardy Plants were fairly well shown, the principal exhibitors being Messrs. Paul and Son. This firm was first for twelve bulbous plants with good specimens of Iris reticulata, Chionodoxa sardensis, Dogstooth violets, lachenalias, and tritelias. The firm also had a beautiful collection in the miscellaneous class in which the anemones and saxifragas were especially good.

Crocuses and Lily of the Valley did not form very strong features, and with reference to them it will suffice to say that Mr. Douglas was first for crocuses, and Messrs. H. Williams first for the lily of the valley.

Camellias had no provisions made for them in the schedule, nevertheless they were well represented, as Messrs. William Paul and Son, Waltham Cross, staged a very large collection of cut blooms, all of which were in a high state of development. Prominent amongst other good varieties were C. M. Hovey, Beauty of Waltham, Benneyi, Rafia, Mathotiana, Cup of Beauty, Montironi, and Archduc Carle.

Daffodils were staged in large numbers by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, and Messrs. Barr and Son, 12, King Street, Covent Garden, and the collections staged by these exhibitors formed an important feature.

Miscellaneous Contributions, other than those already referred to included a magnificent bank of flowering and ornamental-leaved plants from Messrs. J. J. Laing and Sons, Forest Hill. Especially noteworthy in the collection were the orchids and clivias. Messrs. H. Cannell and Sons, Swanley, exhibited the remarkable fine collections of zonal pelargoniums and double cinerarias which attracted so much attention at Westminster on the previous day. Messrs. W. Cutbush and Son, Highgate, staged a collection of hard-wooded flowering plants. Messrs. J. Veitch and Sons, exhibited a group of new amaryllis. Mr. C. Turner sent a box of carnation blooms. Mr. J. Simms presented a good dish of La Grosse Sucree strawberries, and Messrs. B. S. Williams and Son, exhibited lilacs and clivias, the last named comprising fine examples of Clivia cruenta, C. Ambroise Verschaffelt, and other good forms.

Novelties were numerous, and, as usual, were dealt with in a generous manner. Botanical certificates were granted as under :—

To Messrs. J. Veitch and Sons for

Lælio-cattleya Hippolyta.—A handsome hybrid; described in report of R.H.S.

To Mr. Elliott for

Angræcum citratum giganteum.—A strong growing form, but hardly distinct enough to justify the award.

To Mr. C. Rann, Highbury New Park, N., for

Oncidium Larkinianum.—A form in the way of O. tigrinum; described in a recent report of R.H.S.

To Messrs. Paul and Son for

Tulipa Kaufmanni.—A beautiful species, the flowers of medium size, the segments long and narrow, and on the outer side white, marked with a broad band of purple, and on the inner side white, golden yellow at the base, and marked with a crimson blotch.

Floricultural certificates were granted as under :—

To Messrs. J. James and Sons for

Cineraria Gem.—A beautiful variety, the flowers large, and of fine form; the colour white, with broad blue band round the margin.

To Messrs. J. Laing and Sons for

Clivia Stanstead Beauty.—A remarkably fine variety, the umbels of immense size, the flowers large and of good form, and the colour soft orange.

To Messrs. B. S. Williams and Sons for

Clivia Meteor.—A handsome form in the way of C. cruenta, the umbels of noble proportions, the flowers large and of superb form; the colour rich orange scarlet.

Epiphyllum Russellianum Gaertneri.—An attractive variety, producing medium-sized drooping flowers of a vermilion scarlet hue.

To Messrs. J. Veitch and Sons for the undermentioned amaryllis—

Champion.—A superb scarlet variety; described in a recent report of R.H.S.

Olivette.—A distinct variety, the flowers of medium size, and superb form; the colour rich crimson scarlet, and extending to the base of the perianth.

John Heal.—A handsome variety, now well-known and highly appreciated or its attractiveness and high quality; the colour deep crimson, the segments tipped greenish white.

A SOUTH OXFORDSHIRE FLORIST.

A recent issue of the *South Oxfordshire News* contains the following account of the labours and triumphs of our excellent friend, Mr. John Walker, of Thame, a man well known and universally respected in the horticultural world :—

The name of the Thame Nurseries at once suggests that of their proprietor, through whose natural gift and liking for horticulture, combined with indomitable perseverance and energy, Thame has become known to thousands who would otherwise, perhaps, never have heard of its existence. The name of Mr. John Walker in this connection, indeed, is now so well known that we offer no apology for referring to it. There is scarcely a show of any import-



ance, from Manchester to Brighton, where Mr. Walker has not won his laurels and held his own against the greatest growers in the kingdom.

It is thirteen years since that he beat all his rivals at South Kensington, where his roses were used in the bouquet which was then presented to the Queen, other members of the Royal Family expressing their great appreciation of these blooms, as evidenced by an extract from the *Standard*, which, speaking of his splendid exhibits on that occasion, referred to him in these terms: "Mr. John Walker, nurseryman, of Thame, whose roses were so beautiful, that the Princess Beatrice asked to be favoured with some of them." These were principally Marechal Niel, and the tree from which they were cut has produced nearly two thousand roses in one season, the fine colouring of which has been remarked in the trade journals since then, no one apparently being able to account for it or to produce its like. Dahlias, however, have always been Mr. Walker's special forte, and with these for longer than we can remember he has always been in the front rank of growers, and only last year at the Crystal Palace show, with six exhibits only, he took two firsts, and a second, third, and fourth prizes. The year's good record was fittingly brought to a close by the awards at the Royal Aquarium, Westminster, and Brighton the next week, when both shows being held the same day, Mr. Walker, at the latter place, obtained two firsts, and at the former, where he was also entered, he was equally fortunate. His first "great go" with dahlias was when he beat the late Mr. Charles Turner, at Buckingham Show.

"Like a great many other businesses," says our contemporary, "this had very small beginnings, and Mr. Walker is another illustration of the fact that round men won't fit square holes, and either make failures or work themselves into positions more congenial to their tastes and talents. It is now more than fifty-six years ago since as a lad of fourteen years Mr. Walker came into the town, and began to assist his uncle who was in business as a grocer, in the house now occupied by Mr. Tame, chemist, in the Corn Market." Upon the purchase of those premises by Mr. Thorpe, who founded the present chemist's business there, Mr. Walker's uncle removed to the spot now occupied by the subject of our remarks, nearly opposite the quaint old market hall, of date 1579, but which was removed in order to erect the Jubilee Town Hall in 1887. For some few years Mr. Walker, as his duty was, weighed up sugar, sold tea, and made candles (those were not the days of gas or electric lighting) in the most orthodox fashion, the last we are told being the most liked occupation of the three, Mr. Walker taking especial pride in the shape of his dips. His uncle, an aged bachelor, used frequently to complain that "John spent rather too much time in his garden," where, on the twenty-pole plot, the prize pansies, gooseberries, and potatos were produced.

But his innate liking for gardening could not be restrained, and in about the year 1846 he had, though still helping his uncle in the grocery business, commenced business on his own account as a florist. His nursery, however, was not extensive, twenty poles of ground and a two-light frame then representing what has since grown into about thirty acres. Soon after this Mr. Walker opened the smaller of the two shops now occupied by him for the sale of seeds (about 1850), and had, in conjunction mainly with Mr. Stone, of the Elms, set on foot the Thame Horticultural Society, Mr. Stone contributing the first £1 and Mr. Walker 5s. Other gentlemen, like the late Dr. Lupton, Mr. John Simmons, Mr. Thomas Shrimpton, and others, formed a committee, Mr. Walker becoming one of the two secretaries, a post he has held ever since.

For some years Mr. Walker was the principal prizetaker at the local show, and after a time, in order that the other exhibitors might have a better chance, he discontinued to show for competition, though every year his fine grouping of plants and cut flowers, &c., which always figures at the end of the largest marquee, is one of the best features of the show. Soon after the starting of the society in 1848, Mr. Walker's fame as a florist began to grow, and it was necessary to look out for more land, the twenty poles, it may easily be imagined, being altogether inadequate to his requirements. Accordingly we find him taking a part of the British School gardens, and about the same time the Lashlake gardens, a piece of land of between two and three acres. These he had not long before he began to exhibit at Oxford, Buckingham, Wycombe, and other shows in the neighbourhood, at which he was always very successful, and his life since that time may be described as being one of steady and uninterrupted success. In the course of years we find the nurseries at Queen's Road and Chilton in his possession. These, together with those at Lashlake, were also found to be too small for his needs, and the North Street nurseries were added, followed more recently by about seven acres on the Kingsey Road.

In the Lashlake Nursery are grown the famous Maréchal Niel, and other roses, show dahlias, asters, zinnias, British and exotic ferns, herbaceous plants, and general nursery stock. This reminds us that Mr. Walker's strain of quilled Victoria and incurved asters are now grown and sold all over the world, and are acknowledged to be some of, if not the very best, and certainly equal to Betteridge's, of North Oxon. In the early part of the year, too, the large patches of pheasant-eyed and double narcissus are worth a walk to see, the immense number of blooms being chiefly used for wreaths and decorations, and, later on, the large beds of quilled and other asters, the seed of which is so much in demand, are well worth seeing. In the North Street Nursery there is every year a splendid collection of carnations and picotees, and in a house adjoining these chrysanthemums are grown to a wonderful perfection.

The pelargoniums, show, zonal, tri-coloured, and kindred plants are also grown in this nursery; the zonals having a special house reserved for them to produce trusses for exhibition. And here, too, is the largest lot of standard roses and a variety of shrubs and trees, but the great bulk of these last are in the Queen's Road nurseries, which, in the summer and autumn, revel in a wealth of colour. Here are most of the dwarf roses, forest and fruit trees, and shrubs of all descriptions. Here and there, too, are planted choice peas for seed. The Kingsey Road nursery of about seven acres is chiefly occupied by currant and gooseberry trees and numbers of Scotch and larch firs, &c. Here are also grown considerable quantities of seed potatos, peas, onions, garden and cattle cabbage, while the greater part of the grapes and peaches are grown at Chilton.

It goes without saying that during the course of his career Mr. Walker has received hundreds of prizes besides seven cups, silver and bronze medals, certificates, &c., and it would, of course, be wearying to give any account of these. In this connection we may mention his Agricultural Root Show, held early in November in each year, when his customers all round the district enter into strong competition for the offered prizes.

Although past the allotted three score years and ten, Mr. Walker still takes an active part in the business, and does not appear to have aged during the last fifteen or twenty years, though his eldest son, Mr. Stephen Walker, has chiefly managed the growing of the dahlias and standard roses for some time, Mr. George Walker, a nephew, taking the chief share in conducting the seed business. We need not say that Mr. Walker is deservedly respected. He is genial and unassuming in manner, and a kind and generous employer of labour. He has not yet lost any of his enthusiasm as a florist, and is ever ready to assist in the promotion of any society having for its objects the improvement of horticulture of any description. Largely through his assistance the newly-formed Chrysanthemum Society, or rather the additional branch of the Thame Horticultural Society, was formed, and we can look forward to the first chrysanthemum show in the autumn through the interest he helped to create in that flower. We cannot close our sketch of Mr. Walker and his nurseries without echoing what we are sure is the wish of all our readers who know him—that it will be many years before the career may be ended of one whose success has been so well deserved, in which the town has in a measure participated, and of whom it may in a degree feel justly proud.

MR. McLEAN'S GALLERY, HAYMARKET.

The exhibition of pictures in oil, numbering sixty-four in all, afford an agreeable entertainment for an hour, for all are good, and a few are of special importance. We can but briefly notice them, but lovers of pictures will observe that if they are not anxious about quantity they will find here enough to detain them, and to restore equanimity of mind if the bustle and din of the town has in any way discomposed them.

Mr. James Orrock leads off with a very nice bit of work "The Cricketer's Arms, Danbury" (1), and presently again arrests us with "Feeding Poultry" (8). Mr. C. Burton Barber presents a pretty bit of genre in "Quite at Home" (12), a girl feeding a squirrel. Groups of frolicsome and occasionally mischievous boys perform antics in four pictures by Mr. B. Hartmann and Mr. C. Hartmann; these show various shades of humour of quite a fresh and genuine kind. "A Happy Family" (15), by Geza Vastagh, is a beautiful group of lion, lioness, and playful cubs, far above the average of such works in the solid modelling and life-like, easy happiness of the family. In "Jaffa" (17), by Mr. G. Bauernfeind, we have a brilliant representation of a function of the Mahommedan Church, a procession in honour of saints, with the architecture of an Eastern city, and a rich display of banners and costumes. Mr. Max Gaisser's "Knotty Point" (25), is a delicate bit of genre, a group of men arguing a great point in the midst of old books; there is a fine dignity and intellectual richness in this work that impresses one; a lover of books is bound to give it a little extra attention. "Off the Cornish Coast" (27), by H. Musgrave, is in masculine force, as the subject demands; the sea is green in the offing, grey in the near distance, and the scene impressive by its unity and picturesqueness. The "Old Story" (29), by G. Kuhl, presents a pair of rustic lovers in an old city, with red roofs, and gardens containing hollyhocks, a cheerful snatch from the realities of life. "Squally Weather at Sennen Cove" (38); deep indigo waves with white crests chafed by an angry wind, and everywhere threatening mischief; showing a vigorous handling by Mr. Edwin Ellis. Very different is Mr. W. H. Borrow's "Sunny Afternoon" (41), where the pleasant sea has become playful, and sends its pellucid green waves with gentle motion on a sandy shore. In the place of honour hangs Mr. Orchardson's noble work, "If Music be the Food of Love—play on" (24), a spacious apartment with old style piano, whereat sits an old style beauty, with waist an inch or two below the level of the shoulders, while at a moderate distance sits a swain of the same old type, carefully attired in tight breeches and square coat, listening, rapt in an elysian dream, for the passion of love gives new soul to the music and the light of romance to this fine picture. His walls and floor are such as we are used to, they show great spaces of amber, grey, and bronzy gold; the colouring as impressive in its simplicity and perfect harmony as the story is simple in its elements and perfect in the sentiment expressed. The day is long when we can give ten minutes to the enjoyment of such a work.

TWO USEFUL TOMATOS.

The two tomatos here figured are at once interesting and useful. The great size to which the more popular varieties are grown places these smaller kinds at a disadvantage, and generally speaking, these smaller kinds cannot be put forward as superseding the greater favourites. But they have their uses, and are not to be excluded from the garden in which tomatos are understood, for if they do not astonish the crowd they may delight the epicure and satisfy many proper requirements.

In the suggestion of a special use for the currant tomato, figured in G.M. last week, the two varieties now before us have equal rights, for to decorate a tomato soup by floating in it that each guest may have a fruit with the soup as a bonne bouche, they are admirably suited, and the smallest samples should be selected for such a purpose, consequently the crop should never be thinned. But what of the remainder, seeing that we cannot ensure using all we grow for the decoration of soups? Well, that question is disposed of by saying that every use to which the large fruit are put will suit the small ones also. They make the best soup and sauce; they are better suited to enliven the dessert, and they are the very best for tomato salads, seeing that the flesh is more solid and dry than that of the large kinds and of the most excellent flavour. The large ones are undoubtedly best for grilling with chops and for stuffing for the oven (and we wish people would not stuff them, for it spoils them), but for the dessert-table and for salads the smaller kinds are always the best.

The figures of *Pear-shaped* and *Cherry-shaped* tomatos are from true types. There are spurious kinds in cultivation under these names, and they are objectionable, being deficient of the very qualities that render these so peculiarly useful.



PEAR-SHAPED TOMATO (Colour deep red).

BERBERIS AQUIFOLIUM AS A LAWN PLANT.

It is not often one sees this cheap Barberry planted singly on the lawn, but when forms of it are chosen on account of their tendency to present a much deeper colouring of the leaves than others this berberis is a conspicuous object on any lawn. Of course positions should be chosen where they will be fully exposed to whatever sun is obtainable during the winter months. Barberries, like all other seedling plants, vary considerably both in style of growth and colour of the leaves. Some have long narrow foliage, which fails altogether to assume any other colour but green, while others are clothed with short leaves much broader than others, while the spines around the edges are much more thickly set and considerably stouter. Plants of this type colour very often a purple bronze, while others are bright red and scarlet, and scores are bronzy hued. A round form of bush is the most attractive as long as the branches are not cut in too close, but allowed a free extension in uniformity with each other, it is in this manner when the flowers show themselves to greater perfection by having ample space to develop. E. M.

[The best variety is that named in the nurseries "Undulata nova." The growth is very neat, the leaves waved and glossy, the autumnal tones of colour brilliant—a plant worthy of the best place in the garden.]

PLANTING EVERGREENS.

When the planting of evergreens is not completed by the end of November, it is always desirable to defer such work until the spring, as if a severe frost should come directly after the work is completed, even the most hardy subjects are liable to injury. The results I am aware, whether it is in early or late planting, are influenced by the weather. For that reason, when one has to deal with choice subjects, it is as well so to arrange the work, so as not to unnecessarily expose the shrubs to the injury of a possibly severe frost, or, in other words, instead of planting in mid-winter it is better to do so in the spring.

The word spring used in this connection is, I know, rather vague in meaning. Therefore, to make myself clearly understood, I will say that the best time to remove or transplant evergreens is just before they commence to make new growth, which may be early or late according to the weather. The common laurel is the first to feel the excitement of spring-like weather, and we may safely take it as our guide in this matter, and commence operations upon other subjects as soon as we see indications of new growth upon the laurels, dealing as a matter of course with what are the most hardy first. Even with the indication of approaching spring, as I have alluded to, the operator need not be in a violent hurry to move such subjects as Barberry, Sweet Bay, Euonymus, Box, Yew, Elæagnus, Osmanthus, Conifers, Arbutus, Cotoneaster, Escallonia, Garrya, Ilex, Phillyrea, &c. Unless the weather should be exceptionally warm, it will be quite safe to deal with them up to the middle of April, and in some cases later than that.

Rhododendrons will soon be bursting their flower buds. Therefore, the sooner they are placed in their permanent quarters the better. These are plants that are for the most part very hardy, and as they lift with a good ball of roots there is not so much risk attending their removal as with many other things.

I must devote a separate paragraph to the conifers because they are such an important class of plants. For present purposes they include all that are usually entered in catalogues as Junipers, Cupressus, Thuias, and Retinasporas, as well as those that attain to larger proportions than those I have named. We know that these subjects are planted at various periods during the autumn and winter with varying results. But any one who has been accustomed to planting this class of plants, will readily agree that rather late spring planting is invariably attended with the best results.

I may remark here that a good deal of the future success of tree planting depends upon the manner in which the ground is prepared to receive them. I have always found in practice that any outlay in well preparing the soil has been well repaid. When it can be so arranged the ground which is to be planted in the spring should be prepared early in the winter, and when large subjects have to be moved the holes should be dug out two or three months before the time for planting. Only those who have been much engaged in planting can thoroughly realize how much better the work can be done, and how much better the different subjects take to the soil when the stations are prepared early in the winter. The ground, from being exposed to winter weather, becomes friable, and is easily worked into a fine tilth, which enables the planter to fill in round the roots with fine soil. The roots, so to speak, can be made quite comfortable, which is not the case

in many instances, when the ground has been fresh dug over, or the holes newly made. There is no doubt that early preparation often makes all the difference in the future behaviour of the plants or trees.

Planting in wet weather, where the soil is of a retentive character, should always be avoided, as the ground treads into a paste, which, when dry, becomes hard and lumpy and impenetrable. I must now caution the inexperienced against a too free use of water should the weather be dry. It is not well for the roots to be in a dry soil, but one good soaking will last for three or four weeks if the surface over the roots is mulched with long litter or some other material that will prevent the escape of the moisture by evaporation. It ought not to be difficult for anyone to understand that a newly planted tree cannot use up so much moisture as an established one. But that is not all, if the ground is kept in a saturated condition about the roots it will be cold and ungenial for them. The result is that it will take them longer to get well hold of the surrounding earth. A frequent use of the syringe over-head, however. may be recommended as altogether beneficial.

I have not mentioned the holly, so far; having purposely left any reference to it until now, because I have found that when choice specimens have to be transplanted that it is better to defer doing so until the beginning of May. They may then be moved with every prospect of success.

Writing about planting trees a writer in G.M. said a long time ago, that he went into a certain nursery with a good sum of money in his pocket intending to leave some of it behind in the purchase of some trees. In walking round to find the manager he came upon a lot of men taking up trees for sale as rapidly as their strength would let them regardless of the way in which the roots were mutilated. At this point the manager came upon the scene when he politely asked his visitor what he wanted. "Kindly tell me what it is o'clock" was the reply, "oh, it's just now one o'clock" he answered; "yes, I thought so" said the would be purchaser, "for I see your men are digging up trees like one o'clock." With that he left with his money safe where it was when he entered the grounds as he had no wish to expend it upon trees that had lost half their roots through careless mutilation in taking them out of the ground.

There is a good deal more in this incident than inexperienced people are prepared to believe. According to their view of the matter, if a plant or tree has only a few roots it is bound to grow: it only remains to "stick it" in the ground in some sort of fashion and all will be well. But the results are not often so satisfactory as they are expected to be. The trees may not die perhaps but they are so long in becoming established, that either the nurserymen or the man who planted them is blamed for their unsatisfactory appearance, when perhaps neither is in fault. If the former has to cut down the price, it is very plain that he cannot afford to devote the time and care to lifting carefully. As to the planter of trees obtained at a cheap rate, his position is an unenviable one, for however carefully he may do his work the end will not be satisfactory. I have in my time had to plant trees purchased at market stalls and auction sales, as well as by private treaty, and the conclusion I came to years ago was to go to some well-known nursery, select what is wanted, and pay a fair price. It is the bartering business that does the mischief. In all my experience, when I have acted on the live and let live principle, I have always been well served. The pleasures of planting are not to be found in the invoice, but in the behaviour of the trees afterwards, for when they prosper we are sure of pleasure. Disappointment is generally the reward of those who adopt a cheese-paring policy when making their purchases.

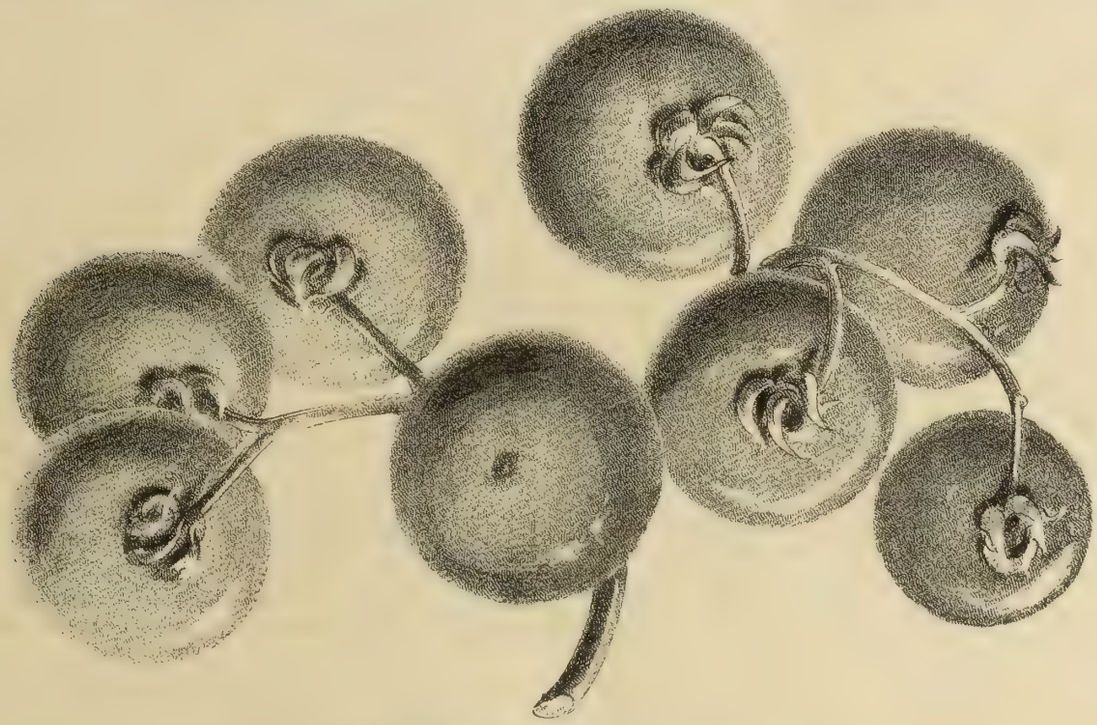
J. C. Clarke.

BROCCOLI.

The past winter has been especially favourable to the broccoli crop, and as the result of the favourable conditions that have obtained we have been sending to table a plentiful supply of excellent heads since October, when the cauliflowers practically came to an end. Nor is the supply of broccoli exhausted, for, notwithstanding the fact that the thermometer went down to within a few degrees of zero at the beginning of March, the late kinds promise to give an abundance of good heads until May. The broccoli will, indeed, have done such good service by the end of the season, that were I to found my observations wholly upon the experience of the past winter I should be justified in describing them as forming one of the most useful classes of winter vegetables we have. But it is necessary to take into consideration the experience of some previous years, and to state that they are comparatively tender in constitution, and liable to be destroyed by frosts of exceptional severity. Hence the importance of saying that in the scheme of cropping the broccoli ought not to have too large a space assigned them. They should, where practicable, be grown in sufficient quantities to maintain a supply extending over a period commencing in October and ending in May. On the other hand, they should not in any case occupy such a relatively large space as to render it necessary to materially reduce the area devoted to the crops of Brussels sprouts and kales, as when that is done there is grave risk of a break during the winter in the supply of green vegetables.

In the cultivation of broccoli for the supply of the table, as distinguished from the production of heads for exhibition or market, it is necessary to bear in mind that examples of medium size are preferable to those of large dimensions. There is no material difference in the quality of large and small heads when they are cut at the same age, and served under similar conditions, but the smaller heads have a more elegant appearance, and are more convenient in serving. For a long time it was the practice of writers to recommend examples of the size of a breakfast cup as the most suitable, and many still adhere to their views upon this point. It is now generally conceded that broccolis of that size are a trifle too small, and I would suggest that those from five to six inches in diameter are the best. Heads of this size are of good appearance, delicate in flavour, and can be readily served. To produce heads of this description a very liberal use of fertilizers is not necessary, and cultivators might with advantage banish from their minds much that has been written with reference to the use of manure in the preparation of land for the broccoli crop. Heavy manuring and deep digging are frequently described as of equal importance in broccoli culture. I do not so regard them, but attach more importance to a thorough stirring of the soil, than to the use of fertilizers. To employ the heavy dressings of manure sometimes recommended, is not only unnecessary, but in many instances positively injurious. By the too liberal use of manure an excessively luxuriant growth is promoted, with the result that the plants are rendered more liable to be cut off by severe frosts. If they escape they produce heads of too large a size. It is essential to use the manure with discretion, and I would, to make myself clear, state that soils which are poor and light should receive a rather liberal dressing. On the other hand, those in good condition should have the manure sparingly applied to them.

Deep stirring of the soil is in all cases desirable, and it is a good practice to trench to a depth of eighteen inches or two feet when it can be done without bringing the subsoil to the surface. Trenching should of course be done early in the winter, that the



CHERRY-SHAPED TOMATO (Colour bright red or yellow).

soil brought to the top may be thoroughly pulverized by the frosts and rains. Any stirring that may be necessary after this period should be limited to ordinary digging. My practice in the preparation of the quarters for the broccoli, has for many years past been to apply a moderate dressing of manure sometime during November, and then to trench the ground two feet deep. In March it is planted with early and second early potatos, and the rows are arranged three feet apart, to allow sufficient space for the rows of broccoli between them. The plants are put out between the rows of potatos when of a suitable size, and when the potatos are lifted the spaces are forked over, the surface made level, and the haulm and weeds, if any, are removed. Subsequently the surface is hoed over as may be required to keep down the weeds. By this course of procedure we obtain a vigorous yet sturdy growth, and the plants are in the best possible condition for withstanding a severe frost. I am careful to select the most open position the garden affords, and as far as possible, take advantage of the slips outside the walls.

As there is no difficulty in having an abundance of cauliflowers until November there is no occasion to make a special effort to obtain a supply of broccoli before that month. To succeed the Autumn Giant, which is the best of the cauliflowers, for autumn use, two sowings are made of Autumn Mammoth White and Veitch's Self-Protecting, the first in March under glass, and the second in a sheltered position out of doors. The plants raised in a frame with a little artificial heat are properly hardened off and pricked out two or three inches apart to acquire strength. Planting out commences as soon as the plants are of a suitable size. Those raised in the frame are as a matter of course put out first, and when they have been consigned to their permanent quarters the seed bed outside is drawn from. The varieties from which we cut in the autumn are dealt with in a somewhat different manner to those grown for the production of later supplies. In the first place we make the soil rather richer, and in the second the quarter is sown with spinach, which comes off earlier than would the potatos. The rows are thirty inches apart, and the same distance is allowed between the plants in the rows as it is not found necessary to put them quite so far apart as those which have to stand over the winter. After the spinach comes off the surface must be kept well stirred with the hoe until the leaves spread over the intervening spaces. If after cutting has commenced the heads turn in faster than they can be used we lift them with a moderate ball of soil and lay them in rather close together in a frame from which the lights are wholly withdrawn excepting in frosty weather. This removal checks their development, and it is comparatively easy to keep them safe from frost.

For the winter supplies Backhouse's Winter White, Snow's Superb Winter White, Sutton's Protecting and Penzance Early White have been found the most useful of a large number of varieties that have been submitted to a careful trial, and either of them will not fail to prove satisfactory. In raising the plants for furnishing the winter supplies the seed should be sown in April. The middle of the month will be the best time for the majority of cultivators, much of course depending upon the district and soil. The planting out should commence as soon as the plants are large enough, and be continued as opportunities offer until a sufficient stock has been put out. To transplant, as occasionally advised, is not necessary, but should the seed bed be much crowded, it will be advisable to draw a few out before any injury has been done from overcrowding.

For the spring crop the most desirable varieties are Champion, Matchless, Leamington, Model, and Late Queen. In ordinary seasons these will maintain a supply until the end of May, but of course much will depend upon the season and district. These should be sown in the open towards the end of April, and, as in the case of the earlier sorts, be put out when of a suitable size, or as soon afterwards as practicable. Showery weather ought as far as possible to be taken advantage of, but the work must not be unduly delayed in waiting for rain, or much valuable time will be lost. In planting in dry and hot weather we put out a few rows each evening, and supply with water until established.

The Purple Sprouting broccoli remains to be noticed, and with reference to that variety it must be said that it requires much the same culture as the kales. The seed should be sown in the open in March or early in April, and the plants be put out early, as a long season of growth is necessary to the production of a heavy crop of sprouts. The soil ought also to be somewhat richer than for the other kinds.

Old Spadesman.

SWEET JONQUILS.

Amongst the many flowering bulbous plants at this time of the year there is none more appreciated than the single form of Sweet Jonquils. They are alike useful for cutting or filling small vases for the house, where a choice perfume is not objected to. It is not necessary to plunge the bulbs among cocoa fibre refuse, ashes or sand, as in the case of the majority of other kinds of bulbs, jonquils will succeed quite as well, if not better, without being plunged. We place three bulbs in one three-and-a-half inch pot in October, using pretty good soil, stand the pots on the greenhouse stage or on a shelf in a cool-house, where the soil is kept moist, but not allowed to get too wet. Here they remain until in flower, being freely supplied with liquid manure from the time the pots are full of roots until the blooms are fully developed. I find that the foliage is not only stronger, but preserves a deeper green colour when plunging the pots is not resorted to. This year the flower spikes and blooms are finer than we have usually had them. When the flowers are past the bulbs are planted in the borders or upon the grass, where they remain and flower freely annually.

M.

ACACIAS OF SMALL GROWTH.

Acacias have received comparatively little attention of late years, and in consequence their usefulness for the embellishment of the conservatory during the spring months is not so generally known as could be desired. Their flowers are wanting in the boldness and brilliancy of colour characteristic of those of a large proportion of the azaleas, the camellias, and some other classes of hard-wooded plants blooming at the same time. This, however, is no drawback. The growth of the several kinds is extremely elegant, the flowers are distinct in character and beautiful in appearance, and the majority have the additional recommendation of being delightfully fragrant. In a group of plants so large as that formed by the acacias there is necessarily a great diversity in character and also in attractiveness, and it is, therefore, necessary to exercise some care in making a selection. The dimensions of the structure in which they are to be grown must also be taken into consideration, and the culture of those only attempted that can attain their full development in the space that can be devoted to them. Beautiful as are the green and silver wattles which will be found in the catalogues under the designations of Acacia affinis and A. dealbata, they are too robust in growth for structures other than those of the largest size, for when cramped for want of room their appearance is anything but satisfactory.

It is decidedly preferable in the majority of cases to confine the attention to the species of comparatively small growth of which the following are perhaps the best, namely:—

Acacia armata, one of the best known, is in some respects the most useful of the several kinds. The foliage is small and of a dark green hue, forming a striking contrast to the bright yellow globular flowers. This species is highly ornamental at all stages, and may be kept to almost any size by a judicious use of the knife. The pruning, when necessary, should be done immediately the flowers have lost their freshness and beauty, and the plants be placed where they will have the assistance of rather more warmth than in the greenhouse, and enjoy a moderate degree of atmospheric humidity. Under these conditions they will produce new shoots ranging from nine to fifteen inches in length, which have a more elegant appearance than the short growths produced when the plants are unpruned and remain in the conservatory or greenhouse.

A. Drummondi is very distinct from the foregoing, and in its way not less desirable. The leafage is pinnate and greyish green, and the flowers are cylindrical and of a pale yellow hue. It can be readily trained into any desired shape, but it should, as far as practicable, be allowed to grow naturally, as it is only when this is the case that it is seen to the best advantage.

A. grandis has strong claims upon the cultivator. The growth is dwarf and elegant, the leaves are pinnate and of a dark green hue, and the flowers are bright golden yellow and globular in form.

A. floribunda is remarkable for the late period at which it blooms, and is, therefore, useful for forming a succession to the other kinds. It is of moderate growth, the leaves are long and narrow, and the bright yellow flowers are freely produced in spikes of considerable length.

A. leprosa, as yet but little known in gardens, is a handsome species with greyish green foliage and bright yellow flowers.

A. ovata is one of the smallest of the acacias, and is remarkable for its elegant appearance. The growth is slender, the leaves small and of a dark green hue, and the small bright yellow flowers are produced in great profusion. Attractive at all stages, this charming species is most effective when grafted on stems of A. armata twelve inches or so in height.

A. pulchella, a small slender growing species, producing with great freedom comparatively large bright yellow globose flowers.

A. retinodes, a very distinct species, with long greyish foliage, and bearing bright yellow flowers.

A. Riceana, an extremely elegant species, with long slender pendant branches, and of great value for training up pillars and over the roof of the conservatory. The flowers are small bright yellow, and freely produced.

The cultivation of acacias is so simple as to present but few difficulties to even those who have not had much experience with greenhouse plants. They will thrive in a mixture consisting of peat and loam three parts each and sand and leaf-mould one part each. Or they may be grown in loam, to which a moderate proportion of sand and leaf-mould have been added. They require liberal supplies of water at the roots, more especially during the season of growth, and to prevent the moisture remaining in a stagnant condition about the roots the drainage must be liberal. A light and airy position is most conducive to their welfare, and they may with advantage be placed out of doors during the summer season.

W. B.

BULLFINCHES AND FRUIT BUDS.

Is it not nearly time that the owners of gardens began to wage a war of destruction against these destructive birds? If the sparrow does injury to corn and deserves to have a price set on its head, surely the bullfinch, that does so much injury to fruit trees, deserves no better treatment. From the 1st of November until the 1st of May, there ought to be a free licence allowed to all for catching or killing these destructive creatures, and the owners of gardens should combine and give so much per head for every bird brought to a responsible agent. Such a course would soon make an end of one of the greatest enemies to our fruit crops. From the common standard plum to the choicest pears, and even peach trees on walls, all are subject to the visits of these depredators every year. I think it is time than an effort was made to limit their destructive performances.

J. C. C.

THYRSE-FLOWERED ACANTHUS.

Thyrsacanthus strictus.

The beautiful Thyrsacanthus rutilans that we have included with Justicia speciosa and a few such plants as of the first importance for the adornment of the stove and intermediate house in the early months of the year, may be most properly aided by the association with them of the plant here figured, *Thyrsacanthus strictus*, a majestic species with bold leafage and very showy panicle of crimson scarlet flowers. The "Refugium Botanicum" opened its hospitable doors to plants that were, generally speaking, neglected because not worth houseroom, but we seem to feel the want of an asylum for neglected worthies of the garden, and such a plant as this would have a claim for admission.

In general character this comes near to T. bracteolatus, which has lanceolate leaves and a more closely packed thyrsus. Of the two T. strictus is the best, and may be grown to grand specimen form, or be kept to moderate dimensions at the will of the cultivator. Stove temperature with a humid atmosphere and liberal supplies of root moisture are requisite to a good growth of this plant. Aphides and red spider will soon make an appearance if the treatment is ungenerous, but the syringe and the fumigator will keep them in check. We have seen worse things happen where the plants have been kept too dry, and then, as the leaves will not bear to be dressed with any insecticide, we were content to start a few clean cuttings and put the old roots incontinently into the furnace fire. But fairly good management suffices to ensure healthy plants and a splendid display of the brilliant flowers.



THYRSE-FLOWERED ACANTHUS, *Thyrsacanthus strictus* (Colour vivid crimson scarlet).

Notes of Observation.

NEW ZEALAND FLAX.

For outdoor decoration Phormiums (New Zealand flax) are valuable subjects. Nowhere do they present a better appearance than when growing by the side of water, either a natural lake or an artificial stretch of water. Being perfectly hardy, it is during the winter months when they are more appreciated in such a position for the reflection of their form is seen to advantage in the water, when they are planted sufficiently near to the edge. For growing on the highest parts of the rockery, clumps of phormiums are suitable in the place of yuccas which are sometimes used for this purpose. The former plant gives more variety in colour than do yuccas, therefore are the more valuable. For the summer decoration of flower beds in the sub-tropical garden phormiums are often employed. They are better grown in pots as they are the more readily removed from one place to another twice a year as is necessary for that mode of ornamentation. Keeping the plants in a cold house in the pots is the best way to manage them for the last named use. All the varieties are easily increased by dividing the roots. The best time to do this is during March or April when as many plants are needed as can be obtained, afterwards potting them to give a start into growth in a slightly warmed house until they are required for planting out at the end of May or early in June. If a good stock is already in existence, the roots may simply be divided, leaving three or four crowns or growths to each and planting them at once into their permanent position in the early part of April. An addition of some leaf soil is an advantage to their future growth, combined with an abundant supply of water to the roots when in activity.

Three varieties of Phormium may be recommended. *P. Colensoi* makes leaves four to five feet long and about six inches wide, the under side of which is glaucous coloured: the upper surface a deep purply green. It is a most effective plant for any position. *P. Tenax variegatum* has leaves dark green striped with deep yellow and white, which are quite upright in growth; this is particularly free, and is most effective, especially when growing from a green base of some hardy plant, for instance Herniaria glabra or one of the saxifragas. *Tenax* is the plain green form of the former and a capital one for rough and ready wear, bearing any amount of hardships, such as bad positions, &c., still thriving. E. M.

ERICA CARNEA.

Those who have not grown this hardy heath cannot know its value for brightening up the garden at this time of the year and for a month previous. It is one of the few hardy plants which flower freely twice a year—now and again in October. For covering the soil at the edge of beds of Rhododendrons, Kalmias, and other American plants it is capital, growing so thick and flowering so abundantly. As a rockery plant too it is good, and will succeed anywhere provided a fair amount of light is given it along with peat for its roots. About the middle of April when its flowers fade and its growth is commencing is the best time to increase the stock which is easily done by pulling it in pieces, every bit having a root attached will grow. Should the weather be dry at the time some shade will be beneficial by sticking among it some evergreen boughs for a time until new growth arises. Some water to the roots also will be a great help towards a rapid growth in parching weather. In the Royal Gardens, Kew, is a great patch of this Erica that for some time past has been rich in colour, and this clump is worthy of special attention. It covers one side of a slope at the foot of those two trees that you have named, the "brothers," a little beyond the celebrated Corsican pine near the chief entrance. For how long will that clump endure the shade and drip of those great trees? E.

ROSE REINE MARIE HENRIETTE.

For flowering in a warm greenhouse at this time of the year this is a capital rose, where brightly-coloured buds are required for button-hole bouquets or other uses. It is in this manner that this rose is seen to its greatest perfection, as when fully blown the petals are loose and flabby, while they do not retain that brightness of colouring so noticeable in buds and half-expanded flowers. This variety strikes from cuttings quite freely, and as it is of quick growth, useful plants can be had in two years from the time the cuttings are inserted. The cuttings should be struck early in April, plunging the pots containing the cuttings in a brisk bottom-heat, when roots will quickly be formed. The plants should be shifted on into larger pots, as is necessary to enable them to make vigorous growth. When thriving they will make shoots six feet long or more in one season. From these strong shoots abundance of blossoms will be obtained the following spring. Liberal feeding at the roots with liquid manure when the plant is in full growth will be found an advantage. E.

FLOWERLESS NARCISSI.

We grow here a goodly number of these flowers, both in the borders, on the grass, and in the woods, but up to the present they do not appear to be flowering nearly as freely as last year for instance. In fact, this is the worst season's flower production I have seen for the last ten years. The greatest scarcity of bloom is to be observed among the Lent lilies. They usually at this time of the year present masses of pale yellow, growing as they do in colonies of, in some instances, ten feet square. Last year, where a couple of dozen blooms were to be seen, not a single flower is this season visible. Even the double daffodils are not flowering with the same freedom as last year. We have here hundreds of roots growing on the grass, fully exposed to the sun, in quite a favourable position. The reason, I presume, is caused by defective ripening of the bulbs in some way or other last year. M.

SHELTERS FOR CHOICE PLANTS.

I have found the shelters of which I wrote to you on October 22, 1887, page 643, and again on January 11, 1890, page 17, so very useful in the sudden great changes of weather to which we have been lately exposed, that I will ask you to find room for another short notice. The osier coops which we first used, though protected by the green scrim, cannot, I fear, last for many years; we have therefore had frames made of galvanized iron wire. These are quite light to carry, and can be made of the size of an ordinary round hen-coop at about 2s. each, and in sets of 1 foot high, and 12, 13, 14, and 15 inches across, at about 9d. each shelter. So far, we have only had the coop size in use, but I have no doubt the smaller sizes will be sufficient to protect small plants in flower from frost and rough weather. Cyclamen Atkinsii has been for some time in great beauty with us, and many of the species of crocus and other spring flowers. The thermometer on a little house in Wisley Wood fell to 8 deg., the shelters have therefore been well tried. They should also be of service placed over newly-moved plants, and to shade flowers. George F. Wilson.

A LATE WHITE CHRYSANTHEMUM.

There may be others as good, but there is no better amongst the Japanese varieties for late flowering than Pelican. I had many many blooms of this variety in good condition in the last week of February. Associated with its late flowering qualities is a fairly vigorous constitution, which admits of its being grown on the cutting-down principle with the best results. J. C. C.

RANUNCULUS ANEMONOIDES.

Those who are in search of suitable plants for the rockwork should not fail to obtain this gem. At the present time it is thickly studded with its delicate blush-coloured blossoms, as round as a shilling, and about that size. These being thickly set just above a base of parsley-like foliage, with a bluish tint of colour and larger curl in the leaf than the majority of this garnishing material has, renders this ranunculus a most captivating subject, even to the casual observer of rockery plants. E. M.

CHIONODOXA LUCILIÆ.

We have this early spring flowering bulbous plant growing in several positions in the borders and in the rockery, but in no way is it more effective than growing at the base of a stout specimen of Phormium Colensoi which occupies the topmost part of one of our rockery clumps. In other places it grows freely from a base of a green-leaved cerastium, and again among Sedum Lydium and various Aubrietias, the green foliage of which forms a good contrast with its pale blue flowers. Seedlings are now flowering freely where they dropped three years since. E. M.

SOWING CARNATION SEEDS.

There is no better time to do this than in the early part of March. I sowed some seeds at the beginning of February, placing the pots in a cold greenhouse, and covering with a piece of glass, and although the seeds were saved in 1887, they have germinated remarkably well, and there is scarcely a failure among them. I trace this satisfactory result to keeping the seeds in closely-corked bottles, and in a cool dry place. Early sowing in spring means good strong plants for the ensuing season, and that is a decided gain. Some might say—why not sow, say, in August, as soon as the seeds are ripe? I think this a very good plan with those who have ample house accommodation and some heat at their disposal; but, in the case of amateurs with small resources and conveniences, it is much safer to sow the first week in March. I have known amateurs to sow in early autumn, only to have their tiny plants damp off during the winter, which is very vexing. April sowings are rather too late, and I have known plants fail to bloom the following season through not being advanced enough. Happy are they who have a small frame with a gentle bottom-heat. If a bed be made up in such a frame, and shallow drills drawn in a surface of fine soil and the seeds sown thinly, they soon germinate, and the young plants can be grown on to become strong for planting out in the autumn, care being taken that at no stage are they allowed to become drawn. Not having a frame, I sow in pots and transplant to boxes, and from these to the open ground in autumn. Plants that have to stand in the open a second winter through not blooming the first have a rough time of it, and the losses through fog, frost, and damp in such a case are quite lamentable. But it is one of the difficulties attending upon growing carnations near to smoky London. R. D.

SPIRALS.

It may interest some other amateurs to hear how I have fared with *Stachys tuberifera*. Last spring, as a novelty, I bought one hundred tubers, and my garden not being quite ready for them, they were stored in too dry a place, with the result that only six grew. In consequence, I left them in the ground through the winter, and simply banked them up to keep away the frost, of which we have seen so little this winter. I have just re-planted them, I must confess somewhat late, as they had grown four to five inches, and required great care, and, although I have not counted them, feel sure there are from one hundred and fifty to two hundred tubers by the room they occupy. H. W. P.

Hibiscus Esculentus, the plant which furnishes the vegetable called okra or gumbo is proving valuable also for its fibre. Its stem furnishes a fibre which, like those of ramie and jute, can be woven into textile fabrics. Moreover, while in the other cases the fibrous and the woody elements are mixed together in the stem and have to be separated by hand, in Hibiscus the fibres form a central core surrounded by the wood. They may, therefore, be separated by machinery, and, being long and extremely strong, will furnish an excellent fabric at very small cost.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Stove Plants in bloom comprise Amaryllis, Anthurium Andreanum, Begonia Carrieri, B. Ingrami, B. semperflorens, Clerodendron Balfouri, Eucharis candida, Franciscea confertiflora, Gardenia Fortunei, Guzmannia picta; Imantophyllum miniatum, Ipomea Horsfalli, Medinilla magnifica, Rhododendron Taylori.

THE HOUSE.

Small Conservatories attached to suburban residences may in many instances be made much more attractive than is usually the case at a very small outlay, and without incurring any additional labour in the matter of management. It is a quite common occurrence for these little houses to be either unoccupied or to present a most uninviting appearance, owing to their being filled with plants of a weedy or insignificant character; and yet with a few cheap plants of the right sort, they might be very useful to smoke and gossip in at times, and a very little outlay, with a very little good management, would render them what they should be—winter gardens, cheerful and gratifying to the tasteful eye and creditable to their owners. How to do it is the question? Imprimis, there are certain plants of noble aspect and peculiar toughness of constitution that are not difficult to keep alive, but are really difficult to kill. As is is always desirable in gardening to produce an effect at once, without waiting half a lifetime for it, the prudent way to begin would be to buy large plants at once, and spread them out and fill in amongst them with small cheap things that are known to need but little care. In the spring, bulbous plants such as hyacinths, tulips, and narcissi; and herbaceous plants, such as Dielytra spectabilis, may be brought into requisition. For the summer season, the fuchsias and zonal pelargoniums will perhaps be found the most useful. During the summer the early and late flowering chrysanthemums will afford a cheerful display of colour; and in the winter bring into requisition pot plants of the laurestinus, and very cheerful Grislinia littoralis, the free flowering broom (Cytisus racemosus), and the garland broom (Coronilla glauca), and as many sedums and sempervivums as can be scraped up. The large plants would require to be repotted every second and third year, and to be supplied with plenty of water all the summer, and very little all the winter. During the summer they should have plenty of air, and in the winter they must enjoy a free circulation of air during mild weather; and in times of severe frost a little fire heat to keep them safe.

CONSERVATORY AND GREENHOUSE.

Balsams for early flowering to be kept growing freely; if starved they are spoiled. Let the soil be sweet, light, and rich, with plenty of fibre and thoroughly decayed manure. Keep the plants near the glass, and let them have plenty of water.

Cacti and Succulents generally require attention now, if they have not yet been dressed up for spring. They require liberal feeding, and as long as sunshine is abundant ought to be grown freely and then be rested perfectly, and as the result they will bloom abundantly. Those that are pot-bound may have a small shift; some of the old soil to be picked out from the roots; the potting to be done with care, plenty of drainage, the soil equal parts broken brick and chalk the size of walnuts, good turfy loam, and rotten cow-dung. Those not in need of a shift should have a little of the old soil removed and replaced with the new mixture. Give plenty of water while they are growing in earnest, and as much light as possible.

Herbaceous Calceolarias will be smothered with green fly now that the weather is mild, unless they are well looked after. The best preventive is to keep them growing freely; and if any need to fumigate do it promptly and effectually.

Fuchsias are growing freely, and must be shifted as they need it. Overpotting, usually to be avoided, is not an evil with fuchsias, if they are warm and are not saturated at the root.

STOVE AND ORCHID HOUSE.

Achimenes started into growth may now be put into pans for flowering, and have a little bottom heat to give them an impetus to extend their roots.

Orchids in flower should as far as practicable be placed where the flowers will not be injured by moisture, and it is in all cases an advantage to separate them from those in full growth and requiring a liberal degree of atmospheric humidity.

Stove Plants should have free ventilation early in the day, when the weather is bright, with westerly winds, which will allow of shutting up early to reduce the firing. Plants that have flowered, and are not yet cut down, must have immediate attention, for the tendency of everything now is to grow, and the growth from the first should be as we wish it.

FORCING AND FRUIT HOUSES.

Melons advancing to a fruiting state to have a good temperature by linings or otherwise, and though they require less water and more light than cucumbers they must not be kept too dry, or the red-spider will take possession of the foliage. Young plants lately turned out must be kept rather close, to encourage free rooting, but as soon as growing freely to have air, or they will become drawn. In thinning the shoots, endeavour to promote a regular growth, evenly spread out and rather thin, so that every leaf will be fully exposed to the light. The night temperature to be 60 deg., rising by day to 75 deg., or 80 deg. at the utmost; if beyond 75 deg., give air to reduce the heat. This is a good time to sow for succession, and also for those who must depend chiefly on sun heat for their produce.

Peaches that have passed through the stoning process to have more water at the root, and occasional syringing to keep down red-spider and help the young growth. Those lately set to be thinned moderately, remembering that in the process of stoning a considerable quantity of fruit may fall.

Pines swelling their fruit will be benefited by clear liquid manure; when ripening to be kept dry. The fruiting house to range from 65 deg. to 80 deg., the utmost day temperature to be 85 deg., and that only when there is a strong sun heat. Succession stock may go down to 60 deg. at night, and rise to 80 deg. by day. Plants newly potted to be watered with great care until they begin to make new roots.

Strawberries must have as much light as possible in every stage of forcing and never suffer through insufficiency of water. A good heat may now be allowed. Where the berries are acquiring colour give less water at the root and none overhead.

Vinery.—Vines just showing fruit to have the bunches thinned as soon as possible, and with the greatest care. Tie up the shoulders carefully, and avoid all rough usage of the bunches, and do not allow the hand to touch the berries, as rust is commonly the result of such contact. Ply the scissors so as to leave plenty of room for the berries to swell, and to give the bunches as fine an outline as possible. Remove useless shoots; stop laterals; see that the border is moist enough, and examine it some distance below the surface.

FLOWER GARDEN AND PLEASURE GROUND.

Annuals of every kind may now be sown, indoors and out. It is early for stocks and asters, but these may also be sown, together with balsams, zinnias, ipomœas, egg plants, clintonias, amaranthus, salpiglossis, &c. All these things require light soil, and it is best, when they are sown in pans, not to mix any kind of manure with it, but to enrich the mixture when they are potted off, as if the soil is too rich in the first instance they are apt to damp off.

Bedding Plants to be shifted if needful, but generally speaking the business of importance now is to get them hardened off by transference to pits, cradles, &c Some who have to deal with large quantities put them into trenches dug as for celery, and lay boards, old lights, or mats over at night, and this simple way of disposing of a difficulty is found to answer exceedingly well.

Clear up everywhere and everything that has a touch of untidiness about it without delay. At the first break of genuine sunshine the ladies will be exploring the garden, and there ought not to be a withered leaf, or a broken flower-pot, or a scrap of stick, or cast-off tally anywhere visible. Make all bright and firm with broom and roller, and thin out dead wood from all trees and shrubs. This is a good time to trim the grass verges, and give beds and borders a final pointing over.

Chrysanthemums growing freely must be shifted on and stopped as required without any delay beyond the proper time. It is the securing an early growth that is the key to success in forming fine specimens and obtaining an abundance of bloom of good quality.

Roses to be pruned if not yet done; no danger now in any part of Britain, and teas may be pruned with the rest; the young shoots are the most valuable, and these must be left a sufficient distance apart to allow light and air to benefit them equally.

KITCHEN GARDEN AND FRAME GROUND.

Broccolis to be sown in variety and quantity for use in autumn, winter, and next spring.

Cauliflowers wintered in frames may be planted out in southern and western districts, but in cold or damp places it is as yet too early, as if cold weather occurs many will be destroyed and the rest will be crippled. Plants pretty strong in seed pans will be greatly benefited by planting them out in frames on a slight heat, or they will do without it if in light rich soil and carefully managed.

Celery standing out will now begin to bolt; so, to save some as late as possible, take up the remainder of the crop, and lay it in by the heels in a shady corner, or pack it in dry sand in a shed till wanted. Plants in seed pans in a forward state to be pricked out on a bed over fermenting material giving a gentle heat; the surface soil to be light and rich. In the absence of any source of heat, make a bed of manure and leafmould on a hard foundation; put a frame over, and prick out the plants in it.

Lettuce to be pricked out from seed pans, as advised for celery and cauliflowers. The winter bed may now be thinned out, putting the plants on well-manured ground, but leaving some in the bed to supply a few small hearts earlier than those planted out will do.

Onions.—Sow main crop with as little delay as possible.

Peas.—Sow succession crops, and earth up and stake any that are ready. The wrinkled varieties are the best to sow now.

VILLA FARM.

Where live stock is large in proportion to the extent of pasture land the cabbage crop is of no ordinary importance, for under a well-devised course of culture the produce obtained from a given area is simply enormous, and at all times and seasons is much relished by the stock. Indeed, on deep holding loams that have been deeply cultivated and liberally enriched with manure, crops ranging from fifty to sixty tons per acre have been produced, but forty tons may be considered a good crop, and will afford an ample return for the cost of production. Such cabbages as Enfield Market, when raised from seed sown at the end of the summer and planted out early in the autumn, two feet apart each way, or at the rate of 10,890 per acre, will yield a large amount of green food that will be found of much value for sheep feeding during the summer. The same or some similar sort is useful for sowing early in the spring to be fed off in August and September, but for feeding during the winter and spring the Drumhead varieties are decidedly the best. To sow now, Early Oxheart and Early Drumhead are most useful, as they will be ready by the time the spring crop of the Enfield Market is disposed of, and will be available for feeding purposes until the end of December, or even later; but from midwinter onwards the large late Drumhead is the most profitable. The three varieties here mentioned will, if sown now, ensure a succession from August until the May following, provided of course the area planted is in proportion to the consumption. But when it is desired to have the large Drumhead in use from the end of November until the end of the spring two sowings must be made, one at the end of July to furnish plants for putting out as early as practicable, and the other in March for planting out in May or June, and the crops will be available from November to February, and from the month last mentioned to May, respectively. The large Drumhead should invariably be raised from seed sown in beds, and be transplanted when of proper size, but the others may be either raised in beds or the seed can be sown, or rather drilled, where the crop is to stand. More seed is of course required when drilled than when sown in beds, the usual quantities per acre being 1 lb. and 4 lb. respectively, but the labour of transplanting and the risk of the crop being checked by dry weather when the transplanting operations are going on are avoided. The drills should be two feet apart, and the plants thinned to the same distances in the rows, for to obtain full-sized hearts two feet from plant to plant each way must be allowed. The large Drumhead requires an additional twelve inches each way, and in the production of exhibition specimens four feet each way is usually allowed. The soil cannot well be too rich or too deeply stirred, but it will suffice to apply a moderate dressing of manure and plough the land in the usual manner. As in the case of garden crops the frequent stirring of the surface is most beneficial in its effects, and therefore the horse hoe should be brought into requisition as often as may be necessary, until the leaves have extended as far over the intervening spaces that the implement can no longer be employed with safety.

PLANT HYBRIDISM.

Mr. Lewis Castle,

[Read at the Horticultural Club, March 11th, 1890.]

No subject connected with horticulture presents so many features of interest and importance as plant hybridisation ; it has been closely studied by some of the best observers and most skilful practitioners, numberless facts are recorded bearing upon the matter, and extraordinary results have been achieved. To review the results alone would require a large volume, but to provide matter for discussion it will only be necessary to touch upon a few points, and detail observations or experiments illustrating them.

It must, however, be premised that it is exceedingly difficult to draw up any general rules, as what is found to hold good in one family, or even in one genus of plants, does not apply with the same force in others, and where any general principle can be defined the exceptions are often so numerous that its value is considerably diminished. This no doubt is mainly due to the impossibility of providing identical conditions in every case, and also to the fact that though so much is known regarding plant fertilization there are still many mysteries or seeming anomalies to perplex investigators. Fortunately in certain marked groups of plants—sometimes merely the varied descendants of one species—hybridising or crossing has been reduced to a system, and after long experience those engaged in the work can predict with some approach to accuracy the probable results of their experiments. With an extension of such methodical observations we may expect much which is now obscure will be ultimately elucidated.

Influence of Pollen and Seed Parents.

One portion of the subject which merits especial attention is a consideration of the relative effects of the pollen and seed plants employed as parents in the production of hybrids. We have to deal with some of the principal phenomena of plant life, and the results of the innumerable experiments would appear to give us good foundation for definite rules. This, however, is far from being the fact, and we can only generalise in the majority of cases. In the Orchid family perhaps hybridising has been reduced more nearly to a system than in any others, and the number of reversed crosses exactly resembling the product of the original cross is so great it points to the conclusion that the pollen and seed parents have but little special effect. One of the most skilful and successful of orchid hybridisers writes me on this subject as follows :—"In no case can I see one hybrid but what is quite intermediate in habit of plant and shape of flower, though in some cases out of the same seed pods we get variety of colours. In every case if possible we take the strongest plant for the seed parent. We always have an object, but in some cases are disappointed, and those concerning which we are most hopeful are often the most disappointing. Some hybrids, particularly in the Cattleya family, even before flowering are exactly intermediate in habit between the two parents, that any person who knows the family well can read the parents in the plant. Take Cypripedium Sedeni, for example, from C. Schlimi crossed with C. longifolium, and the reversed cross. These are so nearly alike that we cannot distinguish one from the other ; habit of plant, time of flowering, leaves, length of flower-stem, shape and colour of flower, are all the same."

An example of this fusion of characters was afforded at a recent meeting of the Royal Horticultural Society, when plants of the hybrid Cypripedium Lathamianum were exhibited from C. Spicerianum crossed with C. villosum, and from the reversed cross the results were practically identical. In a few instances the reversed cross has resulted in something of a slightly different character, as, for example, in Zygopetalums, Z. pentachromum having been raised from Z. Mackayi crossed with Z. maxillare, and Z. Sedeni from the reversed cross. In the majority of instances, however, there is a fusion of character that is rarely seen in other plants.

The term hybridising is now usually confined to the fertilization of one species by the pollen from another, and crossing to the same operation effected between the varieties of one species ; the latter term was, however, at one time applied to the reverse crossing already noted, and hybridising is a sufficiently general term to be fairly applicable to either case. In Primula sinensis and its numerous forms we have examples of extreme variation artificially produced without the aid of another species, but the variations obtained under cultivation are so pronounced that crossing has been resorted to with surprising results in increasing the number of forms and tints. One of the largest cultivators of these and some similar plants assures me in making crosses between two varieties of Primula sinensis he always expects the seed parent to give three out of every four characters, and it is this fact which renders it difficult to produce distinct alterations in any type, as it is only either by chance or by a long series of experiments that a desired result can be secured. Another hybridiser who has been engaged for some years in the production of Primula seed has found that the seed parent generally gives the foliage and habit, and the pollen parent the floral colour. With regard to this I proved from experience a few years since that in crosses between the "fern-leaved" and "palm-leaved" varieties, when the former was made the seed parent there was a much larger per centage of seedlings with "fern leaves" than if the pollen was used on the "palm-leaved" varieties, thus supporting the opinion just given. It has also been observed with regard to Primula sinensis, that the pollen from a double variety placed on a single variety was more likely to give a good proportion of double-flowered seedlings in the progeny than if the parentage were reversed. As an example of that the pollen of an excellent double variety with flowers of a moderately good crimson colour was employed to fertilise a single variety of an exceptionally bright tint, and the result was a double variety with flowers equal to the pollen parent in form and substance and as bright as those of the seed parent. As exceptions to this, however, it must be noted that in two instances where doubles have been crossed on singles, all the seedlings came single, and in the reverse cross about 10 per cent. were double.

In experiments with Balsams I have found somewhat similar results to those described—namely, pollen from a single flower applied to a double flower produced a much larger per centage of double-flowered seedlings than where the single variety was made the seed parent ; but when pollen could be obtained from another plant of a double variety for application to the double seed parent the result was still more satisfactory in the number of double-flowered plants produced, though the colours were often less bright than in the parents, and this loss of colour was not so noticeable when a single-flowered pollen plant was employed.

With Zonal Pelargoniums I made a number of experiments some years ago, partly with the object of testing the relative effects of the respective parents, and though the results were somewhat diverse, yet amongst hundreds of seedlings raised quite 80 per cent. more closely resembled the seed parent in habit and foliage, and the pollen parent in flowers. Mr. Peter Grieve, who performed good service amongst the variegated Pelargoniums, has stated that in his opinion the constitution of a plant is chiefly due to the seed plant, and he attributes the delicacy of many of the pelargoniums named to the employment of the plants with variegated leaves as seed bearers. He further says, "The most vigorous and in all respects the best I have raised have been from green-leaved seed parents." This we can easily understand, but my observations teach me that considerably more depends upon what may be termed the individual characters of the seed plant than upon the specific or varietal distinctions. Thus the selection of a healthy plant for seed-bearing is likely to give better results than a weakly individual of the same species, whatever the cross may be.

It has been stated with good reason that where so much difference results from reverse crossing it is in a large measure due to diversities of form or constitution of the pollen, and in some of the most variable cultivated plants the microscope reveals a surprising variation in the form of the pollen grains. Certain plants, however, possess an inherent capacity for variation through a greater range than others, and in two that have been noted—*i.e.*, Primula sinensis and the Balsam, all the forms have been originated by intercrossing without the aid of other species. Phlox Drummondi might be cited as another instance of a similar kind, all the variations having been formed within the limits of one species. It appears that under cultivation the constitution of a plant gradually becomes disturbed ; different soils and conditions, with perhaps increased vigour, produce effects that are most likely to be felt in the delicate floral organs, though probably more evident in the foliage and growth. To increase the tendency to variation, therefore, plants should be grown under as diverse conditions as possible consistent with their health, and when the crossing is confined to the form of one species, the most distinct should be selected, except where some particular character is desired, when close in-breeding will sometimes produce the wished-for result.

Partial Fertilisation and Sterility.

Hitherto attention has only been directed to plants in which there has been little difficulty in securing seed; the progeny have presented a fusion of characters more or less complete, and have been equally fertile, or nearly so, with their parents. Next to these we have the hybrids or crosses, which are themselves either partially or wholly sterile, except when fertilised with pollen from another variety or species. Examples of this occur in nearly every family of plants where hybrids have been produced, and even amongst the descendants of one species, as in the highly bred forms of primulas previously mentioned, cyclamens, and other plants. In some of the brightly coloured single primulas much difficulty is experienced in securing seed for this reason, as even when abundance of pollen is produced, as happens occasionally, it seems useless except when employed on other varieties. Close intercrossing often induces sterility in the seedlings, and is commonly attended by a greatly increased vegetative growth ; a consequence, as some suppose, of the sterility, but probably in certain cases it is the cause, for it is well known that excessively luxuriant plants are rarely such good seed bearers as those of a medium or even stunted growth. There is another form of partial sterility, this time in the parent plants, when perhaps it is possible to make one plant the seed parent in a cross, but not to reverse the cross and secure seed. Something after this kind took place in the production of the hybrid rhododendron Princess Alice, which was obtained by two cultivators from R. ciliatum fertilised with pollen from R. Edgworthi, yet Mr. Anderson Henry has stated that he repeatedly tried to secure seed from R. Edgworthi by employing pollen of R. ciliatum, but failed every time.

Sometimes in the results of hybridising one species with another some of the seedlings show altered characters partaking of the two parents, and others closely resemble one only of the parents. A peculiar instance of this kind has been recorded, in which Begonia manicata was crossed with B. coccinea, and one pod of seed was produced. Seedlings were raised, and amongst them were two distinct forms that were afterwards named B. prolifera and hybrida, but a large proportion were the true B. manicata. In this case it would seem that either the pollen of B. coccinea had sufficed to impart vitality to the ovules without altering their character, or that some of the ovules had been self fertilised, either being equally remarkable.

Imperfect Fertilisation.

The last form of fertilisation that need be considered here is that in which the pollen only influences the ovary to induce an enlargement, the ovules not being affected in any degree, or not sufficiently to render them fertile. Dean Herbert recorded many instances of this kind, and amongst them he mentioned that when Alstrœmeria aurea is fertilised with pollen from other species full sized capsules are produced, but no perfect seeds. Fruits have been obtained on passifloras in the same way, but seedless, and numbers of other instances could be given.

Turning to the orchids, we have as regards the odontoglossums two curious facts to consider. One is that numbers of odontoglossums are found in a wild state so exactly intermediate in floral form and colouring between other well-known species as to leave no reasonable doubt that they are natural hybrids ; they have been introduced freely, and have puzzled botanists and horticulturists not a little. The other fact is, that notwithstanding this evident variability and tendency to intercrossing in a wild state, the odontoglossums have not yielded to the cultivators' attempts to obtain hybrids under artificial conditions, indeed they have stubbornly resisted all efforts, and have caused more disappointment than any other orchids. Seedlings have been raised in a few instances, but invariably lost, and the strangeness of this circumstance induced me a few years ago to make some experiments with a view to testing the matter. I had several healthy plants of Odontoglossums, and amongst them were six each of two favourite species—O. Pescatorei and O. triumphans. They were in good condition for experiment, flowered well, and if a cross could be effected they gave a promise of something worth securing. Yellow forms of the O. Pescatorei type had been introduced, and one charming variety, for which Mr. Brownlow D. Knox obtained a first-class certificate from the Royal Horticultural Society on April 13th, 1886, impressed me greatly, and the impression was intensified when the same plant realised £165 at a public auction the next day. There was little doubt that O. triumphans or O. tripudians, most likely the former, had conferred the yellow colour, and it did not seem too much to expect similar results from an artificial cross. Three of the strongest plants were selected of O. Pescatorei and of O. triumphans, and two flowers of each were reciprocally fertilized—*i.e.*, the pollen of O. Pescatorei was placed on O. triumphans, and *vice versa*, thus twelve flowers were fertilised, and to my great satisfaction it appeared to be effectual with nine, for in the course of a week the ovaries were perceptibly enlarging. They were carefully watched, and as they slowly advanced golden visions began to rise of a few thousand yellow flowered plants of O. Pescatorei, and these hopes were

sustained for nearly six months, when the capsules, which were then well developed, commenced shrivelling, and upon examination were found to contain nothing in the shape of fertile seed.

With the other plants of the two species named a different experiment had been tried—namely, seven or eight flowers were fertilized with their own pollen or with that from other flowers on the same spike, but in only one case was the ovary in any way affected—*i.e.*, where a flower of O. triumphans had been fertilised with pollen from another flower on the same plant, and in this instance the development only lasted for a week or two, and the capsule then collapsed as in the previous case. These experiments were interesting as proving what Darwin and others have recorded—namely that pollen often has the power of affecting the ovary, though it cannot influence the ovules, and cases have even been described where the ovules too have been affected, but no embryo produced. Experiments were tried with several other odontoglossums, but without success, except in one instance, between O. Cervantesi and O. Rossi majus. A flower of the former was fertilized with pollen from O Rossi majus; on March 29th, 1888, a capsule was produced, which slowly developed and ripened until June 30th, 1889, when it commenced dehiscing. The pod was then removed, and was found to be packed with minute seeds, which when examined under a glass appeared to be perfect. In the course of the following week the seed was sown, and now a few diminutive seedlings are just visible. The reverse cross failed to produce any result, and in any case the seedlings from such parents are not likely to possess any special merit even if they survive, which is doubtful.

The subject is a tempting one to pursue still farther, but I have said enough, perhaps too much, and I will now leave it to others to extend the hints I have attempted to furnish.

Calls at Nurseries.

MESSRS. VEITCH AND SONS' AMARYLLIS.

The display of amaryllis in the Royal Exotic Nurseries, 1, King's Road, Chelsea, has peculiar interest this season because of the striking character of some of the new varieties, and the quite typical character of a number of the older kinds that are carefully preserved and cultivated by the firm, many of which are flowering simultaneously with the newer kinds, affording subjects for most interesting comparisons. Here, for example, we find Aulica, Vittata, and many more that were "best" in their day, and have supplied material for the making of better than themselves. Conspicuous is *Graviana*, a tall thing with narrow petal, scarlet with purple lines, a grand plant in its day; There is beauty still in *Acramanni*, and the suggestion of fine form and rich colour. It is of medium size with long petal, the colour rich deep crimson, shading to marone, the centre greenish. Very beautiful and interesting is *Pardalinum*, and strange to say it is very small, a fact that is of value only in its comparative aspect, for there is nothing absolutely large or small, and this was a large or a fairly full-sized flower when it first appeared, but has become small because we have gone so far beyond it. Like Acramanni, and other of the older types, this is still worth growing and it has a degree of historical importance. As we now see it, the flower is smallish, neat in form, delicately spotted white on a ground of light rosy scarlet. We turn from this to the great gun of the season which must head our list of varieties in the flowery bed in the centre of the house where other great guns are showing fire. The name is appropriate, for the present at least, it is

Champion.—A flower that overtops all that are known for size, breadth of petal, majesty of port, and colour. The petals are 3¾ inches across, and the flower 10 inches over. If you form a model amaryllis to these dimensions, you will soon discover that it is enormous. The colour is what may be termed orange-scarlet, a hue common to the amaryllis of the show class, but very pure and strong, and in the centre there is a pale green star. That this should secure the highest award at the disposal of the Floral Committee needs not to be supported by arguments; it is just one of the things for which one feels the ordinary highest to be a trifle wanting. Any taint of coarseness would tell with force against this majestic beauty, but there is none; in finish and texture it is perfect, and the code of judging we have laid down for these flowers is most agreeably justified by it.

Bellona is near to Champion, and claims attention for its superb character. It is of medium size to smallish, of beautiful form, the colour deep scarlet, passing into marone. Though not one of the newest, it is still one of the best.

Leopoldi encounters us with a sort of challenge as to ask, "Am I below the line of high merit now?" No, certainly not; it is a grand thing, the colour rich marone-shaded crimson, with white tips, the colouring irregularly disposed, but immensely effective.

Empress of India is worthy of its name, and should be kept in cultivation as an essential member of any respectable collection. It was the first grand lead in the broad petal, open-faced class of flowers, for the funnel form is antique, and we shall be glad of a few of the best of that old race to mark the transition that the breeder has effected from the realms of Nature to the school of Art.

Milton is distinct and fine; the flowers of large size, the plant a massive specimen, showing one umbel of six flowers and another of four—ten flowers in all; a wonder!

Erato is new and novel, for in a great flower of the finest form we have a perfect self-colouring of rich cerise-red and not a tint of green visible. Flowers of self-colouring will become frequent, but we do hope we shall not utterly lose the green star, for often it is a splendid feature.

Her Majesty is an established variety, white with red lines, valuable for colour, and a gem in its way; for a collection indispensable.

Illustrious is of medium size and good form, the colour rich deep full crimson; in every way first-rate.

Armata is large, of good form, but a little narrowish in petal, the colour rich deep scarlet self.

Dromo is in splendid style, the flowers large, with broad petal, rich velvety-scarlet. Possibly the name should be Dromio, but we give it as in our notebook.

Cicero is an established variety of high character, in size medium, and somewhat funnel shaped, the colour deep marone-crimson, with a small green eye.

Marcellus is large and a little out of form, but for all that a fine flower; and what it wants in form it more than compensates in colour, which is rich wine-crimson with clear green star.

SALADS.

By M. Henri Vilmorin.

At the meeting of the Royal Horticultural Society on Tuesday, M. Henri Vilmorin, of Paris, read a paper on "Salads," in which an outline was given of the practice adopted by the French growers. Dr. Hogg presided, and in introducing M. Vilmorin, congratulated the society on its good fortune in having such a distinguished French horticulturist to address the Fellows on a subject in which the French cultivators had long been so proficient.

M. Vilmorin having expressed the pleasure it gave him to be present, referred to the dietitic value of salads, and the desirability of the table being liberally supplied with them throughout the year. As indicating their importance, he pointed out that whilst in vegetables eaten in a cooked state much of the nutritive matter was lost in the process of cooking, in vegetables used as salads the potash and other mineral matters so essential to health were retained. The list of vegetables that may be used as salads was a rather long one. There were for examples plants grown for their roots and bulbs, such as radishes and onions; plants grown for their leaves, such as lettuce and endive; plants grown for their flowers or buds, such as the nasturtium and borage; and plants grown for their fruits and seed pods, as the tomatos and capsicums. In the matter of salads the taste of the French differed materially from that of the English people. Hence in France many vegetables were employed for salads that in England were not generally recognized for that purpose. The list of vegetables so used was a long one, and to enumerate all the things that were used in France would occupy too much time, and it would therefore be necessary to confine his remarks to the salading in which the English cultivators were the most interested.

In France as in England lettuce occupied an important position, and in the neighbourhood of Paris are very largely grown. Both cos and cabbage lettuce are highly appreciated, and a continuous supply is maintained throughout the year. From May to November they are obtained from the open ground, and from December to April from under glass. Endive ranks next in importance to lettuce and supplies are maintained during the greater part of the year. The curled and broad-leaved varieties are both largely grown, but the broad-leaved or Batavian variety is in the greatest request during the winter. The earliest supplies are obtained from sowings made on a hotbed in February, and from these sowings endive weighing two pounds each and well blanched are obtained by the middle of May. Successional supplies are obtained from a second sowing under glass in March, and subsequent sowings in the open. Both endive and lettuce require soil that has been liberally enriched with manure, a fact that is not lost sight of by French cultivators.

Dandelion and chicory, so highly esteemed by the French people, receive special attention in the market gardens in the neighbourhood of Paris, and are extensively grown in them. Roots of the dandelion obtained from pastures may be utilised, but they are not equal to those which have been produced under a liberal course of culture. The usual practice in growing the dandelion is to sow the seed in April in drills two feet apart. When sufficiently advanced, the plants are thinned to a distance of six inches apart in the rows, and the intervening spaces are hoed over at intervals to keep down the weeds. In October some of the growers simply form ridges over the rows by drawing the soil with the hoe from the spaces between them. The ridges remain undisturbed until the leaves begin to push through, when the ridges are levelled down, and the tops cut and sent to market. The produce so obtained is only partly blanched and is sold at a cheap rate. Other growers lift the roots and place them in a cellar or in a frame lined with fermenting materials, from which the light is excluded. The roots are packed rather close together, in an upright position, and the tops are taken off when the leaves are from eight to ten inches in length. In private gardens, the practice is frequently adopted of arranging the plants from 18 to 20 inches apart each way, and in the winter forcing them by turning pots over them and covering with fermenting materials, the roots being thus covered at intervals according to the demand. Three varieties of dandelion are grown, the broad-leaved, the cabbaging, and the moss curled, the first two being the most highly appreciated. The chicory is grown in much the same way as the dandelion. The large rooted or witloef, so extensively cultivated in Flanders, is the most common in the neighbourhood of Paris. The seed is sown in April in drills eighteen inches apart, and in due course the plants are thinned to a sufficient distance apart to admit of the production of strong roots. In the autumn the roots are taken up and laid in a convenient position, and from the bed thus formed they are drafted to the cellar or frame in which they are to be started into growth. The roots are packed together in an erect position, and the greater proportion of those grown in the market gardens are forced in pits. These pits are 4 ft. in width, and the fermenting materials are packed against the sides and also heaped over them. Placing the roots upon a hotbed instead of covering with the fermenting materials have been tried but the results have not been satisfactory, especially in the case of the witloef; as the leaves spread about more or less instead of forming compact heads as when the practice of covering the roots is adopted. The tops of salsify when the roots are forced under the came conditions as the chicory are delicate and nutty in flavour and much appreciated.

A hearty vote of thanks was accorded M. Vilmorin at the close of his paper.

VISIT OF M. HENRI VILMORIN TO THE HORTICULTURAL CLUB.

On Tuesday evening a party of members of the Horticultural Club assembled at the rooms of the club, Hotel Windsor, to receive as a guest M. Henri Vilmorin, of the celebrated firm of Vilmorin-Andrieux and Co., seedsmen, of Paris, who had come to London, at the invitation of the Royal Horticultural Society to give a lecture on salads. Dinner was served at six, the party consisting chiefly of representative horticulturists, Dr. Hogg presiding, the Rev. H. H. D'Ombrain in the vice-chair. The health of M. Vilmorin was the "toast of the evening," proposed with admirable taste by Dr. Hogg, and acknowledged with much feeling by the distinguished guest, who concluded an interesting speech by proposing the health of the chairman. The Vice-chairman proposed the visitors, associating with the toast Mr. Northrup, of Minneapolis, who replied with much vivacity and freshness. Mr. Shirley Hibberd proposed the Royal Horticultural Society, associating with the toast the names of the Rev. W. Wilks, honorary secretary, and Mr. D. Morris, honorary treasurer. These gentlemen having responded, some lighter entertainments ensued, and the party separated before the hour of ten.

Replies to Queries.

Window Garden Societies in London.—Inquirer writes: I am desirous of obtaining the names and addresses of secretaries of window garden societies in the metropolis, and shall be greatly obliged by any assistance the readers of the Gardeners' Magazine can give me.

Overgrown Shrubs.—W. Harris: You may cut them back now, and as they have been on the same ground many years it will be well to finish the work with a good top dressing of half-rotten manure spread on the ground over their roots. In cutting back leave each tree in as good a form as possible for the next growth, but those that are leggy and hideous may be cut down to within a foot of the ground.

Christmas and Lenten Roses.—R. W.: The Christmas roses are Helleborus niger and its varieties, all of which have white flowers, and the Lenten roses comprise the varieties of Helleborus colchicus, H. olympicus, H. orientalis, and other species flowering at the same time. The Christmas rose may be successfully planted both in the spring and early in the autumn, but the others, unless growing in pots, should be planted in the autumn, when at rest.

Names of Plants.—A. B.: 1, Davallia canariensis; 2, Nephrodium molle; 3, Adiantum hispidulum; 4, Selaginella caulescens; 5, Cheilanthes Ellisiana; 6, Adiantum capillus-veneris.—H. Sanders: 1, Oncidium Batemanianum; 2, O. suave; 3, Dendrobium aureum pallidum; 4, D. Pierardi.—F. R. R.: 1. Dodecatheon integrifolium; 2, Asperula odorata; 3, Arabis stricta; 4, Pinguicula grandiflora; 5, Hepatica (Anemone) Americana; 6, Gentiana humilis.—Everard: 1, Herminium cordatum; 2, Odontoglossum Galeottianum.

Lilies.—Jason: The speciosum section are scarcely hardy enough for your cold district, but you might start them in pots in a cool house and plant them out in May. They ought to be growing freely now. It is a great mistake to keep the roots of lilies dry at any time. When in the store (where indeed they should never be except for commercial purposes) they should be in some moist material, such as cocoa-nut fibre refuse. The noble giganteum might be treated in the same way. The common white candidum is one of the hardiest and we think you might plant it out without fear. Make note of the important fact that immediately after the lilies have flowered is the proper time for planting them. Act upon this rule and you will probably have better fortune in future. In cold places the chief injury is caused by frost acting on the young spring growth.

Adiantums.—H. R. N.: The plants have evidently exhausted the soil in which they are growing, and unless they are taken in hand at once the growth will be unsatisfactory throughout the season. Remove a few of the old fronds without injury to the new ones now rising, and then turn them out of the pots; reduce the ball by at least one-third, and return to pots of the same size as those previously occupied. Use a mixture consisting of fibrous peat, mellow fibrous loam, and silver sand, and press the soil firm round the sides to prevent the water passing away without moistening the whole of the ball of soil. Moderate supplies of water at the root will suffice until they have commenced to grow freely, but they must be kept rather close and enjoy a liberal degree of atmospheric humidity.

Harpaliums.—Amateur: There are three distinct forms of Harpalium rigidium, and as they are extremely beautiful and bloom at different periods, they are all desirable in the same garden. The first to bloom is H. rigidum præcox, which attains a height of about three feet, and bears large golden-yellow flowers; H. rigidum blooms from a fortnight to three weeks later; H. rigidum semiplenus has comparatively large semi-double flowers of a bright golden hue, and blooms in the autumn, long after H. rigidum is past its best. The last-named is known also as Helianthus lætiflorus, which will probably prove its correct name. By purchasing strong plants at once, and planting them in a well-prepared border, you will obtain flowers in the course of the season, and soon be able to raise a stock sufficient for your requirements.

Herbaceous Phloxes.—B. M.: The herbaceous phloxes may still be planted with the assurance of satisfactory results, both from pots and the open border, but as the growth is now becoming active the planting must be done with as little delay as possible. As you do not wish to increase the stock of the varieties you have in the border, the old stools should not be lifted and divided this season, but receive a liberal dressing of short manure, which must be lightly forked in about the roots. If you are not able to give them a dressing of manure of this description, spread a thin layer of some good artificial over the soil to a distance of about twelve inches from each stool, and then prick it in with a fork. This will promote a vigorous growth, and the plants will produce well-developed flower-spikes provided the shoots are thinned to three or four to each stool. When phloxes are allowed to occupy the same position, as is so frequently the case, for several years without receiving any assistance from fertilizers or having the growths thinned, they present such a miserable appearance as to convey a very poor idea of their marvellous beauty when subjected to a liberal course of culture. Next year you will do well to lift and divide them at the end of February or the early part of March.

Wildsmith Memorial Fund.—The following subscriptions have been received since the publication of the first list at page 144: Amount previously acknowledged, £43 3s.; George Palmer, Esq., J.P., £5 5s.; Sir Henry and Lady St. John Mildmay, £5; Lady Codrington, £2 10s.; W. H. Myers, Esq., £2 2s.; Rev. G. J. Thomas, £2; Mrs. Marsland, A. E. Phillips, Esq., James Bishop, Esq., S. B. Stevens, Esq., Miss D. Tate, Mr. D. T. Fish, Martin Hope Sutton, Esq., Alfred Sutton, Esq., J.P., Messrs. Cowslade (*Reading Mercury*), and Messrs. Rivers and Slaughter (*Reading Observer*), each £1 1s.; Mr. and Mrs. W. Bailey, Mr. W. H. Lees, Mr. E. Molyneux, Mr. T. D. Myles, and Mr. J. Hudson, each £1; Mr. E. Butler, Mr. W. Cook, Mr. W. Gilbert, and Mr C. S. Fuidge, each 10s. 6d.; R. D. Catchpool, Esq., Mr. G. Bunyard, Mr. A. F. Barron, Mr. J. R. Petch, Mr. G. Trinder, Mr. A. H. Thorne, Mr. A. M. Wade, and Mr. J. Willard, each 10s.; amounts under 10s., £3; members of the Reading Gardeners' Association—Mr. G. Stanton, £1; Mr. W. Lees, 10s. 6d.; Mr. R. Fenn, Mr. J. Tegg, Mr. W. Badcock, and Mr. J. P. Jones, each 10s.; amounts under 10s., £3 7s.; total, £91 9s. 6d. Further subscriptions are earnestly requested to enable the committee to carry out the object they have in view, namely, to place a child on the Gardeners' Orphan Fund. T. Turton, hon. secretary, Maiden Erleigh, Reading.

Correspondence.

NATIONAL CHRYSANTHEMUM SOCIETY.

May I invite the co-operation of chrysanthemum growers throughout the length and breadth of our land in the efforts that are now being made by the special committee of the National Chrysanthemum Society, viz., Mr. Lewis Castle, Hotham House, Merton, Surrey; Mr. George Gordon, 1, Stile Villas, Wellesley Road, Gunnersbury; and Mr. C. Harman-Payne (hon. sec.), 60, Thorne Road, London, S.W.; in the preparation of an entirely new edition of the N. C. S. catalogue.

The National Chrysanthemum Society have good reason for being satisfied with their last publication in 1888, both as regards the acknowledged advantages of its classification, and other general information, and also the sale which has considerable more than balanced the cost incurred. But it is desired that this new edition should be even more complete, while several fresh features will be added.

With this end in view I venture to ask for space for this note, in the hope that many who are interested in the work of the N. C. S., will lend us their assistance by offering suggestions, and specially by affording any information as to synonyms or errors, either of omission or commission in the previous editions. Such information will be welcomed by either of the gentlemen forming the committee, or by William Holmes.

Frampton Park Nurseries, Hackney, London.

Law.

IMPORTANT TO NURSERYMEN.

An action was heard at the Westminter County Court, which was brought by M. August Van Geert, of Ghent, against Messrs. James Carter and Co., of High Holborn, to recover the price of some camellias supplied in the autumn of last year, and which reached Messrs. Carter and Co. in an unsaleable condition, the leaves and buds having fallen from the plants; and as M. Van Geert would neither make any allowance nor replace the plants, Messrs. Carter and Co. were compelled on principle to defend the action.

The defence involved the important question as to who was responsible for the damage, as the plants were sent to the agents of M. Van Geert in the City, and the defendants had no knowledge of the carriers or the route by which they were sent from Ghent, although they appear to have paid the freight to the carriers in a lump sum with the charge for bringing the plants from M. Van Geert's agents to Messrs. Carter's warehouse in High Holborn, and upon this fact, coupled with the statement in a printed catalogue of M. Van Geert's that "all plants travel at the expense and risk of purchasers," it was decided by his Honour Judge Bayley that the defendants were liable.

It would be interesting to know whether any other traders received plants from Ghent last autumn in a similar condition. It may be said in passing that in the case of another consignment which Messrs. Carter received from M. Van Houtte about the same time in a damaged condition it was unnecessary to bring the matter into the County Court, as M. Van Houtte very promptly and liberally met Messrs. Carter in the matter by sending other plants to replace those which had been injured.

ROSE SHOW FIXTURES, 1890.

June 24.—Drill Hall, Westminster (N.R.S.).
" 27.—Royal Aquarium.
" 28.—Eltham, Reigate.
July 1.—Canterbury, Hereford, Sutton.
" 2.—Croydon, Dursley, Hitchin.
" 3.—Bath, Farningham, Norwich.
" 5.—Crystal Palace (N.R.S.).
" 8.—Gloucester, Ipswich, Winchester.
" 9.—Diss, Ealing, Tunbridge Wells.
" 10.—Birkenhead, Worksop.
" 17.—Birmingham (N.R S.), Helensburgh.
" 22.—Tibshelf.

The only rose show on the above list which extends over more than one day is that at Winchester, which will be held on July 8 and 9.

Rosebank, Berkhampstead, Herts. Edward Mawley.

Obituary.

Died, March 22, at The Ivies, Wantage, after much suffering, Mr. W. Caudwell, F.R.H.S., aged 67 years. Deceased was well known as an enthusiast in primroses and other hardy garden flowers, notices of his progress having appeared in the pages of the Gardeners' Magazine on several occasions. He was born at Grove (one mile north of King Alfred's reputed birthplace), and assisted his father in the cultivation of much of the land lying between Wantage and the Great Western main line at Wantage Road Station until 1859. In 1878 he commenced growing hardy flowering plants to supply the market. To do this he purchased, at a very high figure, four acres of land, called Low Moor, a portion of which was a swamp, or, correctly speaking, an osier bed. Here, with the help of three or four old farm hands, he commenced operations by planting a slope with twenty thousand common primroses from the woods; the beds in the lower portions being filled with the old Irish polyanthus, oxlips, cowslips, and other forms of the primula family. After years of patient fertilizing, he secured a large number of shades of coloured primroses on the true one-flower stalk, while his polyanthus forms appeared endless. He gathered but few flowers, and each season managed to secure a good-sized bag of seed for distribution. He was also great in roses, annuals, and herbaceous subjects, his long beds fronting the road being generally gay in summertime with dianthus, pyrethrums, poppies, antirrhinums, and foxgloves. He established a healthy plantation of fruit trees, which are now assuming paying proportions; and the glass structures at The Ivies insured a supply of roses for the northern markets from Christmas until April. Possessed of means, he was exceedingly generous to the poor, and his loss will be also felt in the town, he being always ready to aid in every work contributing to the benefit or pleasures of his fellow townspeople. He was prominent in the movement for establishing the local steam tramway and gasworks, of which he was a large shareholder. The disease to which he has succumbed very much wasted his frame, and he was laid aside but thirty-six hours. He leaves a widow and a niece to mourn his loss.

On the 21st inst., Mr. Robert Walker, of Richmond, near Peterhead, a gentleman of rare qualities, and well known as a botanist and an amateur of gardening. Recently he contributed to the Buchan Field Club a history of the Buchan Flora.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
6	S	**Easter Sunday.**	5 27	2 25	6 40	8 5	6 14	2 38	2 54	—	0 3	47·7
7	M	Prince Leopold born, 1853.	5 24	2 8	6 41	9 24	6 32	3 9	3 26	0 19	0 34	47·9
8	Tu	Lord Chatham died, 1778.	5 22	1 51	6 43	10 44	6 56	3 44	4 1	0 51	1 9	48·1
9	W	Fire Insurance due. Oxford Easter Term begins.	5 20	1 34	6 44	Morn.	7 23	4 19	4 38	1 26	1 44	48·3
10	Th	Battle of Toulouse, 1814.	5 18	1 17	6 45	0 2	8 2	4 56	5 15	2 3	2 21	48·4
11	F	Peace of Utrecht, 1713.	5 15	1 1	6 46	1 14	8 53	5 37	6 1	3 40	3 2	48·6
12	S	☾ Last Quarter.	5 13	0 45	6 48	2 16	9 56	6 28	6 57	3 26	3 53	48·7

Orchids in Flower.		Day of Yr.
		1890
Leptotes serrulata	Brazil.	96
Cattleya Skinneri	Guatemala.	97
Phalænopsis Schilleriana	Manilla.	98
Aerides Fieldingi	India.	99
Dendrobium aduncum	Manilla.	100
Dendrobium anosmum	Manilla.	101
Dendrobium primulinum	India.	102

ROYAL HORTICULTURAL SOCIETY.

CHISWICK GARDENS,
GRAND DAFFODIL EXHIBITION AND CONFERENCE,
April 15, 16, 17, and 18, 1890.

The Exhibition will be opened on Tuesday, April 15, at Three p.m., by H.R.H. THE DUCHESS OF TECK.

Conferences on Wednesday and Thursday, at Two p.m.

Admission: Tuesday, from Two o'clock, Half-a-Crown; Wednesday, Thursday, and Friday, from Eleven o'clock, One Shilling.

Exhibitions and Meetings for the Ensuing Week.

Tuesday, April 8.—Royal Horticultural Society.—Meetings of Floral, Fruit and Scientific Committees.

Saturday, April 12.—Royal Botanic Society.—General Meeting.

Auction Sales for the Ensuing Week.

Wednesday, April 9.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Fruit Trees, Shrubs, Border Plants, &c.

Wednesday, April 9.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Stove and Greenhouse Plants, &c.

Friday, April 11.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

Friday, April 11.—Messrs. Protheroe and Morris, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C.; Roses, Greenhouse Plants, &c.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, APRIL 5, 1890.

Easter Flowers are provided in the usual abundance, and the flower markets have had, and will have, a new life for a season. At no season of the year is the enjoyment of flowers by the general public keener than at Easter, a fact in part accounted for by the comparative cessation of festivities during Lent, but in much greater part by the awakening of Nature, and the universal desire for participation in the floral feast presented in the fields and the gardens after the deadness of six months. The beauty of the opening spring is ever a surprise to us; no repetition of the phenomena can bring them into the category of the commonplace; the senses are the more fully aroused by the excitement that follows on a prolonged rest, and the flowers of the season appeal directly to our warmest sympathies and most cherished hopes. The employment of flowers in connection with important sacred and domestic functions is no new thing; the custom is, perhaps, as old as society itself, the beginning of which no records tell. But within the past half-century the custom has attained to huge proportions, and although the announcement occasionally accompanying melancholy intelligence, of "no flowers," appears to hint of a decline in the usage, there is no decline, but growth instead, and vast and ever-increasing is the consumption of flowers for a variety of purposes. At the present time the chief demand in the markets and in private gardens is for church decoration, which in some sense, is a distinct branch of decorative art, requiring special taste and peculiar resources for its full development on sound principles. There is probably much valuable material for the purpose that has hitherto escaped notice, and consequently there may be room for discovery of material to enlarge the practice beyond its present apparently exhaustive range. We were lately admiring an extensive and beautiful collection of ivies, many of them the best of the variegated varieties, that had grown out of bounds and required to be brought within compass to be manageable. The time had arrived for a free use of the knife upon them, and the question arose, could they be allowed to remain untouched until the eve of Easter, then to be cut in and the resultant sprays made available for church decoration. There could be but one answer to such a question. The eve of Easter is as suitable as any time in the year for cutting back ivies that have grown beyond bounds, and a cartload of such cuttings, more especially if clean and bright from a country garden, would be invaluable in the hands of skilful decorators. But ivies grown near a town might be in need of purification to render them suitable for any purpose except for the garden fire, for the winter in a town atmosphere takes all the beauty out of these plants, and as their beautiful colours decline, a coating of soot hastens the process of their conversion to the dinginess of evergreens in all such situations.

The favourite flowers need no advocacy; but there is often a lamentable scarcity of them at the moment when they are required. This happens especially with arum lilies, a consequence often of defective management in the summer of the year preceding. No routine of cultivation answers so well as planting them out, and potting them into their flowering pots at the time of taking up, the subsequent keeping being such as will keep them dormant until within a reasonable period of the date when the flowers will be required. These plants will endure a high temperature with abundant moisture, and the only point of importance is to keep them free from greenfly, which has a great liking for them, and is persistent in its attacks when the plants are growing freely. Azaleas are so easily managed, and give so liberally of their flowers, as to be of the greatest value for Easter. And they offer the advantage of endless variety, from the stately florist section to the miniatures of the obtusa and amœna group, which make amends by their liveliness for their diminutive proportions. The greenhouse and forcing pit must ever be the source of our chief supplies at this season, for in the forward spring there is not much at command and from the open, and in a late season there is comparatively nothing. Were the festivals fixed as to time, the trades that are more especially influenced in their movements by them, would be greatly advantaged, and we have endeavoured to show how this might be done without violence to usage or tradition. It is, however, too great a subject for any casual consideration, and it is not within reasonable expectation that the present generation will witness any change.

The shores of the Mediterranean will supply much of the material that will adorn our churches, but supplies will also be derived from the Channel Isles, the Scilly Isles, and all the centres of horticultural activity in Europe. The tendency of lady decorators is to favour the use of fragrant flowers, which we feel bound to say are less desirable than to many may appear. The atmosphere of a crowded church is not improved for health or enjoyment by the odours of flowers. When diffused in pure air these odours are as wholesome as they are agreeable, but when the vitiated air of a crowded interior is loaded with these subtle essences, health is endangered and enjoyment is not to be thought of. It is a grave mistake to employ for church decoration the cheap hyacinth blooms that are now on sale in all great towns, and especially in London. It will be remembered, perhaps, that for several years past it has been the custom of the bulb growers of Haarlem to send out a circular containing a declaration to the effect that the export of cut blooms would be discontinued. But with the return of spring, it appears that the promise is forgotten, and forgetfulness is favoured by the prospect of some return for flowers that are but a plague where they are, for the blooms of hyacinths are not even available for manure—in fact, there can be nothing done with them but either to sell them or leave them in heaps to perish. Their unfitness for church decoration we have seen illustrated in the carrying out of

delicate persons in a state of prostration from the combined effect of heat in a carbonized air heavily laden with the powerful perfume of hyacinths. It would be a proper rule to exclude all sweet-smelling flowers, but we dare not ask for such a rule to be enforced, for would not the draconic code appear to many as little less than sacrilegious?

A relaxation of the traditional severity of the observance of Lent appears to have accompanied the expansion of floral tastes in church and home decoration. It is not so far back in time but that many living can remember when the demand for flowers during the forty days was of the scantiest nature; for in truth, it might be said, there was no demand at all. But here, and in a great degree in the United States, Lenten fare admits of more liberal dressing than formerly, and as a consequence, the flower markets maintain a moderate movement, consistent in some degree with a season in which flowers are usually scarce, but undoubtedly in great part due to the generally respectful observance of the rescripts of the church. Whether the tendency to mitigate the gloom of Lent by a more liberal bill of fare and a freer use of such emblems of festivity as flowers commonly are is destined to increase, none can say. But appearances favour the expectation that feeling and opinion are alike drifting towards a mere outward formality; and should the season be thus denuded of its established austerity, the fixing of the now moveable feasts will become a comparatively easy matter. Christmas is fixed because it is not associated with ceremonies of the law; but Easter and Whitsuntide are moveable because in part derivable from ceremonial observances anterior to the establishment of Christianity, and therefore dependent for the time of occurrence on the lunar reckoning that has so large a place in the Mosaic system.

Easter affords the first full taste of the country to the myriads who dwell in towns, and it is a matter for the most profound regret that it is impossible to regulate the weather for them. A fine Easter is an unspeakable blessing, but the weather can, at this season, behave in so unpleasant a manner that at the moment of writing this we dare not indulge in any speculations as to possibilities. All we can do in reference to that matter is to hope, as everybody else does, for a good time, and hoping is so cheap a business that we shall not ask for any thanks for our generosity. But we may assure the myriads "in populous cities pent" that given good weather the country is now in a delightfully attractive state, more especially in the suburbs of great towns in the southern counties. Money has so much influence on the "beauties of nature" that it is only in the vicinity of populous and wealthy cities that we learn of the true delights of spring. When we enter upon regions remote from civic influences we do not see the early leafing trees, the early and gay flowering trees, the green lawns and their accompaniments of garden flowers, and the bosky woodlands that shelter singing birds and wild flowers innumerable. At this time the Home Counties are wonderful for beauty, but beyond them northward the indications of the opening spring are less pronounced, and the greater the space the less colour is there in the picture. But spring is a season of delight everywhere, and the moorlands are capable of rejoicing when the power of increasing warmth and light has been felt by its slow moving vegetation. That the country is better than the town must be granted, but the town has its attractions, and London is now fast acquiring its most beautiful aspects, for a beautiful city it is at all seasons, and a most beautiful city in the spring. From this time to the end of the month a series of interesting meetings invite attention in London and elsewhere. Here are a few of them of which readers may take note:—April 8, committee meetings of R.H.S.; April 15 to 18, Daffodil Exhibition and Conference at Chiswick; April 22, committee meetings of R.H.S., and on the same date National Auricula Exhibition; April 23, R.B.S. second show; April 29, Manchester Spring Show in Town Hall; April 29 and 30, spring flowers at Royal Aquarium, Westminster. The great events in the series are the Auricula Show on the 22nd, and the Daffodil Conference 15th to 18th.

Surrey Floricultural Society—Annual exhibition, July 23 and 24.

Stow-on-the-Wold Horticultural Society.—Annual Exhibition at Quar Wood, August 13.

Faringdon Horticultural Society.—Annual Show, Thursday, August 14.

Horticultural Club will meet on Tuesday for dinner and conversation at 6. The subject for discussion will be a paper to be read by Mr. C. T. Druery, entitled "The Wonders of Fern-land."

National Rose Society Executive Committee will meet in rooms of the Horticultural Club, Hotel Windsor, at 3 on Tuesday, to receive report of the catalogue committee.

Hyacinths and other Spring Flowers are now plentiful in gardens about London, and the parks are as gay as usual at this season of the year. The early tulips want a little time with warmth.

National Horticultural Society of France will hold an exhibition in the Pavilion on the Champs-Elysees, May 21 to 26. The schedule is published at 1, Rue Cassette, Paris.

Vegetable Conference and Chrysanthemum Centenary Conference are reported at length in the March number of the *Journal of the Royal Horticultural Society*, published within the past few days. This is a bulky number and will afford much entertainment; while as to the practical value of its contents, those who will call to mind the business effected at the two autumnal conferences will need no assurances.

Kew Palace was included in the vote proposed for repairs of the royal palaces in Committee of Supply on Monday. Mr. Labouchere said the charge for Kew Palace and the buildings on Kew Green amounted to £1,420. For his own part he had never discovered what this place was; he had seen nothing but a dead wall. Nobody lived there, and the place was of no use to any human being, Kensington Palace was spoken of by Mr. Morton in much the same tone, monarchies always weaken themselves by nursing excrescences. The votes were passed of course, but the disused palaces make a waste of public money.

Epping Forest has been improved in the direction of Theydon Bois, by the addition to it of a tract of 12½ acres situated at Oak Hill, by arrangement with Sir T. F. Buxton and Mr. E. N. Buxton. The area of the forest is now 5,542 acres. The systematic thinning is carried on under the direction of Mr. Alexander McKenzie, the superintendent, the work thus far accomplished having already resulted in great improvement both to the trees that remain, and the underwood that contributes in so great a degree to the beauty of the forest.

Royal Gardens, Kew, have many attractions for Londoners bent on holiday making. The wild garden on the mount near the Cumberland gate is in full dress with daffodils on the slopes and primulas on the lower levels. The rockery has a few good things in flower, but the low temperature of the past week has checked the progress of many good things that should now be in flower. Prunus triloba on the wall next the walk that on which the Corsican pine and the stone pine are conspicuous, is now in perfect condition. It is certainly the most beautiful tree of the season. The gardens will be opened at 10 on Monday morning.

The Catalogue of Pompon Chrysanthemums, of which an instalment appears in the present sheet, is completed so far as we are enabled to go, and the varieties reach the high total of 770, which far exceeds our expectations. The list will be completed in three successive issues of the magazine, and will form a valuable, and certainly unique, contribution towards the history of the chrysanthemum, a subject of the greatest interest at the present time. We have had generous assistance in preparing this list from Mr. Alfred Salter, Mr. C. Harman Payne, and other friends, and although it is obviously incomplete, we fear it must ever remain so from the apparent exhaustion of the material available for the purpose. As it stands, however, it is in its way a remarkable compilation, and while less perfect than we hoped, is far more extensive than we expected. It will now be appraised by impartial judges, and will be appreciated agreeably to its deserts.

Education in Agricultural and Horticultural Subjects in elementary schools is proposed in a Bill introduced by Mr. Jesse Collings, M.P. Under this scheme any School Board or managers of a public elementary school may provide means and facilities for the purpose of giving instruction in certain agricultural and horticultural subjects. These include (1) fruit, flower, and vegetable growing; (2) poultry, bee, and pig keeping; (3) budding, pruning, planting, and propagating; (4) the rotation of garden crops; (5) the nature and properties of soils; (6) the use of manures; (7) the knowledge and choice of seeds; (8) the structure and life of plants; (9) the action of birds and insects on crops; (10) the choice and use of simple tools; and (11) packing fruit, vegetables, &c., for market. The curriculum may also include such other analogous subjects as may be sanctioned from time to time by the Committee of Council on Education or by the Science and Art Department. For these purposes School Boards and managers are empowered to provide or contribute to the provision of such school gardens, allotments of land, workshops, tools, and appurtenances as may be necessary. There is to be a kind of dual control of these schools, for they are to be subject to the inspection of the officers of the Committee of Education or of the Science and Art Department. A special grant, not exceeding 50 per cent., is to be made by the Committee of Education or the Science and Art Department for the expense of providing these allotments, school gardens, buildings, fittings, tools, and appurtenances. But the cost and full particulars must be sanctioned by the Committee of Council or the Science and Art Department. Notwithstanding the definition of an elementary school in the statutes, the Committee of Education and the Science and Art Department are empowered to give grants on such conditions and regulations as they may lay down for any of the subjects taught and expenses incurred under the Bill. With regard to the Code of Education, the "Committee of Privy Council" are directed to make such alterations in it as will admit of special instruction in agricultural and horticultural subjects being given in public elementary schools. In the event of any School Board or managers of a public elementary school providing evening or other continuation schools and classes for the purpose of giving instruction in any of the subjects above referred to, the Committee of Council on Education or the Science and Art Department are authorized to give grants to these continuation schools or classes in the same manner as to public elementary day schools. These schools and classes are to be open to "children who have left school, to young persons, and adults," and they are, as already mentioned, to be subject to inspection by the Committee of Council on Education or the Science and Art Department.

Crystal Palace Floral and Horticultural Exhibitions are announced as follows:—May 10, Grand Summer Show; July 5, National Rose Society's Show; August 16, Co-operative Flower, Fruit, and Vegetable Show; September 5 and 6, National Dahlia Society's Show and Crystal Palace Fruit Show; October 9 to 11, Autumn Fruit Show; November 7 and 8, Chrysanthemum Show.

Tasmanian and Australian Apples and Pears are once more appearing in the London markets, and by their good looks ensure a ready sale. In respect of flavour these fruits are mostly good, but there is a certain flatness, due doubtless to deterioration in transit, that distinguishes them from the fresh bright flavour of home grown fruit. In Ribstons and Cox's this is particularly noticeable. But of the usefulness of these late comers there can be no doubt, for English apples are all gone.

A Return of Wintry Weather has given vegetation a check, but we have not heard of any disasters or alarms, for light frosts at this time of year are commonplace events. Plums are now flowering freely in southern counties, and will probably not suffer from frost so long as the days are sunny and the nights dry. But cold rain or snow would be fatal to the business, and we will hope the critical time may pass without such occurrences. The gardens everywhere are gay with the scarlet ribes, daffodils, forsythias, double-flowering plums and peaches, and hardy primulas are promising to make a great show with the next visitation of kindly weather. The present prospect is not a pleasant one, for changeable weather appears to be imminent.

Notes of Observation.

MAKING TREE IVIES.

Having learned from Mr. Hibberd's ivy book how tree ivies came into existence, I have been making some, and I am afraid I have missed some point of importance, because they do not keep strictly to their tree character. I allowed a lot of ivies to run to the top of a wall, and there allowed them to riot. They formed growths on the top of the wall different to those on the face of the wall, so that instead of lobed leaves, the leaves were now entire. Mr. Hibberd explains all this, and all I need do is to contribute my "Note of Observation." Having obtained these growths with entire or lobeless leaves, I took cuttings from them, and when these were rooted, I planted them out. Having begun soon after the book appeared, many of my trees are now handsome plants, and I am alarmed to find occasionally shoots rising from the base with lobed leaves and a tendency to run. I say "tendency," but sometimes it is more than that, for I have cut out some runners that had grown to double the length of any of the proper tree growth before I noticed them. The observation I offer may be useful to lovers of ivies, for it appears to me that any ivy can be made into the tree form by allowing it to run, and then leaving it to manage its own affairs on a roof of any kind. But the appearance of climbing or running growth troubles me, and perhaps a word of advice might enable me to complete my task of making and keeping tree ivies.

J. Bland.

[Our correspondent has operated in a quite orthodox manner. What has happened to his tree ivies is just what happens to all, for they never cease to make occasional attempts to run, and if a wall is near enough, will soon run up it, and the tree form is likely to dwindle away. The running growths should be cut out.]

FRUITS FOR LOW WALLS.

Some dividing walls in my garden are too low for fruit trees in a general way. Some plum and pear trees that I found upon them when I took possession grew with such vigour that it became a joke with us that to keep them sufficiently cut back was work enough for a man the whole year round. As a matter of course, they bore no fruit, and that puzzled me until I learned from G.M. the true philosophy of pruning, and then I began to re-form my walls, and time has justified me. Pears, plums, and peaches evidently require a certain freedom, not only to spread laterally, but to rise; and to use the knife severely promotes injurious growth, which renders them barren. The pears bear it best, but it is miserable work. Now, I find Morello cherries, nectarines, and currants and gooseberries profitable occupants of my dwarf walls, and the last named surprisingly so. It did at one time appear to me ridiculous to plant currants and gooseberries on walls, but experience proves the practice to be sound. I secure now the earliest green gooseberries in the district, and the latest ripe gooseberries; the first from a warm, east wall, the second from a north wall, where, with Morellos, the gooseberries answer well. A wall covered with ripe red currants in large bunches is a fine sight, and it is quite easy to protect with netting, and thus cheat the birds. No more conflict with Nature in "knifing" fruit trees that begin with the letter P.

J. B.

Fruit Culture at Jaffa, has, according to a report of Consul Gilman, become an industry of great value. Of the 9,000 acres of cultivated land pertaining to the community, 3,000 acres are covered by orange groves and gardens; and these are all under irrigation. Among the other fruits produced are the lemon, lime, citron, date, peach, apricot, grape, fig, pomegranate, plum and melon, as well as the olive. All the ordinary garden vegetables are also grown here of good quality and in abundance. Of late, the vine, especially, is receiving increased attention and care; extensive vineyards are being planted; and as here the vine is free from the diseases and insect pests of other countries, and the soil and climate are peculiarly adapted to it, this should be one of the most flourishing wine-producing countries in the world. The olive does best in the hill country and generously responds with abundant crops to the slightest care.

CATALOGUE OF POMPON AND SINGLE CHRYSANTHEMUMS.

Abel (Payre). *Anem. pom.* 1867. Carmine, disc red tipped yellow.
Abbe Dantin. *Pom.* Violet-tipped gold.
Acis (J. Salter). *Pom.* 1862. Straw yellow.
Ada Owen (Owen). *Single.* 1889. Citron yellow.
Adele Prisette (Pele.) *Pom.* 1855. Lilac; fimbriated.
Admiral Sir T. Symonds (Symonds). *Single.* 1887. Rich yellow.
Adolphe Weick (Delaux). *Pom.* 1886. Rose and white; fimbriated.
Adolphus (Ware). *Single.* 1885. Lilac, suffused with rose.
Adonis (Lebois.) *Pom.* 1851. Rose and white.
Adrastus. *Pom.* Mauve; early.
Aglaia (Poole). *Anem. pom.* 1866. Lilac, with creamy white disc.
Aigle d'Or. *Pom.* 1856. Canary-yellow.
Aissa (Lebois). *Pom.* 1871. Rosy purple.
Aimé Porte (Porte). *Pom.* 1886. Blush white.
Alba perfecta (Boucharlat). *Pom.* 1877. Pure white.
Alfred Diggles (Teesdale). *Single.* 1887. Rich amaranth.
Alice (Cannell). *Single.* 1884. Blush white.
Alice (Ingram). *Pom.* 1864. Deep yellow.
Alice Butcher (Butcher). *Pom.* 1886. Rich orange; very early. Sport from *Lyon.*
Alice Owen (Owen). *Single.* 1889. Soft crimson.
Alveoliflorum (Lebois). *Anem. pom.* 1852. Rose, disc yellow.
America (Hallock). *Single.* 1884. Delicate blush, large.
Amerique. *Pom.* 1857. Rose and yellow.
Ami Feille (Lebois). *Pom.* 1864. Rose red.
Aminta (Lebois). *Pom.* 1866. Red, striped yellow.
Amphilla (Bull). *Pom.* Orange-crimson.
Amy (J. Salter). *Pom.* 1866. Pure yellow.
Anais (Delaux). *Pom.* 1883. Lilac-rose, tipped gold; fimbriated.
Anastasio (A. Salter.). *Pom.* 1882. Rose pink; early.
Andromeda (J. Salter). *Pom.* 1859. Creamy yellow, tipped brown.
Annie Forsyth. *Pom.* White-tipped rose.
Alexander Pele. *Pom.* Salmon bronze.
Alice Stevens (Stevens). *Pom.* 1890. Golden yellow.
Annie Henderson. *Pom.* Pale yellow.
Antonius (Salter). *Anem. pom.* 1857. Yellow, orange disc.
Antoinette Adam (Lebois). *Anem. pom.* 1857. Sulphur white, yellow disc.
Anna Boleyn (J. Salter). *Pom.* 1865. Orange buff.
Anna Feille. *Pom.* 1865. Fiery red, tipped yellow.
Apotheose (Verschaffelt). *Pom.* 1882. Purple-carmine.
Albion. *Pom.* Rose blush; early.
Apollo (Smith). *Pom.* Chestnut and yellow.
Arabella. *Pom.* Blush.
Arbre de Noel (Verschaffelt). *Pom.* 1882. Orange shaded red.
Argentine. *Pom.* 1854. Silvery white.
Ariane (Bernet.) *Pom.* 1885. Amaranth, with yellow disc.
Ariadne (Pertuzes). *Pom.* 1852. Rose pink.
Ariel (J. Salter). *Pom.* 1859. Lilac blush.
Ascanio (J. Salter). *Pom.* 1857. Bright golden yellow.
Asmodee (Lebois). *Pom.* 1852. Red-yellow.
Astarte Salter (J. Salter). *Anem. pom.* 1865. Bright amber.
Astrea (J. Salter). *Anem. pom.* 1859. Lilac blush, golden centre.
Atilla (Lebois). *Pom.* 1868. Deep rose.
Attraction (Teesdale). *Single.* 1883. White shaded lilac.
Atropos. *Anem. Pom.* Reddish crimson.
Augusta (J. Salter). *Pom.* 1860. Blush white.
Aurelia (Lebois). *Pom.* 1869 Deep pink tipped white.
Aureole (Delaux). *Pom.* 1886. Lilac pink.
Aureole (Pele). *Pom.* 1856. Red and orange.
Aurore Boreale (Pele). *Pom.* 1856. Dark orange.
Aurora (Cullingford). *Single.* 1886. Marone crimson.
Aurora (A. Pele). *Pom.* 1861. Orange red.
Aurora (Lemoine). *Pom.* 1874. Buff and orange.
Aurelien (Lebois). *Pom.* 1871. Pale yellow.
Antigone (Lebois). *Pom.* 1861. Tender rose.
Autumna. *Pom.* 1851. Buff.
Azzoletta (Lebois). *Pom.* 1869. Rose pink.
Baronne d'Ulimbert (Lebois). *Pom.* 1868. Rose-lilac.
Baron d'Adswaerd (Lebois). *Pom.* 1859. Blush-tipped rose-lilac.
Bayardiere. *Pom.* 1854. Silvery rose shaded bronze.
Beaute de Fioriti. *Pom.* 1856. Blush shaded carmine.
Belle Navarraise (Delaux). *Pom.* 1885. White shaded rose; fimbriated.
Berroll. *Pom.* Bright golden yellow.
Bernard de Rennes. *Pom.* 1852. Yellowish buff.
Blanche Colomb. *Pom.* 1886. Blush white.
Bordeaux (Pele). *Pom.* Sulphur white; early.
Bessie (Ingram). *Pom.* 1861. Chestnut red and yellow.
Bijou de Horticulture (Pele). *Pom.* 1855. Cream white.
Black Douglas (Cannell). *Pom.* 1885. Marone-crimson.
Ble d'Or (Lemoine). *Single.* 1889. Pale yellow.
Blushing Bride (Davis). *Pom.* 1886. Rose-lilac
Bob (Smith). *Pom.* 1854. Dark brown.
Boccace (Delaux). *Single.* 1888. Carmine and yellow.
Bolide. *Pom.* Bright gold yellow.
Boule Blanche (Delaux). *Pom.* White, yellow centre.
Boule de Neige. *Anem. pom.* 1856. Pure white.
Bouquet Fleuri (Boucharlat). *Pom.* 1884. Bright red.
Bouquet Seduisant (Delaux). *Single.* 1887. Bright crimson.
Bouton d'Argent (Miellez). *Pom.* 1851. White.
Bouton de Venus (Lebois). *Pom.* 1850. Blush pink.
Brahma (Delaux). *Pom.* 1886. Crimson tipped yellow; fimbriated.
Brazen Mirror. (Pethers). *Pom.* 1862. Brassy yellow.
Bride of Engleberg (Teesdale). *Single.* 1883. Pale blush, orange disc.
Briolis. *Anem. pom.* 1881. Rose blush.
Brilliant. *Pom.* 1854. Rich crimson.
Brown Cedo Nulli. *Pom.* Chestnut. Sport from *Cedo Nulli.*
Brunette (J. Salter). 1857. *Pom.* Orange-buff.
Brunette (A. Salter). *Pom.* 1882. Amber, shaded brown.
Buckingham. *Pom.* 1855. Buff, shaded nankin.
Buttercup (Cannell). *Single.* 1889. Bright yellow.
Calliope (J. Salter). *Anem. pom.* 1861. Ruby-red.

Cameleon (Lebois). *Pom.* 1863. Bright rose.
Canari (Pertuzes). *Pom.* 1885. Bright yellow.
Canary (Cullingford). *Single.* 1884. Bright yellow.
Canary Bird (J. Salter). *Pom.* 1861. Clear yellow.
Canariense Improved (Cannell). *Single.* 1886. Clear yellow.
Captain Nemo. *Pom.* Amaranth-purple.
Capella (J. Salter). *Pom.* 1862. Red-chestnut.
Captain Marignac (Delaux). Rose and white.
Carduusifolia (Cullingford). *Single.* 1884. Rich marone.
Carmine Cedo Nulli (J. Salter). *Pom.* 1866. Rose carmine; sport from *Cedo Nulli.*
Carminata alba (Delaux). *Pom.* 1883. Carmine edged, white, tipped gold; fimbriated.
Carbuncle. *Pom.* Bright yellow.
Cassy. *Pom.* Syn. *Early Cassy.* Pink.
Cedo Nulli (A. Pele). *Pom.* White.
Cendrillon. *Pom.* White, shaded lilac.
Cèrès. *Pom.* 1855. Amaranth and white.
Cérès (J. Salter). *Pom.* 1860. Dark orange.
Champs Elysées (Lemoine). *Pom.* 1874. Amaranth purple.
Charlemagne (J. Salter). *Pom.* 1857. Bright red.
Charles Dickens. *Pom.* Gold-tipped rose.
Charming (Owen). *Single.* 1889. Golden yellow.
Chedeville. *Pom.* Reddish crimson and orange.
Chilon Chilard. *Pom.* 1886. Purple-rose.
Christiana (J. Salter). *Pom.* 1860. Canary yellow, tipped brown.
Christobel (J. Salter). *Pom.* Bronzy rose and fawn.
Chromatella (A. Pele). *Pom.* 1861. Orange and yellow.
Cinderella (J. Salter), *Pom.* White.
Citronella (Smith). *Pom.* 1862. Bright yellow.
Clarissa (J. Salter). *Pom.* 1857. Cinnamon red.
Cleobis. *Pom.* 1855. Rose carmine and white.
Coachman (Cannell). *Single.* 1884. White, with green disc.
Cœur Joie (Delaux). *Pom.* 1885. Yellow shaded crimson.
Cométe Biéla (Delaux). *Pom.* Brick-red.
Comte Achille Vigier. *Pom.* 1854. Salmon-red.
Comte de Morny. *Pom.* Syn. *Purple Pompon.* Bright purple.
Comtesse de Clapier. *Pom.* 1856. White and rose.
Comtesse de Flotte (Lebois). *Pom.* 1869. Rose pink, tipped white.
Comtesse de Mons (Lebois). *Pom.* 1868. Blush pink.
Comtesse de Morny. *Pom.* 1886. Pink.
Coquette (J. Salter). *Anem Pom.* Blush, high yellow centre.
Coquillage. *Pom.* Rosy bronze; early.
Cora (J. Salter). *Pom.* Cream white.
Cravachon (Delaux). *Pom.* Crimson-violet.
Creme (Delaux). *Pom.* Cream-tipped yellow.
Creole. *Pom.* Dark salmon.
Crimson Perfection (Langlois). *Pom.* Bright crimson.
Crœsus (J. Salter). *Pom.* 1858. Amaranth-red.
Crushed Strawberry (Cannell). *Single.* 1885. Buff red.
Curiosity (Boucharlat). *Pom.* Blush lilac; early.
Cupidon. *Pom.* 1851. Light crimson.
Cybele (Bernet). *Anem. pom.* Purple rose with yellow centre.
D. Windsor (Teesdale). *Single.* 1887. Chestnut red.
Dalila (J. Salter). *Pom.* 1856. White edged rose.
Dame Blanche (Lebois). *Pom.* 1852. White; fimbriated.
Damiette (Lebois). *Pom.* 1866. Purple-rose.
Danae (J. Salter). *Pom.* Bright gold.
Daphnis (J. Salter). *Anem. pom.* 1851. Carmine-rose.
Delphine Caboche (Pele). *Pom.* Violet rose.
Denticulatum (Henderson). *Pom.* 1874. Pale pink, shaded yellow.
Dernier Adieu (Lebois). *Pom.* 1863. Rose-pink.
Deuil du Pere. *Pom.* 1884. Crimson.
Diamant (Boucharlat). *Pom.* 1886. Rose and sulphur.
Diamant (Delaux). *Pom.* 1884. Reddish crimson.
Diana (J. Salter). *Pom.* 1861. Pure white.
Dick Turpin (Forsyth). *Anem. pom.* 1873. Bright magenta, with golden disc.
Diogene (Lemoine). *Pom.* 1874 Rich amaranth.
Distinction. *Pom.* Blush.
Dona Carmen (Lebois). *Pom.* 1866. Snow white.
Donna Anna Gonzales. *Pom.* Gold.
Donald Carmy. *Pom.* White.
Dr. Bois Duval (Duval). *Pom.* 1854. Carmine-red.
Dr. Clos (Lebois). *Pom.* 1864. Bright pink.
Dr. Kellock (Cannell). *Single.* 1884. Lilac-pink.
Drin Drin. *Pom.* Yellow, dwarf.
Duchess of Fife (Piercy). *Pom.* 1890. White; early.
Dupont de L'Eure. *Pom.* Amber-yellow.
Durham. *Pom.* Yellow.
Duruflet (Pele). *Pom,* Rosy-carmine, scented.
Early Blush (A. Salter). *Pom.* 1884. Rose blush; very early.
Edith (J. Salter). *Pom.* 1860. Pale rose-salmon.
Eclipse (A. Salter). *Pom.* 1884. Bronze-red, tipped yellow.
Effie (Owen). *Single.* 1889. Pale blush.
Elegance (Delaux). *Pom.* 1883. Bronze-red.
Elegant (Owen). *Single.* 1889. Yellow-orange.
Eleonore. *Pom.* White.
Eleonore (Delaux). *Pom.* Orange-red.
Eleonore (Lassali). *Pom.* Bright rose.
Elise Conte. *Pom.* 1858. Rose-carmine and white.
Elise Layeillon (Delaux). *Pom.* 1884. Cream colour, shaded rose and salmon.
Ella Zuilla. *Pom.* Chestnut and gold.
Elise Miellez (Lebois). *Pom.* 1850. Deep rose.
Emily (J. Salter). *Pom.* 1860. Rosy bronze.
Emma. *Pom.* Rosy purple.
Eole (J. Salter). *Pom.* 1857. Rose lilac.
Ernest Benary (Lemoine). *Pom.* 1874. Silvery lilac.
Esmeralda (J. Salter). *Pom.* 1859. Salmon-red, shaded orange.
Esther Himmes (Lebois). *Pom.* 1864. Rose-edged white.
Esther Himmes. *Pom.* 1865. Yellow, striped red.
Estella. *Pom.* Rosy yellow.
Etincellant (Delaux). *Pom.* 1884. Reddish crimson, shaded brown.
Etoile de Venus. *Pom.* 1856. Yellow and orange.
Etoile du Berger. *Pom.* 1856. Golden yellow.
Etoile Orange. *Pom.* 1883. Scarlet orange; early.
Eugene Laujoulet. *Anem. pom.* 1858. Yellow and orange disc.
Eulalie Laye. *Pom.* Silvery rose.
Eva (J. Salter). *Pom.* 1860. Light golden yellow.
Eveline. *Anem. Pom.* 1859. Pure white.
Eynsford Gem (Cannell). *Pom.* 1887. Deep crimson.
Exposition de Chalons (Delaux). *Pom.* 1885. Rose violet.
Exquisite (Ware). *Single.* 1887. Pure white.
Fabiola (Lemoine). *Pom.* 1874. Pale peach.
Fair Margaret (Teesdale). *Single.* 1884. Pale blush.
Fairest of the Fair (J. Salter). *Pom.* 1862. Lilac blush, silvery tips.
Fairy Nymph (J. Salter). *Pom.* 1866. White.
Fair Marguerite (Teesdale). *Single.* 1883. Pure white, yellow at base.
Fairy (J. Salter). *Pom.* 1862. Lemon-yellow, shaded orange.
Fantaisie (Bernard). *Pom.* White; fimbriated.
Fanny (J. Salter). *Pom.* 1860. Dark crimson red.
Fatma (Cannell). *Single.* 1889. Purple-rose.
Fanchette. *Anem. pom.* 1856. Lilac with sulphur centre.
Fastiguoso. *Pom* Blush white.
Fenella. *Pom.* 1851. Bright orange.
Fee Enchantresse (Delaux). *Single.* 1887. Carmine-purple.
Fee D'Aprigny (Lamare). *Single.* 1839. White and lilac.
Feu D'Amour. *Pom.* Rose-purple.
Fibreto (Lebois). *Pom.* 1868. Bright yellow.
Fiberta. *Pom.* 1884. Bright yellow; very early.
Figaro. *Pom.* 1865. Red and yellow.
Figaro (Cannell). *Single.* 1886. Rose-magenta.
Fimbriatum Luteum. *Pom.* 1856. Olive-yellow; fimbriated.
Firefly (Smith). *Anem. pom.* Bright red.
Firmament (Delaux). *Pom.* Red-crimson.
Fimbriatum. *Pom.* Rose-lake.
Fioramesta. *Pom.* Blush tinted rose.
Flambeau. *Pom.* Fiery orange.
Flavia. (J. Salter). *Anem. pom.* 1857. Golden yellow.
Flambeau Toulousain (Delaux). *Pom.* 1886. Rose and white.
Fleurette. *Pom.* 1856. Violet-purple.
Flora. *Pom.* Deep yellow.
Florence (J. Salter). *Pom.* 1861. Dark cherry red.
Flocon de Neige. *Pom* 1886. Blush white; early
Francois Ier. *Pom.* 1856. Orange and red.
Frederic Marronet. *Pom,* 1882. Orange and red.
Frederic Pele (Lebois). *Pom.* 1857. Bright crimson.
Freedom (Owen). *Single.* 1889. White.
Fremy (Nantais). *Pom.* Red; fimbriated.
Gaillardia (Delaux). *Pom.* Red-orange.
Gaiety. *Pom.* Bright red, with orange border.
Galatea (J. Salter). *Pom.* Clear lilac; late.
Gem of the Valley (Brown). *Anem. pom.* 1864. Pale pink.
General Canrobert. *Pom.* 1856. Pure yellow.
General Negrier (Pertuzes). *Pom.* 1885. Red and yellow; fimbriated.
Gentilesse. *Pom.* 1886. Sulphur, tipped rose.
Gerbe d'Or (Delaux). *Pom.* Rich yellow.
Gertrude Claridge (Ware). *Single.* 1885. Bright golden yellow.
Germaine Clermont (Delaux). *Pom.* Rose-purple.
Gloire de Montrouge. *Pom.* Orange and red.
Golden Circle (J. Salter). *Pom.* Golden orange.
Goldfinder (J. Salter). *Pom.* Dark golden yellow.
Goldsmith (Piercy). *Pom.* 1889. Bright yellow.
Golden Cedo Nulli. *Pom.* 1859. Yellow, tipped brown.
Golden Luxembourg. *Pom.* Yellow; sport from *Mrs. Wood.*
Golden Star (Owen). *Single.* 1889. Bright yellow.
Golden Trevenna (Dixon). *Pom.* 1875. Yellow. Sport from *Trevenna.*
Golden Mdlle. Marthe (Pope). (Syn. Miss Oubridge.) *Pom.* 1880. Bright yellow.
Golden St. Thais. *Pom.* Bright yellow. Sport from *St. Thais.*
Golden Shah (Ware). *Pom.* 1889. Golden yellow.
Golden Button. *Pom.* Golden yellow; early.
Golden Drop (J. Salter). *Anem. pom.* 1851. Golden yellow.
Golden Jardin des Plantes. *Pom.* Syn. *Golden Madame Domage* and *Claire Alazio.* Yellow; early.
Golden Aurore Boreale (Hayes). *Pom.* Yellow; sport of *Aurore Boreale*
Golden Fleece. *Pom.* Bright yellow; early.
Golden Madame Domage. *Pom.* Light straw.
Golden Perfection. *Pom.* Yellow.
Grace Darling (J. Salter). *Anem. pom.* 1866. Pale lilac.
Grand Sultan. *Pom.* Carmine.
Graziella. *Pom.* Blush lilac.
Guernsey Sunset (Ware). *Single.* 1889. Rich golden yellow.
Gus Harris (Cannell). *Single.* 1884. Rose-lilac, golden disc.
Guillaume Delaux (Delaux). *Pom.* 1884. Rose-amaranth, shaded white.
Helene. *Pom.* 1855. Rosy violet.
Helen Lindsey. (J. Salter). *Pom.* Cream white.
Heloise Meillez (Pele). *Pom.* White.
Hendersonii. *Pom.* Yellow.
Henri Defosses. *Pom.* 1856. Rich orange.
Henri Monnier (Lemoine). *Pom.* 1877. Rose-lilac.
Henry Day (Ware). *Single.* 1885. Rose-lake, shaded gold.
Henry Irving (Teesdale). *Single.* 1884. Silvery rose.
Hermine. *Pom.* 1885. Pearly white.
Hietta Himmea (Lebois). *Pom.* 1863. Snow-white.
Higham. *Pom.* 1884. Blush. Sport from *St. Mary.*
Hippolyte Jamain. *Pom.* 1883. Rose carmine, reverse yellow; early.
Ida. *Pom.* Yellow.
Il Brasiero. *Pom.* 1855. Brassy red.
Illustration (A. Pele). *Pom.* 1861. Rose-purple.
Imperatrice Eugenie. *Pom.* 1855. Lilac-peach.
Indian Prince (Smith). *Pom.* 1862. Red and gold.
Inest. *Pom.* 1852. Paper white.
Inimitable (A. Salter). *Pom.* 1882. Amber-yellow, early.
Indiana. *Pom.* Reddish orange.
Inimitable. (A. Salter). Amber; early.
Innocence (J. Salter). *Pom.* 1866. Pure white.

(*To be continued.*)

THREE USEFUL TOMATOS.

The large exhibition tomatos are commanding so much attention that we must keep a few choice kinds of smaller size in view of our readers for their special usefulness, for to lose them would be a misfortune, and it must be confessed events are tending that way.

Green Gage is here figured normal size and shape. We see samples labelled green gage very much larger than this, but in proportion to their size they lack the quality for which this is distinguished—a fine flavour for eating, and a flavour that correspondingly renders it less



GREENGAGE TOMATO.

suitable than others for culinary purposes. When true it is plum shaped, very neatly finished, the colour a beautiful transparent greenish yellow.

Queen of Tomatos is not to be mistaken for Golden Queen, which is a large round yellow fruit of a fine golden colour, well suited for exhibition. The true "Queen" is plum shaped, sometimes dumb-bell shaped, very neatly finished, the divisions of the calyx elegantly recurved, the colour of the fruit yellow or red. Excellent for table use and for salads.

King Humbert belongs to the group of which Chiswick Red is the type. The fruits of these are smallish and are produced in large clusters. King Humbert is the best of this series; an extraordinary cropper, in form plum shaped with distinct suture. It will be valued whenever a dry-fleshed tomato is required, and is particularly serviceable for salads, for which the juicy kinds are less suitable. The large clusters of bright red fruits are singularly handsome, and if cut when nearly ripe and suspended in clusters in a dry cool place keep a long time in good condition.

CARNATIONS IN BEDS AND BORDERS.

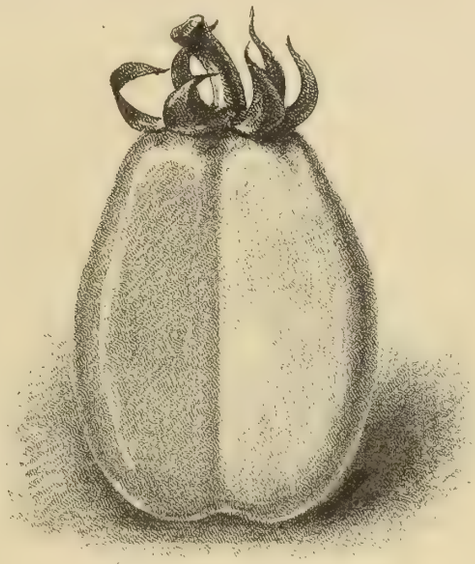
Interesting as is the production of exhibition blooms of carnations, it cannot compare with the cultivation of these flowers for home decoration, and it is satisfactory to know that they now occupy a more prominent position in the flower garden, than at any previous period in their history. The exhibitions, to which objections are sometimes made, have done much to promote an extension of their culture, and



QUEEN OF TOMATOS.

thereby more than justify their existence. Indeed, since the inauguration of the exhibitions of the southern section of the National Carnation Society, their cultivation has increased by leaps and bounds, with the result that at the present time, hundreds of plants are annually grown in gardens in which previously they had no place. They are of course more largely grown on the stage for the production of exhibition blooms, than was the case a few years ago, but I attach more importance to the marvellous extension of their culture in the border, as it shows that their beauty is now being appreciated by the owners of gardens generally. It is of course a point of considerable interest that their growth for exhibition should have extended, and if these flowers give rise to any feelings of regret, it is because of my not having sufficient time on my hands to enable me to take an active part in the competitive gatherings held in the course of the summer. Although I am not able to grow for exhibition I have a comparatively large collection, as I long since found that the finest of the flaked and bizarre varieties may be as successfully grown in the open borders as the commonest of the selfs. The flowers fully exposed lack, as a matter of course, the finish characteristic of those developed under glass, but they are surprisingly beautiful and their charming colours afford much pleasure both to my friends and myself.

Carnations, and picotees also, are not so particular as to the character of the soil in which they are grown as by some is supposed to be the case. In common with a host of other good things they make the most satisfactory growth and produce the finest flowers when they have the advantage of a deep friable loam, but judging from my experience and observation, there are but few soils in which they cannot be grown with full assurance of the most satisfactory results. The beds and borders in which they are to be grown must of necessity undergo some amount of preparation, and this has to be adapted to the character of the staple. In dealing with light soils well rotted manure from the farm yard should, as far as practicable, be employed. It would be still further improved by a dressing of loam, such as that in which the strawberries and chrysanthemums in pots have been grown. The advantage of adding fresh soil to the border is, however, not sufficient to justify the purchase of maiden loam unless it can be obtained very cheap. On the other hand, in the preparation of the beds where the soil is naturally close and tenacious in texture, manure that is partly decayed should be used, and be supplemented by coarse grit such as the sweepings of walks and drives and charred refuse such as the remnants of what is technically known as a "smother."



KING HUMBERT TOMATO.

The soil of my garden is a fairly good loam, and in the preparation of the beds that we devote wholly to the carnations, the first step is to dig them over to a depth of about twelve inches as soon as the layers have been taken off and potted up for the winter. In the process of digging, the soil is left rather rough on the surface to expose it as fully as possible to the action of the frost and rains during the winter. At the beginning of March the beds receive a rather liberal dressing of manure from the stable. This is at once forked in, and care taken to well mix it with the soil to a depth of ten or twelve inches. In the mixed borders special preparations cannot well be made for the carnations and picotees, and they have consequently to take their chance with the other occupants of the border. They do not here fare indifferently. I have long known that hardy herbaceous plants will not thrive in soil in a more or less exhausted state. Consequently the borders are enriched annually with manure or thoroughly-decayed vegetable refuse. The dressing is applied in the spring when the plants are pushing through the surface, and the vacant spaces are then forked over. No attempt is made to bury the whole of the manure, as that would necessitate digging too near many of the plants. There is no loss in leaving the manure or refuse thus exposed, as the rains will wash the goodness out of them and carry it down to the roots.

It has for many years past been my practice to bed out my carnations and picotees in the spring, as the plants invariably suffer so much during the winter that a considerable proportion of those not killed are so crippled that they fail to make a growth sufficiently strong to bloom satisfactorily. When the layers are taken from the old stools in the autumn they are put in large sixties and placed in a frame, in which they remain until bedded out. During the winter they are freely exposed to atmospheric influences, excepting during rainy and frosty weather, as a close atmosphere is highly injurious to them. We ventilate moderately in wet weather, but during frosts the lights are closed and the glass covered with mats if considered necessary. A few degrees of frost will not do them any harm when not saturated

with moisture. Neither will it do them any good, and it is in all cases advisable to avoid risk. In the course of my experience I have submitted autumn planting to a careful trial, but the results were anything but satisfactory. In some seasons those planted as they were taken from the stools were severely injured by the frosts, and in other winters they suffered from an excess of moisture in the soil, with the result that the growth was weak and the flowers indifferent in quality.

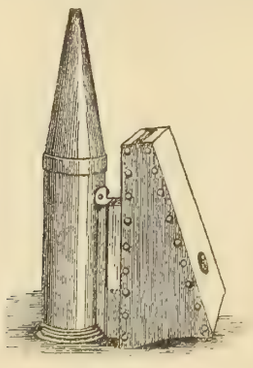
The first week of April is the best time for planting, advantage being taken of a dry state of the surface soil for performing the operation. Twelve inches apart each way is a good distance at which to put them, as strong plants when arranged at this distance apart will cover the whole of the surface without suffering from overcrowding. As they are put out the soil must be made moderately firm about them. When the soil is naturally light it is a good practice to tread the surface a month or so after planting. Liberal waterings during May and June will be beneficial should the weather be dry during these months. Early in the second of the two months a top dressing of some good artificial manure will be beneficial but liquid stimulants are not desirable.

W. B.

SPRING WORK IN THE APIARY.

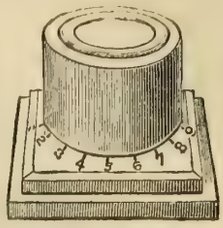
Spring examinations must be made the first fine day when bees are flying freely. Care should be taken to make a thorough examination of each hive and its contents, and record a note of it on a small piece of note-paper, which can be pinned to the back of the hive where it will be handy for future reference, and also for adding any other small notes it may be best to record. I prefer this plan to having a larger register with matter concerning all the colonies, because what may be wanted to be known concerning each colony may be seen as soon as the hive is arrived at. For single hives, perhaps, the best place to attach this paper would be under the hive cover, but in the house apiary it may be fastened to the back of the body of each hive. We have made our first examination and can report that all are in a prosperous condition. Never since we have been converts to the modern method of bee-keeping have we known bees come through the winter better. Every colony without a single exception is strong in bees, and all have brood and eggs in the hive in different stages of development, while the greater part are well off for store. The bees are now carrying in natural pollen from the catkins of the willows and also from crocuses and other early flowers, and bee-keepers in the southern and midland counties should now commence stimulative feeding. The syrup for feeding at this season of the year should be made thinner than for autumn feeding, or about one pound of good preserving sugar to one quart of water. This should be set over a steady fire, and kept constantly stirred until the sugar is all dissolved and the whole begins to simmer. A wine-glassful of vinegar should then be added and a pinch of salt, and stirred for about a couple of minutes, when it may be taken off to cool. We generally keep our syrup in a honey extractor, where it is quite safe against any prowling bees, and may be conveniently drawn off as required.

It is surprising what a little time need be taken up with the examination of the colonies when the bee-keeper knows what he wants to do, and goes in a methodical way about it. The first requirements are some rolls of old dry sacking and small sheets of brown paper, a small piece of each about four inches square, rolled up and tied not too tight, so that it will easily slip into the smoker. Several of these may be made and kept near the hives ready for use. We prefer the Bingham smoker, one of Mr. Abbot's pattern being here illustrated:—



One end of these rolls of paper and old sack-cloth is lighted and put into the smoker, which may then be stood down until wanted, and if properly lighted it will burn for a long time. All bee-keepers should wear veils, which can be made for 3d., with a strip of black netting sewn up at the edges, forming a bag open top and bottom. This should be slipped over the head and the hat put on, or if the bee-keeper is very nervous about being stung he may have a little piece of elastic run in one end and may pass the net over the rim of his hat, so that the elastic fits closely round the crown. This will keep the net a good distance from his face, and the other end may be tucked under his coat collar. But a practised hand will not be over-particular, as he will simply wish to prevent getting a sting near the eyes. Gloves should never be used, as they are clumsy and do not prevent the bees stinging, but they appear to me to annoy the bees, as they prevent the work being done so neatly and carefully as it ought to be.

As the object is to ascertain the exact condition of each colony of bees and to put on feeding stage and feed bottle, these should be ready to hand before the bee-keeper opens the hive, as also the small slips of paper for making entries of the exact state of each hive. The feeder here illustrated is very suitable for spring stimulation, and may be had of most dealers in bee appliances:—



An ordinary stage may be formed by cutting a hole in a small piece of half inch board sufficiently large to take the mouth of a honey jar or pickle bottle. On this place a piece of perforated zinc sufficiently large to cover the hole; then another piece of board over the top of the zinc cut the same as the under one would make a very good feeding stage for spring stimulation. But in this case cheese cloth or muslin must be used to cover the mouth of the bottle and tied round with a string before turning it down over the feeding stage. The rate at which the bees get the syrup may be regulated by putting extra folds of muslin or cheese cloth, and these must also be regulated according to the thickness of the syrup, or it will run through too fast, and, apart from running over, the bees will waste the syrup.

All being ready and smoker lighted, the examination need take no more than three minutes to a hive. First remove the top covers, then turn up one corner of the quilt and point the nozzle of the smoker to the top of the bars, and give a few puffs from it as the turning back of the quilt proceeds. Next remove the dummy, or if the hive is of large size and is only partly filled with combs, pass them back one by one until the bars in the centre are reached, where, if all is well brood will be in different stages of development. In ascertaining this much, you will also see the condition as to store. The frames should then be put back in their places, and all covered up again snug; but before finishing the little hole should be left for placing the feeding bottle over, and this should be put in place and well wrapped round ready for feeding or filling feeder later on in the day. When the hive is closed up the note may be made as to its condition, first the date (say) "March 22. Bees plenty; store good. Brood on three frames." Some may be short of store when note should be made of the same, and such colonies should have all they will take. But those in good condition should only have about half a pint or less twice a week, as the object is to stimulate them to activity, and as there will be no dearth of natural pollen after this time there will be no need to resort to pea meal as artificial pollen. Great care should be taken when feeding over the brood nest that everything fits down close, so that there is no escape of heat from the hive. The danger of this during the early spring months is the greatest objection to feeding above. Where no brood can be seen suspicion will be aroused as to whether the colony is queenless or not, and without wasting time hunting each frame over for her the little stimulation now recommended will soon settle the question, and such colonies should be examined again in the course of another week or ten days. Then if there is still no brood it should be joined to the nearest neighbour, by bringing each colony closer together each day or two until they are quite close, when both lots may be put into one hive and sprayed a little with scented syrup.

Apiarist.

DAFFODILS IN FLOWER.

The following varieties of narcissi are now in perfect condition in Mr. Hibberd's collection at Kew. A list has been given of those that were in flower February 8, the present list was made up March 27:

Pseudo-Narcissus or Trumpet Daffodil.—*King Umberto*, light yellow perianth, and rich yellow trumpet or crown; *Maximus*, rich yellow, a little twisted; *Minor*, full yellow (nearly over); *Variiformis*, primrose and sulphur yellow; *Scoticus*, whitish and full yellow; *Lent Lily* (typical N.P.N.), cream and yellow; *Mrs. H. J. Elwes*, soft yellow and rich yellow; *Dean Herbert* (bicolor), primrose and yellow; *Lobularis*, full yellow; *Lobularis amplicornis*, full yellow; *Hudibras*, yellow and deeper yellow; *Tortuosus*, white and sulphur; *Exquisite*, creamy white; *Rugilobus*, primrose and yellow; *Rebecca Syme*, white and citron; *Spurius Coronatus*, *Spurius Henry Irving*, *Spurius Yellow King*, *Spurius Golden Spur*, a fine series of the yellow class; *Thomas Moore*, light yellow and full yellow; *Tottenham Yellow*, yellow and deep yellow; *Shirley Hibberd*, light yellow and deep yellow, slightly twisted; *Obvallaris* (Tenby) shaded yellow; *Pseudo-narcissus plenus*, cream and yellow; *Morning Star*, pale yellow and deep yellow; *Cambricus*, creamy and yellow; *W. P. Milner*, sulphur yellow; *Telamonius plenus*, rich gold, very showy; *Horsfieldii* (bicolor) white and rich yellow.

Incomparabilis or Chalice-Flowered—*Queen Bess*, white; *Stella*, white; *Dwarf Golden Mary*, primrose and yellow; *Concolor*, yellow and orange; *Albus*, white; *Sir Watkin*, rich sulphur and orange yellow; *Sunlight*, yellow and orange; *Titan*, yellow and orange; *Sulphureus*, sulphur and clear yellow; *Astræa*, sulphur and yellow edged orange; *Pericles*, primrose and pale yellow; *Darling*, yellow and orange; *Magog*, sulphur yellow; *John Bull*, sulphur yellow.

Leedsi or Eucharis-Flowered—*Leedsi*, white and lemon yellow. Many of this group are nearly as forward as Leedsi, but need the aid of time and warmth.

Japanese Lilies are now dispatched from Yokohama in such large numbers annually as to form an export of considerable importance. According to a note in a recent issue of the *Revue Horticole* in the three months of July, August and September of last year, no less than 1,192 cases, containing 700,000 bulbs were exported from Yokohama to the United States and Europe. A large proportion of these bulbs were, no doubt, Lilium auratum, which the Japanese grow as a field crop.

STOVE AND GREENHOUSE PLANTS.

The houses are well furnished with forced lilacs, azaleas, a few roses, arum lilies, even poinsettias are not past, and trumpet daffodils are not too common. The pelargoniums of the Unique type are now valuable for colour; a few hydrangeas make welcome lumps of colour; a few old-fashioned hard-wooded plants appear in places where one would scarcely expect to find them, and are more than ever acceptable; while of prunus and pyrus there are many examples, the double-flowering plums, peaches, and cherries being invaluable, and even Pyrus malus floribunda being not too common for a place in the cool house to show a pyramid of the loveliest of apple blossom.

Thyrsacanthus strictus has made a fine display of its richly glowing flowers with a noble leafage to accompany them on plants that have been kept over for specimen growing and have given no trouble, as sometimes happens with plants of the acanthaceous order. Half a dozen justicias and thyrsacanthus may be allowed a place in a mixed stove with advantage, for where one succeeds all will. Ours have for companions Dendrobium nobile in quantity, with a few other winter and spring flowering subjects that love a warm moist air, and they constitute a quite happy family.

Tillandsia Lindeni is now in superb condition with us, the intense blue of its interesting flowers being so much valued that if we could show nothing else there would be no question raised about the relative richness of our furnishing. But we have some other good things, and we are not insensible to their merits.

Hymenocallis undulata is a superb plant of its class, delightful now with its fine head of flowers, pure white, with long narrow divisions supplying a really delicate study of form that artistic eyes readily take note of. As a matter of course it has the treatment prescribed for Pancratiums, which are often kept too dry in the winter, but generally speaking are well cultivated, and require only ordinary stove treatment, and to have a shift every year. The plant before us has a grand leafage, and is a quite conspicuous object when in flower.

Hæmanthus multiflorus makes a fine show with its great heads of scarlet flowers, one of the finest of its fine class, the filaments forming a thready or rather a silky tassel of resplendent appearance. The species of hæmanthus not now in flower pay for the space they fill with their massive leafage, *H. coccineus* in particular being a striking plant as an example of its family. *H. albiflos* has flowered well and is now growing freely. We value this for its distinctness, as we do the pink *H. carinatus* and *H. pumilis*. For a small stove collection the best are coccineus and albiflos, and these, therefore, should be the first secured.

Eranthemum cinnabarinum and *E. pulchellum* are so brilliantly beautiful that we must count it as a misfortune when we find a suitable stove with no such occupants. The first is a rather tall plant with red flowers that have a crimson blotch on the bottom lobe; the second has flowers of intense pure blue, most freely produced on a plant of quite moderate growth. There are others not less beautiful perhaps, but of less importance when a moderate collection is the subject of consideration. The moist stove is the place for such plants; they grow quickly and feed grossly, and starvation, strong light, and burning drought will soon render them more plague than profit. But when their natural habits are encouraged there are no plants more easy to manage, or that pay better for good treatment.

Eupatorium ianthinum is becoming an old plant, and yet it appears to have found its way into very few private collections. Where cinerarias and other plants of soft texture are valued, this is as worthy of a place as any of them, its mauvy heads of inflorescence having a delightful appearance. The common white eupatorium or "ageratum" as it is usually labelled is certainly an inferior though more popular plant than this, against which it is scarcely possible to level an accusation of troublesomeness, although, like all such subjects, red spider has a fancy for it when kept too dry, too close, and too hot.

Chorozema cordata represents an interesting group of so-called "New Holland plants" that have gone out of fashion but have not lost their beauty, and are even more serviceable where they are encouraged than would appear, judging by the neglect into which they have fallen. *C. varium Chandleri* and *C. varium nanum* may go with it to make a group of three good subjects to give tone to a collection of spring-flowering greenhouse plants. These require good cultivation in a fibrous peat soil of the best quality, or, lacking that in turfy mellow loam and leaf-soil. They require liberal supplies of water and to be kept in a moderate temperature and well aired. Scale and spider are often troublesome, but happily mildew is never, or very rarely seen on these plants.

Cytisus stenopetalus is a good greenhouse plant not much known. It is distinct from the general run of this group in its glaucous leafage, and flowers of the same colour and not unlike in general appearance those of the pretty Lupinus luteus, which is a gem in its way for cheerfulness and perfume. *C. racemosus superbus* is another of the good brooms for choice purposes, a decided improvement on the older form of C. racemosus. *C. filipes* counts as number three in the list of the "best" of these plants; it forms a most elegant pendulous standard when grafted on the common laburnum. The flowers are silvery white, a well grown specimen being as distinct as it is cheerful.

Salvia Boliviensis makes a splendid show now with fresh, full green foliage, crowned by copious heads of crimson-scarlet flowers that are at once showy and substantial, compelling one to recognize the plant as one of special merit. We find it an easy matter to bring these forward in an intermediate temperature, and after flowering we destroy the plants, having a new crop every year from cuttings. The stock should be planted out in June and taken up in September and kept cool, but just moving all winter until the flowers are wanted, when removal to a warm pit will complete the routine. They should never suffer for water, or the lower leaves will go and red spider will make its mark on the whole plant; but that enemy kept at a distance there is nothing easier than to have a succession of salvias in flower from October to April, after which time they are not wanted until October comes round again.

Asparagus decumbens is a delicate curiosity for a basket or vase in the greenhouse. It will make a beard, a cataract, a fringe—call it what you will—of brilliant green vegetation of two or more feet in length depending from the receptacle in which it is grown, giving a welcome change from the usual upright attitude of greenhouse plants. The little grey mossy tillandsia goes well as a companion for it, for that also forms a beard, and is as ancient and serious looking as the asparagus is young and cheerful.

Buphane toxicaria is a fine amaryllid, with a handsome head of flowers of a lively crimson colour, the thread-like perianth and the filaments of which combine to form a delicate tassel of silky fringe of great beauty. The Buphanes were formerly classed as Brunsvigias, and occupied an important place in Dean Herbert's valuable book on the Amaryllids. It is the "poison bulb" of the Hottentots, who obtain from it poison for their arrows, a circumstance that illustrates a great difference between the lilies and the amaryllids. The first are mostly innocuous and edible. The second in some degree noxious and inedible. No animal will touch a narcissus, and therefore they are safe in grass lands until the scythe attacks them.

PICTURES OF FLOWERS BY LADY ARTISTS.

The thirty-fifth exhibition of the Society of Lady Artists is now open to the public in the Egyptian Hall, Piccadilly, and contains many pictures in oil and water colours. The contributions number in all 577, of which a large proportion are interesting by reason of good work or attractive subjects, while a certain few are of such high merit as to bring the exhibition within the magic circle of first class artistic entertainments. Having on former occasions reported on the studies of flowers that are conspicuous features of an exhibition of this kind, we propose to take a similar course on the present occasion, and the pressure on our space being severe, we must be brief in our observations.

We begin with No. 19, a bunch of wallflowers, by H. Miller, well drawn but lumpy and wanting a little fire; in "Fresh Gathered Flowers" (28), by Emma Walter, the Dendrobium nobile and Eucharis amazonica are admirably drawn, and the group is well arranged for effect, the result being a pleasing picture. If the stephanotis were a trifle more pronounced in purity we should like it better. "Japanese Anemones" (58), by H. Cresswell, illustrates the special value for artistic purposes of our white variety of Anemone Japonica. It is here shown in full stature upon a grey ground with judicious reserve in respect of colouring. "Silver and Gold" is the appropriate title of a showy picture, No. 72, a chased parcel-gilt vase with a bunch of dried lunaria seeds, a dish of Flemish Beauty pears, and various accompaniments of drapery forming a rich and harmonious group. The "Daisies and Sorrel" (96) of R. Chandler is a pretty study of our native Chrysanthemum leucanthemum with ruddy stems of rumex, and it would be better were the daisies a trifle whiter, but of the two evils that commonly accompany flower painting to colour under the mark is of less moment than to colour over it. In the tuberous begonias of Sarah Manly (111) we have a clever arrangement in what we regard as the proper maximum of colour that is agreeable to the truth of nature and the conditions of a confined field within the frame of a picture, for to reproduce the intense reality of such flowers would be unwise even were it possible. The flowers are well selected, and the grouping in a glass vase on a dark bronzy background is in the best taste. Emma Walker gives us Nicotiana affinis (115) in true character and excellent drawing, but a little weak, which, indeed, is agreeable with the subject. "The Verger's Garden" (113), by Agnes Hussey, shows a group of gay flowers in foreground, in the background a church. It is characterized by earnestness, but the flowers are spotty, and the church has too much of a blue tone, and the end of it is that perfect success is not attained. Wallflowers, by Alice M. Nicholson (138), show blood walls in a Flanders mug: such a bunch, if natural, would show many delightful shades of colour that are not here attempted, and there is a want of light upon them which would give to them a life they have not. "Orange and Blue" is the title of No. 144, by May Varley; it is gaudy and crude, the bursting orange being an unpleasant object. The Jonquils of Bertha Jefferys (164) are in a brown jug, the ground dark grey; the flowers show their characters well and in a correct key of colour. Gladioli and Anemones (172) by Mrs. Gorst, though skied, is visible by reason of its size. A pleasing group in brown jar, but the characters a trifle indefinite. "Olives and Palms, Bordighera" (204), a garden scene, the trees delightfully mixed up, and all of mature growth with picturesque expressions. There is much good work in this drawing. No. 210, by Emma Walker, is entitled "Weigela and Chaffinch's Nest." The flowers are as "hard as nails," and suggest that they were studied from porcelain models. "A Winter Bouquet" (222), by A. Wentworth Sheilds, has some happy touches, and the winter cherry is brought in with agreeable freshness. Japanese Anemones (236), by Lily Blatherwick, is artistic in purpose, and the general tone satisfactory. A trifle more expression, obtainable by infinitesimal touches would improve it. "A Dish of Herbs" (249), by Celia Davis, is an ambitious work in oil, it consists of a furniture group, comprising an ancient water-pot painted green, a copper pan, a table, a dark jar, a few onions, leaves of rhubarb, and dark drapery. As a study of colour quite charming, and not without interest as a composition. "The flowers are sweet, the colours fresh and true" is the title of an attractive drawing by Miss Ada Bell. The colouring is delightful, but there is a lack of architecture in the flowers, suggesting that this skilful artist will, in this case, rely on her taste, which is true, rather than on her knowledge, which is certainly sufficient to enable her to give us enough of the structure of flowers for their identification. "Spring Flowers," by Madame E. Cathelin (288), is a fine representation, in oils, of a group of Poet's narciss, yellow walls, and yellow marguerites, in a squat red jar. On a near view the loading of the colour on the flowers in the centre is too apparent: at a reasonable distance the harmonies are perfect. The good judgment of the painter is seen in the way the blue hyacinth is introduced. If pushed forward to the centre it would be a disturbing element; but its subordinate position compels it to give repose. A "Study of Irises," by M. C. Lowe, excellent. The Poppies, of Mabel G. Marston (317), are in a brown jar, the flowers represent the Oriental Poppy in its fullest tone of colour. This is a noble piece of work, and we feel half ashamed to say that we should like to see just a little more fire in it. If it errs (perhaps it does not) it is at least on the side of self-restraint, and that is, so far, creditable. Compare it with 369, by E. H. Stannard, and you will observe that we have here poppies with enough fire in them, but they have no such fine architecture as No. 317, while the surroundings weaken them and the white lilac is obtrusive. In 322, by Mr. Milward, we see admirably depicted the effect of a field of flowering brassicas; a sheet of yellow, and beyond a most sweet bit of landscape. The subject is not one of the best for a small picture, but being taken, the result is quite satisfactory. "A Waterway in the Broads," by Mrs. de Guerin takes us to Norfolk in the pleasant autumn when the waterways are rich with purple loosestrife, ruddy docks, and a tangle of many-coloured herbage. The expression of such garniture is admirably caught, and we return thanks for the imaginary trip it has enabled us to make to a pleasant land where cares may be for a time forgotten. The next is an extra good thing; it is entitled, "Wild Hyacinths," by Catherine M. Wood. A great mass of Scilla nutans crammed in a scullery pan results in quite a superb bit of work. The manner in which the light is managed puts the critic out of court. But he will take occasion to remark that fine feathers are not wanted to make fine birds, for any bird will do for a picture for such as can paint, and any bird will do for the table for such as can cook. This pretty thing filled us with longing, and we turned to No. 336 to find another gem from the same hand; a tuft of acacias, which are not so easy to draw as pumpkins, but are here handled with most delicate decision.

A FIELD OF ROSES.

The Salon picture, by Mr. A. Graves, of a field of roses at Périgny, might have been painted at Mitcham, in each case the same kinds of roses being grown and the manipulation not greatly differing. The chief object of the cultivation is the manufacture of rose water, for which purpose the flowers must be secured just before they acquire full expansion, as at that moment the perfume is at its highest. In many of our great rose nurseries the flowers are regularly gathered throughout the season, and are immediately stored in casks with salt and sent to



A FIELD OF ROSES AT PÉRIGNY, by A. Graves (Salon, 1889).

the operators. The varieties in favour for the chemist and perfumer are the Provins, Damask, and French, and some sorts are preferred for certain soils and certain purposes over others, for conserve of roses is manufactured as well as the fragrant water. Six pounds of roses are required to make one gallon of rose water. A thousand flowers yield 50 lbs. of fresh petals, and these, when dry, weigh only 10 lbs. so that in the manufacture of conserve an immense bulk of roses is required.

Those who know the commercial rose gardens would not be in haste to send a painter to them, for the monotony is oppressive and roses, as such, appear to lose all interest in the farmer's hands. But M. A. Graves has made a beautiful picture, as one may say, out of nothing. Mr. Alma Tadema's shower of roses in his famous picture of Heliogabalus is in the nature of a warning; and here we see more roses than are needed for pictorial effect, and yet the work is completely successful and engages one's interest in all its simple details.

WATER BUCK BEAN.

Menyanthes Trifoliata.

A group of Menyanthes in full flower observed from the bank of a pool, or pond, whereon it grows, is perhaps as beautiful and pleasing as any orchid, or exotic plant, belonging to more favoured climes. Yet, how very rarely it is seen upon lawn, or other garden ponds, or fountain basins. Much has been written regarding the adaptability and hardihood of the water hawthorn, *Aponogeton distachyon*. Why, therefore, is our own probably more beautiful British aquatic, so entirely neglected? The accepted English name is Buck Bean, owing to the resemblance the leaves bear to broad beans; it was also known formerly as Marsh Clover, and Marsh Trefoil. The Latin name Menyanthes, refers to the duration of its flowers, which generally last one month. Like the Aponogeton above referred to, the surfaces of the five-cleft corolla are prettily set off in fringe, or feathered fashion. Unlike this aquatic compeer, however, the blooms are "slightly dashed with a wash of light carnation" (I am quoting Gerarde's description, which is excellent), and which doubtless makes the flowers so extremely pleasing. Though little known and seldom seen, if indeed at all by dwellers in purely suburban districts, it nevertheless adorns ponds and brooks in many places about the country. It seeds freely, each individual bloom producing its pod of seeds, and plants are easily transplanted from one piece of water to another. As with aquatics generally, the spikes of flower are well adapted for indoor decoration, lasting a long time in beauty. Botanical dictionaries describe an American variety and accord it the distinct specific name of the country, though the accompanying descriptions are certainly incorrect. William Earley.

The Flowering of the sweet-scented vernal grass is regarded by Mr. Martin J. Sutton as a suitable index to the relative earliness of the spring. In his experimental grass garden *Anthoxanthum odoratum* has been properly isolated *in situ* for many years, and the following have been the dates on which the panicles of this, the earliest English grass of any agricultural value, have shown themselves—1886, April 24; 1887, April 28; 1888, May 3; 1889, April 23; 1890, March 28. At the present time, he says, most pastures are forwarder than they often are at the end of April. A second winter would be a dire calamity; should we escape that we may look for a great hay crop.

TEA SCENTED ROSES IN THE GARDEN.

During the past few days I have been busily engaged in preparing some beds that are in the course of the next few weeks to be planted with tea and noisette roses, and in no season has work of a similar description been done under more favourable conditions. The fact of my having been thus employed is not in itself a matter of general interest. A mention of it nevertheless serves a useful purpose. It gives me an opportunity of saying that in no season of the year can the planting of these two beautiful classes be so successfully carried out as in the spring, and that the ground should be prepared well in advance of the roses being bedded out. I have in the course of my lengthy experience formed new beds of teas in the autumn and winter, and although I have not experienced any great losses the results have not been such as to justify my recommending the planting of teas in either of these two seasons. It is very much better to purchase the plants in the autumn when the stocks in the nurseries are such as to afford some latitude in making the selection—have them sent home and keep them over the winter. This has long been my practice, and is, perhaps, the best the private grower could adopt. Those from the open quarters are laid in by their heels in a sheltered position and protected by a layer of brake or straw, and those in pots are placed in an unheated frame and fully exposed to atmospheric influences excepting in frosty weather.

It is interesting to note in visiting the gardens of friends that the cultivation of teas has been greatly extended during the past few years, as the result chiefly of the teaching of the Gardeners' Magazine. It is reasonable to infer that these varieties will be even more largely grown as their peculiarities become better known, as there can be no difference of opinion as to the beauty of their flowers or the desirability of having an abundance of them. The soil of the garden is naturally warm and well drained, and, therefore, in preparing the beds and borders for the comparatively tender roses, it is not necessary to do more than apply a liberal dressing of farmyard or stable manure, and then dig to a depth of about twelve inches. On heavy soils, such as those resting upon the clay, something beyond the simple course of procedure found sufficient in our case is necessary. One of my friends who has to deal with a cold, tenacious clay, is especially partial to the teas, and for several years attempted to grow them, but the results were so discouraging that he had made up his mind to abandon their culture in the open.

Visiting him during the shooting season, I suggested that he should form three or four large beds in a sheltered position, and raise the surface twelve inches above the general level. This he decided to do; and in accordance with my advice, he excavated the soil to a depth of two feet, and put the top spit on one side, and the bottom spit, consisting of a tough clay, was wheeled away. This done, a drain, formed with three-inch pipes, was laid along the centre and connected with a main drain near at hand. A twelve-inch layer of drainage material, consisting chiefly of brick rubble, was put in the bottom of the excavations and covered with thin turf. To the reserved top spit sufficient manure, vegetable refuse, and fresh soil was added to form a bed two feet in thickness, and the mixture was then put on the top of the drainage and the sides made firm, nicely sloped, and then turfed over. It is easier perhaps to form a bed in this way than to describe how it should be done. It certainly does not involve a heavy outlay in either time or money. The point, however, to be considered is not so much the trouble of forming the beds in this way as the results obtained. These have been so far satisfactory, that the plants make a robust growth, and annually produce an abundance of flowers of superb quality. Previously the trees suffered severely during the winter in consequence of the soft, unripened state of the wood, but now the growth becomes so well hardened by the end of the autumn that the trees suffer but little during the winter.

The majority of my tea roses are on the seedling brier, which, in my garden, as elsewhere, has proved the best of all the stocks for the dwarfs. Standards must of necessity be on the hedgerow brier, and for teas of strong growth that are required for tall pillars or high walls the De la Grifferaie is the best stock. The planting of dwarfs and standards from the open ground should be done in March, but dwarfs in pots should be bedded out in April, care being taken to have them well hardened. Those propagated in the course of the winter and spring should be kept under glass until the end of May, be then gradually hardened off and bedded out. Two feet is a good distance at which to put the teas each way, and the intervening spaces may the first season be filled with dwarf stocks, asters, or other annuals of low growth. Care must of course be taken to prevent the annuals so crowding the roses as to interfere with the growth, more especially in the case of those propagated in the spring previous.

The selection of varieties must have due consideration, and I would mention the following as having proved the most satisfactory with me, namely: Amazone, a fine variety, with long bud and valuable from which to cut; Belle de Bordeaux, Catherine Mermet, Chateau des Bergeries, in the way of Isabella Sprunt, but more double; Comtesse de Nadaillac; Dr. Grill, a beautiful variety raised by Bonnaire, of which as yet but little has been heard; Etoile de Lyon, Francisca Kruger, Homere, Hon. Edith Giffard, Jean Ducher, Lady Castlereagh, Luciole, Ma Capucin, Madame Berard, Madame Camille, Madame Cusin, Madame Chedane Guinoisseau, Madame Hoste, Madame Lambard, Madame de Watteville, Marie Guillot, Mons. Furtado, Perle des Jardins, Safrano, Souvenir de Paul Neyron, Souvenir de Therese Levet, Sunset, The Bride. I have not given the colours of the varieties, as I am anxious not to impose too heavy a tax on your space at this busy season. Amateur Rosarian.

FIMBRIATED CIRRHOPETALUM.

Cirrhopetalum (Bulbophyllum) fimbriatum.

In what may be spoken of as the orchid revival of the past few years the interesting group of cirrhopetalums has obtained some attention, and we call to mind with pleasure examples shown by Mr. G. F. Wilson at meetings of R.H.S., which were regarded with much interest. In addition to beauty of a somewhat singular kind these orchids attract attention by their apparently reversed arrangement of floral organs. We say "apparently reversed" advisedly, because in such cases there is simply no reversion, nor is there any abnormal feature whatever to excite curiosity. The relative position of the labellum to the entire flower is one of attitude only and a twist of the pedicel, or of the peduncle may explain the whole matter.

This matter of the reversed position disposed of, it still remains that these are curious orchids and not only attract attention but in some sense compel observation for the apparently abnormal is stamped upon all their features. Each umbel of flowers being inverted, and each separate flower being accommodated to the arrangement, we have in the example before us—and in others less distinctly—an arrangement which seems to include one prolonged sepal or petal and a quite peculiar labellum, which, on a first view has a pouch-like form, but is soon found to be not really so for the supposed pouch is a saddle-shaped lobe associated with a two-horned column.

The prolonged strap-like process that forms the principal part of the flower will be found to consist of the two lateral sepals united by their inner edges. The remaining sepal and two petals are minute ovate bodies tapering into bristle-like points, causing the "fimbriated" feature from which the present plant derives its specific name. The several curious characters combine to produce a plant of great beauty, the singularity of which is not confined to the flowers only, for the neat ovate pseudo-bulbs are so nearly leafless that they appear to be always dormant, whereas in truth they are nearly always in activity, the green cuticle being an efficient leaf surface.



FIMBRIATED CIRRHOPETALUM, *Cirrhopetalum fimbriatum* (Flowers pale green or greenish yellow.)

Cirrhopetalum fimbriatum, native of Bombay, has flowers of a pale green or greenish yellow, the tongue-like lip and the petals are red. This may be grown as an aerial orchid as near the roof as possible, as a full light is essential to its well doing. It flowers in April and May.

C. Camingii, native of the Philippine islands is at once curious and beautiful. The pseudo-bulbs are small and each is surmounted by an oblong coriaceous leaf. The flowers are in a semi-circle, the lateral sepals, of a warm purple colour, are united by their edges but are free at the points. The lip is tongue-shaped, the petals and the superior sepal are fringed with glandular hairs.

C. Medusæ, native of Singapore, is a rare curiosity, at present "quite out of fashion" by reason of the absorption of admiration by cattleyas and cypripediums, but as deserving of attention as any orchid grown. In this the lateral sepals are prolonged into hair-like pendent threads four to five inches long of a pale yellow colour spotted with pink. It is appropriately named the Medusa's Head orchid.

C. Macraei, native of Ceylon, is as curious as any but less distinctive in appearance. The flowers are in a loose umbel or more properly an irregular raceme; the lateral sepals are only in part united, they are yellow with a stain of red. The superior sepal is more prominently produced than is usual with these plants. I have not grown this species but have seen it thriving at Kew on lumps of turf suspended in full light.

C. nutans is a pretty thing, native of Manilla. It comes near to C. fimbriatum but is less attractive. One of its distinguishing characters is the loose articulation of the labellum which moves with contact of the breath and is in fact but rarely motionless.

C. cornutum, native of Eastern Bengal, is a beautiful species with well defined characters, the colour of the flowers, purplish red and green.

C. Thouarsii, native of Java, Madagascar, and Manilla, is a beauty with flowers arranged like a fan, each with distinct pedicel; the lateral sepals twisted, the colour tawny red, the superior petal concave with a bristle point, beautifully spotted. It flowers at all seasons, but is a troublesome plant to manage.

EASTER PALM.

The first taste of country air after the winter is past, for a majority of the inhabitants of great towns, is that obtained on Good Friday. In a late season, when Easter is early, the first taste is scarcely enjoyable, for usually a killing east wind prevails, and the country, especially near the town, is scarcely more inviting than in January. But in an early season, and the holidays falling somewhat late, the case is different, for green leaves appear in plenty, there are flowers in the gardens, the hedgerows sparkle with golden green, and the great joy of the excursionist, and especially of the liberated Londoner, is to find a palm tree, with abundance of palm on it, which is always regarded as "fair game" to be torn or cut as most convenient, and as much of it carried away as possible to adorn the sideboard at home as a trophy of a day spent in "palming." One can almost forgive the brutish manner in which willows, thorns, and other trees are ravaged by a certain class of holiday makers of the lower order, from consideration of the rarity the "thing of beauty" is in their eyes, and their evident appreciation, although so strangely manifested. When they tear a tree to pieces to secure a booty of "palm" or "May," they have no idea of the years of growth required to bring the tree to maturity, and as to the wrong they do to its lawful owner, a low selfishness excludes all thought of him, and, moreover, has he not had enough of it, and has he not other trees on which to feast his eyes when the holiday is over, and these spoilers of his joys are again immured in their factories?

Apart from all the unpleasant circumstances that the streaming forth of a town population calls to mind, there is much to cause gratification in their haste to see once more the country that "God made," to be relieved thereby of contact with the town that "man made," and has generally thought too much of the virtues of stones and bricks, and too little of the greenery that might by possibility be secured amidst its crowded streets, to keep alive some remembrance of the face of nature.

Palm Sunday precedes the week of the Passion. As a day of observance by the Church it is commemorative of the entry of Christ into Jerusalem, when "much people that were come to the feast, when they heard that Jesus was coming to Jerusalem, took branches of palm trees and went forth to meet Him, and cried, "Hosanna: Blessed is the King of Israel that cometh in the name of the Lord" (St. John xii. 13). In what may be termed, without irreverence, the palmy days of the Romish Church, when all Christendom was influenced by its teachings and ceremonies, it was the custom to carry in procession the host borne aloft by a priest seated on the back of an ass, and palm branches were carried, and a few were strewn in imitation of the event recorded by St. John. The Church to this day makes free use of palm branches in ceremonies pertaining to the solemnities of "Passion Sunday," and the European palm, Chamerops humilis, is in special favour for the purpose. From very early times the people of this country and of Northern Europe generally have found a substitute for the palm they could not obtain in the willows that are so plentiful in northern lands, and thus our "palm" consists of the catkins of certain species of salix.

For the student of trees, therefore, Palm Sunday has some special interest, and one point suggested by the homely custom is that the species and varieties of native willows are so numerous that even a forester may be pardoned for not understanding them, and, as a rule, no botanist is so rash as to profess to know much about them unless he has given special attention to the subject. At this time, with a few striking examples of palm trees to interest us in a country walk, it may be proper to ask what they are? The willows that supply 'palm" are principally *Salix cinerea*, the grey sallow; and *Salix caprea*, the goat willow or great round-leaved sallow. The reason of their conspicuousness and suitability is to be found in the showy character of their catkins, and their appearance at this season, for the willows in general flower later. The first of these trees has elliptical or ovate leaves, which do not appear until after the catkins are matured. These are ovate in form, of a dull grey colour, silky, and occur at regular intervals on the shoots that bear them. The goat willow has large, broad, deep green leaves, and catkins that appear in advance of the leaves; they are of ovate form, silky, yellow, and conspicuous.

The grey sallow is one of the commonest, and certainly not one of the handsomest of trees. It haunts river-sides and wet hedge-rows, and when allowed to form a tree, does not rise above twenty to five-and-twenty feet; but usually it is pollarded to supply an inferior material for coarse wicker-work. On the other hand, the goat willow is equally handsome and useful. When in flower, as it is now, its appearance is cheerful and rich in promise, for in a full flood of sunshine it is a golden tree, and though so far removed from a true palm, is still suggestive of triumph. The much valued Kilmarnock willow, one of our best of weeping lawn trees, is a variety of the goat willow.

The adoption of the willow to represent the palm is by no means so extravagant as it may to many appear. In the feast of Tabernacles all kinds of plants or bushes were employed in the construction of the green grottoes, those of the myrtle, honeysuckle, olive, and palm being more especially in favour; and if the oleander were at command, that too would be appropriated as the willow of the brook. That the palm should be conspicuous was a matter of necessity, because of its abundance in early times. In the early occupation of Palestine by the children of Israel, the date palm, *Phœnix dactylifera*, was abundant. It was this tree that made the city of Jericho famous; but the date palm has been well nigh extinguished in the Holy Land, and throughout the Levant it is a scarce tree as compared with its plentifulness in ancient times. In the days when pilgrims visited the holy shrines, it was the custom to bring home palm branches as memorials, and it is from this the term "Palmer" originated. The cockle-shell is equally important as a symbol of pilgrimage, but generally is intended to record the visit of the pilgrim to the shrines of certain saints.

There are many reasons why we should deal tenderly with customs that have the sanction of long ages. They preserve to us a sort of breathing from the world of ideality that is beneficial to our daily life. Time alone, without adventitious aids, converts many facts into mere ideas, transmutes prose into poetry, greatly to our advantage. When Wordsworth saw the procession in the Vale of Chaumony, it was but according to his nature that it should carry him back to the early days when the foundations of the Christian faith were being laid in Judea, and a people who cherished exclusiveness, beyond all others, were, in spite of themselves, developing a system of the broadest universality.

> The Hebrews thus carrying in joyful state
> Thick boughs of palm and willows from the brook,
> Marched round the altar—to commemorate
> How, when their course they through the desert took,
> Guided by signs which ne'er the sky forsook,
> They lodged in leafy tents and cabins low,
> Green boughs were borne, while for the blast that shook
> Down to the earth the walls of Jericho,
> These shout hosannas—these the startling trumpets blow!

The willow is a "sad" tree, and was celebrated by the poets as such long ere the introduction of the weeping willow from China. Shakespeare puts a willow in the hand of "Widow Dido," and to wear the willow is to signify that one has had a misfortune in the court of love. Thus Herrick sings:

> Thou art to all lost love the best,
> The only true plant found,
> Wherewith young men and maids, distrest,
> And left of love, are crown'd.
>
> When once the lover's rose is dead,
> Or laid aside forlorn,
> Then willow-garlands round the head
> Bedew'd with tears are worn.

It is quite within reason to assume that its association with the ceremonies of the Passover and the events preceding the death of our Lord is sufficient to account for the sentiment it has been regarded as representing.

While willows are before us, we call to mind that the handsomest of our willows, as *Salix Russelliana* and *S. alba* for example, give to many parts of our country a most distinctive scenic character. The willows of the Bedford Level, of the winding Warwickshire Avon, of the Essex marshes, are so truly characteristic of their several regions that we should scarcely care to see them removed, even were they to be replaced by trees of more noble aspect. There is, moreover, much beauty in the more stately of the willows fully justifying Montgomery's eulogy:—

> Odours abroad the winds of morning breathe,
> And, fresh with dew, the herbage sprang beneath;
> Down from the hills that gently sloped away
> To the broad river shining into day,
> They pass'd; along the brink the path they kept,
> Where high aloof o'erarching Willows wept,
> Whose silvery foliage glisten'd in the beam,
> And floating shadows fringed the chequer'd stream.

It is well known that Dr. Johnson cared nothing for the beauties of the country, or at all events professed to be indifferent to its beauties. Yet there was a tender place even in his rugged nature, and Johnson's willow has obtained a fame only a trifle less in degree than the mulberry of Shakespeare. This tree was a Bedford willow (*S. Russelliana*), and the following account of it appears in Deakin's "Florigraphia Britannica":—

"A 'tree stood near the public footpath in the fields between the city of Lichfield and Stowe Hill, the residence of the celebrated "Molly Ashton."' This was the famous willow of the celebrated Dr. Johnson, which he, or his father, planted. Such was the delight that he took in this tree that he said it was the joy of his early and waning life, and on his visiting Lichfield he never failed to visit it. Dr. Trevor Jones, a physician at Lichfield, at the request of Dr. Johnson, gave him the following particulars of the tree, as recorded in the 'Philosophical Transactions': The trunk rose to the height of twelve feet eight five-tenths inches, and then divided into fifteen large ascending branches, which, in very numerous and crowded sub divisions, spread at the top in a circular form, not unlike the appearance of a shady oak, inclining a little towards the east. The circumference of the trunk at the bottom was fifteen feet nine five-tenths inches; in the middle, eleven feet ten inches; and at the top immediately below the branches, thirteen feet. The entire height of the tree was forty-nine feet; and the circumference of the branches at their extremities upwards of two hundred feet, overshadowing a plane not far short of four thousand feet. The surface of the trunk was very uneven, and the bark much furrowed. The tree had then (November 29, 1781) a vigorous and thriving appearance. The most moderate computation of its age was at that time near fourscore years; and some respectable authorities were strongly inclined to think that a century had passed over its head.' In April, 1810, Dr. Withering found the trunk to girt twenty-one feet at six feet from the ground, and to extend twenty feet in height before dividing into enormous ramifications; it was then perfectly sound and in unimpaired vigour. It was at various periods injured by being blown away with violent storms, and at last in April, 1829, it was blown to the ground by the violence of a storm. The wood was converted into snuff boxes and other articles by the admirers of Johnson, and kept as a remembrance of him, and as a record of so famous a tree. In the same situation another young plant is said to be flourishing from a branch of the old tree, which had accidentally been used as a pea rod by Mr. Holmes, the proprietor of the ground, and was found to be growing at the time the parent tree was blown down, so that the history of the parent may be remembered by the flourishing of its offspring. Another instance of the great size to which this willow grows is given by Hooker in the case of one growing at Gordon Castle, Scotland, and which at the age of 61 was fifty-seven feet high, and above eleven feet in its greatest circumference."

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Greenhouse Plants now flowering include Acacia ovata, A. retinodes, Aphelexis rupestris grandiflora, Azalea indica, Blandfordia Cunninghami, Chorozema cordata, C. splendens; Clivia cruenta, C. miniatum superbum, Dielytra spectabilis, Dracophyllum gracile, Eriostemon buxifolium, Pimelia Hendersoni, Polygala Dalmaisiana, Rhododendron arboreum, R. Duchess of Edinburgh, and Statice profusa.

THE HOUSE.

An aquarium, when properly managed, will not fail to afford an immense amount of pleasure. or an ample return for the time and attention bestowed upon it. In the stocking and management of an aquarium the very general error of attempting too much must be carefully guarded against, for to the practice of placing a larger number of fishes in the tanks than the body of water they contain is capable of supporting may be attributed a greater proportion of the failures that occur. Undue haste in stocking the tanks, and placing them where the occupants are exposed to too strong a light have also something to answer for. The dimensions and the forms of the tanks must be left to individual taste, but they ought not to be of very small size, and they should certainly possess a fair degree of strength. The rockwork ought to be somewhat limited in quantity and light in construction, so that it will not occupy over much space, or add materially to the weight. It should be built on a level surface, a wooden slab being preferable, and when properly set be immersed in water for a month, as new cement is most injurious to the fishes. The colour of the rockwork is not of so much consequence, as it soon acquires a colouring of its own; but a greyish brown is the most pleasing to begin with. In stocking a tank it is not necessary to introduce vegetation, and at the most a few plants of Vallisneria spiralis are alone admissible, and these should be put in when the bed of clean pebbles is formed. The tank ought to be fitted up and be in working order for four or five weeks before the fishes are added, and during that time the water should be changed every three or four days. After the introduction of the fishes the water will not require changing at all if a judicious system of management is carried out, but it will be necessary to add a little occasionally to replace the loss from evaporation. The fishes should be comparatively few and small, and taking all things into consideration, the gold carp is decidedly the best. A subdued light is the most conducive to the welfare of the animals, and if vertical so much the better. When the aquarium occupies a position near a sunny window the blinds will require careful management, as continuous sunshine is most hurtful, and will soon cause an immense amount of mischief. Cooked rice is the most suitable food for carp, and in feeding no more ought to be given than will be at once eaten.

CONSERVATORY AND GREENHOUSE.

Azaleas that have done flowering must be kept rather close and in a moist atmosphere to favour a quick growth, as it is important to get the new wood well ripened when the growth is completed. Those that are cramped at the roots must be repotted in good peat and silky loam.

Camellias done blooming treat the same as advised for azaleas. Those coming into bloom must have occasional assistance from liquid manure. Lanky plants will be improved by removing the top buds before they expand, to throw vigour into the lower branches. A better way to improve them is to cut them back and keep them rather close until they have commenced to make new growth.

Hyacinths must have abundance of water while in bloom, and for some time after; as long indeed, as the foliage continues green and growing. After it begins to get discoloured dry them off gradually, and lay the pots on their sides, where they will have morning and evening sun to ripen the bulbs.

Pelargoniums to be encouraged to grow freely by the use of the syringe and regular tying out. Fumigate as soon as fly appears, or much mischief may ensue. Plants showing for bloom to have weak manure or soot water at every alternate watering.

STOVE AND ORCHID HOUSE.

An increase of heat and moisture will now be required for orchids of all kinds, in both Indian and Mexican houses, but water must be applied with caution until growth has fairly commenced. Specimens of Cattleya, Calanthe, Phajus, Saccolabium, Stanhopea, Zygopetalum, Brassia, Dendrobium, and Sobralia will require frequently syringing about their pots and blocks as the plants advance; in fact, the cultivator must now encourage luxuriant growth as early as possible, in order to have the pseudo-bulbs well ripened in the autumn. Shading must be put up not later than the second week of the month, but a better plan is to have good roller blinds, so as to shade at will, if only for an hour or two, when there is a hot sun with an east wind. Growers of Anæctochilus usually place them on bottom heat, and keep very close at this time of year, which is the very opposite of good practice. Bottom heat causes too quick a growth, which results in weakness, and want of ventilation adds to the mischief, and the two evils are frequently combined for the destruction of collections for which large sums of money have been paid. Ordinary stove temperature is all they require.

FLOWER GARDEN AND PLEASURE GROUNDS.

Auriculas to be shaded as the bloom progresses, and have shelters at night by means of mats. Give plenty of water and plenty of air. Thin the pips in good time to the standard number, whatever that may be.

Chrysanthemums for general decorative purposes to be now propagated. Suckers are as good as cuttings, and there need be no disputes about the relative values. They do not require much heat to start them, and nothing is better than a gentle hotbed on the old-fashioned plan. Old stools may be planted out in the borders.

Violets planted now from young runners of Russian and the double-flowering kinds will make fine plants. Seedling plants generally bloom most profusely, and in most of the seed catalogues the best kinds are entered.

KITCHEN GARDEN.

Forcing must be continued with lettuce, mint, asparagus, and potatos, but this business is now nearly at an end for the season. Many of the complaints of failure which reach us are attributable to high night temperature. All sources of heat that are under full control, such as hot water and flues, admit of being reduced or increased as required, and the temperature should always fall from five to ten degrees at night in heated structures of all kinds.

Successional Sowings may be made of all leading kitchen crops, and where the work of the last month has been delayed, seeds got in early will not be much behind those sown last month. Sow Windsor, Longpod, and Johnson's Wonderful beans. Sowings should also be made of Horn carrot, Savoy, Brussels sprouts, Scotch kale, broccoli, cauliflowers, and cabbages, for autumn use, a succession of such things being preferable to a glut all at once for the private grower. Beet should be sown in the second week, in ground deeply dug, but not manured. Sow also onions, lettuce, radish, small salad, seakale, and asparagus; the two last in drills, one foot apart, and one inch deep for asparagus, and two inches for seakale,

Tomatos, Capsicums, &c.—Pot off as fast as needful, and keep them growing vigorously. It is not too late to sow if they have been neglected.

Vegetable Marrows sown now will produce almost as early as those sown a fortnight or a month since. It is best to bring the plants on singly in pots, as they are shorter and stronger when turned out than if grown several in a pot, and allowed to sprawl about and spindle away their strength.

POULTRY YARD.

Turkeys, although fairly profitable when reared systematically, cannot be recommended as suitable for places where the space assigned the poultry is at all contracted. Owing to their large size and peculiar habits they must have a roosting place to themselves, and during the day they should have plenty of room to ramble about, so that they are not brought too closely in contact with the other birds. Those who have the command of the necessary facilities, and are desirous to raise a brood, should commence at once, as there will be none too much time for the birds to attain their full size and be brought into good condition by Christmas; but for several reasons it is not desirable to make a beginning much before this time. As in the case of other kinds of poultry, the eggs for sitting must be as fresh as possible, and the number no larger than the hen can keep thoroughly warm. Twelve eggs may be considered a good average for a sitting, but one or two more or less will not be a matter of any consequence. The turkey hens are capital sitters—too much so, for sometimes they will sit so close that they will not leave the nest for food as often as they should do, and in consequence become so impoverished as to be quite unable to afford the eggs the requisite degree of warmth. Food should, as a matter of course, be placed within a short distance of the nest and a watch kept upon the hen, and if it is found that she does not leave the nest so often as she ought to do, she should be driven off once a day, but with as little fuss as possible. On or about the twenty-sixth day from the commencement of the period of incubation the eggs should be examined and the addled ones removed. At the same time, the hen must be well fed, and from that time until the poults are hatched and dried she must not be disturbed, for when they are much exposed previous to their being well dried they frequently perish. They are as a rule hatched on the twenty-seventh or twenty-eighth day, and are thoroughly dry in about twenty hours afterwards, and until that time they require nothing but the warmth of the mother. The first supply of food to the young poults should consist of small crumbs of bread and curds, or eggs boiled hard and chopped up fine and mixed with the bread, and after the second day or so this should be supplemented by oatmeal or barley-meal, mixed with hot milk or water, or a mixture of the two. As they increase in strength boiled rice with lettuce cut up rather fine, soaked bread, minced liver, meat shred rather fine, must be added, for in a comparatively short space of time after they are fairly upon their legs they require food of a somewhat substantial character, and they must also be fed at rather short intervals, so that the platters may not be empty for any length of time. During the first four or five days the brood must be carefully housed, and if the weather is warm and dry it will be a good plan to place the coop on a grass plat during the day, and remove to a warm house in the evening.

BONE MEAL.

A friend has met with a great loss of plants through using bone meal in his potting-soil. His greatest loss is amongst some specimen fuchsias. When he repotted his plants last spring he mixed the usual quantity of the meal with a portion of the compost. Not having sufficient meal to do the whole number of plants he selected the youngest and most promising to receive it, the others receiving none at all. All appears to have gone well with the plants up to the time they were placed in their winter quarters. About this time, or soon after, the injury to the plants must have commenced, for on taking them out a fortnight ago for the purpose of giving the plants their annual shift it was found that some were dead and others nearly so, while the others —those that did not have any of the bone meal in the soil—were alive and doing well. The unsatisfactory condition of the plants that had the meal caused an inspection of the soil and roots to be made, which soon revealed the cause of the injury and loss of the plants. A number of whitish-brown maggots three-quarters of an inch long with a dark brown head were discovered amongst the roots and in the soil, I examined the roots and stems myself and found that the maggots had completely eaten all the bark or rind round the roots and the base of the stem below the soil, and were even boring their way into the hard wood and required a knife to dislodge them. Having eaten the roots asunder in many places and completely barked the others, there is no wonder that the plants died. My friend is confident that the bone meal was the cause of introducing these creatures into his potting-soil, and the fact that those plants which did not receive any being uninjured goes a good way to support him in his view. But not having heard of such a case before, I thought it worth while to record this instance, as, if the use of bones in any form in the garden is liable to introduce such a destructive enemy, it becomes a serious question to the cultivator, whether their use had not better be discontinued? If such a thing was to occur in a vine border, a sudden collapse of the vines must certainly follow.

The reader must not jump to the conclusion that the enemy is the ordinary wire worm: I am too familiar with the form of those creatures to be mistaken. The insects in question are much larger and lighter in colour, with a more prominent head. J. C. Clarke.

Frangipanni Essence is made from different species of Plumeria (a genus belonging to the Dog-bane family), which grow in the West Indies and certain parts of South America, and especially from *P. rubra*, a native of Jamaica.

CULTIVATION AND SELECTION OF POPULAR ORCHIDS.

By Alexander Wright.
Prize Essay Chiswick Gardeners' Mutual Improvement Association.

Orchids have of late years become such favourites with most plant lovers that it is important the gardener should have a good knowledge, not only of their culture, but the selection of the most popular and useful kinds suitable for home decoration. That selection is no easy matter becomes apparent when we call to mind the great number of orchids now known, numbering, according to different authorities, from three thousand to six thousand species.

By "popular orchids" I mean those that are most appreciated by the general public, admired for the beauty or fragrance of their flowers alone, and not for their money value. The high prices realized by some of the varieties that have appeared amongst imported plants have helped, to a large extent, to draw the attention of plant lovers to this quaint and varied family. And it is curious to notice, that once the attention is drawn to orchids and their beautiful and curious flowers are examined, the more one sees of them the greater is the desire to know more about them. Whether this may be owing to the diverse shape and size of some of the flowers, to the rich and various colours to be found amongst them, or the delicious perfumes given off by some of the flowers, or all combined, I am not prepared to say; but certain it is there is a great fascination in orchid flowers and in orchid growing, and the passion expands as though destined to become universal. In no class of plants do we find mimicry carried to a greater extent than in orchids. Here we may see rude representations of the bee, the butterfly, the dove, the swan, beetles and flies, and even man himself is not omitted from the range of resemblances.

In colour the most fastidious in taste can be pleased, as nearly all colours and shades are to be met with in orchid flowers. The perfume of the flowers is varied; in some species it is most pleasing, and in others so strong—or, as some people I know put it, so offensive—that it is best inhaled at a distance. When we consider we have all those advantages combined in one class of plant, it is not surprising to find that their culture is increasing year by year by "leaps and bounds," as their treatment and requirements become better understood.

We often hear it said we "kill our favourites with kindness." In no class of plants does this apply with more force than with orchids. There have been more orchids killed by attempting to grow them in a too hot and dry atmosphere than all other causes combined. This, to a large extent, may be the fault of the plant collector in the first place, who may find some plants in a tropical country, and in sending them home forget to say they were found growing so many thousand feet up on a mountain side, in a cool and moist temperature, or whether they were found growing in the valley below, where the atmosphere was both hotter and drier. This, unfortunately, may be considered one of "the secrets of the trade," to prevent other collectors discovering the locality where certain species or varieties are to be found. Whatever may be said to the contrary, I consider that to know the native habitat of a plant and its surroundings must be a guide to a certain extent, to its successful cultivation, although it would not always be correct to conclude that the conditions were everything the plant desired, but rather the conditions were the best to be had under the circumstances.

When the cultivator has no reliable information of a plant's natural habitat to guide him in its culture on its first introduction, often many plants are lost until a mode of treatment is found under which they will grow and thrive. But we are living in an age of rapid progress, and let me say, to the credit of gardeners generally, that when once they discover the cultural requirements of any plant that has been found difficult to establish and grow, there are few amongst them but would let it be known for the benefit of their fellow workers. Possibly in no other class of men will you find this kind and friendly spirit so freely carried out as you will amongst gardeners. With this friendly spirit so prevalent and with the aid of the horticultural press, any difficulty in plant growing once understood and explained, soon the information spreads throughout the length and breadth of the land, and all are benefited by the publicity.

The cultivation of orchids in private gardens is often carried on under great difficulties, either as regards the houses they have to be grown in not being of suitable construction, or having to grow them along with other plants. Yet we often meet with examples of successful culture where orchids have to be grown with a miscellaneous collection of stove plants, and many of the grand collections of orchids now to be met with throughout the country were first started in this way. Where orchids have to be grown with other stove or intermediate house plants, as we often find them in places where there are no houses devoted entirely to their culture, it will be found advisable to keep the plants as well up to the light as possible, and away from the dry air coming direct from the hot-water pipes. It will be found that growing the plants in baskets suspended from the roof of the house, where the house is large and the plants would be a considerable distance away from the glass if left on the stage, is one of the best ways to obtain satisfactory results. Most of the epiphytal orchids will be found amenable to this treatment, and where the house is lofty it is surprising what can be done to add to its attraction in this way. Where the plants are kept near the glass as here recommended, it will be found that they will grow better and bloom more freely than plants grown further from the light, and with more substance in the flowers, consequently lasting a longer time in perfection.

If it is desirable to grow the orchids in pots on the stage amongst other plants, and the stage of the house is made with the usual wooden battens, and the hot-water pipes underneath it will be found a great advantage to fill in the open spaces, and cover the stage over with shell shingle, broken coke, or ashes, to retain the moisture amongst the plants when necessary, as will be the case during their growing season and the hot summer months.

Where orchids are grown in quantity it will be necessary and of the utmost importance to have suitable houses, and the small span-roofed house running east and west has been found the best adapted for their requirements. For the culture of what are termed cool-house orchids, a house not exceeding twelve feet wide will be found the most convenient, just allowing room for a path down the centre of the house, and side stages from three to four feet wide on either side. Some horticultural builders have adopted the system of double stages, but where water tanks are formed the length of the house on both sides, the double stages are not at all necessary. For cool-house orchids I would strongly recommend the formation of those tanks. It is not necessary they should be more than a few inches deep, with perhaps a deeper part about the middle of the house, to allow the dipping of a can for watering purposes. I am strongly in favour of the shallow tanks in preference to deeper ones, as they are more readily cleaned out. The stages should be kept well up to the light, yet leaving room for the plants to be stood on inverted pots, as this allows more room for using the syringe freely amongst the plants in damping down.

In the heating arrangements of the house there should be sufficient hot water to keep up the necessary temperature without having the pipes too hot. The ventilation of the house should be ample; there should be means of admitting plenty of air opposite the hot-water pipes, as well as at the ridge of the house. The question of air is a most important one in orchid growing. To be a successful cultivator, it will be found beneficial to have a plentiful circulation of fresh air amongst the plants, even when it is necessary to apply a little more fire-heat to keep up the required temperature. I do not go so far as to advocate, as some growers do, the admission of cold air even when it is freezing sharp. I do not believe that air admitted under such circumstances is beneficial to the plants, but rather otherwise. If air is admitted at all other times the plants will suffer no ill effects by the house being closed at night during frosty weather. Again, in the neighbourhood of London, where fogs are so prevalent, a sharp look-out will have to be kept to guard against them finding an easy entrance into the houses. The houses should be closed on its first appearance, otherwise the effect of a dense fog will be most disastrous to the flowers and flower buds, causing them to wither up and drop wholesale. Some species are found more liable to the injurious effects of the fogs than others. The phalænopsis, calanthes, dendrobiums, lælias, and oncidiums flowering during the autumn and winter months suffer to a larger extent than perhaps any other genera.

Let us now turn our attention to the house just described, and see what may be done with it. Having agreed to adopt a minimum winter temperature of 50 deg. to 55 deg. with a proportionate rise with sun heat during the day, and a minimum summer temperature of 60 deg. with the corresponding rise in the day time, we will have a house in which a great many of the most beautiful of our popular orchids may be successfully grown.

Odontoglossums.—Coming first on the list of popular orchids would be Odontoglossum crispum (perhaps better known as O. Alexandræ), one of the most beautiful and useful of orchids. This, along with its other varieties, will always form a very attractive feature in the house, for wherever a quantity of it is grown the house will seldom be without some plants in flower. Other Odontoglossums that would find a place amongst popular orchids would be Andersonianum, Cervantesi, Chestertoni, cirrhosum, citrosmum, Edwardi, gloriosum, grande, Halli, Insleayi, and its varieties, splendens and Leopardinum, luteo-purpureum, maculatum, Œrstedi, Pescatorei, Phalænopsis, pulchellum, Rossi majus, triumphans, and vexillarium (this last at the warm end of the house).

Of Cypripediums, Boxalli, barbatum and its lovely varieties, Harrisianum, insigne, and varieties; Leeanum, Leeanum superbum, Schlimi, venustum, villosum, &c.

Of Oncidiums, dasystyle, Forbesi, incurvum, macranthum, Marshallianum, ornithorhynchum, tigrinum, varicosum, and Rogersi.

Cattleyas, citrina, crispa, Lawrencianum, labiata, Gaskelliana, Mendeli, Mossiæ, Skinneri, Trianæ, and its pretty varieties.

Lælias, albida, anceps, autumnalis, and varieties; Dayana, purpurata and varieties.

Epidendrums atropurpureum, fragrans, vitellinum majus.

Dendrobiums, Ainsworthii, crassinode, Devonianum, aureum, nobile, Pierardi, thyrsiflorum, and Wardianum.

Ada aurantiaca.

Auguloa eburnea, Clowesi.

Cœlogyne, cristata and its varieties.

Cymbidium eburneum, Lowianum, Mastersi.

Lycaste Skinneri and its numerous varieties; aromatica, citrina, plana.

Masdevallia amabilis, Chelsonii, Chimæra, Harryana and varieties; ignea, Lindeni, and Veitchiana.

Pleione humilis, lagenaria, maculata, and Wallichiana.

Sophronitis grandiflora.

Some of the above species are not generally given as cool house orchids but in the temperature recommended above I have found them grow and flower satisfactorily. I have also omitted many of the beautiful named varieties of different species, but with them it is only the question about their price, which keeps them from becoming popular.

Potting.—The material used for potting purposes is in itself so simple that it loses much of the mysterious properties attached to various compounds often recommended for potting different stove and greenhouse plants. For the epiphytal orchids, good fibry peat, sphagnum moss, that grown under trees to be used in preference to that found growing in water; the former being shorter in its growth, and more compact, a neater finish can be given to the plants when potted, and I find that it grows better and lasts longer than that found growing in water. Charcoal may be used with advantage, but if not readily obtained broken pots may be used instead. In crocking the pots keep the potsherds on edge, rather than lay them flat, as it will allow a stick to get a firmer hold in using one to tie the plant or flower spike to. In using the peat knock all the dust out of it on the bench before using, using only the rough pieces, with about equal parts of sphagnum, with the addition of a few pieces of charcoal or potsherds, which help to keep the material open. Finish the pots neatly by using the compact growing pieces of sphagnum, placing them so that they will grow on the surface.

In potting Odontoglossums, I do not recommend the plan of keeping the plants raised above the top of the pot as is often seen. If the base of pseudo-bulbs is just elevated above the edge of the pot, that will be sufficient. Nor should the pot be filled to the rim with the potting material, rather allow about ½ in., so that should the plant get dry at any time it can be watered with the watering can, and without having recourse to dipping, a plan that requires much time to carry it out.

There are plants on the other hand that are better raised, such as those that emit roots freely, and prefer to grow out of the material rather than in it. Examples of this kind will be found amongst the Oncidiums, Vandas, Ærides, &c. The Cypripediums are often raised unnecessary high in their pots. In potting them there ought to be room left for watering. Most of the Cypripediums will be benefited by the addition of a few small pieces of turfy loam to the peat and sphagnum in potting, and for some of them, such as niveum, concolor, &c., the addition of small pieces of limestone will make a great difference to the well-being of the plants.

The terrestrial orchids will require more substantial material to grow in. Calanthe Veitchii, Phajus grandifolius, Peristeria elata, Anguloas, &c., can best be grown with good loam, manure, and leaf soil, to which some bone meal may be added. Nor will the plants be required to be raised in the pots, like the epiphytal group, but enough room should be left for watering. Cœlogyne cristata and Lycaste Skinneri are improved in their growth by leaf soil being

added to the peat and sphagnum, and the Pleiones are the better for leaf-soil and bone meal.

Let me here strongly recommend that all orchids should be repotted every year at least, and all decaying material, or any not having roots in it removed, and replaced with fresh material. This will be found to keep the plants in better health than where the system of top dressing is resorted to and the plants allowed to go on for perhaps two or three years without being potted. The consequence of such treatment is that when the plants are turned out of their pots, the roots are found in a very bad state. The plants thus receive a check from which recovery is often a slow business.

There are a few plants that may be allowed to go for two or three years without repotting, and they are those the roots of which adhere firmly to the sides of the pots or baskets, rather than to the material in which they are potted. With all the terrestrial and with most of the epiphytal orchids, this yearly overhauling will be found to do them good. The system of top dressing should be guarded against, and never carried to excess, as is often done.

The best time for potting the different species and varieties is a most essential point in the successful culture of orchids, and for which no "hard and fast" rules can be laid down, but it may be taken as a general rule, that the best time is when the plants are starting into growth.

(To be continued.)

Exhibitions and Meetings.

CRYSTAL PALACE, SPRING FLOWER SHOW, March 29.

The annual exhibition of spring flowers at the Crystal Palace held on the above date included hyacinths, tulips, azaleas, cinerarias, cyclamens, and a few other classes of plants that may be had in bloom at this season of the year.

In the open classes for thirty-six hyacinths, twenty-four pots of narcissi, and twenty-four pots of tulips the only competitors were Messrs. H. Williams and Sons, Fortis Green, Finchley, to whom the first prize was in each case awarded, the varieties being the same as those represented at Regent's Park on the previous Wednesday. The St. George's Nursery Company, Hanwell, and Mr. Philip Langley, Broom, Slough, were first and second for thirty-six cyclamens with large well-flowered specimens, and in the class for twelve cyclamens the exhibitor last named was the only competitor, and received the first prize. Messrs. Paul and Son, Cheshunt, were first for twelve amaryllis, Empress of India, Her Majesty, and Gonzola, being perhaps the best. Lily of the Valley was well shown in the class for twelve by Messrs. H. Williams and Sons, and fairly good examples were contributed to the class for six by Mr. J. Lambert, gardener to H. W. Segelcke, Esq., Herne Hill; Mr. W. Clark, Herne Hill, and Mr. C. Nunn, Maze Hill. In the amateur's division, the best hyacinths and narcissi were shown by Mr. H. Shoesmith, gardener to M. Hodgson, Esq., Shirley, and the best tulips came from Mr. W. Clark.

Collections of azaleas were shown by Mr. R. Wells, Sydenham, and Mr. C. Nunn, both of whom staged medium sized and nicely flowered examples, the first and second prizes being awarded to these exhibitors in the order of names. Cinerarias constituted one of the best features, Mr. J. Ford, gardener to Sir C. Pigott, Bart., Wexham Park, Slough, staging large finely-flowered specimens in the two classes for these flowers, in each of which he received the premier award. Mr. Phillips and Mr. Shoesmith also had good collections in the classes set apart for private growers. Mignonette was well shown and the prizetakers in the class for eighteen pots were, Mr. A. Carter, Ewell; Mr. D. Phillips, and Mr. Fleming, Cookham. In the class for groups, Messrs. J. Laing and Sons, Forest Hill, were first with a tasteful arrangement, in which the clivias were conspicious. Mr. H. James, Norwood, was second.

The miscellaneous contributions included a collection, comprising clivias, lilacs, and hyacinths from Messrs. B. S. Williams and Sons, Upper Holloway, roses in pots and hardy flowers from Messrs. Paul and Son, and daffodils from Messrs. Barr and Son, 12, King Street, Covent Garden. The St. Georges' Nursery Company contributed a large collection of cyclamens, and Mr. Nunn staged a tasteful group of flowering and fine foliage plants.

ROYAL HORTICULTURAL SOCIETY

Scientific Committee, March 25th.

Present: D. Morris, Esq., in the chair; M. Henri De Vilmorin, ex-President Botanical Society of France; Messrs. Blandford, MacLachlan, Wilson, Rev. W. Wilks, and Dr. Masters.

Effects of London Fog on Plants.—Mr. Morris read the terms of an application for a sum of money from the Government grant administered by the Royal Society, to be devoted to the partial payment of the expenses connected with the inquiry into the composition of London fog, with special reference to those of its constituents that are injurious to plants.

Fruit of Loranthus.—Mr. Morris stated, on the authority of Professor Oliver, that the fruit of Loranthus attached to the panicle of the sugar cane, as exhibited at a previous meeting, was L. americanus.

Sugar-cane Borer.—Mr. Blandford reported that the moth mentioned at the last meeting, as injuring sugar-canes in St. Vincent, was Diatræa saccharalis. The beetle alluded to on the same occasion is known as Xyleborus perforans, and was originally described by Wollaston in his "Catalogue of the Coleoptera of Madeira," p. 96. It occasions great injury to the bungs of the wine casks in Madeira. Wollaston found it commonly feeding in the stems of Jatropha curcas.

Seedlings of Sugar Cane.—Mr. Morris, in continuation of information placed before the committee on December 10, exhibited specimens of mature seeds of the common sugar-cane (Saccharum officinarum). There were also shown germinating seeds, some plants, drawings of the flower, and dissections of the fruit (caryopsis) in detail. Mr. Morris stated that there appeared to be no authentic record of any really wild station for the sugar-cane. Further that the fruit of the sugar-cane had not hitherto been figured or described. At Barbados several times during the last twenty years, and more recently by Professor Harrison and Mr. Bouch, self-sown seedlings of the sugar cane had been observed. The subject was taken up systematically in 1818, and about sixty of the seedlings had been raised to mature canes. Many of these exhibited well-marked characteristics, differing from the varieties growing near them. Careful inquiry had shown that canes known as the "Purple Transparent" and "White Transparent," and possibly also the "Bourbon" cane produced seeds in very moderate quantities. Spikelets received at Kew had been examined and the seed found *in situ*. A description with figures had recently been laid before the Linnean Society by Mr. Morris. It is anticipated that by cross-fertilization, and a careful selection of seedlings, it will now be possible to raise new and improved varieties of sugar-cane, and renew the constitutional vigour of plants that have become deterioriated through continuous cultivation by cuttings or slips. Great importance is attached to the subject in sugar producing countries as it opens up an entirely new field o investigation in regard to sugar-cane cultivation.

Figs.—Branches were exhibited covered with a brown scale, which the sender said had proved very injurious. The remedy suggested was to scrub the branches with a hard brush and soap suds. The specimens were further referred to Mr. MacLachlan for examination and report. Other branches of fig in a dying condition were apparently free from parasites, and their condition betokened some mischief at the root.

Iris Sindjarensis.—A plant of this was exhibited by Messrs. Barr and Son, and received a botanical certificate. M. Vilmorin pointed out its resemblance to Iris orchidacea.

St. Helena Ebony.—Mr. Morris alluded to the peculiar vegetation of St. Helena, now confined, for the most part, to a small area in the central and higher part of the island. Many of the trees formerly native to the island are now all but, or quite extinct. Among them is a species of Trochetia, or Melhania. The trunks of this tree are embedded in the cliffs of the island, and are dug out by the inhabitants for the sake of manufacturing ornaments. The following quotation from Melliss' exhaustive work on St Helena refers to this plant: "The native ebony of St. Helena. This plant I believe to be now extinct. It formerly grew on the outer portions of the island, near the coast, at altitudes of 2 to 4, where the weather-beaten stems are still found deeply embedded in the surface soil. The last plant I saw was a small one growing in the garden at Oakbank about twenty-five years ago, but it is not there now, and I have searched the whole island over for another, but in vain. The leaves were dark green, and the flowers white; the wood is very hard, heavy, black in colour, and extremely brittle. It is still collected and turned into ornaments, which are much prized on account of its rarity. That this tree once formed a considerable portion of the vegetation clothing the island on those parts that are now quite barren, is strongly evidenced by the many references to it in local records. Pl. 29. It is the Dombeya erythroxylon of Andr. *Bot. Repos.*, vi., t. 389, not of Willdenow."

It is interesting to know that the plant is still in existence under cultivation at Kew (and perhaps elsewhere), under the name of Dombeya erythroxylon. At the present time the plant, which was obtained from the gardens at Herrhausen, is in flower at Kew.

Mr. MacLachlan called attention to the interesting remark on the rare plants of St. Helena, contained in Mr. Wollaston's book on the Coleoptera of the Atlantic islands.

Fingered Citrons.—Dr. Masters showed a drawing of a fruit that had ripened in the garden of Mr. Hanbury, at La Mortola, near Ventimiglia, and made some comments on the peculiarities of its structure. M. de Vilmorin said that similar malformations occurred in other oranges, especially in the Bitter Orange, the flowers of which were used in perfumery, and in which the carpels might be seen occasionally in all stages of dissociation.

Sport of Narcissus.—From Mr. Walker came one bulb producing two distinct flowers, viz., Silver Phœnix and N. incomparabilis fl.-pl. The specimen was referred to Dr. Masters for further examination.

Florida Pine.—From Mr. Divers came a cone of Pinus cubensis (Elliotti), and one of P. inops var. clausa, just brought home from Florida. Mr. Morris spoke of the wood of the Cuban pine as being very hard, and said that many colonies were now importing soft wood, not that their own forests were destroyed, but because the timber yielded by them was too hard to be used profitably. M. de Vilmorin pointed out the difference between the typical Pinus inops and the specimen exhibited.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.

This society has held two meetings during the past month. On the 11th, Mr. A. King in the chair. A paper was submitted to the meeting on "Vine Culture" by Mr. J. C. Parker; the subject proved of great interest to the members present, who assembled in great force to hear the paper. A capital discussion was sustained by Messrs. Riding, Alexander, Gull, King, Phillips, and Fulford. On the 25th, the Rev. E. E. W. Kirkby in the chair, a practical paper on "Mushroom Culture" was read by Mr. E. Wallis, of Buntingford. Mushrooms were exhibited by Messrs. Bray and Gillians. A lengthy discussion followed by the following members, Messrs. Bray, Alexander, Riding, Durrant, Phillips, Brown, and Fulford. The Committee are perfectly satisfied with the progress made by the society since its birth, but the secretary is sorry to say there are many gardeners and their assistants within easy reach of the society, who do not attend the meetings. The Committee will be most happy to welcome them either as visitors or members. Any information will be gladly furnished by Mr. J. B. Riding, hon. sec., Ware.

LECTURE ON APPLES AND THEIR USES.

A few evenings since an able lecture on "Apples, their Culture and Use," was delivered by Mr. W. Roupell at the British Workman's Club, Upper Tulse Hill, a fine building, recently erected by a local philanthropist, Mr. T. Buxton Morrish presided, and opened the proceedings by explaining that the lecture was given on behalf of the Gardeners' Orphan Fund, which he commended to the meeting in a forcible address. The lecture was of a comprehensive character, and conveyed much practical information concerning apples and the best methods of culture. Quotations from old authorities, as well as new, were given, and some extracts from Mr. R. D. Blackmore's recent work, "Kit and Kitty" were well received. The walls were hung with suitable maps and drawings, but a fine collection of well-preserved apples was found to be the most effective illustration, and excited much surprise and interest, especially when during a pause in the lecture some well-filled baskets were handed round for the audience to test the truth of tho proverb, "The proof of the (say apple) is in the eating."

Admission was by ticket with some reserved seats, but the meeting consisted largely of gardeners and their wives. A collection was willingly made, and several new subscribers gave in their names, the result being a substantial benefit to the Gardeners' Orphan Fund.

CROYDON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.

At the meeting of this society, held on the 18th ult., a paper by Mr. Lewis Castle, on "Hybridization in Plants," was read. E. S. Bowman, Esq., presided, and there was a large attendance of members. At the close of the discussion which followed the reading of the paper, hearty votes of thanks were passed to Mr. Castle and the chairman.

GARDENERS' ORPHAN FUND.

The usual monthly meeting of the committee took place at the Caledonian Hotel, Adelphi, on the 28th ult., Mr. George Deal presiding. The following special receipts were announced by the secretary: from Mr. English as the result of some smoking concerts, Windsor Castle, Holborn, £5; from Mr. Lewis Castle, part proceeds of the sale of the chrysanthemum annual, £5; from Mr. W. Roupell, as the proceeds of a lecture on "Fruit Culture," presided over by Mr. Buxton Morrish, £6, Mr. Morrish to have the value of this sum in votes at the next election; also £2 1s. from Mr. Roupell as annual subscriptions obtained by him; from Mr. A. Pears, Isleworth, a donation of £5 5s.; from Mr. J. S. Foljambe, Osberton Manor, Worksop, a donation of £5; and from the recent performance in aid of the fund at the Covent Garden Theatre, £10 19s. 6d. An interesting discussion arose as to a donor having the privilege of exhausting the voting power obtained by a donation of £5 and upwards at one election, instead of having a life vote or life votes, and it was regarded that rule 12 gives this privilege to donors. As a matter of course the right to vote in respect thereof can be exercised only at one election. Communications were read from certain local secretaries: from Mr. Burnett resigning that office on leaving England; from Mr. T. Turton, Maiden Erleigh, accepting the office of local secretary in the place of the late Mr. W. Wildsmith; from Mr. John Trevor, formerly of Oswestry, and now of Hatley, St. George, offering to continue to act in that capacity for Malvern; and Mr. L. Castle, at his own request, was appointed local secretary for Merton and district. Mr. J. Hughes, of Birmingham, also wrote, making a useful suggestion in reference to the payment of the weekly allowance to a child at Birmingham, which suggestion was adopted.

At a later hour a meeting of the joint committee, which comprises several of the stand-holders in the Flower Market, which body has in hand the arrangements of the third floral fête in aid of the fund, to take place in the Flower Market, Covent Garden, on May 21 next, was held; the stand-holders being numerously represented. A letter was read from the Lady Mayoress expressing her willingness to open the fête on May 21. The names of several ladies were mentioned who should be applied to to become patronesses of the fête, and the hon. secretary was instructed to obtain their permission. It was resolved that the band of the Royal Horse Guards Blue, under the direction of Mr. Charles Godfrey, be engaged for May 21; that the tickets of admission be 5s. each as last year; that the number of admission tickets allotted to stand-holders be the same as last year; and that the number of tickets be limited to two thousand.

CHISWICK GARDENERS' ASSOCIATION.

The highly successful session held by this association in 1889-90, was brought to a close by a festive gathering at the George Hotel, Chiswick, on the evening of the 28th ult. Upwards of forty members and friends sat down, and the chair was occupied by Mr. George Gordon, and the vice-chair by Mr. John Fraser. After justice had been done to the good things provided, and the loyal toasts duly honoured,

The Chairman proposed the toast of "Continued Success to the Chiswick Gardeners' Association." In doing so he referred to the large measure of success that had attended the operations of the association, and the influence the association had exercised in promoting the formation of similar societies in other parts of the United Kingdom. He then passed under review the work of the session, and in congratulating the members on the excellence of the papers that had been contributed to the meetings pointed to the fact that they had been fortunate in obtaining the aid of some of the most eminent horticulturists of the day. But whilst regularly attending the meetings and taking an active part in the discussions on the various matters brought forward, the members had not lost sight of the claims of charity. They had, indeed, organized an entertainment in aid of the Gardeners' Orphan Fund, with the result that they had been able to hand over to the secretary nearly sufficient to meet the cost of one orphan for a whole year. Attention was next directed to the immense advantage resulting from gardeners meeting together for the purpose of discussing matters bearing upon the work of the garden, and to the fact that notwithstanding the great advance that had been made in the art of horticulture of late years, much yet remained to be accomplished. More especially should attention be directed to the development of profitable fruit culture.

Among other toasts that followed those of Mrs. Lee, the donor of the prizes for the essays and the "Judges of the Essays" received an especially hearty reception, the generosity of Mrs. Lee in giving the prizes, and the kindness of Mr. Shirley Hibberd, Mr. J. Wright, Mr. J. Fraser, and Mr. L. Barron in awarding them being evidently highly appreciated by the members.

The musical arrangements formed by no means the least satisfactory part of the gathering and an enjoyable evening was spent.

Replies to Queries.

Chrysanthemums in Borders.—W. M.: The new growth produced by the chrysanthemums in the borders may have been injured by the frost experienced early in March, but the probability is the tops of the suckers have been eaten off by the slugs as fast as they made their appearance above the surface.

Names of Plants.—Weston: The leaves are not sufficient for identification. Send flowers when plant is in bloom and we will then render what assistance we can in the matter.—W. M.: The fern is Polystichum angulare lineare.—Roper: 1, Narcissus corbularia or bulbocodium; 2, Linaria cymbalaria, it will flower in June, it likes a life on a sunny wall; 3, Parnassia palustris, requires a bog or moist peaty soil.—Everard: Passiflora amabilis.

Freezing Fruits.—F. F.: We cannot give you one word of encouragement. As regards the mere doing it that is easy enough, for freezing is no longer a fine art; it is an industrial art, and practised daily in a thousand places. But to freeze fruits of any kind will be to spoil them, and to keep them any length of time in a low temperature will assuredly destroy all those qualities for which fruits are cultivated and valued. Why aim at the impossible?

Deutzias.—W. Smith: So far as we are able to gather from your letter, the deutzias which you have forced for several years past have become exhausted. Assuming this to be the case, the best course to take will be to cut them down to within a few inches of the ground line. On their commencing to make new growth, turn them out of the pots, reduce the balls by at least two-thirds, and return them to pots of the same size as those previously occupied, or one size smaller. Allow them to remain in the frame until they have completed their growth, and ventilate freely. Then place in an open position out of doors to promote a thorough ripening of the wood.

Beetroot.—R. W.: Size in beetroot is of secondary importance, and, as a rule, the crop should be grown in a quarter that has not been recently manured. The end of April or the beginning of May will be early enough to sow the main crop. A few rows of the Egyptian Turnip-rooted may be sown in a week or ten days for furnishing a supply during the latter part of the summer.

Scentless Mock Orange.—X.: The scentless mock orange, Philadelphius inodorus, which had an award of merit conferred upon it by the Floral Committee of R. H. S., is by no means scarce in trade collections, as proved by the fact that it is entered in the catalogues of the principal nurserymen, at prices ranging from nine to twelve shillings per dozen. Mr. Leach speaks of its being so readily forced that it can be had in bloom at Christmas. But to have it in flower at midwinter plants furnished with well-ripened wood are necessary. In common with other deciduous shrubs suitable for forcing, the scentless mock orange should be grown in pots during the summer, previous to their being taken to the forcing pit. It is only when well established in pots that hardy shrubs can be forced with the best possible results.

Asparagus in Town Garden.—G. H. W.: Yes, asparagus may be grown to perfection in a town garden, but the position must be completely open to light and air. If shaded by walls or trees, the production of a fine growth will be doubtful, and if very much shaded, impossible. A deep sandy loam is the best soil for asparagus, but if a soil has to be made for it, loam should be the staple, with large additions of sand and lime rubbish and fat manure. Without lime the plant does not fully prosper. The best way to ensure a fine plant is to sow seed in April in rows three feet asunder, and in due time thin the plants to three feet apart in the rows, thus finally leaving them three feet apart each way. You may grow other things between in the first and second year, but in the third year the asparagus must have all the space. Every autumn a good coat of fat manure should be spread over the surface. Cutting should not commence until the third year.

Orange Tree.—Mrs. Putmore: Your old tree has probably exhausted all the nourishment at its command, and would be improved by giving it a new pot or tub, with fresh soil to restore its vigour. It must be handled by someone accustomed to such work, for the packing of the drainage and filling in the soil around the roots demand a certain amount of skill to ensure satisfactory results. The soil should consist of a mixture of two-thirds good turfy loam and one-third well-rotted manure from an old hot-bed. If the soil is at all heavy, a sufficient amount of sharp sand should be added to render it granular and porous. The turfy loam should be in lumps, for a merely powdery soil is not at all suitable. This should be done at once, and the tree should be shut up rather close in a shady greenhouse until it begins to grow, when it must have air and increased supplies of water.

Law.

A NURSERY FOR THISTLES IS ALLOWABLE IN LAW.

In the Queen's Bench Division the appeal case Giles v. Walker raised the question whether the law gives protection against a diffusion of thistles from neglected land. It was an action by a farmer against a neighbour for allowing thistles to grow upon his land and scatter their seeds upon the plaintiff's land. The case was in the County Court of Leicestershire, at Loughborough, and the plaintiff complained that in the summer of 1887 he saw thousands of thistles in full seed upon the land in the defendant's occupation. He had seen thistles on the fences of his ground and all over it, and he had employed people to take them off. The defendant had begun his occupation of his land six years ago; it was forest land, and forest land does not, as the plaintiff's witnesses represented, grow thistles, so long as it remains forest, but the defendant had cleared the land, and then these thistles had sprung up. It appeared, however, that there were plenty of thistles all round, and witnesses stated that wherever the land was left fallow it produced thistles in abundance. The Judge, however, only left it to the jury whether the plaintiff had suffered damage from the thistles grown on the defendant's land in consequence of his negligence, and they found for the plaintiff for £3. The defendant appealed.

Mr. Toller appeared on his behalf in support of the appeal, and urged that there was no evidence of negligence to sustain the action. [Lord Esher: Negligence implies a duty. What duty did the defendant neglect?] It is impossible to say.

The Court called on the counsel for the plaintiff.

Mr. Bray, on his behalf, tried to support the action. [Lord Esher: The defendant did not bring the thistles there?] No, but he caused them to grow by clearing the forest land, which does not while it is forest produce thistles, but only when it is cleared and turned up. [Lord Esher: But the man has a right to till his land, and cannot help the thistles coming up. Lord Coleridge: You do not suggest that he sows the thistles? [A laugh.)] No. [Lord Coleridge: How as to poppies?] The argument, no doubt, applies to any noxious weeds. [Lord Esher: How do you show any duty to keep the thistles down? They have grown for ages. Have you any authority to show such a duty?] No, it must be admitted that there is none, but where the act of the defendant has caused weeds to grow and propagate it is conceived that on general principles he is bound to keep them down. [Lord Esher: Where you bring anything noxious to your neighbours on your land there may be such a duty, but not where it is only the natural produce of the land. Lord Coleridge: It is what in law is called "the act of God."

Lord Coleridge: I never heard of such an action. The appeal must be allowed, and the judgment set aside.

TRADE CATALOGUES.

Ryder and Son, Sale, Manchester.—*Japanese Primulas, Tuberous Begonias, &c.*

Rawlings Brothers, Old Church, Romford.—*Dahlias.*

J. Cheal and Sons, Lowfield Nurseries, Crawley, Sussex.—*Dahlias, &c.*

Charles Turner, Royal Nurseries, Slough.—*Soft wooded, Stove and Greenhouse Plants.*

W. H. Hudson, West Green Road, Tottenham.—*Japanese Lilies, Iris, Vallota, &c.*

Obituary.

On March 25, at Stanley Villa, Turnham Green, William John Coleman, late Covent Garden Market, aged 73.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
13	S	**Low Sunday.**	5 11	0 30	6 50	3 4	11 11	7 31	8 10	4 22	4 56	46·7
14	M	Princess Beatrice born, 1857.	5 9	0 14	6 52	3 42	After.	8 56	9 46	5 35	6 21	46·9
15	Tu	Easter Law Sittings begin.	5 7	Bef'e N.	6 53	4 11	1 53	10 32	11 12	7 11	7 57	47·1
16	W	Battle of Culloden, 1746.	5 5	0 15	6 55	4 33	3 15	11 48	—	8 37	9 13	47·2
17	Th	Lord Seaton died, 1863.	5 2	0 29	6 57	4 53	4 37	0 18	0 43	9 43	10 8	47·3
18	F	Cambridge Easter Term begins.	5 0	0 43	6 59	5 11	5 56	1 8	1 29	10 33	10 54	47·5
19	S	*St. Alphege.* ● New Moon.	4 58	0 56	7 0	5 29	7 14	1 49	2 9	11 14	11 34	47·6

Orchids in Flower.		Day of Yr.
Cattleya amethystoglossa	Brazil.	1800
Cattleya citrina	Oaxaca.	103
Cypripedium caudatum	Panama.	104
Cypripedium lævigatum	East India.	105
Dendrobium Leechianum	Gar. hyb.	106
Epidendrum flammea	Gar. hyb.	107
Vanda suavis	Java.	108
		109

Exhibitions and Meetings for the Ensuing Week.

Tuesday, April 15, to Friday, April 18.—Royal Horticultural Society.—Daffodil Conference at Chiswick.
Thursday, April 17.—Royal Horticultural Society of Ireland.—Spring Show.
Thursday, April 17.—Linnean Society.—General Meeting.

Auction Sales for the Ensuing Week.

Wednesday, April 16.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Roses, Shrubs, Climbers, Border Plants, &c.
Wednesday, April 16.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Palm Seeds, Plants, &c.
Thursday, April 17.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids.
Friday, April 18.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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The Gardeners' Magazine.

SATURDAY, APRIL 12, 1890.

The Cultivation of Salads must rank with the fine arts in rural economy, and will demand, in common with other fine arts, taste and talent beyond the average of the practical horticulturists. It is proper enough to say, because it is simply true, that a stable boy can grow lettuces and onions, but that sort of growing is to the art in general of no higher range than the rude figure of a horse cut in the turf on the hill side to the model of the same animal by a modern sculptor of the highest fame. The many who listened to M. Vilmorin's discourse on salading at meeting of R.H.S. must have felt that it is a very serious business, and our brief report of the lecture, at page 187 of our issue for March 29, will have suggested that, wherever it may begin, it certainly does not end with the sowing of mustard on moist flannel, or the sprouting of old onions in the scullery window. When M. Vilmorin tells us there are two hundred plants adapted to supply salads, he is, of course, indulging in a little pleasantry, because, though the fact may be so, not many persons will need or care to know of them all; and for the appetites and circumstances that prevail, probably a score or so will generally prove sufficient. We are not of those who would cut down lists of subjects as though there should be no room left for a diversity of tastes, for the variety that Nature offers us is not to be appraised by individuals who set themselves up as arbiters, but as there are many to be fed, and an abundance is provided, it is better many tastes should be gratified than that conceited coxcombs should be encouraged to dictate what we should eat, drink, and avoid. If there is need for two hundred sorts of saladings, therefore, we will cheerfully allow them; but as they are not all adapted for the same season or the same climate, we may more advantageously consider them in detail than in the mass. Between a tomato salad and one of tender lettuce in winter what a difference! And yet, each being perfect of its kind, the experienced salad eater might find it difficult to give preference to either, because both are so good.

But "each being perfect of its kind" is a condition akin to the miraculous when an English table is in view, and more particularly a public table in an English hotel. That there should prevail differences between English and French tables is not matter for either surprise or regret *per se*, but it is a fact for all that, the difference is generally in favour of the French table, whereon we usually find a salad that may be eaten with pleasure and safety, whereas, on the English table, it is, alas! often impossible to enjoy the salad, and dangerous to encounter the consequences. It is well, therefore, that we should listen with eager attention when an eminent French horticulturist, who is also a traveller and a man of taste, discourses on the subject, for he will surely offer lessons it will be good for us to learn.

In the cultivation of salads, the differences of practice between countries so closely associated as England and France, are astonishingly great. It has been our privilege to indoctrinate our readers in the mysteries of winter lettuce, which are obtained by gentle forcing under closely-fitting frames, to which air is not admitted, the proper product being lettuces of a brilliant green colour, loose in texture—or, in other words, without "hearts"—tender, delicately flavoured, and eatable almost to the outside leaves. The growth of such is an old industry in France; it is a new industry in England, and its extension within the past few years marks a welcome advance in salading.

The markets strikingly illustrate the differences of practice that prevail in the two countries in the growing of many sorts of saladings. Handsome cos lettuce have been on sale for three weeks past in London; they are in no case of home growth, nor have we anything that comes near to them, save, perhaps, cos lettuce in frames that will not be ready for some time to come, and at the best will not equal in beauty those now coming into the market. When we compare home-grown with imported endive, the difference is indeed striking. The first is a coarse, partially blanched, tough-eating article; the second is of fine texture, perfectly and elegantly blanched, tender, of a delicate flavour, and of easy digestion. We may continue the comparisons with the like disparagements to ourselves until the summer is somewhat advanced, then the comparison is in our favour; we gain the lead and keep it until winter returns, and then the former rule is found to prevail again. It follows that if a Frenchman can throw some useful light on the subject of salading, an Englishman might do something similar, and perhaps the Englishman's tale would prove as profitable to an audience of Frenchmen as a Frenchman's to an audience of Englishmen. We want a full and fair statement of both sides, in order to discover somewhat definitely what each has to learn that may be of actual advantage.

We know some things, and are literally none the wiser for our knowledge. We know, for instance, that when we speak of French saladings we are speaking of the productions of a country that extends from the parallel of Dunkerque, opposite Dover, to the Gulf of Lyon in the Mediterranean—our most southern point being the most northern of the country to which in respect of salading we are supposed to be in competition. As regards boundaries, France extends southward below the latitude of 43, while England extends northward above the latitude of 50, a clear difference of seven degrees in favour of our neighbours who are so great in saladings. In this connection we might be asked to compare London with Paris, the difference between the two cities being only two degrees. But the comparison then is all to the good of our neighbours for winter produce, for not only have they the two degrees, but they have a dry, sandy soil and a dry, clear air, whereas we have a damp, loamy or clayey soil, with a moist air that is polluted with smoke and often poisoned by fog. Thus, as regards the capital cities, Paris may command better things than are possible in London in the way of winter saladings. This part of the subject has been superficially and unfairly treated in the literature of recent years, in which the horticulture of France has

been extolled as far in advance of that of England. What the one country gains at one end of the story it loses to the advantage of the other at the opposite end of the story, and the balance in the end is nearly equal. "Nearly," we say, because in respect of salading the French have still the best of it, for they bring to the aid of better conditions a higher degree of skill, and a comparison in the markets will illustrate this point effectually. It follows that English gardeners may take lessons from the practice of our neighbours with advantage, more especially in respect of winter and spring saladings. A week of frost makes an end of watercress grown in the open; but when grown under glass the winter supply may not only be safe against frost, but abundant and of the finest quality. If the demand for saladings during the winter is not great in this country, there arises a great demand with the first burst of spring, and our home-grown supplies are unequal to it, and it is of the greatest advantage to us that we can obtain what we need by importation. At the present time the consumption is great of imported lettuce, dandelion, and chicory, and the prices paid are such that home-grown material cannot be said to be placed at any special disadvantage.

If we have something to learn in respect of growing salads, we need, perhaps, quite as much to be taught to eat them. The English appetite for salads is in a bad state, for it appears to favour indigestible washed out, flavourless stuff that is as useless to the frame as it is offensive to a cultivated taste. The coarse material that passes for salad would often be misplaced in the pig trough, because even pigs have some taste in the matter of food. Lettuces and celery are allowed to stand in water for hours and then human beings voluntarily sacrifice decency and health in eating them. It is dreadful to reflect that at a distance of only seven leagues across the English Channel is a nation that understands salads, and the people of this country make no effort, or a very feeble one, to learn something of the pleasure in the first instance, and the benefit in the last, of an elegant and delicate salad as part of the daily food of a civilized being.

Bolton Chrysanthemum Show, November 14 and 15.

Maidenhead Annual Flower Show, August 14.

Mr. G. A. Bishop has been engaged as head gardener to S. T. Mander, Esq., Wightwick Manor, Wolverhampton.

Mr. A. Alderman has been engaged as head gardener at Thurnscoe Hall, Rotherham, the residence of J. D. Ellis, Esq.

Mr. G. W. Mair has been appointed superintendent of the Victoria Park, Handsworth, Staffordshire.

Mr. J. Tunnington has been engaged as head gardener at Ripley Castle, Yorkshire, the seat of Sir H. D. Ingleby, Bart.

Mr. James Wood has been engaged as head gardener to D. McClure, Esq., West Bank House, Heaton Mersey, Manchester.

Mr. H. May has been engaged as head gardener to Lady Keane, Rose Mount, Sunninghill.

Liverpool Horticultural Association's fixtures for the current year are April 8 and 9, July 16 and 17, and November 18 and 19.

Ghent Summer Show, of Royal Agricultural and Botanical Society will be held May 11 to 13.

New Gallery Exhibition of Pictures will be opened to the public Thursday, May 1.

Society of Painters in Water Colours will open for the season Monday, April 21.

Rugby and District Chrysanthemum Show, Town Hall, Rugby, November 19 and 20.

Winchester Horticultural Society Rose and Flower Show, July 8 to 11.

Brighton Chrysanthemum Society will hold its exhibition on November 11 and 12 instead of November 4 and 5, the dates originally fixed.

Leicester Flower Show will take place on Tuesday, August 5, and a meeting of the British Fruit Growers' Association will be held in conjunction with it.

Bath and West of England Society's Journal contains a practical paper on the cultivation of apples in the western counties of England from the pen of Mr. Garland, of Killerton.

London County Council's estimates for the financial year include one of £65,325 for the maintenance of the public parks and open spaces under its charge.

Mr. James Finlay has been engaged as head gardener at Grinkle Park, Loftus-in-Cleveland, Yorkshire, the seat of Sir C. M. Palmer, Bart., M.P.

Mr. T. F. Rivers will, on behalf of the British Fruit Growers' Association, give a lecture on "Fruit Culture" at the meeting of the Balloon Society, to be held at St. James's Hall, on Friday next, the chair to be taken at eight p.m.

Fruit Prospects do not brighten, but happily there is time yet for improvement. Plums and pears are flowering in all southern counties; in the midlands and the north the plums are showing abundant bloom, and the pears are prepared to follow closely. Last week and this week the temperature has been so wintry that expectations have not risen high.

Proposed Hall for Horticulture.—A meeting of horticulturists and of persons interested in commercial horticulture will be held in the Council Chamber of R.H.S., Victoria Street, Westminster, on Tuesday, the 22nd, to consider the proposal and to secure support. The chair will be taken at half-past one.

National Auricula and Primula Society will hold its annual exhibition under the auspices of R.H.S. in the Drill Hall, James Street, Westminster, on Tuesday, April 22, when the exhibition will be opened to the public at 12. The luncheon will be arranged for by permission of the Horticultural Club at the Windsor Hotel at 1.30. Members of the Carnation and Picotee Society are invited to join. To many probably it will be convenient to do so, as immediately after the luncheon a meeting will be held to make final arrangements for the Carnation Exhibition and Conference that is to be a special attraction at Chiswick, July 22 and 23.

Mr. and Mrs. Gladstone, while sojourning at Weybridge in the past week, paid a visit to the beautiful Oakwood gardens of G. F. Wilson, Esq., F.R.S. The gardens at Wisley, near Weybridge, have been formed in an oak wood for the especial cultivation of beautiful hardy plants requiring a variety of conditions for their well-doing. In these gardens accommodation is provided for plants requiring peaty, boggy, sandy, calcareous, and other kinds of soil, and shady, sunny, exposed, and sheltered situations, the result being a truly wondrous assemblage of the most beautiful forms of vegetation gathered from the temperate climes and elevations of all parts of the world. Some account of the Wisley gardens was given in our issue for July 20, 1889.

British Fruit Growers' Association.—At the meeting of the committee held in the rooms of the Horticultural Club, Victoria Street, on the 3rd inst., several letters were read with reference to the arrangements that are being made for giving lectures in the provinces in conjunction with local societies, amongst them being one from Brownlow O. R. Tower, Esq., thanking the association for the excellent arrangements made for the recent meeting at Ellesmere. The programme of the great conference on strawberries and bush fruits at the Royal Aquarium on June 27 was prepared, and that of the conference to be held at Leicester on August 5 was considered. The routine business included the election of a considerable number of members.

MICHAELMAS DAISIES.

So much has been written during the past few years with reference to the beauty and usefulness of the finest of the perennial asters that I do not propose to ask you to allow me space to speak in their praise. We find them of considerable value for brightening up the borders in conjunction with the early chrysanthemums, and as they require but little attention they appear to be especially adapted to the requirements of amateurs and others with but little spare time. No class of hardy herbaceous plants could well be so variable as are the Michaelmas daisies, for whilst some are extremely beautiful, others are veritable weeds. I can speak with some degree of confidence upon this point. The tenant immediately preceding myself of the house I am now occupying appears to have been very partial to these flowers and to have had a rather large collection, in which were several kinds utterly devoid of beauty, and these appear to have been extensively grown. On my taking possession I found that although an effort had been made to remove the asters with the other things, the borders were full of the roots of these worthless kinds. The first season I left them undisturbed with a view to ascertain what they were, but from the time they flowered, some three and a-half years since, until the present time, I have waged war against them, but as yet they are not wholly exterminated.

It is satisfactory to know that nurserymen have expunged the worthless species that have given me so much trouble from their catalogues, and it is to be hoped that they will still further reduce their lists, for the shortest that has yet been published contains too large a number. I am alluding to these asters now, because this is the best season of the whole year in which to commence their culture, or make additions to collections. Planted now, examples, whether from pots or the open ground, will, in the course of the summer, become sufficiently strong to bloom profusely in the autumn. The majority of the asters are well able to hold their own when occupying a position in a crowded border, but all the more beautiful kinds appear to the greatest advantage when they have sufficient space for their full development. They also thrive in borders to which the roots of shrubs and trees have access, but less vigorously than in soil that is not so impoverished. In other words they, in common with the majority of the robust herbaceous plants, make the most vigorous growth when planted in moderately rich soil. Subsequent to their becoming established, it is simply necessary to apply a moderate top-dressing of manure annually or every second year, and to thin the growths when necessary. The planting should be done without unnecessary delay, as the sooner they are in position after these notes are published the greater is the probability of their blooming satisfactorily in the autumn.

The most beautiful of those under three feet in height are: Aster acris, a charming species, with azure blue flowers; A. amellus Bessarabicus, a handsome form, with purple-blue flowers; A. dumosus, an early-blooming species, with purple flowers; A. discolor, an elegant form, with white and pink flowers; A. longifolius formosus, a dense-growing variety, producing rose-pink flowers; A. nivea, the flowers pure white; and A. Shorti, an early-blooming species, bearing lavender-blue flowers. The finest of the strong-growing kinds are: A. Chapmani, the flowers bright blue; A. ericoides, white; A. formosissimus, rose-purple; A. grandiflorus, mauve; A. Novæ Angliæ pulchellus, bright rose; and A. polyphyllus, white. Enterprising Amateur.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, April 8.

Floral Committee.

Present: William Marshall, Esq. in the chair; Rev. H. H. D'Ombrain, and Messrs. P. Blair, T. W. Girdlestone, R. Dean, Shirley Hibberd, T. Baines, H. Herbst, C. T. Druery, H. B. May, R. B. Lowe, C. Jefferies, B. Wynne, and George Paul.

Following so closely upon the holidays it was not surprising that the contributions should have been less numerous than at the two meetings held in March. Novelties were few, and it may be mentioned as a matter of some interest that no first class certificate was granted by either of the committees.

Especially attractive was the large group of roses in pots from Mr. W. Rumsey, Joyning's Nursery, Waltham Cross, Herts, to whom the award of the silver Banksian medal was made. The whole of the specimens in the group were admirably grown and well-flowered, and prominent amongst the varieties were Cleopatra, a superb new tea of English origin, the flowers large of good form, with fine petal and of a delicate flesh pink hue. Very fine also was Madame Hoste, a comparatively new tea of much value. The same exhibitor who staged a good box of cut blooms in which Senateur Vaisse, Lady Mary Fitzwilliam, General Jacqueminot, Alphonse Soupert, Duke of Teck, Camille Bernardin, Innocente Pirola, Madame Camille, Alba Rosea, Niphetos, Marechal Niel, and Madame Lambard were represented at their best. Mr. J. Hudson, gardener to the Messrs. de Rothschild, Gunnersbury House, exhibited a box of cut blooms of Magnolia conspicua, and sprays of Habrothamnus scaber, an exceedingly beautiful species bearing dense clusters of bright red flowers. Mr. Wilkins, The Grange, Kingston Hill, sent a good basket of fancy polyanthuses and was accorded a vote of thanks.

Messrs. Paul and Son, Cheshunt, contributed liberally to the attractions of the meeting, and were awarded the silver Banksian medal for their several exhibits. They presented a large and effective group of amaryllis, consisting chiefly of varieties of their own raising; cut specimens of hardy shrubs, and a group of Alpine and hardy herbaceous plants. The shrubs included a hybrid berberis in the way of Berberis aquifolium, but earlier and bearing much finer racemes of flowers; and B. Darwini, one of the best of the small leaved kinds. The hardy flowers included the brilliantly-coloured Tulipa Gregei, and several forms of that species with yellow and scarlet flowers, primroses in variety, several Alpine primulas, Gentiana verna, the most brilliantly-coloured of all the gentians, and Doronicum plantagineum excelsum, a distinct form, remarkable alike for the large size and rich colouring of the flowers. O. T. Hodges, Esq., Lachine, Chislehurst, exhibited a group of hardy primulas and several well grown examples of Lachenalia Nelsoni, and was awarded the bronze Bankside medal. The examples of Primula viscosa and P. hirsuta were especially well bloomed, and proved to demonstration the great beauty of these species when at their best. From the Royal Gardens, Kew, came an interesting group of hard-wooded plants, in which were finely flowered specimens of Agapetris buxifolia, a handsome shrub of neat growth, and bearing a profusion of bright red tubular flowers, and Acacia lineata, an extremely beautiful species of small growth.

Daffodils were presented in large numbers and excellent condition, and formed a feature of considerable importance. Mr. J. Walker, Ham Common, Surrey, exhibited an immense collection, which was remarkable alike for the high quality of the flowers and the taste evinced in their arrangement. The silver Banksian medal was awarded. A large representative collection was exhibited by Messrs. Barr and Son, 12, King Street, Covent Garden, to whom also the silver Banksian medal was awarded. From the society's gardens came cut specimens of Aucuba japonica vera nana, well furnished with bright crimson berries.

Orchid Committee.

Present: Dr. Masters in the chair; Baron Schroder, De B. Crawshay, H. M. Pollett, H. Ballantine, C. Pilcher, J. Dominy, E. Hill, Lewis Castle, S. Courtauld, J. Douglas, A. H. Smee, J. O'Brien, and T. B. Haywood.

The most important of the novelties submitted to the committee was Dendrobium atroviolaceum, a distinct species introduced from New Guinea by Messrs. J. Veitch and Sons, Chelsea, by whom it was exhibited. The pseudo bulbs of the plant exhibited were about fifteen inches in length, but it may be assumed that when the plants are well established they will grow to a larger size. The flowers are produced in somewhat drooping racemes near the apex of the pseudo-bulbs, and about two inches in diameter; the sepals and petals are pale green, spotted with marone, and the labellum deep violet, the green ground breaking through in longitudinal lines. Mr. T. A. Glover, gardener to E. Ellis, Esq., Manor House, Wallington, contributed a specimen bearing four well-developed racemes; Messrs. J. Laing and Sons, Forest Hill, sent a well-marked form of Cypripedium niveum; Mr. Veerstake, gardener to Rev. Handley, Bath, staged an excellent broad petalled variety of Odontoglossum crispum; a good specimen of Angræcum sesquipedale, and an example of Odontoglossum maculatum; Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, exhibited a small group comprising well-flowered examples of Dendrobium nobile nobilius, D. nobile Cooksoni, Cattleya Mendeli, Trentham variety, remarkable for the rich colouring of the labellum, and Dendrobium chrysodicus, a beautiful hybrid of recent introduction. A bronze Banksian medal was awarded the exhibitor. Mr. W. H. Young, gardener to F. Wigan, Esq., Clare Lawn, East Sheen, was awarded a similar medal for a group of orchids, in which Cattleya Schroderæ was represented by a remarkably fine form; Mr. Cowley, gardener to F. G. Tautz, Esq., Studley House, Hammersmith, contributed a high-coloured form of Cattleya Lawrenceana, and a good specimen of the beautiful Cypripedium selligerum majus; Mr. O. Drewett sent cut flowers of dendrobiums and cypripediums; and Mr. G. Palmer, The Gardens, Drinkstone Park, Bury St. Edmunds, contributed splendidly-developed spikes of a bright rose-coloured form of Odontoglossum Pescatorei.

Fruit Committee.

Present: Sir Charles W. Strickland, Bart., in the chair; and Messrs. P. Crowley, R. D. Blackmore, T. F. Rivers, W. Warren, J. Smith, J. Wright, A. Watkins, G. Wythes, H. Balderson, Harrison Weir, J. Hudson, and J. Cheal.

Excellent examples of thirteen varieties of broccoli were sent by Mr. Barron from Chiswick, and the best of the types represented were Cooling's Matchless, Sharpe's Monarch, Mammoth, and Leamington. Mr. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, sent two good baskets of mushrooms.

Novelties.

Awards of merit were made as under:

To G. F. Wilson, Esq., Heatherbank, Weybridge, for

Primrose Oakwood Blue.—A beautiful variety, bearing large, finely-formed flowers of a rich cobalt blue with golden centre.

To Messrs. Paul and Son, for

Pyxianthera barbatula.—A distinct hardy Alpine, cushion-like in growth, with small, bronzy-green leafage, and producing a profusion of pure white flowers. Useful for a ledge on the rockery.

To Messrs. J. Veitch and Sons, for

Amaryllis Grand Monarch.—An exceptionally fine variety, the flowers very large with broad, stout segments, the colour brilliant crimson, shaded with marone, and extending to the centre.

To Mr. R. Dean, Ealing and Bedfont, for

Polyanthus Terra Cotta.—A distinct and beautiful fancy variety, the flowers large and borne in good trusses, and the colour bright brick red.

Scheme of Affiliation of Local Societies.

The following scheme of affiliation of local horticultural societies with R.H.S. was passed by the Council on Tuesday last:

Local societies subscribing £1 1s. will be entitled to

I. Two copies of the R.H.S. *Journal.*
II. To nominate one of their members to rank as a £1 1s. Fellow of R.H.S., with the usual privileges, excepting the Society's *Journal.*
III. One transferable ticket, admitting to R.H.S. meetings and shows, which may be used by any members of the local society.
IV. To purchase, at cost price, one silver and one bronze medal.

Local societies subscribing £2 2s. will be entitled to

I. Four copies of the R.H.S. *Journal.*
II. To nominate two of their members to rank as £1 1s. Fellows of R.H.S.
III. Three transferable tickets, admitting to all R.H.S. meetings and shows.
IV. To purchase, at cost price, two silver and two bronze medals.

Daffodil Exhibition and Committee, April 15 to 18.

The following are the arrangements for the Daffodil Exhibition and Conference to be held in the gardens of the society at Chiswick during the ensuing week:—

On Tuesday the Fellows will be admitted to the gardens at one p.m., and the general public at two p.m., and the exhibition will be formally opened by H.R.H. the Duchess of Teck, at three p.m. The judges and committees of selection will during the day be engaged in examining the flowers and drawing up their reports.

On Wednesday the Fellows and the general public will be admitted to the exhibition at eleven a.m. The conference will be opened at two p.m. by Professor Michael Foster, president of the conference, with an address. Mr. C. R. Scrase-Dickins, secretary of Narcissus Committee, will next give a short *resumé* of the work done by the committee since its appointment in 1886, and will present the report of the committee as to the exhibits and the awards of the judges. The following papers will then be read: "Historical Account of Cultivated Narcissi," by Mr. F. W. Burbidge, M.A., F.L.S.; "The Poeticus Group," by the Rev. G. H. Engleheart, M.A.

On Thursday the exhibition will open at the same hour as on the previous day, and the conference be resumed at two p.m.. Mr. J. G. Baker, F.R.S., will occupy the chair, and the following papers will be read: "On the Natural History and Cultivation of the Trumpet Daffodil and its Hybrids," by the Rev. C. Wolley-Dod, M.A.; "On Irish Varieties of Daffodils, with Special Reference to the White Forms," by Mr. John T. Bennett-Poë; "Notes on Seedlings and Seedling Raising," by the Rev. G. H. Engleheart, M.A.; "Daffodils for the London Market," by Mr. James Walker.

On Friday the exhibition will be open from eleven a.m. to four p.m.

A challenge cup and three silver medals are offered as prizes for collections in accordance with the conditions stated in the society's schedule.

DISPLAY OF SPRING FLOWERS AT READING, April 2.

On the above date, in bright weather, Mr. G. Phippen, Victoria Nurseries, held his second annual exhibition of bulbs and early-flowering subjects in the New Town Hall, Reading. The attendance was large, the musical skill of the Marines' string band and other artistes proving an additional attraction.

The hall was beautifully arranged. A double table occupied the centre, flanked by narrower stages, the staging round the walls being divided into sections, a semicircular table fitting to the form of the orchestra or organ gallery. Every portion was in harmony, Mr. Phippen being known as a well-qualified floral decorator. On the tables were harmoniously grouped choice palms, dracænas, spiræas, Bermuda lilies, arum lilies, Dielytra spectabilis, as centres or back grounds; with in the front line pans of lily of the valley, hyacinths (singly in pots or grouped in pans of six each), tulips (in pans of a dozen), narcissus, Primula obconica, daffodils, &c., in double lines edged alternately, with bunches of primroses and scarlet anemone fulgens, mixed with neat tufts of Isolepsis gracilis and mosses.

Some idea may be formed of the richness of the display when it is stated that Lilium Harrisi was represented by 600 fully-expanded flowers; of hyacinths about 4,600 spikes; of lily of the valley, 6,000 spikes; of tulips, 2,700 flowers; and of cut daffodil and narcissi, 2,000 spikes. Of primroses there were 150 bouquets, and a yet even larger quantity of the scarlet anemone.

One very striking feature of the display was a full-sized Irish harp (with golden strings), the frame and pedals formed of 500 yellow double daffodils (Telamonius plenus); this formed a centre piece for the orchestra; the other floral designs comprised ladies' dress sprays, wreaths and bouquets in which bronzy ivy foliage, scarlet anemone, yellow daffodil, fern fronds, grasses, &c., were mixed with orchid blooms and roses. One well-executed design (the monogram "I.S.H.") was very tastefully arranged, the "I" of pips of double scarlet pelargoniums, the "H" of double Russian violets, and the "S" of inflorescence of Allium Neapolitanum.

Hyacinths.—Among the best forms (singly in pots) the best spikes were British Queen, white, large waxy bells; King of the Blacks, very deep blue; Safrano, pale yellow; Rubra maxima, pink veined; Disraeli, double, red; Grand Maitre, sky-blue, shaded; Mr. Plimsoll, white, large; Bosco, deep red, striped; Leviathan, white, shaded rose; Empress of India, red, drooping bells; Cavaignac, light blue, large, glossy; Princess of Wales, light red, semi-double; White Bird, large, white; Roi des Belges, deep red; Obelisk, yellow, fine compact truss; Imperatrice Eugenie, large white, waxy, the premier variety of the show; Moreno, salmon red; Kohinoor, light red,

showy; Minerva, yellow, veined red; Stirling Beauty, pale yellow, grand form; Emperor of the Whites, semi double, large bells tipped green; De Candolle, lilac; Joost Van Vondel, yellow; Condor, flesh; Cissa, magenta; and Duc de Luxemburg, light yellow, compact spikes. In the sixes of one kind the best groupings appeared to be Leonidas, La Grandesse, Charles Dickens, Macaulay, Sir H. Barclay, Herman (choice), Regulus, Prima Donna, General Pelissier, Grand Vainqueur, Prince of Wales, General Havelock, Gigantea, Snowball, Mont Blanc, Queen of the Blues, Captain Boyton, William I., Norma, and Madame Van der Hoop.

Tulips.—The room being heated the bulk of the forms on view expanded their chalices very bravely, a few of the double varieties, especially so Toreador and the red and yellow forms of Tournesol, Duc Van Thol, Gloria Solis, Imperator rubrorum, and Murillo were conspicuously showy. The other sections were represented by masses of Brutus, Artus, Keizers Kroon, Cottage Maid; red, white, and yellow Tournesol, Rose Grisdelin, Wouverman, Yellow Prince, Chrysolora, Standard Silver, Grootmeester, Blanc Bourdre Pourpre, Van Vondel, Bride of Haarlem, Couleur Ponceau, Proserpine, Rosy Queen, Vermilion, Brilliant, Belle Alliance, Couleur Cardinal, Purple Brown, Couronne d'Or, L'Immaculés, &c., &c.

Miscellaneous Subjects comprised a most interesting collection of hardy and rock plants, including primroses and polyanthuses, Primulas floribunda, Sieboldi, pubescens, Rosea grandiflora, and nivalis; Saxifragas Vandelli, oppositifolia major, Burseriana, Malyi, and Sancta; Fritillaria pallidiflora, uniflora lilacea, and Ouranensis; Hepaticas angulosa, triloba, and cærulea; Polygala chamæbuxus purpurea; Androsace carnea, A. eximea, and A. Laggeri carnea; Anemone pulsatilla; Sanguinaria canadensis; Narcissus cyclamineus, and Sisyrenchium grandiflorum. Other novelties included a grand stout development of Primula obconica, the leaf blades, flowers, and general habit distinct, the flowers being large, round, and smooth, with a rich purplish rose eye.

CHATTER AND CHIPS.

I have somewhere read that it is a difficult matter to get a man to work unless he feels inclined to do so. It is very evident, from a letter before me, that our Editor is of the same opinion, and that he thinks that such is just my case. At any rate, the tone of his communication indicates that he thinks I have rested long enough, and that it is time I came out of my shell again, and devoted some of my spare time in compiling some notes under the above heading. I think I cannot do better than begin with a note on the

Present Prospect of the Fruit Crop.

This is everywhere in the most promising condition. At the same time I can only write hopefully. The English climate is so fickle, that even the present abundant promise may be disastrously affected by the weather before the advent of summer. Let us hope that it may not be so. Any way, the present outlook is most cheering in the closing days of March. If anything in this way has suffered at all, it is the apricot crop. In some few cases I know all the first blossoms which opened were killed by the frost early in the month, but the same agency that destroyed the first blooms retarded the others, so that there was more than enough left uninjured to form a crop. So far as I have seen the apricot crop is the least satisfactory of any, but peach and nectarine trees over a wide area are in the most satisfactory condition, not only are the blooms abundant, but they are stout as well, and all the organs of fructification are well developed. Pears are also in the most satisfactory state so far as the promise of bloom is concerned, for the trees are everywhere loaded with bloom buds just ready to expand. If there should be any failure in the pear crop it will show itself first in such varieties as the Jargonelle, Williams' Bon Chretien, and Beurre d'Aremberg. The buds of these were very prominent early in the year, and I should not be surprised to hear that in some cases they were injured by the cold weather of the month of March. As I write on March 26th there is very little pear bloom expanded on the other sorts, so that we may reasonably hope to get a good set of fruit. Plums and cherries are in a very promising condition. With regard to bush fruit I must wait a little longer before I say what the promise is likely to be. The birds have destroyed many buds as usual, and sometimes the spring frost does them serious injury.

Paraffin and Mealy Bug.

It will be remembered, perhaps, by some of my readers that in one of my communications on a previous occasion under this heading I referred to a case in which I had prevailed upon a young gardener to try the effect of syringing his stove plants with diluted paraffin for the destruction of mealy bug. Business called me again to the neighbourhood where the person referred to resides. So I called upon my young friend to see how the remedy had answered, as I knew if my instructions had been carried out it could not fail. It was agreeable to me to find that this had been done, and that no longer was this pest to be found in the garden. The cultivator was delighted to tell me that the longer he uses this remedy for destroying mealy bug the more he becomes convinced of its safe and effectual character. Although so destructive to insect life, it never injures vegetation if applied with proper care. In this instance a large plant of stephanotis, covering the whole of the roof of the house used to give no end of trouble, and was never clean many days together. Now the gardener drops half a wineglassful of paraffin into a gallon of water, and gives the plant a good syringing with the mixture. This is done about once a fortnight during the summer with this result, that we both searched the plant the other day but could not find a single insect, although before he adopted this remedy they could be seen in large white bunches at many different points. I can assure all those who are troubled with mealy bug that they need not be afraid to adopt the same means of getting rid of them on all hard-wooded plants, provided they do not increase the quantity I recommend, and keep the stuff well mixed as it is being applied.

Aphides in the Orchard House.

Greenfly is an unwelcome visitor when it attacks the fruit trees in orchard houses just as they are in flower. This it often does; and the destroyer increases at such an alarming rate that great deal of harm is done in a short time. Perhaps some of the knowing ones will be telling us that it ought not to be, no greenfly or any other insects ought to be allowed to reach the trees. Perhaps not, but they do nevertheless, in well-managed gardens as in others. I know it is not always possible to keep the trees free altogether from insects. At the same time, I am bound to say they ought not to be allowed to increase in such numbers as to do harm to the crop. The man that takes it easy when fly appears has none of my sympathy, because such a thing need not be if the cultivator will begin battling with the enemy before he acquires destructive power. It is surprising what may be done by going over the trees and pressing between the thumb and finger, and picking out with a pointed stick any of the insects that are found in the centre of the flowers and then killing them. If this plan is followed up twice a week, from the time the first blooms open until they have all set their fruit, the enemy will not get the upper hand, and the trees may be kept sufficiently clean until it is safe to apply some other remedy, in the way of syringing with some insecticide. A more expeditious but less certain way of destroying the fly is to use Gishurst compound, at the rate of two ounces of the compound to one gallon of water, and apply the mixture with a brush. But the liquid must be kept out of the centre of the flowers, or it may do them harm. Young cultivators should be very careful not to syringe fruit trees with any kind of mixture while the fruit is young, or it may possibly cause it to fall off. The same rule applies to fumigating. Strong doses of tobacco smoke will have the same effect.

The Best Pea for Exhibition.

In my travels last season I saw many sorts of peas growing, as well as exhibited at different shows. The best for showing out of the large number which came under notice was Sutton's Jubilee. It is a pea of noble appearance, the pods being long and unusually wide and full. The colour is also good, being a dark green. Associated with these good qualities is a free bearing habit. It grows to a height of about four feet.

Chatterbox.

Literature.

Days and Hours in a Garden. By E. V. B. (Elliot Stock.)—The seventh edition of this bijou book is the same as each of its predecessors, and it is not to record "improvements and corrections" that we announce its publication. Such a book, owing its life to sentiment, observation, and sympathy, is either at its best at first or never; it is a work of art that needs no such patching and mending as a work of science usually does as each successive edition is called for. But it is of importance that in so few years as those over which its publication extends it should acquire a degree of popularity to justify reproduction for the seventh time, for it tells of a wide-spread love of gardens and gardening, for where there is no love this book has no place, and yet for scientific purposes it has its uses, as the reader of its pleasant pages may soon discover. It is but a series of sketches of the aspects of the garden from time to time throughout the year, the changing scene being placed before us in light touches that are at once graphic and truthful, but never elaborated into fineries or splendours, or profundities to challenge criticism. And these light sketches, full of genial persuasion and gentleness, are served up in a most dainty style of printing to form a book of the inviting character that one might take to be designed expressly as an Easter offering, carrying with it a spirit of love and cheerfulness.

Journal of the Royal Agricultural Society of England (Murray).—The now famous journal of the R.A.S., enters upon a new career with this first part of the third series, and is to be published quarterly instead of half-yearly. We shall appear hypercritical possibly, but we will, for all that, venture to say that if a change was needed, a *monthly* issue should have been determined on, for the world moves faster now than in the days when the Society's journal first took shape and had but few competitors. But, accepting with thankfulness what is before us, we have to say that this is a capital number. Amongst the special articles is one by the editor, Mr. Ernest Clarke, on the "Foundation of the Royal Agricultural Society," and one by the Right Hon. Sir James Caird on "Fifty Years' Progress of British Agriculture." The management of lands, crops, cattle, manures, and the progress of special agricultural industries obtain ample attention. We must particularize three papers in this number as likely to interest many of our readers: they are "Disposal of Sewage by Small Towns," by Clare Sewell Read; "Fruit Farming for Profit," by Charles Whitehead; and "Market Gardening in the Scilly Islands," by E. Brewer. Miss Ormerod's report on insects injurious to crops is perhaps not less important than any of the foregoing, but the separate reports published by Miss Ormerod are so much fuller that for general purposes they are to be preferred. Many horticultural societies probably will now include the Journal of R.A.S. in the list of periodicals provided for the use of their members.

Orchids, Their Culture and Management. By W. Watson and W. Bean. (Upcott Gill.)—The progress of this admirable work is highly satisfactory. Part II. just issued is occupied with Stanhopea, Vanda, Trichopilia, Thunia, and some smaller genera, all of which are fully described and effectively illustrated. It will be invaluable to beginners in orchid culture, and the adepts will often consult it.

Carters' Practical Gardener is in very attractive form for the year 1890. The geometrical designs will be useful to the practitioners of carpet bedding, and the year's work will be useful to those amateurs who take a permanent interest in the real business of a well managed garden. There is a great mass of literature for a little money in this thoroughly practical book.

Antwerp festivities in August next will include the opening of the new Museum of Fine Arts and Antiquities and commemoration of the Tercentenary of the death of Christopher Plantin, the famous Antwerp printer, whose house and trade plant form a museum that equals in interest anything this fine old city can invite us to admire. The botanical books turned out from the Plantin press are greatly prized by all literary botanists, and the students of art find a joy in examining the original drawings made by the great Rubens for the initial letters, head and tail pieces, and colophons, for the Plantin firm.

CAYENNE OR RED PEPPER.

A correspondent asking about the different kinds of pepper is urgent on the subject of the kind known in commerce as "Cayenne," which is usually a red pepper, but not so of necessity, because were a yellow pepper in demand it could be produced from capsicum pods of that colour. The red pepper of commerce is commonly the produce *Capsicum annuum*, one of the hardiest of tropical plants, and a common weed in South America and the West Indies. The fruits of this plant



CAYENNE PEPPER—Fruit of *Capsicum annuum*.

are variable in form and colour, but the typical pattern is oblong conical, as in the figure accompanying this note, the colours being red and yellow. The pungent principle exists in both the shell and the seeds, and it is developed long ere the fruits are ripe, as may be discovered by any one who will taste a full-grown capsicum while it is still green. With Europeans cayenne pepper is regarded as a flavouring condiment, but with inhabitants of the tropics it is in many places considered one of the necessities of life, and is eaten green as well as ripe.

But cayenne pepper is also derived from the pods of *Capsicum frutescens*, which are smaller than those of *C. annuum*—in fact, not more than an inch in length, and are known in commerce as "chilies," "bird pepper," "guinea pepper," and "goat pepper." These being dried and ground furnish a pepper of excellent quality.

Another class of capsicums, known as "sweet peppers" and "bell peppers," produce fruits of large size, and are severally named Red Bullock's Heart, Yellow Tomato Pepper, Bull's Nose, and the like. These are mildly pungent, and have a peculiar flavour that renders them acceptable for slicing in salads and for flavouring gravies and sauces.

The cultivation of these peppers is a simple matter. If the seed is sown early in April in a warm house or on a hot bed, the plants should be ready to put out on a dry border under a hot wall early in June, and if the summer proves hot enough for tomatos the capsicums will do very well. But to ensure handsome, decorative plants, it is better to sow in March, and grow the plants on in pots. Indeed, this course is the only one that can be recommended in the case of the large fruited varieties, which require a long season and full exposure to sunshine. All these plants like a dry soil, therefore watering must always be performed with care, for enough they must have and in proportion always to the temperature.

GOLD-FISH IN PONDS.

Artificial ponds, at this time of the year, present a lively appearance, many positively swarming with animal life, visible and microscopical. Several of the former, and, maybe, some of the latter, are very hostile to gold-fish.

Almost every morning we take out two or three dead ones, either perforated with holes under the gills, or having bare patches where the scales have been removed.

We judge that the larvæ of the Ornoptera, and such beetles as Dyticus marginalis, Notonecta glauca, Nepa cinerea, Acilius sulcatus, and others are answerable for this damage.

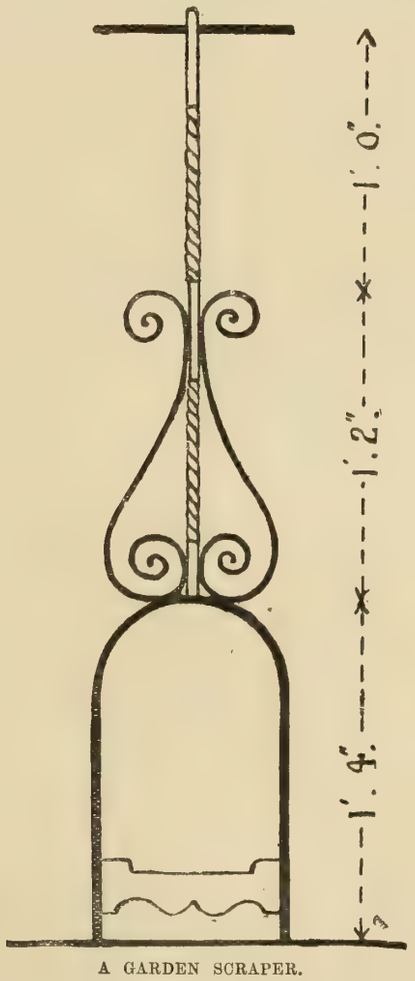
It is most difficult, if not impossible, to exterminate these pests, when in considerable numbers, especially where water-plants are grown.

Another objectionable hindrance to the well-being of the fish was a sort of fungus, which greatly resembled the silk-weed, nearly always present in artificial cemented ponds. This, however, has not appeared with us for some time now—a fortunate fact, for the disease is fatal. We sent a fish, so attacked, to Mr. Paul, of Euston Road, who expressed his opinion that he had never before seen anything like it.

Frogs are very active now, as it is spawning time: but we always remove a portion of the spawn, as there is so very much of it—in fact, it nearly fills up all the shallow pools, and looks most objectionable in the waters. M.

A GARDEN FOOT SCRAPER.

Among the many small things required in a well-kept garden, one of the most necessary and useful is a good scraper. For general purposes and most positions there is probably nothing to beat the simple and well-known form of scraper, made of two oak posts each about 2 ft. 6 in. long by about 2 in. square, pointed to drive into the ground, and a stout strip of sheet iron 2 in. wide by 12 in. long. It answers its purpose, and is not too conspicuous. But for positions near the house something a little more ornamental is generally required. Here is a good form of scraper suitable for placing on each side the front door. It is made of wrought-iron, and the bottom ends should be fixed into a



A GARDEN SCRAPER.

block of hard wood to be buried in the ground. The handle at the top will be found very convenient, especially on such occasions as returning home late after dining out, &c. Old Gardener.

North Woolwich Gardens, so long popular with Londoners as a place of entertainment, have recently been thrown open to the public, and will henceforth be known as the Royal Victoria Gardens. The gardens extend over eleven and a half acres, have a splendid river frontage, and have been purchased at a cost of £19,000, which has been raised partly by subscriptions, the remainder having been contributed from various public funds.

CATALOGUE OF POMPON AND SINGLE CHRYSANTHEMUMS.

(Continued from page 192.)

Iphigenie (J. Salter). *Pom.* 1855. Rose-lilac.
Iris (J. Salter). *Pom.* White tipped pink.
Isabella (Lebois). *Pom.* White.
Jacintha. *Pom.* Pale rose.
Jacques Himmes (Lebois). *Pom.* 1864. Rose-crimson.
James Forsyth (Forsyth). *Pom.* 1866. Brown-red.
Jane Amelia (J. Salter). *Pom.* 1860. Deep rose-carmine.
Jane (Cannell). *Single.* 1885. Pure white.
Jane Elizabeth. *Pom.* White ; late.
Jardin des Plantes. *Pom.* Syn. *Madame Domage.* White ; early.
Java (Bernard). *Pom.* Pure white.
Jeanne d'Arc. *Pom.* 1855. Blush-white.
Jeanne Cousinie. *Pom.* 1884. Purple-red.
Jeanne Hatchette. *Anem. pom.* 1857. White, pale yellow disc.
Jenny Lind (Cannell). *Single.* 1889. Yellow tinted orange.
Jersey Beauty (Langlois). *Pom.* Yellow and brown.
Jersey Gem. *Pom.* 1883. Yellow tipped brown.
Jessica (J. Salter). *Pom.* 1866. Crimson.
John Allum (Ware). *Single.* 1885. Bright-lake tipped yellow.
John W. Chambers (Hallock). *Single.* 1884. Golden-yellow.
John Tyars (Teesdale). *Single.* 1887. Rich magenta.
Jonas (Lebois). *Pom.* 1852. Bronze crimson.
Judy (Salter). *Pom.* Golden yellow.
Juguarita. *Pom.* 1856. Golden orange.
Julia Engelbach (Smith). *Pom.* 1862. Yellow and brown points.
Jupin (Bernard). *Pom.* Golden yellow.
Justine Tessier (Lebois). *Pom.* 1864. Blush-pink.
Kenilworth (A. Pele). *Pom.* 1859. Rose-purple.
King of the Yellows (Teesdale). *Single.* 1889. Deep yellow.
Kyrle Bellew (N. Davis). *Pom.* Crimson and yellow.
L'Avenir (Delaux). *Pom.* 1882. White-striped violet.
L'Ami Conderchet. *Pom.* 1885. Light yellow.
L'Enfant Trouve (Delaux). *Pom.* Red and yellow.
L'Evenement (Delaux). *Pom.* 1887. Rose and white, shaded.
L'Escarboucle. *Pom.* 1857. Bright yellow.
L'Inconnu (Delaux). *Pom.* Orange and red.
L'Orangere (Boucharlat). *Pom.* 1884. Apricot-yellow.
La Bien Aimee (Delaux). *Pom.* 1885. Carmine-red.
La Coquette (Lebois). *Pom.* 1861. Rose, yellow in centre.
La Desiree (Delaux). *Pom.* 1884. Pure white, centre rose.
La Favorite (Delaux). *Pom.* 1885. Red-crimson.
La Fiancee (Lamare). *Single.* 1889. Pure white.
La Financee (Lebois). *Pom.* 1850. White.
La Jonquille (Delaux). *Pom.* Rich yellow.
La Mascotte (Verschaffelt). *Pom.* 1882. Dull crimson.
La Neige (Lebois). *Pom.* 1857. White.
La Petite Marie. *Pom.* Pure white.
La Purete (Boucharlat). *Pom.* 1887. White.
La Pygmee (Lebois). *Pom* 1852. Deep yellow.
La Renoncule (Delaux). *Pom.* Violet-crimson.
La Sapajou. *Anem. pom.* 1851. Orange and red.
La Sibylle (Lebois). *Pom.* 1861. Yellow shaded orange.
La Tamise (Delaux). *Pom.* 1887. Red-salmon.
La Traviata (Delaux). *Pom.* 1882. Red-crimson.
La Vogue. *Pom.* 1855. Golden yellow.
La Sultana *Pom.* Bright lilac.
La Petite Brunette (Salter). *Pom.* Fawn.
La Rousse. *Pom.* Orange red.
La Vallee. *Pom.* 1883. White.
La Vierge. *Pom.* 1882. White, early.
Laciniatum superbum (Delaux). *Pom.* 1883. Rose, tipped yellow ; fimbriated.
Lady Brassey (Ware). *Single.* 1885. Pure white.
Lady Churchill (Teesdale). *Single.* 1885. Terra-cotta shaded yellow.
Lady Dorothy Neville (Smith). *Pom.* Bright yellow.
Lara. *Pom.* Cream, tipped cherry.
Le Camoens (Lebois). *Pom.* 1864. Rose edged white.
Le Jongleur (Lebois). *Pom.* 1850. Yellow tipped red.
Le Lilas (Delaux). *Pom.* 1877. Bright lilac.
Le Luxembourg (Pele). *Pom.* Bronze.
Le Neige (Boucharlat). *Pom.* 1877. Pure white.
Le Pactole (Lebois). *Pom.* Bright yellow ; fimbriated.
Le Parnasse (Lemoine). *Pom.* 1874. Dull pink tipped white.
Le Plaisir (Delaux). *Pom.* Yellow and red.
Le Vesuve (Lebois). *Pom.* 1864. Bright yellow.
Le Vesuve (Delaux). *Pom.* Rose and white.
Le Feu Follet (Lebois). *Pom.* 1851. Crimson and yellow.
Le Nain Bébé. *Pom.* Rosy lilac.
Leonora (J. Salter). *Pom.* 1857. Orange and red.
Leonie Vives (Bonamy). *Pom.* 1862. Creamy white.
Lilacée (Delaux). *Pom.* 1886. Silvery lilac.
Lilac Gem (Teesdale). *Single.* 1883. Rose-lilac, orange disc.
Lilac Gem (Cannell). *Pom.* 1875. Pale lilac with yellow centre.
Lily Owen (Owen). *Single.* 1889. Red-brown.
Little Creole (J. Salter). *Pom.* 1866. Cinnamon-brown, yellow centre.
Little Gem (Ingram). *Pom.* 1861. Light rose margined white.
Little Kate (J. Salter). *Pom.* 1866. Blush, yellow centre.
Little Pet (Smith). *Pom.* 1862. Blush-white.
Little Bob. *Pom.* Syn., *Scarlet Gem, Dr. Bois Duval.* Crimson-brown ; early.
Lilliputiennè. *Pom.* Reddish brown.
Lilac Cedo Nulli. *Pom.* Pale lilac, sport from *Cedo Nulli* ; scented.
Little Beauty (J. Salter). *Pom.* 1866. White edged rose pink.
Lizzie Holmes (Smith). *Pom.* 1864. Bronze-yellow.
Lord Mayor (Ware). *Single.* 1886. Orange shaded red.
Louis de Morney (Delaux). *Pom.* Rose-white.
Louisa (Forsyth). *Pom.* 1873. Purple-crimson.
Louiset Tessier (Lebois). *Pom.* 1863. Purple-rose.
Lovely (Owen). *Single.* 1889. Lilac-pink.
Louise Honoraty (Hayes). *Pom.* Dark rose.
Louise Piton. *Pom.* Silvery-blush.
Lucien Caboche. *Pom.* Rose pink.
Lucrèce (Lemoine). *Pom.* 1874. Dull orange.
Lyon (Pertuzes). *Pom.* Rose-purple.
Lucinda (Lebois). *Pom.* 1866. Sulphur yellow.
Lucinda (J. Salter). *Pom.* 1862. Blush shaded rose.
Lune Fleurie (Delaux). *Pom.* 1889. Deep orange ; fimbriated.
Mabel. *Anem. Pom.* Rose.
Madame Bernard (Bernard). *Pom.* Purple-rose.
Madame Blanche Pertuzes (Pertuzes). *Pom.* 1884. White, with yellow centre.
Madame Boucharlat (Delaux). *Pom.* 1877. White.
Madame Carnac. *Anem. pom.* 1857. Lilac, with yellow centre.
Madame Chalogne, *Anem. pom.* 1858. Blush, pale yellow disc.
Madame Angela Dumet (Lebois). *Pom.* 1841. White, yellow and rose.
Madame Gamlen (Lemoine). *Pom.* 1872. White, with yellow centre.
Madame Gramé. *Anem. pom.* 1857. White, with yellow disc.
Madame Jules d'Ivry. *Pom.* 1852. Light yellow.
Madame Jolivart. *Pom.* Blush white.
Madame Victor Lemoine (Bonamy). *Pom.* 1862. Rose-purple.
Madame Mazères. *Pom.* 1857. Silvery rose.
Madame Mervere (Lebois). *Pom.* White shaded rose.
Madame Mirbel (Lebois). *Pom.* 1850. Blush tipped rose.
Madame Molinie. *Anem. pom.* 1858. Rose-carmine, golden disc.
Madame Montels. *Anem. pom.* 1857. White, with yellow centre.
Madame Montandon (Delaux). *Pom.* 1889. Tender rose ; fimbriated.
Madame Marie Planes (Lebois). *Pom.* 1861. Yellow shaded rose.
Madame Piccol. *Pom.* Rose-purple.
Madame de Sabatier (Lebois). *Pom.* 1868. Lilac-pink.
Madame Sentir. *Anem. Pom.* 1868. Pure white.
Madame Thibaut (A. Pele). *Pom.* 1861. Blush white.
Madame A. Verschaffelt (A. Pele). *Pom.* 1861. Rose shaded lilac.
Madame Vilmorin. *Pom.* 1856 Lilac and rose.
Madame Bachoux. *Pom.* Rose-lilac ; early.
Madame Alphonse Dufoy (Pele). *Pom.* Pure white ; early.
Madame Eugene Domage. *Pom.* White ; early.
Madame Pepin. *Pom.* Crimson, brown.
Madame Bachaud. Pom. Lilac.
Madame de Vatry (Lebois). *Pom.* 1852. A rosy lilac.
Madame de Merlieux. *Pom.* Gold.
Madame Fould. *Pom.* Cream white.
Madame Pauline Deschamps. *Pom.* White and carmine.
Madame Pichaud. *Pom.* White and crimson.
Madame Rousselon. *Pom.* White-tipped rose.
Madame Victor Verdier. *Pom.* Rose and blush.
Madame Lemaire. *Pom.* White, passing to rose ; early.
Madame Mathilde. *Pom.* Rose and white.
Madame Louise. *Pom.* Rose blush ; early ; and fimbriated.
Mdlle. Autier (Lemoine). *Pom.* 1872. Purplish rose.
Mdlle. d'Arnaud (Delaux). *Pom.* 1883. Purple-rose, tipped gold.
Mdlle. Elise Dordan (Delaux). *Pom.* 1886. Rose, shaded white.
Mdlle. Fittere (Delaux). *Pom.* 1882. Chamois, shaded rose.
Mdlle. Guirard (Bonamy). *Pom.* 1862. White, shaded rose.
Mdlle. Valentine Farez (Delaux). *Pom.* 1889. Violet-purple.
Mdlle. Mathilde Jeambes (Lebois). *Pom.* Bright rose.
Mdlle. Laroche (Bonamy). *Pom.* 1862. White, shaded carmine and yellow.
Mdlle. Leonie Lassali (Lassali). 1885. Creamy white.
Mdlle. Massott. *Anem. pom.* 1856. Rose-purple.
Mdlle. Marignac (Delaux). *Pom.* 1882. Rose-lilac.
Mdlle. Marthe. *Pom.* 1861. Pure white.
Mdlle. Pourquie (Delaux). *Pom.* 1881. Lilac, shaded carmine.
Mdlle. Mathilde Raynaud (Delaux). *Pom.* 1883. Golden yellow, tipped white.
Mdlle. Ida Sayssisinel (Bonamy). *Pom.* 1862. Bright rose and lilac.
Mdlle. Schwab (Bonamy). *Pom.* 1862. White, shaded salmon.
Mdlle. Celestine Philopal. *Pom.* 1852. Yellow.
Madge Wildfire (J. Salter). *Pom.* 1866. Scarlet-crimson, tipped yellow.
Madeline Davis (Davis). *Pom.* 1884. Yellow.
Magenta King (G. Stevens.) *Anem. pom.* 1884. Magenta.
Magenta King (Teesdale). *Single.* 1883. Deep magenta, with white zone round disc.
Maiden's Blush. *Pom.* Blush-pink.
Maid of Kent (Cannell). *Pom.* 1885. White, shaded rose.
Maid of Sarragossa (J. Salter). *Pom.* 1859. Rose and blush.
Marie Crouzet (Lebois). *Pom.* 1864. Deep rose.
Marie Dupuy. *Pom.* 1857. White tipped rose.
Marie Lebarbier (Lebois). *Pom.* 1869. Light pink.
Marie Stuart (J. Salter). *Anem. pom.* 1866. Lilac, sulphur centre.
Marie Louise (Boucharlat). *Pom.* Lilac-rose.
Maria Vert (Delaux). *Single.* 1887. Tender rose.
Marone Model (Cannell). *Pom.* 1873. See Bob.
Mary Anderson (Teesdale). *Single.* 1885. White, suffused rose.
Marseille (Pele). *Pom.* Rose lilac ; early.
Mary Lind (Smith). *Pom.* 1862. Sulphur blush.
Masaniello (A. Pele). *Pom.* 1859. Rose-lilac.
Maurice Jongla (Lemoine). *Pom.* 1872. Deep orange-yellow, tipped brown.
Marabout. *Pom.* 1852. White ; fimbriated.
Marc Aurelia (Lemoine). *Pom.* 1874. Red tipped orange.
Marechal Magnon (Lebois). *Pom.* 1857. Rose-lilac.
Margueridetto (J. Salter). *Anem. pom.* 1856. Rose-carmine.
Margarita (Delaux). *Pom.* 1888. White tipped rose.
Marguerite de Coi. *Anem. pom.* 1874. Pale rose with white and yellow disc.
Marguerite Vincent. *Pom.* Chestnut-brown.
Marguerite de Wildemar (J. Salter). *Anem. pom.* 1854. Yellow.
Marguerite Bouverie. *Pom.* Violet tipped yellow.
Marmouset (Lebois). *Pom.* 1863. Bright crimson.
Medora. *Anem. Pom.* Rose lilac.
Medusa (Salter). *Pom.* Brown.
Meteor (Cullingford). *Single.* 1886. Chestnut shaded gold.

(To be continued.)

CULTIVATION AND SELECTION OF POPULAR ORCHIDS.

By Alexander Wright.

Prize Essay Chiswick Gardeners' Mutual Improvement Association.

(*Concluded from page* 201.)

Manures.—The question of applying artificial manures to orchids is often raised. Some good growers recommend it, others equally experienced condemn it. But I think there are but few growers but will admit that some of the species are greatly benefited by the judicious use of manures, such as the application of bones, in the form of bone meal, for many of the terrestrial orchids. One large grower I know speaks very highly of horse droppings, such as would be prepared for a mushroom bed, being added to the potting material for lycastes, and watering odontoglossums with weak manure water, made by steeping the droppings in water some time before using. He says the different appearance of the foliage after the use of the manure water is marvellous, and he is gradually giving such treatment to the whole of his odontoglossums. I do not recommend any radical change in the culture of orchids where the plants are doing well, but experiments carefully carried out often lead to a more successful mode of treatment. Do not for a moment let us suppose that we have yet reached the limit of successful culture in orchids, great as has been the stride made in that direction during the last few years.

Watering.—When to water and when to withhold water is another most important question. As a general rule, plants require most water during their growing period, but even then great care must be taken not to over-water. The sphagnum growing on the surface of the pots will help as a guide to watering. To keep the sphagnum green and growing on all plants during their growing season, and on cool orchids all the year round, will be the aim of most orchid growers. Allowing the sphagnum to become partially dry before watering will in most cases ensure enough water to the plants. The plants under this treatment will produce good growths and flower spikes in abundance. Guard against keeping the sphagnum always soaked so as to rot it; the growth made under such conditions is not the kind to flower freely.

Syringing will be necessary during hot, dry weather; it helps the plants as well as keeps down insect pests. As dendrobiums, cattleyas, &c., mature their growths, remove them to a cooler house where they can be more fully exposed to the light. But where this cannot be done, move them to the cool end of the house, and keep the syringe from them. I am no advocate of the dry system, that is still too common amongst orchid growers, of keeping many of their plants quite dry after having matured their growths.

After syringing during the afternoon shut the house up close for about an hour afterwards. This greatly helps the plants, and is a system I follow with good results. Watering during the winter months is best carried out in the morning, and during the summer it will be necessary to look over the plants twice a-day. Although I mention those times as being generally the most convenient, never let a plant suffer by want of water, however often and at whatever time it may require it. The true plant lover (and he is generally the successful plant grower) watches over his plants with care and attention, knowing the watchful eye to be essential to success. No other person can see so much beauty in a plant or flower as the painstaking and watchful cultivator who has followed the plant through all the various stages of its growth—it may be from the small seed. And is it to be wondered at if he sees beauty where others fail to see anything? This, I think, accounts for gardeners often estimating their own products as superior to others, for they believe them to be so, and the conviction is the result of the intense interest that careful cultivation encourages.

Shading.—It will be necessary to protect the plants from bright sunshine, and for that purpose there is nothing better than roller blinds. The material known as hexagon netting is very suitable, admitting plenty of light, yet breaking up the sun's rays, so that no burning or scalding of the plants takes place under it. The advantage of a roller blind over permanent shading is considerable, and the latter should never be adopted where the roller blinds can be had. In dull weather the blinds should not be used, and in fine weather they ought to be rolled up early in the afternoon to allow as much light as possible to reach the plants without causing scorching. With plenty of light the plants make sturdy well-ripened growths, one of the necessary conditions to ensure free flowering. During the autumn and winter months it will not be necessary to use the shading, as all the light we obtain then will be beneficial to the plants.

Insects.—Cleanliness is next to godliness; and as regards plants—whether it be orchids or any other plants—cleanliness is of the first importance. The greatest of orchid pests and the most difficult to eradicate is yellow thrips. For the destruction of this insect there is nothing better I know of than dipping the plants in tobacco-water, to which some soft soap has been added. After dipping lay the plants on their side to drain, afterwards syringe with clean water, and where they are troublesome repeat the operation at intervals of about a fortnight until they are got rid of. For scale there is nothing better than sponging the plants carefully with soap water, or some of the many insecticides recommended for this purpose. For green-fly we have found the carbon vapour cones very effectual. It is well known that tobacco smoke causes the leaves of the odontoglossums to turn yellow and drop, so that where they are grown it is better not to use it as an insecticide. If the plants are looked over periodically and cleansed, insects on orchids are never troublesome, and, as I have already said, the plants as well as the houses ought to be kept scrupulously clean at all times.

Diseases.—What is know as "spot" will be found one of the most troublesome to keep clear of. There seems to be great difference of opinion as to the cause of it. I am inclined to attribute it to cold, the plants receiving a chill at some time or other. One thing is certain, if any of the hot section should be kept too long in the cool house, spot very soon appears on the plants, and is a sure sign the plant is suffering from cold.

Seedling Orchids.—The raising of seedlings of any plant is interesting work, but with orchids it is more so than with most plants. Some of the causes for this may be that the so-called species as laid down by botanists do not appear very definite, often we cannot tell where one species leaves off and another begins, so that we may safely conclude there is a wide field open to the hybridist. As a general rule, we find that few species of other flowering plants will cross with one another, but with orchids I do not think this difficulty exists to near the same extent. My experiments in this direction have not extended over many years yet, but the results so far are encouraging. I have found that not only species will cross with one another, and that even genera do not stop the pleasure to be derived from this interesting work. From the experiments I have already carried out I am inclined to think that most of the orchids will cross with one another, as we find suitable seed-bearing plants. I am further strengthened in this belief by the construction of orchid flowers resembling one another to a greater extent than is to be found amongst other flowering plants. If we take two of the widest apart genera, amongst other orchids say cypripedium and odontoglossum, we find that cross-fertilization will be a difficult matter, but, I think, will yet be accomplished. I have often tried to get a cross between the two, but until this season I have never noticed that the pollen mass of the one has had any effect on the other; but this season I have succeeded this far, that the pollen from cypripedium has affected the stigma of odontoglossum, so as to close on the pollen and cause the ovary to swell. In the cypripedium the pollen is broken up into single grains, while in odontoglossum the pollen is in a mass and not granular. This would make a cross between the two genera the more remarkable. I am aware that the swelling of the ovary does sometimes takes place without any seed being developed, but on the other hand the affinity between the two genera must be very close for the pollen of one to take any effect on the stigma of the other, for I take it there must be some effect before the ovary begins to swell, beginning when the stigmatic disc closes on the pollen masses.

That is one of the interesting parts connected with crossing orchids; another is the raising of the seedlings and the careful watching they require through the number of years until they flower. Then the real interest is at its maximum, and we reap the fruits of our labour. Let me recommend all who have a few orchids to try what can be done in hybridising, although it may take a long while to see the result of our experiments. Remember "time is always on the wing," and that they are "growing while we are sleeping."

The cultivation of the hot section differs but little from the cool section, and where they can be cultivated as well as the cool section, it adds considerably to the richness of the collection, both in colour and variation in the flowers.

To see the plants in perfection when in flower, they ought to be removed to a house that can be kept drier, which enables the flowers to last longer in perfection, and if arranged with light elegant palms and ferns, their beauty is considerably enhanced and their diversity of colour and form may be admired at leisure.

GARDEN BEET.

Beet forms a crop of some importance and although not particularly difficult of cultivation considerable care is necessary in carrying out the several details to ensure roots that are at once delicate in flavour, rich in colour, and handsome in shape. Their size counts for but little in estimating the value of beet root, and therefore the cultivator must abstain from selecting the large rooted varieties, for they are all more or less coarse, and avoid forcing the smaller kinds into an exceptional state of vigour by the liberal use of strong manure in the preparation of the ground. On the other hand their culture in soil that is in an exhausted state must not be attempted, for roots so grown will contain an undue proportion of fibrous matter and be of but little use for salads or indeed for any purpose.

It is a good rule, and one therefore to which attention must be directed when speaking of the culture of beet, to devote to the crop a quarter that was liberally manured for the previous crop; beet may be had in perfection from the quarters that were in the summer previous cropped with potatos, cauliflowers, celery, and other vegetables, for which it is necessary to manure liberally. The soil will be in sufficiently good condition to maintain a steady growth and at the same time be free from rank manure. If the quarter on which the beet is to be grown is so far exhausted as to render a dressing of manure absolutely necessary, the manure used should be well rotted and be applied in very moderate quantities. Good tillage is essential to the production of roots that will bring credit to the cultivator, and when practicable the work of preparation should commence in the autumn previous; if it cannot be done thus early a beginning ought to be not later than the end of December, as full exposure of the soil brought to the surface to the rains and frosts of winter is of the utmost value. When the soil is deep enough it should be trenched to a depth of two feet, but whether the bottom spit is brought to the surface or not must be determined by its character. If it is heavy and tenacious or contains a large proportion of stones the best course will be to simply fork over the bottom spit and throw the top spit from the next section upon it, and thus continue until the whole of the quarter has been turned over. It is very desirable that the soil which forms the top spit should be well broken up because of the tendency of the roots to become forked, and of but little use when the digging or trenching has been done in a careless manner. Where the soils are naturally heavy it is a great advantage to fork over some time in March and be careful to knock the lumps to pieces. Advantage must be taken of a dry state of the surface for this operation.

The best time for sowing the main crop of beet is the end of April or the beginning of May, as when sown early there is a danger of the plants being injured by late spring frosts, and in dry seasons of a considerable proportion of the crop running to seed, and being thus rendered worthless. For early supplies it is necessary to sow before the middle of April and take the attendant risks. For the earliest sowing the Egyptian Turnip-rooted and Pine Apple Short Top are the two best, and for the main crop Pragnell's Exhibition, and Nutting's Dwarf Red are of great excellence. There are several other excellent types but I have thought it best to mention those only which have proved the most satisfactory with me. The drills should be about eighteen inches apart and from one and a-half to two inches in depth, and the seed be distributed thinly. From six to eight inches is a good distance to allow in the rows, and thinning should commence at a comparatively early stage, and be proceeded with at intervals until the whole of the surplus plants have been removed. Not less necessary than early thinning is the removal of the weeds as fast as they make their appearance, especially in the early stage. Old Spadesman.

VIOLETS.

Violets are so much in request throughout the winter and spring months that in the majority of gardens the production of an abundant supply of flowers over as long a period as possible is a matter of much importance. In many cases the results are not so satisfactory as could be wished, owing sometimes to the unsuitability of the soil, but more generally to an imperfect acquaintance with some of the details of their culture. Knowing this to be the case, it has occurred to me that an outline of the practice I have adopted for many years with much success would, in conjunction with notes on a few of the best varieties, prove useful to some of your readers.

The annual renewal of the plants is essential to success in the cultivation of the double varieties, all of which have to be flowered under glass, and in the cultivation of the single varieties the best results are obtained by renewing the beds at frequent intervals, as, for example, every second or third year. In any case, the routine culture commences in April, as that month is the best of the whole year in which to make plantations of violets. In the formation of the new beds, the usual course of procedure is to break up the old plants into portions, having two or three crowns each, and then plant them from twelve to eighteen inches apart each way. The smaller distance is the most suitable for the compact growing doubles, and the greater distance the best for the singles with large spreading leaves. Where the space available is comparatively small, a satisfactory compromise may be made by allowing eighteen inches between the rows and arranging the plants twelve inches apart in the rows. With me the single varieties have made a most satisfactory growth, and produced a profusion of flowers when they have been planted eighteen inches apart one way and twelve inches the other. Division of the old plants in the spring as here described is not the only method of increase. Violets can be readily multiplied by means of runners, those produced late in the summer or the early part of the autumn being the best for propagating purposes. Runners taken off early in the autumn, dibbled into shallow boxes filled with a light and moderately rich compost, and wintered in an unheated pot or frame, are in some respects better for the formation of new beds than the divisions of old plants. The superiority, however, is not sufficient to counterbalance the advantage the divisions have in the facility with which they can be obtained. For portions obtained by dividing the old plants must not be too large, as a few stout crowns are far superior to a considerable number in an imperfect state of development.

The selection of a position for the bed in the case of the double varieties that have to be lifted and bloomed under glass is of less importance than is usually assigned it. Some growers regard the north border as the only suitable place for the double violets during the summer. On the other hand, many consider an open sunny position essential to a satisfactory growth. As a matter of fact, they will thrive in both sun and shade, but there can be no doubt that the largest quantities of flowers are obtained when they occupy an open position, where they are screened from the sun during the hottest part of the day. When grown in the shade, as in a border on the north side of a wall, there is a risk of their not producing such strong crowns as could be wished, especially in cold districts. When occupying a sunny border the foliage is frequently attacked by red spider. In any case, it is best to form the bed in an open position, that the plants may enjoy both light and air, and if the bed runs east and west, and a row of scarlet runners is sown on the south side and about thirty inches from the edge, the plants will have all the shade they will require. A rich, well-tilled soil is an important factor in violet culture; and in the preparation of the quarter to be devoted to them, we apply a moderate dressing of manure from an old hotbed, and then throw the soil up into ridges. This is done some time in November, and the quarter remains undisturbed until early in March. We then spread a moderate quantity of leaf mould, of which we usually have an abundance, over the ridges, and then break them down with a fork. Without further preparation the ground is ready for the reception of the plants, which are put out some time between the middle and end of April at the distance stated above. We limit each bed to four rows, and allow a five feet space between the beds, and sow a row of scarlet runners along the centre of each of the spaces. A dry state of the surface soil is taken advantage of for putting out the plants to avoid the soil being trodden into a paste. The work, however, is not unduly delayed, and when we have to plant with the soil in a moist state planks are laid down for the men to walk upon. As the planting proceeds they are well watered in, and they are also assisted with overhead waterings during periods of dry weather until they are well established. After they have become nicely rooted and are commencing to grow freely, a mulch of some loose material will be highly beneficial, especially where the soil is naturally light. To keep the intervening spaces free from weeds is, as a matter of course, necessary, and the runners must be vigorously suppressed unless it is desired to take advantage of them for the increase of stock. In the latter case a few should, towards the end of the summer, be allowed to remain until they are of a suitable size, when they must be taken off and dibbled into boxes. On dry soils, where red spider is very troublesome, the overhead waterings must be continued until the end of the summer, or the leaves will be so injured as to render the plants of but little service.

The number of varieties now in cultivation is sufficient to afford considerable range for selection, but very few will be required for any one garden. The finest of the double violets are Marie Louise, a very fine variety, the flowers large, and of a deep lavender colour, with light centre, far superior to the Neapolitan; New York, similar in general character to Marie Louise, but the flowers are of a bright mauve, and it is earlier in flowering; Swanley White, the best of the double white varieties, and flowers being large, pure white, highly fragrant, and freely produced. In turning to the single varieties, mention must be first made of Wellsiana, which is the finest of all the large flowered single blue violets, and a great advance upon the Czar, Odoratissima, and Victoria Reginæ. The flowers are very large, with long foot stalks, very fragrant, and of a deep blue colour. The plant is vigorous in growth and free in blooming, the production of the flowers commencing early in the autumn. Rawson's White is a capital companion to Wellsiana, and very desirable. The plant is compact in growth, free in blooming, and the flowers are large, pure white, and borne well above the foliage. To these two may be added the Russian, which blooms freely and continuously throughout the winter, provided the weather is open. It is not necessary, or indeed desirable, to remove the runners of he last named, as when allowed to remain they quickly carpet the ground, and bloom freely throughout the season. W. B,

PROFITABLE WORK IN THE KITCHEN GARDEN.

The system of employing nursery beds for the purpose of encouraging the growth of all such plants as Brussels sprouts, cabbage, cauliflower, broccoli, savoys, and borecole is no new thing, but to my mind is not carried out in as many cases as its merits entitle it to be. The kitchen garden ground here is rather limited for what is often expected to come from it, so that a close system of double cropping has to be followed; and were we not to have strong plants of each respective kind to put out when the ground becomes vacant the result would be more often a failure than not. We have tried, on more than one occasion, to draw our supplies of plants as they were wanted from the seed beds, but have been so disappointed that to follow that plan now would seem to us only to court failure, and for several years we have adopted the following practice.

A piece of ground is selected not far away from the water supply, and is made of good heart by digging in a liberal allowance of well-decayed manure, and the soil is well broken up as the work proceeds. A short time previous to the plants becoming fit for transplanting a good top-dressing of old mushroom-bed manure and old soil from the potting bench is added, and the whole well broken up and mixed with the staple by means of strong hoes worked through as deep as possible. Should the surface not be sufficiently pulverized with once hoeing, the operation is repeated, and a slight raking over makes the ground in excellent order for receiving the plants. The size of the piece of ground thus prepared must depend upon the number of plants wanted.

When the plants are large enough they are dibbed into this piece of nursery ground a few inches apart, and after planting are given a good watering first with a spout pot so as to settle the soil well round each plant. The after waterings are generally given through a coarse rose watering can. Among the first plants we are generally anxious to push forward is Veitch's Autumn Giant cauliflower, of which we always endeavour to get a good breadth as early in the season as possible, or they are of little use. The other which claims equal attention is Brussels sprouts, and it is hardly possible to have too many of these two ever-welcome vegetables, or even to bring them along too quickly in the open ground; but Brussels sprouts can be pushed too forward under glass, in which case many will run to seed, and the sprouts will in many cases burst open before they are wanted. But these cannot be compared with the sturdy plants that have been brought on for the greater part of their time in the open air, and have only been assisted for a short time under glass before being planted in the open ground. These nursery beds are kept well supplied with water whenever the plants require it, and these are brought along as quickly as possible. When they are sufficiently large they are planted out in the open quarters which have been prepared for them, and we usually make holes for their reception with a crow-bar and put the plants well down In gardens that are much infested with slugs—a misfortune most common on cold, wet soils—the plan of having strong plants to begin with will be found to answer well, as there is no such thing as one or two small slugs carrying a plant away in one night which makes blanks to be afterwards filled up. Winter greens may be pricked out on the ground from which Brussels sprouts and cauliflowers have been removed, and when these have been disposed of a number of late broccoli may be pricked out on the same; and when these have been cleared into their permanent quarters, the plot may be sown with winter spinach, or be replanted with some of the winter greens or broccoli.

By having good strong plants of Brussels sprouts brought on in this way I have had in some years some of the finest sprouts in the garden to follow early and second early peas, the ground being cleared as soon as the peas have ceased to yield profitably, and slightly pricked up with forks and the plants planted after the manner described, giving them one good watering in. The depth at which they are planted seems to make them defy the driest of weather, but I do not recommend depending upon the planting of Brussels sprouts after peas, as it is too important a crop to tamper with, and a good piece of ground should be prepared by trenching and manuring during the winter months, both for this and Autumn Giant cauliflowers. The late broccoli are good for succeeding the later crops of peas, and for this crop we never dig, but plant into the firm ground, also crowbar fashion. C. Warden.

Clarendon Park.

Forecasting the Weather.—In report of Meteorological Council for 1889 just issued it is stated that the forecasts for the period of hay harvest were correct to the extent of 49 per cent., and partially accurate 35 per cent.; total, 84 per cent. The forecasts for the year were correct to the extent of 50 per cent.; partially accurate, 33 per cent.; total, 83 per cent.

IMPERIAL HOYA.

Hoya Imperialis.

This magnificent asclepiad is not often seen in gardens by reason of its requiring the full heat of the tropical stove, and some peculiarity of management not sufficiently understood by gardeners who have but limited experience with stove plants. Of its sumptuousness our figure will in some degree testify, and if we could give the colour as in the fine figure by Mr. W. H. Fitch, B.M. 4,397, conviction of its claim to high consideration as a climber for the stove would follow upon this note.

It is a comparatively new plant, or certainly not an old one, having been first seen in flower in Regent's Park in the year 1848, from the nurseries of Messrs. Lucombe, Pince, and Co., who obtained it from Messrs. Low and Co. at first hand as a new introduction. It is a native of Borneo, where it was found by Mr. Hugh Low, author of "Sarawak: Its Inhabitants and Productions," published by Bentley in the same year as the plant was exhibited.

This noble twiner is of robust habit, and requires space for its full development. There is no position for it more suitable than to be trained on rods or wires over the main walk of the tropical plan house, as in such a position its flowers are seen to advantage, and their rich perfume can be fully enjoyed. The leaves are oblong-ovate, coriaceous, dark green, the flowers are produced in pendent umbels of nine to fourteen, each on a long pedicel, the whole radiating from the stout peduncle like the ribs of an umbrella. The corolla of five broad divisions is beautifully shaded pale to deep purple or rich purple



HOYA IMPERIALIS.

chocolate, the central staminal crown large and projecting, ivory white, fleshy; the flowers last long and are especially fragrant in the evening and during the night.

In the cultivation of this superb hoya the full heat of the stove is necessary, and the soil should be strong and rich, the peaty composts in favour for stove plants being quite unfit for this vigorous growing plant. Especial care must be taken in cutting the flowers to spare the spurs from which they proceed. When these are removed, some time must elapse for their renewal, during which the plant will continue flowerless, except where spurs have escaped the operation of the knife. A free growth should be encouraged, and the plant trained as near the glass as possible consistent with the freedom it requires, and keeping it near enough to the eye for the enjoyment of its beauty.

ORCHID NOTES—REICHENBACHIA.

Part XI. of the second volume opens with a handsome figure of

Cypripedium Lemoinierianum, so named in compliment to M. Raymond Lemoinier, of Lille, in France, in whose collection it was raised. It is a remarkably vigorous plant, not even surpassed by C. grande in this respect. It forms a tall, vigorous spike, which freely produces bold, richly-coloured flowers, somewhere intermediate between C. calurum and C. Sedeni porphyreum. It requires to be grown in the warmest house, and the editor remarks that this hybrid, with allied species and varieties, succeed best in a compost of rich loam and peat, in equal portions, Moreover, they are said to require plentiful supplies of water when making their growth, and even during winter must be kept moderately moist.

The garden varieties of this type of Lady's Slipper have become very numerous, and they are certainly well worthy of careful attention. The first break from the original species was made by Mr. Seden, in Messrs. Veitch's nursery at Chelsea, by crossing C. Schlimi with C. longifolium, the result being C. Sedeni. C. Schlimi is itself a very beautiful species, not so often seen in cultivation as it ought to be. It is recorded that M. Linden's collector, M. Schlim, found this species growing in "moist places" in the neighbourhood of Ocana, at an elevation of 4,000 feet; and Mr. Purdie, collecting for the Royal Horticultural Society, found it at La Cruz on dry banks. C. longifolium was also discovered at a high elevation in Central America, five to eight thousand feet, and one would suppose that, this being the case, their progeny would not require a very high temperature, but we find from experience that they do; even C. Sedeni revels in a warm, moist atmosphere.

Catasetum Bungerothi (Brown) or C. pileatum (Reichenbach) is well figured with a wood-cut of the female flowers produced in the nursery at St. Albans last year. No more need be said on that point, as it was well figured and described in G. M. in December, 1889, p. 769. This fine plant is now well known, and it is of some importance that it is easily cultivated. It is a basket plant, and succeeds admirably in the warmest house in a compost of good fibrous peat and chopped sphagnum. Like all, or nearly all, the species in this genus, it likes plenty of light, but exposure to the sun's rays checks growth considerably. The catasetums require a good season of rest in winter, and ought to be re-potted, or, rather, re-basketted before they start into growth in the spring. The flower-spikes are produced when the growth of the bulbs is completed. A temperature of 55 deg. to 60 deg. Fahr. is recommended in winter.

Cattleya Ballantiniana is an interesting hybrid that flowered for the first time in February, 1889, and was produced in the St. Albans orchid establishment by crossing C. Trianæ with C. Warscewiczi. The sepals and petals are deep rose, the lip frilled and also of a deep rose colour; the disc of the lip is white, with a stain of yellow at the base. Hybrid cattleyas are not so freely produced as some other species of orchids, and they take longer by a good deal than cypripediums, dendrobes, &c., to grow to a flowering size; but when obtained they are always more valuable, and much more likely to hold their position afterwards. Messrs. Veitch, in their "Manual of Orchidaceous Plants," give interesting details of their work in the raising of hybrid cattleyas. The shortest period from the sowing of the seeds to the flowering of the plants was eight years, and the longest period was nineteen years. The first hybrid cattleya raised in gardens was C. hybrida, now lost to cultivation. C. Brabantiæ and C. Dominiana were raised soon after; also the splendid Lælia exoniensis, all of which were raised at Exeter. As a rule hybrid cattleyas are fairly vigorous in constitution, and flower freely.

Dendrodium Brymerianum is also figured, and is a remarkable species, now pretty well known in collections. It is named in compliment to W. E. Brymer, Esq., of Dorchester, who first flowered it in England. It requires the usual treatment recommended for Dendrobes, and should be grown in every collection. Its distinctive feature is its peculiar lip, which is deeply fringed, the fringe resembling a tuft of certain seaweeds. There is an inferior variety grown in collections under the name of Histrionicum.

The same plant is figured in the *Orchid Album* for the current month, plate 398, and the editor states that the variety Histrionicum is worthless, owing to the flowers having the peculiarity of self-fertilization, which causes them to drop before they open. The pseudo-bulbs of the typical and best variety are long and slender, while the bulbs of the spurious one are much shorter. It is also stated that the plant succeeds best in small baskets or pans, although it also does well in pots. It is a native of Burmah, and does best in the warmest house when making its growth.

J. Douglas.

Calls at Nurseries.

MESSRS. H. CANNELL AND SONS, SWANLEY AND EYNSFORD.

Accepting the other day the invitation, so freely given by Messrs. H. Cannell and Sons to "come and see" their nurseries, I saw at Swanley and Eynsford much that afforded both interest and pleasure, and not a little that filled me with surprise, although I am familiar with the operations of the firm and the energy that is brought to bear upon whatever is taken in hand.

The magnificent displays of zonal pelargoniums, cinerarias, primulas, cyclamens, and winter and spring flowering begonias which form such striking features at Swanley gave me much gratification. They also, by reason of their extent and effectiveness, gave rise to feelings of surprise, especially in the mind of my companion who visited Swanley for the first time. But what surprised me most was the remarkable progress that had been made in the development of the nurseries and seed grounds at Eynsford. It is not so long since the firm entered into possession of the land, some three hundred and fifty acres in extent, and now the greater portion is devoted to seeds or nursery stock. On the rising ground on the northern side of the nurseries a substantial and tasteful residence has been erected, and a more beautiful prospect than that it commands could probably not be found in the county. In the valley the spacious barns, granaries, and oast houses, once the receptacles of wheat, oats, and hops, are either converted or in process of conversion, into warehouses for garden and other seeds. Over the slopes are extending at a rapid rate the nursery stock and the various crops grown for their seeds. For the production of the various classes of seeds that can be brought to perfection in this country, the Eynsford farm has to some extent exceeded expectations. The area over which it extends affords a great diversity of soils and aspects, thus admitting of the several crops being grown under the conditions most conducive to a healthy development, and the pure dry air of the district is especially favourable to the ripening of the seed. As the result of this combination of favourable circumstances samples at once bright in appearance and possessing high germinating powers are obtainaed. It has been proved, amongst other things, that aster seed in every way equal to the finest continental samples can be produced at Eynsford without any special difficulty. This fact is interesting, as showing that our dependence upon continental growers for seed of asters and some other of our flowers is due more to a want of enterprise than to the climatic conditions of this country. Of glass there is as yet comparatively little, at Eynsford eight span-roof houses, each one hundred feet in length, have been erected for use in connection with the seed department, and one or two are occupied with primulas grown for the production of seed, and the others are devoted to the nursing of such things as require a longer season of growth than the average English summer affords.

In walking through the quarters devoted to nursery stock, it is interesting to take note of the relative popularity of the more important classes of hardy flowers as indicated by the extent to which they are grown. Herbaceous pæonies, iris, polyanthuses, violas, pansies, and violets appear to be in high favour, for of each there are several acres, promising a rich display in due season. The violas were flowering freely when I was at Eynsford, and chief amongst the single varieties was Wellsiana, which has a robust habit, is free in blooming, and has large deep blue and highly-fragrant flowers, which are especially adapted for bouquets and other arrangements in a cut state. In a pit at Swanley I saw a double violet which appeared to me to be a decided acquisition. It is known as Lady Hume Campbell, and has large finely-formed flowers, intermediate in colour between those of Marie Louise and the old Neapolitan. The flowers, it may be added, have long stalks, and are delightfully fragrant. Rawson's White, a pure white single violet, introduced by the firm a few years since, was flowering freely, and there was no difficulty in at once seeing that it is the best of the white varieties. I have grown both the last-named and Wellsiana, and, therefore, can speak confidently as to their merits. Much of the soil at Eynsford has been found especially adapted to roses, and the culture has been so far extended this season that the stock planted during the past winter exceeds one hundred thousand, a large proportion being seedling briers.

It would require more space than you could probably spare at this busy season to tell your readers of all of which I made note at Swanley as being deserving of special mention. I shall, therefore, confine my notes to a few of the more important features. Highly effective were the large displays of cyclamens, primulas, and cinerarias. The cyclamens were remarkable alike for the large size, fine form, and effective colouring of the flowers, and were particularly strong in the shades of crimson. The cinerarias, which occupied a large space, comprised both doubles and singles, and included a considerable number of named varieties. The single cinerarias are still unsurpassed in diversity of colouring and beauty; but the doubles are highly effective, and such fine varieties as at Swanley could not fail to prove useful, both for the decoration of the conservatory and for the supply of cut flowers. The primulas, which have several spacious houses devoted to them, and of the single-strains White Perfection, Cannell's Pink, Princess Beatrice, and Improvement must be mentioned for their great excellence. The colours of the first two are indicated by their names; Princess Beatrice has lilac coloured flowers, edged with white; and Improvement has flowers of a brilliant scarlet crimson, and remarkable both for their fine form and large size. Of the double primulas, Alba fimbriata and the Marchioness of Exeter are the most largely grown. The first named is equal in growth and freedom of flowering to the old double white, but has larger and more finely-formed flowers; and Marchioness of Exeter has large double white flowers, attractive on the plant, and of much value for bouquets when mounted singly.

The houses devoted to zonal pelargoniums are so richly furnished with flowers as to present a dazzling appearance. I made note of a considerable number of beautiful varieties in bloom, and give the names of a few with the hope that they may prove useful to some of your readers. These are Mrs. Maize, salmon pink, the flowers large and borne in noble trusses; Swanley Gem, rich scarlet, very large and distinct; Richard Dean, one of the most conspicuous in the collection. The trusses are rather large, the flowers of fine form, and the colour deep purple. John N. Baldwin, bright scarlet, dwarf; Amy Amphlite, white flower, very large; Bridesmaid, white, marked with pink at base of the petals; Lady F. Russell, bright pink, very large both in bloom and truss; Neila, mauve, very distinct; Plutarch, rich scarlet; Hyacinth, brilliant; Edith Little, bright pink; Fiery Cross, bright crimson; and Cannell's Favourite, rose magenta. The whole of the foregoing have single flowers, and are all of the highest quality. Swanley Double is a double zonal producing neat trusses of pure white flowers, and is so free in blooming as to be invaluable for cut flowers, more especially during the winter. At Swanley it is grown very largely to cut from. Black Vesuvius is a distinct

bedder, with bronzy-black foliage, and bearing orange-scarlet flowers. It is the most distinct of all the zonals, and the trials that have been made of it in the flower garden have been in every way satisfactory.

The structure devoted to the shrubby begonias was by no means wanting in attractions, for several of the finest of the winter flowering kinds were still blooming freely and in a fresh condition. Gloire de Sceaux, a little known variety with bronzy leaves and bright pink flowers; Semperflorens gigantea rosea, a strong growing variety producing large panicles of carmine rose flowers; and Nitida, pure white, comprised three of the very best. Although not in bloom the tuberous varieties are not without interest, and as indicating their popularity it may be mentioned that already upwards of one hundred thousand seedlings have been pricked off. In addition there are tens of thousands of yearlings and named varieties. I was struck by the plan adopted for the storage of the corms during the winter, but I feel bound to refrain from entering into particulars about that and some other matters at the present time. VISITOR.

NOTES ABOUT TOWN.

The famous Mrs. Wheldon once asked the pertinent question, "What is the use of having a husband if he doesn't live with you?" And Sir George Trevelyan's inquiry in the House of Commons the other night, was tantamount to demanding "What is the use of a garden and a country house, if Parliament will not permit a member to enjoy them during the best part of the year?" This is exactly the sort of question which hundreds of rational outsiders must frequently have put to themselves when dreamily poring over dreary speeches delivered in the House in July and August. We may safely say, for many reasons and quite without any political bias, that the failure of Sir George Trevelyan's motion for the rising of Parliament at the beginning of July, is much to be regretted. You cannot expect a man to work for eight or nine months out of twelve at exceedingly high pressure, and to be as fresh at the end as at the beginning of his task. No gardener, for example, would attempt to secure crops season after season from the same ground, without manuring and so forth. Would Bacon or Sir William Temple have enjoyed their gardens under the monstrous pressure and exigencies of Parliamentary life as we now see it. ? The constitution of the country is no doubt an important thing, but we appear to make just as satisfactory progress, and to get along quite as well, when Parliament is not sitting as when it is. Indeed, the House often reminds us of an old hen, which, with all her sitting and all her cackling, never hatches anything. The plea of the urgency of "public business" is therefore absurd. Sir George's speech in favour of the motion was one of the most cultured and literary that has been delivered in the House for a long time past.

"To those," said the Right Hon. Member, "who had a taste for the country and had gardens of their own, it was the greatest sacrifice which men could make to public life to forego the most attractive and one of the most expensive of their possessions. A poet who, if the value and not the bulk of his work were taken into account, was hardly second to any poet in our language—he referred to Marvell—had written—

> How vainly men themselves amaze
> To win the palm, the oak, or bays;
> And their incessant labours see
> Crowned from some single herb or tree;
> While all the flowers and trees do close
> To weave the garlands of repose.

These beautiful lines expressed the sacrifices which the richer of our public men made. But the majority of members had one home, and that in a town, and the only way in which they could get change of air was to take a house in the country or to go abroad. But they could not go to the country in the summer without feeling like schoolboys playing truant, and fresh air, such as could be obtained in the Alps, could not be enjoyed at the time at which Parliament now rose."

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At the time of his death, a short time ago, Peter Henderson, the well-known American seedsman, had just completed a new edition of his valuable "Handbook of Plants and General Horticulture." The preface, which he wrote, is dated in January last. This edition contains a great deal of new information, according to the New York *Publishers' Weekly*, and will make still more useful a work which has already become a standard.

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And so the "weather plant"—the legitimate successor and rival of the big gooseberry and sea-serpent—has received a final kick into limbo. It has proved a god-send to several of the daily papers, in which is consistently displayed an extraordinary and even stupendous ignorance of horticultural science. It was a German professor who "trotted out" Abrus precatorius as an organism which would foretell weather changes and prognosticate earthquakes. These fictions were first exploded in the Gardeners' Magazine of December 21, 1889, and a month or so afterwards more elaborately in the *Kew Bulletin*. The plant is unquestionably interesting, but so are plenty of others, to which are not attributed the qualities of being weather-wise, nor of being dreamers of seismological dreams.

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The "very latest" of the many theories which start up from nowhere, and get to a similar locality with equal celerity, is that contained in the advice which directs you to "keep a growing plant in your room, and so long as your plant thrives your piano ought to, or else there is something the matter with it." This is a very delightful piece of newspaper advice, characteristic for its extreme vagueness and general worthlessness. To begin with, "a plant" is scarcely definite—there being more than one! And, in the second, such a variety of plants, with brief spans of life, are now used for decorative purposes, that it is obvious no hard and fast rule could be laid down—even supposing anyone were foolish enough to try the experiment.

* * * * *

A plan for the conservation of the perfume of the violet may be here detailed. In Southern France, it appears, violets are always grown under the deep shade of the olive groves, to preserve and develop the peculiar delicacy of their odour. While other flowers, such as jasmine and rose, freely yield their odour unimpaired, the perfume of the violet seems to be indissolubly connected with the natural flower itself, and to be largely impaired or destroyed by any attempt to reproduce it in artificial form. In almost all the so-called "violet" extracts, the fresh and delicate perfume of the natural flower is wanting, and it is said that perfumers have not yet discovered a method of reproducing it perfectly. W. R.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Hardy plants in bloom comprise, Alyssum saxatile; Anemone stellata fulgens; Arum arisarum; Aubrietia grandiflora; Primroses, Dodecatheon integrifolia, Fritillaria præcox; Galanthus plicatus; Gentiana acaulis; Myosotis sylvatica; Daffodils; Ornithogalum umbellatum; Pansies; Primula acaulis; Silene pendula, S. pendula compacta; and Violas.

THE HOUSE.

The skylark is less suited to a state of captivity than some other small birds that could be mentioned, but it is a great favourite with many for its excellent song, and when kept in cages should have all the care necessary to its maintenance in the most perfect health. Without suggesting the general keeping of larks in cages, it appears desirable to point out, for the information of those who have a partiality for them, the conditions most conducive to their welfare. A beginning should be made with young birds, and it should be borne in mind that males are distinguished by their bright yellowish hue. The cages ought to be rather plain in construction, and decidedly roomy. The smallest dimensions that can be well recommended are a length and height of eighteen inches, and a width of twelve inches. The receptacles for food and water should be fixed outside the cage, and low enough for the birds to reach them when standing upon the floor. The cage must also be provided with a drawer deep enough to hold sufficient sand to enable the birds to dust themselves freely, Perches are not necessary, but it is well to stretch a piece of canvas about two inches below the roof to prevent the birds injuring themselves in their attempts to rise. A small piece of fresh turf ought also to be kept in the bottom of the cage. The food most suitable for larks under confinement is a paste made with bread and oatmeal soaked in milk, with the addition of poppy seed, bruised hemp, bread crumbs, and an abundance of green food. They are particularly fond of ant's eggs, and a little lean meat minced up very fine and given to them occasionally is decidedly beneficial.

CONSERVATORY AND GREENHOUSE.

Azaleas and Camellias.—To ensure strong, thrifty plants, keep shaded while making their new growth, and syringe frequently. Remove all seed-pods from azaleas and the few remaining flowers that abstract vigour from the new wood.

Bedding Plants to be exposed as much as possible now night and day during warm weather. Be in no haste to plant, as we may yet have frosts and cold rains. Pot off plants newly rooted, and let them taste a little bottom heat, to induce new roots to form. Remove zonal Pelargoniums, Verbenas, and other subjects to cold frames as soon as possible.

Beds, if not covered with spar or similar material, should be stirred, and some fresh soil added, in order to maintain the plants in a vigorous condition.

Fuchsias to be frequently syringed, and grown steadily on in a warm moist atmosphere; long-jointed ones may be stopped, so as to produce bushy plants.

Heaths and other hard-wooded plants coming into bloom should have plenty of air.

Pelargoniums required for late blooming should be stopped now, and in such a manner as to make well-shaped plants. Young stock should now have a good shift.

STOVE AND ORCHID HOUSE.

Orchid House should be shaded during the bright weather with tiffany or some other suitable material, removing it early in the afternoon. Plants requiring repotting must be attended to as soon as they are fairly in a growing state. Keep up the moisture in the atmosphere by sprinkling the paths and stages, and shut up early in the afternoon. Cattleyas, many of the Dendrobiums, Sobralias, Gongoras, Brassias, and all similar orchids, must have abundance of atmospheric moisture, as they are now growing freely. The bloom of plants in flower may be prolonged by removing them to a cool house where the atmosphere is drier. Plants suspended in baskets or on blocks will require the frequent and plentiful use of the syringe to keep them in health.

Stove.—Maintain a brisk temperature and a moist atmosphere, and allow no diminution of bottom heat, as most of the plants, and especially those which have been recently potted, are now making vigorous growths. All free-growing plants, such as Gesneras and Clerodendrons, should be shifted on as soon as they require it.

FORCING AND FRUIT HOUSES.

Figs must be frequently syringed until the fruit begins to change colour, and the roots must be aided with manure water. Stop the young shoots before they push too far; four joints are a good average.

Peaches and Nectarines are now coming on well, and the trees must be assisted to swell the fruit to a good size. Give enough water, with liquid manure at least once a week. Pinch off laterals, tie in good wood, syringe early on fine mornings and when the house is shut up for the night, and always give air early.

Pines are growing freely and must have plenty of water. In the fruiting house there must be a good heat kept up—65 deg. to 70 deg. by night, 80 deg. to 90 deg. by day. Pines fruiting require more air than growing plants to ensure a high flavour.

Strawberries ripening to have less water and plenty of light; temperature not lower than 55 deg. by night, nor higher than 70 deg. by day. Remove runners on plants coming into fruit.

Vines in outside borders require the full power of the sun on their roots now, so remove the covering at once. Let there be no neglect in stopping and tying in, now that the vines are growing freely. Covered borders are usually very dry at this season, and a good soaking is necessary.

FLOWER GARDEN AND PLEASURE GROUNDS.

Grass Turf must have every necessary attention now, or the consequences will be a burnt up lawn by July, and the predominance of coarse grasses. A sprinkling of guano or nitrate of soda at once where the turf is poor will be very beneficial. Grass newly up from seed to be handled very carefully, and not to be rolled or beaten till after it has been once mown.

Hardy Herbaceous Plants turned out of pots into good borders now will take to their stations immediately. If delayed longer they will not do so well unless frequently supplied with water, and it is advisable to grow these plants with as few artificial aids as possible.

Polyanthus Seed may be sown on north borders on fine soil, and be very thinly covered. If the border is dry, water well before sowing. When the sowing is done, sprinkle a very thin coating of moss over the seed plot; this will preserve a sufficient degree of moisture till the plants appear. If this seed becomes dry after being once made moist in the ground it perishes.

KITCHEN GARDEN AND FRAME GROUND.

Broccoli of any and every kind may be sown now. Any plants coming forward in seed pans to be made as hardy as possible by full exposure to air and sunshine, preparatory to pricking out.

Cabbage to be sown in considerable breadths, if the main sowing is not yet done. The seed sown now will give supplies from August to April next, if the sorts are well chosen.

Cauliflowers that have stood the winter beneath handlights should have the soil loosened about them, and a little earth drawn to the stems. The glasses should now be removed, but be kept ready in case of keen north-east winds blowing, when they will be useful to put on at night, and, indeed, to leave on for a day or two, should the weather be really wintry, as is not unusual at this time of year.

Celery should be pricked out into boxes or on a slight hotbed, and at all avourable opportunities give air as soon as the plants are established. the main crop is not already sown, sow it at once in a gentle heat.

Lettuces may be sown in open beds for main summer crop. Any that are crowded in seed pans may be much benefited by pricking out on a bed, under a frame, to be lifted shortly with good balls, and planted out finally. If this treatment is carried out with care, so as to cause as little check as possible, some grand samples may be grown, manure and water being of necessity aids thereto. But if the plants are roughly handled, and suffer much, the check will cause them to bolt as soon as warm weather sets in.

Potatos making their appearance above ground should be protected by drawing earth over them. Continue planting for the main crop until the work is finished.

Sow without delay turnip radishes for succession, scorzonera and salsify in drills one foot apart, purslane on a warm sunny border; chou de Milan, savoys, and Scotch kale, carrots for main crop, cabbage, brussels sprouts for late supplies, cauliflowers, and lettuce.

VILLA FARM.

Kohl-rabi roots are highly nutritious and of much value for feeding stock. The crop may moreover be grown with considerable success on soils from which it is not practicable to obtain really good crops of either turnips or swedes. The bulbous portion of the stem, commonly designated the root, may be given to cows in milk with but little risk of a disagreeable flavour being imparted to either milk or butter, provided the quantities are moderate in proportion to the other foods. Strong lands are the best suited to the cultivation of kohl-rabi, but it is not particular in the matter of soil, and provided it has the advantage of fairly well-tilled ground and a moderate dressing of manure a crop ranging from twenty-five to thirty tons per acre may be expected with the utmost degree of confidence. The middle of April is considered by men of experience to be the best time in the whole year to sow or drill the seed, and with reference to this point we would strongly recommend the drilling of the seed where the crop is to be grown as much preferable to sowing in beds and transplanting when the plants are large enough. More seed is undoubtedly required when the drill is brought into requisition, the usual quantity being four pounds per acre; but as a set off to this the labour incurred in the preparation of the seed beds and in transplanting is saved, and it may happen just when the plants are ready to go out that the weather is so hot and dry that to proceed with the work of transplanting would incur the risk of losing a large percentage. On ordinary soils the rows should be eighteen inches apart and a distance of fifteen inches be allowed from plant to plant, and on deep rich loams an increase of three inches each way will be a decided advantage. With the seed should be drilled a mixture of guano and superphosphate at the rate of three cwt. per acre, and in equal proportions, or it may be sown broadcast and harrowed in when the land is undergoing the needful preparation, but drilling the manure and seed together is the better way. Thinning at the proper time, filling up such blanks as may occur, and plying the hand or horse hoe, for the purpose of keeping the weeds under and maintaining the surface in a loose condition will follow as a matter of course and need not be dwelt upon. The bulbs, when they have attained their full size, can be eaten off the land in precisely the same manner as turnips, or they may be stored in the same way as mangles and swedes, and when stored they can be kept in the most excellent condition.

"EVOLUTION."

The Lord let the house of a brute to the soul of a man,
And the man said, "Am I your debtor?"
And the Lord—"Not yet: but make it as clean as you can,
And then I will let you a better."

I.

I my body come from brutes, my soul uncertain, or a fable,
Why not bask amid the senses while the sun of morning shines,
I, the finer brute rejoicing in my hounds, and in my stable,
Youth and Health, and birth and wealth, and choice of women and of wines?

II.

What hast thou done for me, grim Old Age, save breaking my bones on the rack?
Would that I had past in the morning that looks so bright from afar!

Old Age.

Done for thee? Starv'd the wild beast that was linkt with thee eighty years back,
Less weight now for the ladder-of-heaven that hangs on a star.

I.

If my body come from brutes, tho' somewhat finer than their own,
I am heir, and this my kingdom. Shall the royal voice be mute?
No, but if the rebel subject seek to drag me from the throne,
Hold the sceptre, Human Soul, and rule thy Province of the brute.

II.

I have climb'd to the snows of Age, and I gaze at a field in the Past,
Where I sank with the body at times in the sloughs of a low desire,
But I hear no yelp of the beast, and the Man is quiet at last
As he stands on the heights of his life with a glimpse of a height that is higher.

From Lord Tennyson's *Demeter and Other Poems.*

AMERICAN NOTES.

Peppermint Culture and Distillation.

The raising of peppermint for the manufacture of oil is—we learn from the *Garden and Forest*—an important industry in Wayne County, New York. The plants are set out in May, in rows two feet apart, and grow to be about two feet high by August, when they are cut off close to the roots with a scythe and cured in the sun like hay for about twelve hours. The extracting of the oil is done by professed distillers, who are paid by a toll or by farmers themselves in stills of their own. The still is a wooden vat about four feet high by six in diameter. In this the mint is packed close by treading, covered with an air-tight lid, and subjected to the action of steam forced in from the bottom. The oil is volatilized by the steam and condensed in a worm, and the mixed oil and water, collected in a receiver, separate by scientific gravity. It is said that there are a hundred public stills in the country, and it is locally believed that nine-tenths of all the oil of peppermint used in the world comes from this region.

New Hybrid Rose.

A new hybrid rose, raised at the Arnold Arboretum by Mr. Dawson, is just now flowering for the first time. It was—observes *Garden and Forest*—produced by crossing the small, white flowered Japanese *R. multiflora* with pollen from the well known hybrid perpetual, General Jacqueminot. The offspring of this cross has the foliage, somewhat reduced in size, the branchlets and the spines of the pollen parent; the flower is solitary (not clustered as in *R. multiflora*), about an inch across, cup-shaped, semi-double, with bright pink petals; and, moreover, it has the real Jacqueminot odour. The plants, as far as they have been tried, are perfectly hardy, while most of the so-called miniature roses with bright-coloured flowers are tender in the severe New England climate.

Manures for Tomatos.

In the course of the summer of 1889 some trials in the use of fertilizers in tomato culture were carried out at the New Jersey Experiment Stations, From the record of these trials, says the *Garden and Forest*, it appears that nitrate of soda increased the yield invariably, but was most effective when used in small quantites at a time, and, as would have been supposed, when balanced by applications of phosphoric acid and potash. Contrary to a prevalent belief that chemical fertilizers make garden produce watery, tasteless and innutritious, the tomatos on the plots where nitrate was used were not only large, smooth, and beautiful to the eye but they were more solid and had fewer seeds than those on the other plots, and the chemical analysis proved their superior nutritive value. The crop was increased by the nitrate from thirty-five to sixty per cent. on the different plots. Considering that ten tons an acre an average yield, and $6.50 a ton an average price, the gain from the use of nitrate ranges from $17 to $39 an acre. This would make an important difference in a state where 15,000 acres are devoted to raising tomatos for canneries, besides some thousands more where tomatos are grown for market.

Liquid grafting wax.

Permit me, writes Mr. J. L. Budd in *Orchard and Garden*, to give a method of making an excellent liquid grafting wax. The course of procedure is to take one pound best white resin, one pound beef tallow melted very slowly so as not to harden. When melted take the dish from the stove and add slowly, whilst stirring, one tablespoon of turpentine. Then, slowly add alcohol, while stirring, until the mass has a thin molasses-like consistency. In this form it is ready for use, and it is also the best wax for use in waxing collar grafts of the cherry, plum, and pear put up in graft rooms, that we have ever tried. After the alcohol has evaporated too much from exposure to the air, place dish in hot water and add alcohol as before. We also use this wax with perfect success in out-door grafting of the cherry and plum, by keeping dish over a lamp in a lantern-like tin box, and wrapping a white rag over the wax while it is still soft to prevent its possible melting or cracking.

New Early Strawberry.

Among the many new varieties of strawberries that we have tested in our trial grounds there is none, reports *Orchard and Garden*, that appeared more promising at the outset and that, later, has more fully sustained its promise than Shuster's Gem. It is a New Jersey seedling, from Crescent crossed with Sharpless, and first fruited with the originator in 1882. We received plants of it in 1886, and during the first year it attracted particular attention, among other sorts, by its vigour of plant and robust habit of growth. It has fruited in our grounds since 1887, and our experience with it justifies us in saying that the originator's praise when sending us the plants was by no means extravagant. The plant is unusually stout and strong, with clean, healthy foliage, and a pistillate blossom, exceedingly productive. The fruit is large to very large, globular, remarkably regular and uniform in size and shape, of excellent quality, quite firm, and of an intense vivid scarlet colour. In quality it may be rated as first-class. It ripens quite early, about with Crescent, and continues bearing for a comparatively long season.

Hardiness of Citrus trifoliata.

We have no doubt that the hedge plant of all others for all parts of this country has (writes a correspondent of *Orchard and Garden*) at last been found, and its adoption can only be a question of time enough for the seed to become plentiful and cheap enough for the purpose. The plant I refer to is Citrus trifoliata, called by some Limonia trifoliata. It bears small sized oranges, which though too bitterish to eat out of hand make excellent marmalade. I planted thirteen of these trees in the hills of Northern Maryland in the spring of 1880 in a locality nearly 800 feet above tide water, but in a valley where frosts lay heavily. The following winter these little plants, which were seedlings out of four-inch pots, were exposed to a temperature of 18 deg. below zero and 4 deg. below at noon with a bright sunshine. They were entirely unprotected during the whole of this spell, the coldest I ever knew, but were not injured in the least. These trees have never been protected, and are now in full bearing. Its advantages as a hedge plant are its natural dense habit of growth and abundance of its sharp thorns. It is naturally dwarf, and will need but little trimming to keep it within bounds. It is deciduous, but every twig and branch is of a bright, glossy green, and in summer and winter it will make the most ornamental of hedges. The seed can doubtless be obtained in quantity from Japan if there arises a demand for the plants, and it will not be many years before there will be quantities raised in this country, for the trees are wonderfully productive when once started into bearing.

GARDEN FLOWERS.

The return of wintry weather is so strictly according to rule that to be doleful on account thereof would be sheer foolishness. But we will not make pretence of rejoicing, because the spring comes in its established way a little at a time with a lot of old winter sandwiched between its several promises. Green leaves were expanding and flowers were opening, or showing intentions that way, but in the course of a fortnight the progress has been but slight. But there has been progress, and London is now somewhat leafy, and in many places, more particularly westward, a few plums and pears are showing flower, although the fruit trees generally show only swelling buds, and will keep us waiting yet for a full burst of flowers. Daffodils are justifying the poet's words of "taking the winds of March with beauty," for they abound and most welcome they are. As for other good things they are scarce, and there are no subjects that make a great show beyond those mentioned. The wallflowers have greatly recovered, and will from this time improve, although the stocks have been thinned considerably and in damp soils there are many deaths. Winter aconites are quite over about London, and there is nothing to take their place for colour at present.

Chionodoxas make brave patches of blue on the rockeries; the original *C. Luciliæ* being admirably supplemented by *C. sardensis*, and some half-dozen newer sorts are coming along, so that we seem to be in view of quite a collection.

Erythroniums of the Dens canis group are flowering in sheltered nooks, but the American kinds in the open rockery require more time. We have *E. Dens canis album*, white; *album major*, a larger form; *purpureum*, a rich little beauty, early and sure; *purpureum major*, a larger form; and *roseum*, lively rose. There are others, but they are less distinct. In the alpine house we have *E. grandiflorum* in fine trim, and attracting much attention; and *Americanum*, golden yellow. Mr. Ware has a fine lot of *Hendersoni*, a scarce American species with purplish lilac flowers that deepen in the centre to fuller purple, with a circle of gold to emphasize the colouring.

Scillas have made a good show, and *S. bifolia* is first in southern gardens, though just now in its prime in the north. Our prominent scilla now is the well-tried and unsurpassed *S. Siberica*, which now displays its superb azure-blue flowers, a gem for any purpose, whether to force, or to flower in the alpine house, or to light up the rockery, or to play a part in a display of spring bedding, for which purpose to use it well demands some skill, because of the difficulty of finding for it suitable companion plants that will flower at the same time. *S. amœna* is a good plant, and the full coloured variety is the best, the paler *pallida* being useful only to make a change.

Hellebores have finished their season near London, and are endeavouring to grow, but the cold pinches the young leaves, and shelter is still required. We have some fresh-looking clumps of *H. colchicus*, the deep crimson flowers of which have a grand metallic glow when the sun shines on them. All except the niger group will give a few flowers for a week or two yet, but we shall scarcely see them, for the new growths will be conspicuous above the crowns, and the odd remainders will not be wanted: the best of them are *H. purpurascens*.

Anemones include the beautiful *A. blanda*, with its pale blue flowers; and *A. angulosa*, a fuller blue, a finer flower, and a quite important feature of the rockery. The brilliant *A. stellata* is flowering in sheltered nooks of the open rockery, and for some weeks past has been a gay denizen of the alpine house. The same must be said of *A. fulgens*, which has not done so well in the open as one could wish, but under glass has been grand. *A. nemorosa* we have not yet seen, nor has the pasque flower shown its welcome purple flowers. In the alpine house *A. palmata* and *A. sylvestris* have been delightful, and have not failed of admirers.

Saxifragas mean business, and the tufts of *S. sancta*, *S. oppositifolia*, and its white variety, are in beautiful colour. The delightful *S. Burseriana* shows its red buds in plenty, and its milk white flowers appear here and there to suggest that presently there will be plenty of them. All the banks of saxifragas are green and bright and full of promise, but the large-leaved *Megasias* present a woe-begone appearance, the wintry weather of February having made too many marks upon them. They are all showing flowers now, but in a miserable way, the stems being so short that the display is one of imbecility. Some that we covered with spare frames two months ago have flowered well, and the stems were long enough to enable us to cut them to advantage. This is the right way to do them; they need such help quite as much as the hellebores.

SPRING FLOWERS IN THE LONDON PARKS.

For some time past the more important of the parks and open spaces within the metropolitan area have been gay with spring flowers, and they now afford excellent lessons in the utilization of bulbous plants that flower early in the year in the embellishment of the flower garden. First to make their appearance were the crocuses, resplendent in purple and gold, and then followed the daffodils and the hyacinths, the latter now being in perfection and producing an exceedingly effective display. In several instances, and more especially in Regent's and St. James's parks the planting of bulbs in the grass has been carried out on a comparatively large extent and in some cases with considerable success. In others the results have been more or less unsatisfactory and have served to show that there is yet much to be learnt in growing bulbous and other flowering plants in the grass. It is too much the practice of employing mixtures instead of selecting a few distinct colours and then arranging them in more or less irregular masses. When the crocuses, for example, are planted in mixture over a large area they are singularly ineffective, but in masses of distinct colours, so arranged as to give the idea that each mass had sprung from a separate colour, they present an appearance at once natural and effective. More objectionable than the "pepper and salt" mixtures of crocuses are the geometrical figures worked out on the grass with these bulbs. Daffodils although evidently regarded with considerable favour are not employed so largely for planting outside the beds as are the crocuses, although they appear to much greater advantage on the grass. Many are the nooks and corners in the several parks and open spaces in which a few large clumps would materially add to their beauty. It may be suggested with reference to these clumps that each one should be large enough to produce a good effect, when seen from a distance, and consist of a distinct variety.

In Hyde Park, where spring flowering bulbs are utilised with much success in the embellishment of the enclosures alongside Park Lane, tulips and hyacinths are the most largely employed. The tulips are making rapid progress, but the hyacinths are at their best, and of the latter there is a magnificent display. Especially effective are the great blocks of colour in the enclosures between Stanhope and Grosvenor Gates. Each bed is filled with a distinct variety, and the bulbs were planted about twelve inches apart each way, which is evidently the most suitable distance when it is desired to produce the best possible effect with a moderate number of bulbs. The more important of the hyacinths planted in Hyde Park are the following:

Charles Dickens.—A well-known single variety with bright blue flowers, the spikes rather large and massive, and the colour very effective.

Gigantea.—A single variety bearing rather tall spikes of flesh pink flowers, not first-class for bedding, as the green tint of the unopened buds and the partly expanded flowers detract materially from the general effect until the spikes are fully developed.

Couronne de Celle.—A single variety, now surpassed by other varieties in its line of colour for pot culture, but desirable for the flower garden. The spikes are rather tall and loose, the flowers large and well formed, and the colour bright porcelain blue. In the mass this variety is very effective.

Gertrude.—An effective variety, the spikes of medium size, close and compact and the colour deep pink; one of the best of the pink varieties for beds and borders.

Grand Vainqueur.—A useful variety for beds, the flowers pure white and produced in tall rather loose spikes.

Mirandoline.—A charming pure white variety; the spikes of medium size and compact.

King of the Blues.—A well-known deep blue variety producing large finely formed spikes. Very effective in masses.

Sultan's Favourite.—A beautiful pink variety of much value for massing. It is rather tall, the spikes are compact, and the flowers are of good form and effective in colour.

Regulus.—A distinct, but not particularly effective variety; the spikes are rather tall, the bells are of large size, and the colour is a pleasing shade of metallic blue.

Robert Steiger.—One of the best known of the deep red varieties, and also unsurpassed in its line of colour for bedding purposes. The colour is very bright, but owing to the comparatively small size of the spikes it is necessary to plant the bulbs rather closer together than in the case of the majority of the other varieties. To speak more definitely the majority of the varieties should be planted twelve inches apart each way, but the bulbs of Robert Steiger should only be ten inches apart.

Madame Van der Hoop.—An excellent white variety, which appears to advantage in the garden.

Mimosa.—A deep purple-blue variety, effective and useful for the distinct shade of colour it gives.

Lord Derby.—One of the best of the light blue varieties for pot culture, and singularly effective in the flower garden. The spikes are massive, the flowers are of large size and the colour azure blue.

Baron van Tuyll.—A useful variety in the way of Charles Dickens, but rather darker in colour and hardly so effective.

Mont Blanc.—A good white variety, with rather short spikes of finely-formed flowers; better adapted for pots than for beds.

Amy.—A useful variety, bearing neat spikes of deep red-pink flowers. Should be planted rather closer together than is necessary in the case of the majority of the varieties.

Haydn.—A bright purple variety, useful for the distinct shade of colour it gives.

Some of the hyacinth beds have a marginal band of squills, which contribute materially to the general effect. There are also in the enclosures some good beds of the grape hyacinth and of hardy primroses, the last-named being especially attractive. The tulips promise to produce a brilliant display in a short time hence, and the flowers of Chrysolora and Keizerskroon are already showing colour.

MR. INGRAM'S LECTURE ON SPRING FLOWERS.

At the meeting of the Royal Horticultural Society on Tuesday last, W. Morris, Esq., in the chair, Mr. William Ingram, gardener to the Duke of Rutland at Belvoir Castle, read a paper on the selection and cultivation for outdoor display of hardy spring flowers. After a brief introduction on the system of operations by means of which he has made Belvoir the place of highest note in the country for its rockery gardens, and promenade displays of spring flowers, he proceeded to describe the plants that are best adapted for planting out in masses, and more especially those that may be multiplied *ad infinitum* with the aid of ordinary appliance and an average of skill. It is well known that Mr. Ingram manages with apparent ease and with perfect success many subjects that are generally regarded as refractory, but he wisely said less about these than of others that may be spoken of as universally useful, and as well adapted for the garden of the cottager as for that of the prince or millionaire. The modest, early flowering winter aconite is one of the earliest of the series; the hellebores are in service during a long period; the chionodoxa, or Glory of the Snow, is one of the loveliest, and soon becomes as free as a native; and snowdrops, crocuses, anemones, forget-me-nots, drabas, and a hundred more good things have their several claims on account of their various beauties and accommodating habits. One of the important matters in the disposal of such plants consists in finding or creating shelter for them. At Belvoir he had taken advantage of sunny slopes to afford the warmth, the safety, and the strong light requisite to the production of a robust growth and flowers of pure and brilliant colours. It would be found in practice that shelter not only aided the plants, but the enjoyment of them, for the difference was great even within narrow boundaries between the bleak and exposed situations and those that were screened from the cruel east winds and exposed to the fullest sunshine with the aid of a well-drained soil and the reflective surfaces of masses of rock. Often belts of evergreens could be turned to account, and plantations made on their sunny side would be safe and happy, while on their windward side the self-same plants might suffer serious injury, and even if they prospered in the unkind exposure, enjoyment of their beauties would be somewhat precarious as compared with those in more favourable situations. Much may be done in aid of a large system of spring gardening by educating the plants to it. This was no merely fanciful expression. By the education of the plants he meant selection from time to time of the hardiest, the earliest, the most beautiful of any particular group, and the raising of stock from these selected forms, the result after some years of steady work being, in some instances, the gain of a month in the time of flowering, and this he felt he might justly speak of as education. Very much of the work depended for its success on the assiduity of the practitioner in saving and sowing seeds, for although nearly all the plants employed might be increased by divisions and cuttings, he greatly preferred seeds as a rule as producing a better stock, and as affording occasional variations that could be turned to account for the advantage of the system. It was of the greatest importance to note

at what age a plant was at its best. In many instances long lived perennials made a better display when constantly renewed and the display thus obtained from young plants; while others improved with age, and need not, therefore, be so often renewed for the purpose of obtaining the freshness of their youth. Few of the great families were of more importance than the primulas, and he had adopted a plan of securing a strong stock of plants by a peculiar economy of weeds and vegetable rubbish. The material was accumulated on a plot of ground until there was sufficient to form a bed of some two feet in depth, and on this was spread a body of good loam, and thus a site was provided for a plantation of hardy primulas. The weeds were better economised in this way than in burning them, for the vegetable soil resulting from their decomposition was of great value, and its admixture with the natural loam greatly improved it. He found that all plants requiring a rich moist soil prospered on land so made for them, and a considerable improvement in the work of the vegetable garden had been effected by the preparation of plots by this simple procedure. After pointing out some of the beauties of plants placed on the table by Mr. George Paul, comprising the British wild tulip, the chionodoxa, various myosotis, the brilliant Primula rosea, the scarlet anemone and the delicate pale Anemone blanda, and angulosa, Puschkinia scillioides, and many other good things, Mr. Ingram made a few remarks on the difficulties of spring gardening, and brought to a close one of the most interesting discourses we have heard this season.

An interesting discussion followed, in which Mr. G. F. Wilson, Mr. Richard Dean, and others took part. Dr. Masters proposed a vote of thanks to Mr. Ingram, and this being carried with enthusiasm, the business of the day was concluded. The display of spring flowers was rich and various, including vast numbers of daffodils, and the more delicate saxifragas, anemones, and bulbous plants that are now so greatly prized for the alpine house and for the rockery.

Replies to Queries.

Names of Plants.—J. M., Morpeth: Your fern is Polystichum angulare v. grandiceps.—W. Ward: 1, Doronicum plantagineum; 2, Leucojum vernum; 3, Saxifraga sancta; 4, Dielytra cucullata.—F. F.: 1, Adiantum cardiochlæna; 2, Hartstongue, variety Ramo-cristatum; 3, Davallia bullata; 4, Cyrtomium caryotideum.

Cytisus.—The seedling sent in box is promising, by reason of its larger panicles and richer colour, as compared with the parent. It would be well to send a well-grown plant to the Floral Committee of the Royal Horticultural Society, the members of the committee being the best tribunal in the land to judge the merits of such a plant.

Ivy Edgings.—R. B.: It will be slow work to get up edgings to all your beds in variegated ivies, and as the scheme is a large one probably green ivy edgings would be more effective. In case you elect to have green edgings Hibberd's Emerald ivy is the very best and grows with rapidity, but the common Irish ivy is capital edging plant for large work.

Cytisus.—B. F.: These free-growing shrubs break so freely from both the old and young wood that they may be pruned without any apprehensions as to the result. Therefore the large ungainly bushes you have may be pruned into shape without any apprehensions as to the result. To give them a long season of growth the pruning should be done at once, and the shoots be cut rather hard back. It will be an advantage to place the plants in a vinery or other structure where they will have the assistance of a brisk temperature and a moderate degree of atmospheric humidity. Repot as soon as they are commencing to break freely, and remove to rather cooler quarters as soon as they have recovered from the shift. In repotting reduce the bulbs of soil to at least one half their present size and use pots one size smaller, or of the same size as those now occupied.

Phœnix.—F. N.: The genus of palms bearing this name is in no way related to the famed Arabian bird that renews its youth by self-immolation, as in the well-known shop sign of the apothecary. Linnæus adopted ancient names freely; and that is one of the virtues of his system, for it does not greatly disturb the traditions and fables and science of antiquity. There were two rivers of ancient Greece bearing this name, and the father of Europa was so named, as was also one of the companions of Achilles. As for the fabled bird, Herodotus heard the story in Egypt, where it visited Heliopolis every five hundred years. See book 2, chapter 73, where Herodotus says he never saw the bird, except in a picture. There does not appear in any part of the story a suggestion of a palm tree. But the date palm may have been so called because of its friendliness to the life of man, and therefore in some sense an emblem of immortality.

Dwarf Tropæolums.—Vertumnus: We have obtained a list of the varieties that were grown, and here it is—*Shades of yellow*: Crystal Palace Gem, pale yellow with spots; Common Tom Thumb, yellow, full yellow, very showy; Golden King, compact growth, deep yellow, extra good. *Scarlet and crimson*: Tom Thumb Scarlet, light scarlet, good; King Theodore, deep marone; Tom Thumb Crimson, full rich crimson; Empress of India, very neat, blue leaves, flowers smallish, of excellent form, brilliant flame crimson. *Purple and Rose*: Tom Thumb Rose, light cheerful rose, variable, always good; Ruby King, brilliant ruby colour, fine; Cærulean, a somewhat poor thing when standing alone, but in a mixture it is splendid, for the other colours bring out its singular tone of blue. *White*: White Pearl is nearly white, having a slight stain of primrose. It is useful, but rather given to run, and therefore not suited for small beds. The best are Golden King, Empress of India, Ruby King, Scarlet, and Theodore; but all are good, and comparisons are almost odious.

Violets.—Asper: It is not possible to say if violets will thrive in your district. Speaking in a general way they require a pure air, and the atmosphere of a large town is unfavourable to them. In many of the more celebrated gardens of the metropolis, such as the Regent's Park Botanic Garden, the R.H. S. Garden at Chiswick, and others equally well managed, violets do not thrive in a satisfactory manner, and are not grown except for strictly scientific purposes, for the determination of essential characters. But in the garden of F. Knighton, Esq., Kew, Neapolitan violets are grown to perfection in frames, and they flower profusely and sweetly. A moist air, a friable and rather rich and *fresh* soil are favourable conditions, and annual propagation is a point of the very first importance. The self-sown single violets you send, though in their way amusing and acceptable, are not violets in the horticultural sense of the term, and no gardener would make room for them. We do not advise you to destroy them, for if they please you they are worthy to be cherished until you secure something better.

Tobacco.—J. Fielding: In the G.M. of 1887 will be found many figures and descriptions of varieties of tobacco and reports on cultivation, and much information on the manufacture of tobaccos. The species most cultivated for the leaf are *Nicotiana tabacum* and *N. rustica*. The finest qualities of Cuban tobacco are obtained from *N. repanda*. The Persian tobaccos are the produce of *N. Persica*, that of Chili is *N. angustifolia*, and the grand Havana leaf is the handsome *N. macrophylla*. English-grown tobacco is not necessarily of poor quality, for samples have been produced that were considered by competent judges well adapted to take a respectable position in the market.

Cockscombs.—G. Y.: Shift the cockscombs from the small sixties into five-inch pots, and when these are well filled with roots transfer them to eight-inch pots, which are large enough for fully-developed specimens. The smallest of the examples may, if preferred, at the final shift be put into six-inch pots. Very dwarf specimens may be obtained by taking off the heads with a sufficient length of stem, and then putting them into pots with a rich compost. A few of the leaves must be removed from the lower part and when potted plunge the pots in a brisk hotbed and keep rather close and shaded until they are struck.

New and Novel.—W.: You are quite at sea in your interpretation. If you can bring a little common sense to your aid, you will perceive that a thing may be new but destitute of novelty, and may actually possess novelty without being new. The word new refers to time, and the word novel refers to character or quality. A blue rose would be a novelty, and would perhaps be new, for thus far, there is no such thing on record, but every year a number of new roses appear, but quite a small proportion have any novelty of character to recommend them. A score of new varieties of peas may appear in the catalogues, and not one showing any special quality or novelty. But should a new pea appear not needing to be cooked, but fit for the table as taken from the plant, that would be a novelty, and would be spoken of as such. A study of Dean Trench's essay may lead some part of the way to acceptance of the doctrine that no two words have precisely the same meaning. Certainly it is not prudent to attempt to look wise by confounding as the same things new and novel.

Repotting British Ferns.—Amateur: British ferns grown in pots should receive their annual shift early in March. They may still be repotted with success, but as they are now commencing to grow freely they should not be disturbed at the roots to the same extent as may be done with safety early in March. It will, however, be necessary to reduce the ball of soil considerably to enable you to give them the advantage of a liberal proportion of fresh soil without any material increase in the size of the pots. The majority of the species will thrive in a compost consisting of two parts each of fibrous peat and loam and one part each of leaf-mould and sharp silver sand. The soil prepared for varieties of Polypodium vulgare, Polystichum angulare and Scolopendrium vulgare, and for the aspleniums should have a little calcareous matter added to it, broken oyster shells being admirably adapted for the purpose. To Blechnum spicant on the contrary lime is extremely injurious. Asplenium marinum and the Osmundas should be potted in peat to which small proportions of sand and leaf-mould have been added.

Glazed Flower Pots.—H. P. M. D.: We have not seen or heard of the glazed pots for some time, but call to mind that Moore and Co., of Longton, Staffordshire, used to produce them. It is commonly said that plants thrive as perfectly in glazed as in unglazed pots, but certain it is that whatever is attempted in the way of flower pots, the old, cheap, and serviceable common clay pot holds its own against all competitors. There is some virtue undoubtedly in the use of pots that may be broken at small loss, for costly pots are liable to be broken, and that one point is of the greatest importance. It is a fact, also, that genuine lovers and cultivators of plants rather like the appearance of the common pots, or at least they do not recoil from them with such horror as beginners, who feel only the first flutterings of superficial enthusiasm, and are consequently very pronounced in their opinions on matters that are of secondary importance. The true horticulturist thinks so much about growing the plant well that there is not much room in his head for reflections on flower pots, and ornamental receptacles abound for concealing the common pots when plants in perfection are required for table adornment.

TRADE CATALOGUES.

William Paul and Co., Bridge of Weir, N.B.—*Pansies, Pinks, &c.*

William Paul and Son, Waltham Cross, Herts.—*New Roses and Florists' Flowers.*

George Humphries, Kington Langley, Chippenham.—*Dahlias, Bedding plants, &c.*

Obituary.

On February 26, at Hamilton, Bermuda, Mr. Michael Middleton, aged 44 years. He was a student at Kew, which he left in the year 1879, and, after various adventures in America and elsewhere, he was appointed gardener at Admiralty House, Bermuda, in which service he remained until shortly before his death.

On the 8th instant, at 17, Delahay Street, St. James's Park, Mr. Edward Lloyd, aged 75 years.

Fruit and Frost.—A letter to the *Times* of April 7 reads as follows: "The annual lesson is read once more to those genial fanatics who are constantly urging upon us the 'culture of fruit for profit.' Every morning of this week has been frosty, and at six a.m. to-day the thermometer stood at 26 deg., not on the grass, but 6 ft. from the ground. This is no great rarity, but happens in almost every April, and not uncommonly in May.—R. D. Blackmore. April 5."

The Holidays have had such weather as we expected as expressed in our note at page 191. But the amount of out-door pleasuring has not been seriously affected, as the returns from Kew show that the visitors to the Royal Gardens numbered over 63,000 on Monday. Other open air entertainments have been freely enjoyed during hours of sunshine, and we see how great is the advantage to our ever increasing town populations of the many parks and gardens that public spirit has provided for recreative purposes.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths before Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
20	S	**2nd Sunday after Easter.** ● New [Moon.	4 56	1 9	7 2	5 49	8 30	2 28	2 46	11 53	—	48·8
21	M		4 55	1 22	7 4	6 10	9 43	3 5	3 24	0 11	0 30	49·0
22	Tu	Earthquake at Colchester, 1884.	4 53	1 34	7 6	6 37	10 53	3 41	3 59	0 49	1 6	49·2
23	W	*St. George.*	4 51	1 46	7 8	7 8	11 58	4 17	4 34	1 24	1 42	49·3
24	Th	Daniel Defoe died, 1731.	4 49	1 57	7 10	7 49	Morn.	4 52	5 9	1 59	2 17	49·5
25	F	*St. Mark, Evangelist.*	4 47	2 7	7 11	8 37	0 53	5 27	5 47	2 34	2 52	49·6
26	S	Austrians entered Piedmont, 1859.	4 45	2 18	7 13	9 35	1 38	6 8	6 32	3 12	3 33	49·7

Orchids in Flower.		Day of Yr.
Cypripedium grande	Gar. hyb.	110
Cypripedium Lowi	Borneo.	111
Dendrobium luteolum	Moulmein.	112
Masdevallia Veitchiana	Peru.	113
Odontoglossum cirrhosum	Ecuador.	114
Phaius grandifolius	Hong Kong.	115
Phalænopsis amabilis	Sunda Islands.	116

CRYSTAL PALACE.
GREAT SUMMER EXHIBITION OF PLANTS AND FLOWERS, SATURDAY, MAY 10.
Entries close on May 3. Forms and Schedules post free on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

ROYAL BOTANIC SOCIETY. GARDENS, REGENT'S PARK.
SECOND EXHIBITION of SPRING FLOWERS, WEDNESDAY, APRIL 23.
Gates open at 2 o'clock. The Band will play from 2.30 to 5.30.
Tickets to be obtained at the Gardens only, by vouchers from Fellows of the Society, price 2s. 6d. each.

ROYAL AQUARIUM, WESTMINSTER.
SECOND SPRING EXHIBITION,
TUESDAY AND WEDNESDAY, APRIL 29 AND 30.
AURICULAS, POLYANTHUS, OLIVIAS, &c., &c.
Schedules, WILLIAM HOLMES, Frampton Park Nurseries, Hackney, London.

RICHMOND HORTICULTURAL SOCIETY.—The SUMMER SHOW will be held in the OLD DEER PARK, RICHMOND, on WEDNESDAY, 25th JUNE, 1890. For schedules and all particulars please apply to J. H. FORD, Hon. Secretary, 22, George Street, Richmond.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, APRIL 22.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral, Fruit and Scientific Committees.
TUESDAY, APRIL 22.—NATIONAL AURICULA SOCIETY (SOUTHERN SECTION).—Annual Exhibition.
WEDNESDAY, APRIL 23.—ROYAL BOTANIC SOCIETY.—Second Spring Show.
SATURDAY, APRIL 26.—ROYAL BOTANIC SOCIETY.—General Meeting.

Auction Sales for the Ensuing Week.

TUESDAY, APRIL 22.—Messrs. Protheroe and Morris, at their Central Sale Rooms 67 and 68, Cheapside; Orchids.
WEDNESDAY, APRIL 23.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Greenhouse Plants, &c.
WEDNESDAY, APRIL 23.—Messrs. Protheroe and Morris, at Northfields, Battersea Rise, S.W.; Glass Erections, Building Materials, Turf, &c.
THURSDAY, APRIL 24.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids.
FRIDAY, APRIL 25.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.
ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

TERMS OF SUBSCRIPTION.—Post free from the Office, 4, Ave Maria Lane, London, E.C. to any part of the United Kingdom, One Copy, 2½d.; 3 Months, 3s.; 6 Months, 6s. One Year, 11s. 6d. (including the Christmas Number). To America, Australia, Belgium, Canada, Denmark, France, Germany, Holland, India, Italy, Spain, Sweden, and Switzerland, 14s. per annum.

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The Gardeners' Magazine.

SATURDAY, APRIL 19, 1890.

THE NARCISSUS CONFERENCE AT CHISWICK in the past week must be pronounced a success, if it be kept in mind that the display was made by a few trade firms, and that the literary contributions were characterized by freshness and a sufficient amount of science for the occasion. The business was essentially orthodox, for care had been taken to keep at a reasonable distance revolutionary proposals, especially such as might touch classification and nomenclature, which the leaders in this business now consider settled for this time and for all time. The great vinery presented a gay scene on the morning of Tuesday, when the flowers were all fresh as newly taken from their several gardens, and the experts were busy in arranging and naming; or, at the committee table, dealing with difficulties and criticising new varieties. It is matter for regret that amateur cultivators contribute but little to gatherings of this kind; and it must be recorded that the members of the Narcissus Committee—thirty-seven persons—were not very forcibly in evidence; and one may reasonably ask what they do to justify their proud place as representatives of the flower? But it may suffice to record that although the date was a little late for the purpose, the several classes were freely illustrated, and the group of Incomparabilis most freely of all. The date caught these, while it was late for the great body of Trumpets, and a little early for a few of the Poet's Narciss.

In the conversation of the many admirers of the flower who have no special interest in them as articles of commerce, there was one theme prominent. Indeed, the expression current in respect of this theme, seemed to swell to a chorus in such words as "too many varieties," and thereupon followed a demand upon "somebody" to reduce the list, which now exceeds three hundred, to about fifty of the most distinct and generally useful. Certain of the traders say that the multiplicity of names impedes the progress in popularity of this already popular flower. It might occur to them, were they willing to prove themselves as serious as they look, that there need be no great difficulty in selecting fifty, and accumulating stock of those for the benefit of possible purchasers who would be content with that number. We are so accustomed to the cry of "too many," and so accustomed also to observe that the people who cry do little else but leave the matter where they found it, that we are disposed always to doubt their sincerity, until we see them taking measures to carry their views into the region of the practical. It may be asked why the world endures what certain horticultural iconoclasts denounce as mere superfluities? But the world is not so conscious of the burden of too many, as the severe critics who would make a final election after their own taste, forgetful of the fact that the world includes a great variety of tastes; and there are some enthusiasts who can never have enough of any good thing. If it is the duty of any person in particular, or of any corporation in particular, to reduce the list, the task must fall upon a member of the Narcissus Committee, or on the committee as a whole, and if the complaint is to be sent in any particular direction, the committee should have it hot and strong. But we suspect the committee would prefer to see the number increase, for what would the committee do were the raising of new varieties to cease now and for ever? The committee itself would then cease, for its occupation would be gone, and we may safely conjecture that this charmed body would be the last, rather than the first, to take the numbers down.

When we note how many that bear distinct names do certainly lack distinctness, we cannot be utterly indifferent to the complaint, though we object to its iteration by persons who are loud in words and light in deeds. It is one of the amusing circumstances that we may take two varieties that show no appreciable difference of form, colour, or dimensions, and yet do not differ in name only, for one may be priced at so many shillings a-dozen and the other at the same number of shillings each. If people will buy the last new novelty, it is pity they should not be gratified; and it is at best a mild irony to ask a trade cultivator to ruin a profitable business in order to meet the views of persons who have but to select with their eyes open and be content with things that suit their eyes and pockets to remove from the subject every possible ground of complaint. If we may venture an opinion of our own, looking at the case from what we believe to be a commonsense point of view, a considerable number of the names might be cancelled with advantage, and the sorts those cancelled names represent could then be retained in their several classes, but no longer under name, but as *cheap mixtures*. Should the yellow fever that now rages ever subside this will doubtless be done, for it will cease to pay to keep up the lists to their present standard of quantity. But, fever or no fever, daffodils will never cease to give delight, will never cease to be collected, and cultivated, and exhibited, and talked about, for, with all our wealth of hardy spring flowers, this group of beauties is unequalled for splendour of appearance and all the qualities of a spring flower that engage the moral nature in a series of wholesome sympathies to augment the delight that begins in the eye. A purgation of the lists might give a serious check to the mania for collecting; but it would not diminish the beauty of the flower or impose a limit on the world's enjoyment of it.

If a grain of practice is worth a ton of theory, as certain wise people who have not gauged the depth of their wisdom, fondly declare,

then one fact will be equal in value to any number of arguments. An incident of recent occurrence of which we have cognizance at first hand, may be brought to bear on this grave question of reducing the numbers by severe selections. A gentleman universally respected for his knowledge, judgment, and taste in matters horticultural demanded of a cultivator of narcissi assistance in making a selection of the very, very best, and the response was in a proper spirit. The cultivator consigned to one of his side pockets one hundred blank labels, the other saying that a dozen would be enough. When a variety had been selected as one of the very, very best, the name was written on one of the labels, and this was consigned to another side pocket. The inspection and selection proceeded pleasantly; the critical visitor in the free flow of his admiration forgot the limits he had proposed, and thus many very best flowers were made note of, and the labels passed at a regular pace from the right hand pocket to the left. But now the business halted, for the trader said a fresh supply of blank labels would be required, and must be sent for, the visitor having already selected one hundred of the very, very best, while a considerable portion of the collection still remained for inspection. The anti-climax tells its own tale, and may serve as a warning, that to select a dozen, or even fifty, of the very best daffodils is a business more easily talked of than performed.

The setting up of the flowers of the narcissi with accompanying leaves has been one of the weak points in exhibitions hitherto, and it was particularly gratifying to observe in the recent display at Chiswick that a certain few exhibitors had wisely ventured on the happy innovation of adding a few leaves to each bunch of flowers. The most pleasing and most proper relief to any flower in the way of green material is its own leaves; and there should be some special reason for excusing their non-appearance. In the case of daffodils no cultivator possessed of average knowledge of the true theory of vegetable growth would take from named varieties required for show purposes, whether at home or abroad, any of their own leaves. But the extra clumps of rogues, mixtures, and oddments, of which there will be many in the reserve ground, will supply leaves readily, and any diminution of flowers that result will be a matter of the smallest consequence. Seeing how easily leaves may be obtained, and how peculiarly useful, and we will say necessary they are, we incline to the advocacy of a rule to require leaves as one of the conditions of exhibiting. When there are no prizes to be won, exhibitors may reasonably claim complete freedom in respect of such a matter, but in the future, a recommendation would have some effect, and where prizes are offered, there should be a stipulation for leaves as absolutely essential to legitimate presentation.

The exhibition was opened on Tuesday by the Duchess of Teck, who was accompanied by Princess Victoria, and received by Lady Henry Grosvenor, Mrs. Thiselton Dyer, Colonel Trevor Clarke, Mr. T. B. Haywood, Colonel Beddome, Rev. Wolley Dod, Rev. G. Engleheart, Mr. D. Morris, Rev. W. Wilks, and other fellows of the Royal Horticultural Society.

The success would have been more complete had the whole of the business been compressed within two days, for it was not sufficiently substantial for four.

Mr. J. Doe has succeeded Mr. Ellicott as head gardener at Crowe Hall, Bath, the residence of H. W. Tugwell, Esq.

French Exhibition, at Earl's Court, will be opened by the Lord Mayor on Saturday, May 10, at 3 p.m.

Mr. G. Jackson has been engaged as head gardener to C. Threlfall, Esq., Manor House, Aylesbury.

Mr. Thomson has been engaged as head gardener to C. Hoare, Esq., Bignell House, Bicester, Oxon.

Tottenham and Edmonton Chrysanthemum Society.—The exhibition will be held in the Drill Hall, Tottenham, November 6 and 7.

Bath Floral Fete Committee announce Spring Show, May 21; Rose Show, July 3; Autumn Show, September 3 and 4; Chrysanthemum Show, November 12 and 13.

"Journal des Orchidees," edited by Lucien Linden, progresses satisfactorily. In the third number just received are papers on new orchids, the history of orchid culture, parlour orchids, and an agreeable batch of miscellanies.

Mr. J. G. Baker, F.R.S., will deliver a course of twelve lectures on botany, in the gardens of the Apothecaries' Society, Chelsea, on the Saturdays of May, June, and July. The lectures will commence at three p.m., and tickets of admission may be obtained (free) at the Apothecaries' Hall, E.C.

Wildsmith Memorial Fund has made such good progress that the promoters hope to be able to soon bring the collection to a close, and to hand over the amount to the executive of the Gardeners' Orphan Fund preparatory to nominating a child to the benefits of the charity. The sum of about £20 is required to complete the memorial, and it is much to be desired that those who intend contributing to the fund should do so with as little delay as possible.

Brighton and Sussex Horticultural Association.—Rose Show, July 9 and 10; Autumn Exhibition, September 10 and 11.

Acton Horticultural Society has arranged a series of monthly meetings for the discussion of questions bearing upon the garden and its management. The first meeting was held on Monday last, when Mr. George Gordon gave an address on "Horticultural Associations."

Royal Botanic Society's Lectures will commence on Friday, May 9, and be continued on the five following Fridays, in the Museum in the gardens of the Society in Regent's Park. The first and fourth will be delivered by Mr. E. M. Holmes, on "British Seaweeds" and "Mosses"; the second and third by Mr. G. R. M. Murray, on "Insectivorous Plants" and "Flowering Parasites"; and the fifth and sixth by Mr. J. R. Jackson, on "Vegetable Oils and Fats, Gutta Percha, and India-Rubber."

The Illness of Mr. George Deal, who has been compelled to take rest with a view to the renewal of his health, has caused much pain to his many friends, and caused anxiety to the public institutions he aided with his great knowledge of business, and his happy tact in managing affairs. It is hoped his affliction will prove of brief duration, and we have the gratification of announcing that improvement is seen already, although but a few days have elapsed since he was suddenly disabled.

Mr. G. F. Wilson's Blue Primroses are in demand as articles of commerce, and we are bound, therefore, to inform inquirers that Mr. Wilson is not at present prepared to part with any of them. That he will not keep them wholly to himself as their numbers increase is probable, but, dealing with facts only, we must report that for the present those who desire to possess them must exercise patience. His last achievement, *Oakwood Blue*, is so grand in its cobalt colour, that no one should complain if for a time he will reserve it for the special entertainment of himself and friends.

The National Auricula Exhibition on Tuesday next will be in the Drill Hall, James Street, Westminster, and will be opened to the public at 12 noon. The present promise is a larger and finer exhibition than the average; the flowers are reported to be in high condition, and the date will suit the southern growers generally. The luncheon at 1.30 in Hotel Windsor will afford a convenient opportunity for amateurs of auriculas and carnations to take counsel together on such matters as they are mutually interested in as regards the exhibition of their favourites.

Sussex Association for the Improvement of Agriculture makes an interesting report of the past twelve months' work. Amongst the subjects prominent in the address of Professor Jamieson occur state aid in agricultural education, artificial manures, the uses of the tubercles on the roots of papilionaceous plants, and the sources of nitrogen in these plants. The management of grass lands and artificial grasses continue to be the subject of practical experiments, and the substantial report embodies a number of valuable statistical information on these and other topics of high importance to agriculturists.

Horticultural Club will meet as usual in Hotel Windsor on Tuesday next, but the occasion will be more than usually interesting. It will be remembered that the Veitch Memorial Medal has been awarded to Mr. David Thomson, of Drumlanrig, and Mr. Bruce Findlay, of Manchester, in recognition of their eminent services to horticulture. The two gentlemen named will on this occasion be the guests of the club, and probably the opportunity will be taken for the presentation of the medals, for it will be more agreeable to all parties, doubtless, that the presentation should be associated with some festivity and formality than that they should be sent as mere merchandize through the post. Friends who are not members of the club may secure seats at the dinner by writing in advance to Rev. H. H. D'Ombrain, Westwell Vicarage, Ashford, Kent.

DAFFODILS IN FLOWER IN KEW.

April 12.

The following were in perfect condition in Mr. Hibberd's collection on April 12th. Only a few of the Poet's narciss now remain of those that have not flowered.

Pseudo Narcissus,—Captain Nelson, Edith Barber, Emperor, Hudibras, John Nelson, Maximus, Mrs. H. J. Elwes, Dean Herbert, Empress, Horsfieldi, Bicolor, Tortuosus, Cernuus Pulcher, F. W. Burbidge, St. Bridget, Grandis, William Goldring, Mr. J. B. M. Camm, Lent Lily (type), W. P. Milner, J. B. M. Camm, Harrison Weir, Barr's Ajax, Shirley Hibberd.

Incomparabilis.—Incomparabilis (type), Concolor, Edward Hart, Eclipse, Frank Miles, Fair Ellen, Goliath, Semi-partitus, Mary Anderson, Stella, Albus, Albidus, Cynosure, Mrs. Syme, Pericles, Leedsi, C. J. Backhouse, Figaro, Fairy Glow, Mrs. A. F. Barron, Titan, Astræa, Beauty, Gil Blas, Magog, Queen Sophia, Sancho, Lorenzo, Sir Watkin, Princess Mary, Longshanks, Annie Boden, Albert Victor, Bertie, Sulphureus, Beauty, Darling, Gil Blas, John Bull, King of the Netherlands.

Incomparabilis plenus.—Aurantius plenus, Albus plenus aurantius, Albus plenus sulphureus.

Leedsi (type) Amabilis, Acis, Albion, Aladdin, Beatrice, Cybele, Duchess of Brabant, Duchess of Westminster, Elegans, Fanny Mason, Flora, Janitha, Katherine Spurrell, Madge Matthews, Mrs. Langtry, Minnie Hume, Marie Magdalene de Graaf, Queen of England, Superbus.

Backhousei (type) Wolley Dod, William Wilks.

Barri (type) Conspicuus, Dwarf Golden Mary, Lass O'Gowrie, Sulphureus, Imogen, Mimico, Ada, Beatrice, Cinderella, Gazelle, General Murray, Miriam Barton, Piccio, Albus, Sensation, William Ingram, Vivian, Romeo.

Burbidgei (type).—Agnes Barr, Conspicuus, Danby, Edith Bell, Ethel, Falstaff, Guinevere, John Bain, Little Dick, Mary, Model, Ossian, Primrose Star, Robin Hood, Sulphur Star, Vanessa.

Odorus.—Odorus (type), Plenus, Rugulobus.

Triandrus.—Pulchellus, Albus.

Calls at Nurseries.

DAFFODILS AT LONG DITTON.

To those who have taken something more than a passing interest in the daffodils it is well-known that during the past quarter of a century Mr. Peter Barr, the head of the firm of Messrs. Barr and Son, has devoted much of his attention, and not a little of his time, to these beautiful flowers. It will also be known to them that it was mainly due to his efforts that the greater proportion of the seedlings raised by Mr. Backhouse and Mr. Leeds were preserved and placed within the reach of the general body of cultivators, and our gardens thereby enriched by a multiplicity of forms at once distinct and beautiful. In other directions Mr. Barr has rendered services equally important in the cause of the daffodil. He has, for example, been successful in reintroducing some of the fine forms described by Parkinson and other of the old authors which had disappeared from English gardens, and were supposed to be lost to cultivation. To accomplish this has been no light task, and has necessitated his spending several months each spring for some years past in those provinces of France, Spain, and Portugal in which many of the most beautiful forms of the daffodils are evidently at home. Not only has he in the course of these expeditions found several of the kinds that charmed our forefathers, but he has discovered several that are new to cultivation. Beyond this an immense amount of knowledge has been gained as to the peculiarities of a considerable proportion of the several types, and this knowledge is not only utilised to the fullest possible extent in the management of the collection at Long Ditton, but it is placed freely at the disposal of those who are engaged in the cultivation of these bulbs.

The object in penning these notes is not, however, to give a sketch of Mr. Barr's work in connection with the daffodils, for that would require more time and space to do it justice than can now be spared. Rather is it to make a brief reference to the daffodils themselves, which form such a large and important feature in the nurseries of the firm at Long Ditton, with the hope that it may be of service to cultivators. Concurrently with the great increase in the demand for these flowers, more especially the finer kinds, the growth of Messrs. Barr and Son's collection has proceeded at an extremely rapid rate. It has indeed so greatly increased during the past few years that at length the Tooting nurseries no longer sufficed for its accommodation, and new quarters had to be found. These were obtained at Long Ditton, where soil and situation are alike favourable to daffodils and other bulbs, and to the several classes of herbaceous plants. What the exact area of the nurseries may be we cannot say, nor is it of importance, but nearly ten acres are devoted to daffodils, the greater proportion of which consist of the finer kinds. Here may be seen Empress, Sir Watkin, Barri Conspicuus, Emperor, Tortuosus, and other equally choice kinds in numbers that would appear almost incredible were we to give them; but it is not our intention to burden these notes with statistics, and it must suffice to say that the enormous breadth of the fine kinds now fully in bloom produce an impression not readily effaced. The number of varieties exceeds five hundred, and although they are not all, or indeed a large proportion of them, required in any one garden, it must not be forgotten that with reference to these, as in the case of other classes of plants, tastes widely differ, and that it is necessary to take into consideration the diversity which exists.

Yellow Trumpets of necessity form an important part of the collection, and amongst them are to be found some of the most beautiful forms. In passing under review the yellow trumpets, reference will be made to a few only of the most distinct varieties that are sufficiently plentiful to be within the reach of the majority of cultivators. Taking them alphabetically, we have first the Countess of Annesley, a handsome variety, with sulphur yellow perianth and large, rich golden trumpet; and then follow Coronatus (General Gordon), a finely-formed flower, remarkable for its richness of colour; Cyclamineus, a charming little species, dwarf in growth, and with small flowers of a bright yellow colour, specially adapted for front lines of borders, naturalising in grass, and also for pot culture; Emperor, a grand flower, large in size, and rich in colour, and one of the first that should be secured; Golden Spur, a very distinct variety, with spreading perianth and large distinctly lobed trumpet; Henry Irving, a handsome variety, the flowers of large size and fine form, and the colour extremely rich; Johnstoni, a beautiful form of comparatively recent introduction, the flowers of medium size and of a rich sulphur yellow; Mrs. George Cammell, collected in the spring of 1888 by Mr. Barr, is a greatly improved variety, the flowers extremely beautiful in shape and of a pleasing soft yellow hue; Maximus must be mentioned for the excellent form and rich colouring of the flowers, but it is not so free in blooming as some of the others, and its value is thereby somewhat discounted; Mr. J. Berkeley is a much enlarged form of the last-named, and is equally rich in colour and blooms more freely; Rugilobus is in the way of Emperor, and is especially deserving the attention of those who are compelled to limit their selection to the cheapest varieties; Shirley Hibberd, an excellent variety, the flowers finely formed, with pale yellow perianth segments and rich yellow trumpet; and Townshend Boscawen, a large and handsome flower of a rich yellow hue.

Bicolor Trumpets form a rather small group, but they include some of the finest daffodils we have. Empress is unquestionably one of the finest in the section, the flowers being large, finely formed, and distinguished by the breadth and substance of the perianth divisions. Horsfieldi closely resembles Empress, but it is earlier in flowering, and the perianth divisions are longer, somewhat twisted, and not quite so stout. Grandis also bears a striking resemblance to Empress, but the flowers are rather larger, and have perianth divisions of greater breadth. Very fine also in this section are James Walker, J. B. M. Camm, and Michael Foster. A new introduction known as Daniel Dewar is valuable for its distinctness; the flowers are of medium size, the trumpet bright yellow and perianth sulphur white, deep yellow at the base.

White and Sulphur Trumpets include a considerable number of exquisitely beautiful varieties. Especially deserving of attention in this group are Albicans, a charming variety, the perianth white, the trumpet primrose, passing to white, and somewhat recurved at the edge; Cernuus pulcher, silvery white, with large and expanded trumpet, which is tinted with primrose in the earlier stages of development; Colleen Bawn, a charming pure white flower; Dr. Hogg, a distinct variety, with pure white perianth, and large primrose trumpet; F. W. Burbidge, white and primrose, with trumpet elegantly cut at the edge; Moschatus of Haworth, pure white, and of great value; Sarnian Belle, a fine pure white flower; and W. P. Milner, an excellent variety, with finely-formed flowers of a pleasing sulphur colour,

Incomparabilis group comprises varieties, with broad spreading perianth, and chalice-like cup. Some of the finest varieties in this section are Frank Miles, a large and effective flower, of a bright yellow colour; C. J. Backhouse, a distinct form, the perianth yellow, and the cup orange scarlet; Sir Watkin, one of the finest varieties in the group, the flowers exceptionally large, the perianth sulphur yellow, the cup yellow, suffused with orange; Bertie, a fine flower, the perianth white, and the cup yellow, with orange margin; Cynosure, white, with large orange-red cup; Princess Mary, one of the most beautiful varieties in the section, the flowers large, and finely formed, the perianth creamy white, and the cup orange-scarlet; Semipartitus is a beautiful variety, distinguished by the deep lobes of the cup; Stella, white perianth, with large yellow cup.

Barri group comprises several flowers of great beauty, notably Conspicuus, a superb variety, the perianth large, bright yellow, the cup orange scarlet; Maurice Vilmorin, perianth creamy white, and the cup lemon yellow suffused scarlet; and Sensation, pure white, perianth canary yellow, cup edged with orange scarlet. The scarlet colouring of the cups of these varieties renders them remarkably attractive.

Leedsi group comprises a goodly number of beautiful varieties, the flowers are mostly white or white with lemon coloured cups, and are so light and elegant in appearance as to be specially valuable for decorative purposes either alone or associated with other flowers. Beatrice, Duchess of Westminster, Grand Duchess, Minnie Hume, and Superbus are all of great excellence. The Leedsi varieties are, it may be added, useful for pot culture, and are very effective when grown in five or six-inch pots, three or four bulbs in each.

Nelsoni varieties are distinguished by their goblet-shaped cups. Nelsoni, Aurantius, and Pulchellus are all extremely beautiful. They have all white perianths and yellow cups, but are, nevertheless, perfectly distinct.

Burbidgei varieties approach the Poet's Narciss in general character, and are light and elegant in appearance. Especially desirable in this section are Agnes Barr, creamy white with yellow perianth; Baroness Heath, a very beautiful variety, the perianth primrose and the cup suffused orange scarlet; Ellen Barr, a charming variety with full sized flowers with white segment and citron coloured cup suffused with orange; Little Dick, an elegant variety with small flowers and yellow cup margined with scarlet; and Princess Louise, white perianth with scarlet cup.

Especially attractive just now are the great breadths of Anemone fulgens, and the collection of grape hyacinths, both of which are now at their best. The nurseries are readily reached by the London and South Western Railway to Surbiton Station.

THE IMPERIAL HOYA.

It afforded me especial pleasure to see the figure of *Hoya imperialis* in the G.M. of April 12, for a finer plant of its kind is not known, and of this it must be said that it is comparatively unknown, and therefore you render a great service to plant growers in directing attention to it. It is, as you say, a "magnificent" thing. The cultivation being imperfectly understood, I forward this note, hoping it may be useful.

In the cultivation of hoyas a close soil should be avoided, for they are quite unfit for the routine culture followed in the case of strong growing stove plants. They are, in fact, semi-epiphytal, having a strong tendency to throw out adventitious roots along the stem, and may often be seen growing luxuriantly against a moist wall in a manner similar to that of ivies.

Therefore when restricted to the strong soil that would suit a robust stove shrub they do not thrive, for they require a compost of a loose, porous character, open and well ærated, and through which water can pass freely. This is a matter of the very first importance in the case of Hoya imperialis, which I have found to damp off at the collar or point of junction of the plant with the soil, particularly during the dull days of winter. When this happens, however, it will be found due to consolidation of the soil and the accumulation of damp, such as will often occur with peaty mixtures.

But when this happens, the cultivator need not be alarmed, for owing to the free formation of adventitious roots, the plant, if taken in hand promptly, may soon be reinstated. It is only necessary to wash all decaying matter from the base of the stem, allow it to dry, and if convenient dust it with flowers of sulphur or charcoal dust, and then repot, giving the plant a good hold of the new compost. This should consist chiefly of fibry loam, freely interspersed with nodules of charcoal or sandstone, and a sprinkling of bonemeal or other such fertilizer of a mild character.

Care must be taken not to overwater the plant after the repotting. But when growing freely this plant requires a liberal allowance of water, and should occasionally have the help of weak liquid manure. In any case the drainage should be perfect, for without it success is impossible, and loss of the plant at least probable. When newly potted after having lost its roots, it may, being a climber, show distress, and yet watering the soil will not help it until new roots are formed, and will, in fact, only operate injuriously. Recourse must be had to syringing, and owing to its overhead position this can easily be done, and will prove effectual. Give it a shower frequently until it has made a new set of roots and all will go well.

When well managed, this is a grand subject, conspicuous for its beauty, and it has the peculiar merit of flowering freely the greater part of half a year.

Frank Ross.

Pendle Court.

Fruit Prospects have improved within the past few days, but it must be owned they are not very bright even with the present improved weather. Wall trees generally have made a good beginning, and there is fair promise of peaches, nectarines, and plums. Wall cherries are now flowering, and present a grand appearance. Plums and pears are flowering generally and freely, but there appears to be wanting the vigour that tends to fruitfulness, and the weather has been decidedly unfavourable thus far. The present improvement may prove advantageous to places where the bloom is fresh, and will help the apples, which in the south are showing colour.

AMERICAN NOTES.

Californian Prunes.

About 20,000,000 pounds of prunes are according to the *Garden and Forest* annually produced in California, largely of the better quality, which are packed in fancy boxes like the high-grade French prunes. In the eastern cities the California fruit has sold, of late, in much larger quantities than the French, and at prices from three-quarters of a cent to one cent higher per pound. But between 60,000,000 and 70,000,000 pounds of inferior foreign prunes are annually imported, to be sold at very low prices to the labouring and mining population of all parts of the country.

Rose Forcing at Washington.

In the greenhouses of Messrs. C. Strauss and Company at Washington, five acres of glass cover 80,000 rose bushes, of which 20,000 are of the Wootton variety. All are grown exclusively for cut flowers, and during the season from 10,000 to 25,000 buds are cut each day.

Relative Popularity of Roses.

At the February meeting of the Pennsylvania Horticultural Society, held in Philadelphia, an attempt was made to test the relative popularity of the hybrid perpetual roses, Madame Gabriel Luizet and Mrs. John Laing; the choice was made by ballot, and resulted in a majority of twenty-seven votes in favour of Madame Gabriel Luizet in a total vote of about ninety. A similar contest between La France and the Duchess of Albany resulted in a majority for the first named. It would seem that these two varieties (Madame Gabriel Luizet and La France) are securely fixed in the affections of the Philadelphia horticulturists, and may not easily be displaced by the newer varieties, even though these are roses of the very first rank.

Hypericum Kalmianum.

This, says the *Garden and Forest*, was one of the first of the American hypericums described, having been discovered by the Swedish botanist, Kalm, whose name was bestowed upon it by Linnæus. It is a straggling bush, growing two or three feet, with contorted four-angled stems, covered with thin, exfoliating reddish bark, slender two-edged branchlets, and crowded oblanceolate pale leaves one to two inches long. The flowers are bright yellow, an inch across, and begin to open early in July. The pods are ovate and five-celled, a character which best distinguishes this species from the nearly allied H. prolificum of the middle and western states, the pods of which are three-celled. Hypericum Kalmianum is rather a rare plant, being confined to lake and river-cliffs from the Falls of Niagara, where it is found on Goat Island, to the northern lakes. Like the other shrubby hypericums, it is an excellent garden plant, although less showy in flower than some of the other species. They all bloom at midsummer, when few shrubs are in flower; and grow easily, flower profusely, and are not particular about the treatment they receive.

Plums for the Sea Coast.

A correspondent of the *Orchard and Garden* writes:—Prunus maritima, a small tree or shrub more or less common along the New England coast, and farther north and south, is a very pretty object for the lawn, especially in light, sandy soils. It is frequently seen growing in the sand on the beach, and is called the Beach Plum. It may also be found growing higher up among the rocks. On the south side of Staten Island, N. Y., it is very abundant. The flowers are white and borne in umbels, and then they are so numerous as to remind one of a spiræa when in bloom. Planted in the foreground or by the side of a drive or a walk, it is a handsomer object than many shrubs that might be named. The fruit makes a good jelly. P. Americana, a larger plant bearing orange-red fruit, is a good companion for P. maritima. These are valuable plants for sandy soils, and especially for places along the seacoast, such as Nantucket, for example, where it is difficult to get many things to grow.

Dr. Parry.

Referring to the work of Dr. C. C. Parry, who died at Davenport, Iowa, on February 20, the *Garden and Forest* says:—Charles C. Parry was born in Admington, England, on August 28, 1823. His family emigrated to America nine years later, and settled on a farm in Washington County, New York. He was educated at Union College, and then studied medicine. He was interested, however, in botany even at this period of his life, and although he practised his profession for a short time in Davenport, where his family removed in 1846, he soon abandoned it for the more congenial pursuit of natural history. Dr. Parry's real work as an explorer began in 1849, when he was attached to David Dale Owen's survey of Wisconsin, and made a collection of plants in the valleys of the St. Croix and St. Peter Rivers. The next year he joined the botanical staff of the Mexican Boundary Survey, and crossed the California desert from San Diego to the mouth of the Gila River. This journey and the subsequent ones which he made as a member of the survey, and which extended through two or three years, and carried him overland from the Pacific Ocean to the Gulf of Mexico, were rich in botanical discoveries of the most interesting character. Dr. Parry's next conspicuous service to American botany was performed in 1861, when he began his examination of the flora of the central Rocky Mountains. This work, undertaken mainly at his own expense, occupied him several years. The Colorado mountains were at that time a fresh field, practically, their flora being known only by the scant material brought back many years before by the naturalist of Major Long's expedition, and Dr. Parry was able to reap a rich harvest from the plants which extend to the summits of the alpine peaks, which he was the first botanist to reach. Dr. Parry was appointed in 1869 as Botanist of the Agricultural Department at Washington, and occupied this position for two years. He was, however, an explorer by temperament and by habit, and he had little liking for the restraints of an office position. Dr. Parry discovered hundreds of new plants afterward described by Dr. Gray and by Dr. Engelmann, and horticulturists will not forget that it was Dr. Parry who discovered Picea pungens, the beautiful Blue Spruce of our gardens; Pinus Engelmanni, Pinus Torreyana, Pinus Parryana and Pinus aristata. It was through his zeal and enterprise that many plants now familiar to us were first cultivated.

Tulip Tree.

One of the most interesting botanical results certainly, obtained by Dr. Henry during his residence in western China is, observes the *Garden and Forest*, the establishment of the fact that the tulip tree is an inhabitant also of that country. That monotypic species occur in eastern America and in eastern Asia is no new fact, but the plants common to the two regions discovered up to this time, have been unimportant herbs, and the tulip tree is the first instance recorded of a tree found in them both; and a tree, in spite of the long period of its cycle of existence, would be expected, from its greater exposure to climatic changes, to undergo greater modifications than a smaller plant. The presence of the same tree in Asia and in America is remarkable, perhaps, but it is not remarkable that tulip trees should grow in these two remote regions. It would be remarkable if one was not found in Asia in view of the similarity of the two floras, and of the fact that tulip trees of many species were at one time in the world's history widely distributed over its surface. The chief significance at this time, therefore, of Dr. Henry's discovery is that the climatic conditions of eastern North America and central China are so nearly identical, that the descendants of a common tertiary ancestor—one in America, the other in China—have not become sufficiently altered during all the centuries they have existed to furnish to the eye of the systematic botanist differences sufficiently marked to enable him to separate them specifically.

Phalænopsis at Brooklyn.

The cultivation of phalænopsis is evidently well understood by some of the American orchidists. A correspondent of the *Garden and Forest* says:—It would be difficult to find better specimens of phalænopsis than those in the collection of Mr. Frederick Scholes, of Brooklyn, and at this season of the year, when great numbers of them are in bloom, they are specially attractive. There were more than 2,000 fully expanded flowers on February 20, and the spectacle was one not easily forgotten. Among the plants I noted some good examples of P. Schilleriana, literally covered with its beautiful mauve-coloured blossoms, one specimen having eight spikes, which were short, well branched, and carried over 300 flowers. To this variety the owner has given the appropriate name of P. Schilleriana compacta. It has three strong growths, and eighteen broad, leathery leaves, which measure from ten to fourteen inches in length. Another specimen of an admirable variety was carrying 200 flowers, while a dozen others were also equally well flowered. A fine specimen was a plant of P. grandiflora, with three growths and thirteen leaves, which had three strong spikes, well covered with large white blossoms. P. amabilis was well represented by specimens with strong stems, freely branched and covered with flowers. One plant with eight very large leaves had a spike three feet long. The white and purple-spotted flowers of P. Stuartiana were very attractive, and one plant had produced a panicle carrying sixty flowers. P. Sanderiana, which much resembles a rose coloured P. amabilis, was represented by several very dark varieties. The plants occupy wire baskets, and are suspended some two feet from the glass, and are grown moderately warm.

ORCHID NOTES.—ORCHID ALBUM.

The current issue brings this useful publication up to the hundredth part; and the orchids figured are well up to the old standard of excellence.

Cypripedium Elliotianum, a distinct and beautiful species, is well figured. It has been introduced with a nearly allied species, C. Rothschildianum, by Messrs. Sander, of St. Albans, from the Phillipine Islands, and requires very similar treatment to that species. Both of them have been described in the Gardeners' Magazine, and they are now well-known to most orchid cultivators. They are distinct from any other species, and are not very difficult to cultivate, but grow very freely in any warm orchid house. It is stated to produce as many as five flowers on one scape, and when that is the case they must have a very striking effect. We plant ours in fibrous peat, with the addition of sphagnum, broken potsherds, and some pieces of charcoal. The editor advises a little fibrous loam with the peat; indeed, we find now that fibrous loam is an excellent addition to the potting soil of many species of Cypripedium, notably C. caudatum, C. Spicerianum, C. niveum, and some others.

Dendrobium Brymerianum is also well figured, but a few notes were made of it recently, under the heading of Reichenbachia.

Disa graminifolia is figured as a characteristic specimen. The leaves of this species are grass-like, and the flowers of a beautiful blue and purple colour. The editor says it is difficult to establish, and not easily grown afterwards. It is a native of the Cape of Good Hope; and is probably about as difficult to manage as the well-known Disa grandiflora. It is recommended to be grown in a compost of equal parts loam, peat, and leaf-mould. The D. grandiflora is easily grown in some gardens, and in others it will not do at all; probably it requires certain conditions of moisture in the atmosphere, which it cannot obtain in dry districts. It seems to thrive remarkably well in the neighbourhood of Dublin. I saw it growing very freely in the Botanic Garden, Glasnevin, under the care of Mr. Moore. It also succeeded remarkably well with Mr. Tymons at Baskin Hill, near Dublin. It did not receive a very high temperature, not much warmer than an ordinary greenhouse. The plants used also to grow very freely in a heath-house in Chatsworth Gardens, making splendid healthy plants. Probably they grow there now, as they did some fifteen years ago, under the care of the late Mr. Speed. They are planted in fibrous peaty soil, and are well supplied with water.

Cypripedium Ashburtoniæ Superbum is the subject of a very fine plate. It is one of the earlier raised garden forms, being a cross between C. barbatum and C. insigne. The variety superbum was raised from a finer form of barbatum. It is a grave error to raise hybrid orchids from poor varieties, for some one else may be crossing them with the very best varieties only, and those who go in for the ordinary forms for seed and pollen bearers are left far behind. The plant is quite intermediate between its parents, and is easily cultivated. It is also an autumn-flowering plant, producing its blooms in September and October, lasting six months or more in full beauty. A compost of loam and fibrous peat is recommended to grow the plants in, with the addition of sphagnum and nodules of charcoal. The plants require to be kept moist at the roots at all times, even in winter they must not be dried up.

J. Douglas.

Smoke from Factory Chimnies is obtaining some special attention just now, and a committee has been appointed at Manchester to inquire into the means of abating it. Wherever coal is burnt there is more smoke than is consistent with the requirements of the case, for the cheapness of the article appears to stand in the way of smoke prevention much more than any scientific difficulty. The "black country" west of Birmingham, the valleys of the Forth and Clyde, the Lancashire manufacturing centres, and the Taff Valley are the special homes of the smoke demon, and by so much as the heavens are darkened and the earth despoiled are these districts disgraceful to our civilization. No one tries to prevent the nuisance, and therefore it runs to an extreme.

CHATTER AND CHIPS.

Soot for the Garden.

It is surprising how little use is made of some fertilizing materials that can be had at a nominal price, and in some cases obtained for nothing. Soot is one of them, although I do not say that soot or anything else will take the place of farm-yard manure; at the same time it is a useful and a convenient form of manure for many crops if it is used judiciously. It is as well suited for digging in the ground as for spreading on the surface. Having experimented a good deal in this direction, I prefer to mix the soot with the soil by digging it in. When this is done the crops evidently get the benefit of a great portion of it as its effects are more lasting, as is shown by the behaviour of the crops over a longer time. When it is spread on the surface some of its fertilising properties are lost, as the crops grow spasmodically and come to a sudden standstill; however it is better to apply it on the surface than not at all when the crops want stimulating. I used it last year with satisfactory results for such crops as broad beans, peas, onions, and carrots. Amongst flowers I found that such subjects as pentstemons, carnations, asters, and stocks made very good growth in a rather poor soil where a dressing of soot was forked in before the plants were put out.

I must here caution the reader that soot must be used with some care, for if given in excess it causes the plants to grow too much to leaf. Farmers use soot at the rate of forty bushels per acre. For strong growing vegetable crops such as I have mentioned it may be strewn on the surface one-eighth of an inch thick and be lightly forked in just before the seeds are sown. For surface dressings it may be laid on thick enough to make the ground quite dark in colour. A hoe or rake should then be used to mix it up with the surface soil. If it is allowed to remain on the surface the rain beats it into a level mass which water cannot well penetrate.

Naming Seedling Primulas and Cyclamens.

I used to think it was wrong to give names to these plants when they were shown before the Floral Committee of the R. H. Society, but I was not long in finding out my mistake, for some of them reproduce themselves in sufficient numbers and sufficiently true to character for all the practical purposes of the garden. Having proved this to be so, I have no hesitation in saying that your readers need not fear to expend money in that direction for anything in that line they may want. As examples of the subjects I have in view that may be fairly well relied upon, I may mention that beautiful white *Primula alba magnifica*, and *Cyclamen Ruby King*. Both of these and some others which I have tried will not fail to give satisfaction if the seed is of fine quality to start with. The grower must not expect every seedling plant to come the exact counterpart of its parent, but a great portion of them will be so, in proof of which I may refer to the case of *Cyclamen White Swan*. Besides my own stock, I have seen several other lots that have produced large and bold pure white flowers. It is a decided gain to be able to secure such a strain of flowers with so little uncertainty as to the result.

The White Mezereon.

The form of this plant bearing white flowers is comparatively scarce, for what reason I know not; possibly it is because it has not been known so long as the variety bearing red coloured blossoms. Be that as it may, the white form is a capital companion plant to the other and should be found in every garden where hardy subjects that flower in the winter and spring are appreciated. I have had under notice a plant of the white variety since Christmas. Up to the middle of March it was quite conspicuous, as every branch and twig was covered with blossoms which emitted an agreeable perfume, being in that respect quite equal to the better known sort. I made a very pretty nosegay with some branches of the two forms of mezereons and the winter flowering jasmine associated with some ivy leaves at the end of January, and seeing that all the subjects used had been grown in the open air without any protection, it gave as much pleasure to all who saw it as more costly flowers. The colour of the flowers being white, red, and yellow, the contrast was distinct and pleasing.

When is the best time to Plant Christmas Roses.

There is some difference of opinion as to when is the best time to plant or divide the Hellebores or Christmas Roses; but I do not think there is much room for doubt in the matter, as I believe they can be very successfully transplanted in the autumn or spring, preferably the latter; with this reservation, that when the plants have to be divided it should be done in early spring just as the young leaves begin to start into growth. I have noticed as I go about that there is a great difference in the look and behaviour of these plants. In some cases they look perfectly happy and grow and flower in the most satisfactory manner, with dark thick shiny leaves, and leaf stems one inch or more in circumference. In other places they appear to be heavily handicapped in some way, for the plants neither grow nor bloom satisfactorily. In my own mind I am quite satisfied that the character of the soil makes all the difference in their behaviour. In ground that suits them they will grow as well in shade as in the full sun. Therefore, where it is known that the soil is not quite suitable, and it is not convenient to make it so, I advise them to be grown in a position where they get shade one half of the day. I have watched and treated these plants to a variety of soils and positions, and I find they do best when leaf-soil forms one half of the compost. The plants also like a greater depth of good earth than they usually get. I have just made a new plantation, and have taken all the old earth away and have filled up the space with a good mixture composed of one half rotten leaves; the other half is composed of equal parts rough peat and loam. According to my previous experience they will do well in this.

Seedling Plants and Cuttings.

Some amateurs and others who are not experienced in the work of the garden, often meet with some disappointments when dealing with tender seedling and other plants because they do not manage them properly. At this season of the year it is usual to raise a good many of such plants as single dahlias, petunias, and verbenas from seed, and the plants are brought forward on a hotbed or in a warm greenhouse, against which I have nothing to say. It is the after-treatment that so often leads to failure. They take the plants from a warm place and after pricking them out put them in a cold structure. Such treatment is wrong, the plants should be placed in a lower temperature several days before they are disturbed which will give them time to get hardened, and bear the disturbance without any serious check. But when they are transferred from a warm house to a cold one at the time they are transplanted, they experience a violent change and frequent losses invariably result. I hope this seasonable warning will not be lost on those who have not had so much experience in the garden as old—

Chatterbox.

THE GREAT ENEMY OF THE SPRING FLOWERS.

When Mr. Ingram's delightful lecture was concluded, I was hoping the discussion would turn on the subject of the one great enemy of the spring flowers. It is frost: All other enemies are of but small importance as compared with that. Perhaps in the order of enemies Drought in summer should rank second to frost; certain it is that in a hot dry summer many alpines die through want of water where they are not assiduously cared for. But what are we to do against frost? In my garden are frames, pits, hand-lights, and other protectors, but these are simply inadmissible to the garden that is intended for display, and however naturally sheltered the site of the show garden may be, frost will find it and will from time to time make lamentable marks. Twice in the present season I have seen the rising flowers of the megaseas crushed, the wallflowers made flaccid as though dying from drought and the hellebores killed to the ground leaf and flower; this day bright and beautiful, the next a heap of offensive rags.

Many and various are the plans we have adopted, and often with so much success that I complain with timidity, but yet I must complain because my plans prove insufficient. I go into the vegetable garden in January and throw some dry clean straw that costs nothing on stools of rhubarb, and in a few weeks thereafter I have supplies of rhubarb from the open ground. As much protection as half a dozen straws afford my rhubarb, I want for my plants in the show garden and I know not how to obtain it. Surely there is ingenuity in the world sufficient to cope with this difficulty. What I want must be cheap, easily managed, and making no such mark as straw will do, for it is impossible to keep a show garden in proper condition where straw is scattered to protect the plants from frost.

Tiffany, scrim, and Haythorn's Hexagon Netting have been used with advantage. We drive in a few stout short stakes between the plants that need protection and around the outsides of the beds and stretch the material over them and then the plants are safe. The material may be allowed to remain for a time if severe weather compels, in which case the netting will prove the best material, for it is singularly efficient in warding off frost and yet it admits air and light. But when any great extent of ground has to be considered, this kind of protection is rather to be avoided as far too troublesome and I regret to add far too uncertain. In a calm night with a sharp frost your pets are safe under the net and in the morning you remove it and hang it in a shed to get dry for the next use. This is all simple enough, but you may fail to put it on when it is most wanted through not being in a proper prophetic state of mind as to the coming weather; that is difficulty number one I grant it is a difficulty that should not occur, for the observer of the "signs of the times" is rarely mistaken as to what the night will be as regards frost or no frost at the season when the business arises that we now have in view. Difficulty number two is less easily guarded against; you put on your screens and make all safe as you suppose, but there comes a storm of wind, a deluge of rain, a fall of snow and *then* what is the state of the tiffany, the scrim, the netting? It collapses, it sinks down on the plants; it may freeze to them, and when, with difficulty perhaps, it is removed, it is found to be muddy, torn, and scarcely fit for further use. Even this would not greatly matter, but we may see the vegetation crippled by frost through lack of protection at a time when wind and snow render it impossible to use our textile protectives. I do greatly lament that this point was not put forward in the discussion that followed. But oh! the little speeches were neat enough, but there was evidently a conviction in the minds of the speakers that practical matters had been sufficiently discoursed upon and the time had come for sentiment, for anything except to discover how to grapple with the greatest of all the enemies of spring flowers.

Adela.

The Source of Nitrogen in Plants is the subject of a pamphlet bearing the names of Sir J. B. Lawes, F.R.S., and Professor G. H. Gilbert, F.R.S. It is entitled "New Experiments on the Fixation of Free Nitrogen." The publishers are Harrison and Sons, St. Martin's Lane. In this it is shown that while leguminous plants certainly have the power, by aid of micro-organisms, of obtaining nitrogen directly from the atmosphere, it does not follow that in agricultural practice nitrogen may be eliminated from the soil. The scientific results of the inquiry appear not to lessen the value of nitrogenous manures in the preparation of the land for leguminous crops.

SHADING VINES.

Whatever may be the general opinion about the policy of shading vines, there is not a doubt that some sorts of grapes are benefited by it when the shading is judiciously applied, as there are also instances where a little shade is beneficial to sorts that in other cases do not require it. It is for this reason that those who are able to dispense with it exclaim so loudly against the practice. But they forget when doing so that the practice may be justified by peculiar conditions. If they would look at the matter in this light, they would see less cause to differ in their opinion from others who are not so fortunately situated. Someone may be disposed to ask—If the same sort of grapes will do without shading in one house, why not in another? At first sight such a question appears reasonable enough, but it is not so when we take into account the fact that the position and aspects of houses are not alike, and that there is a difference in the distance of the rods from the glass, and that well-established and vigorous vines do not require such attention so much as weak ones. Further, the means of ventilation are in some cases insufficient to prevent the leaves from burning under brilliant sunshine. All these are matters that must be taken into consideration before anyone can say whether it is or not necessary to shade the vines of some particular sorts of grapes.

The reader must not suppose that I am in favour of shading, under ordinary circumstances, such sorts as the Black Hamburgh, Alicante, Foster's Seedling, Lady Downes, and one or two others, because I am not. The conditions under which these sorts are grown must be at variance with sound practice if they require it. The varieties that I have found in practice to be benefited by a little shade at a particular time of their growth in some cases are the Muscat of Alexandria, Gros Colmar, and the Muscat Hamburgh. There are, I know, more vines of the first-mentioned sort grown without the aid of shading than with it; but that does not prove that they would not do better in places where the crop is not in a satisfactory condition if they had the benefit of a little shade. My experience is that in certain cases this grape is benefited by a little shade placed on the glass from the time the berries begin to stone until they begin to change colour. At that time it should be removed, as it is during the time that the seeds are being formed that the foliage gets scorched by the sun. This shows that during the stoning period there is a greater tax upon the roots than either before or after. It appears that during that period the leaves are somewhat enfeebled, owing to the strain of seed forming that is going on in the fruit, and therefore less able to bear the influence of a powerful sun, as it is then that the edges of the leaves get scorched, with the result that the affected parts turn prematurely yellow before their time. It is to prevent this that I advocate judicious shading of this or any other sorts of grapes that are known to suffer from the same cause.

Vines that retain all their leaves uninjured and healthy until the end of the season do not require such attention. As a matter of fact, I do not wish to think of them in this connection. My anxiety is to be of some use to those whose vines have in past years been subject to be scorched, and who are looking about for the cause of the mischief. To such I unhesitatingly say, do not be afraid to place a thin shade on the glass through the hottest part of the summer. Moveable blinds made of tiffany are the best plan to adopt, but I have had to be content with a thin lime wash painted on the outside of the glass, which I find answer very well.

I have mentioned the Muscat of Alexandria as being very liable to have the foliage scorched by the sun, but the sort most liable to injury from the same cause is Gros Colmar. This is so well known to be the case that many skilful growers make it a practice to afford their vines of this sort some amount of shade. It is found to answer so well that shading forms an important part of the details of management. I have always thought, and I shall think it to be so until it is clearly demonstrated to the contrary, that the absence of colour in the berries of Gros Colmar is caused by the injury to the leaves of the vine by the sun, because to see this grape well coloured is an exception. For this reason it is very clear that the injured foliage does not afford the same amount of assistance as that which remains perfect until the crop is ripe. It does not require a very wide stretch of the imagination to suppose—and I think rightly—that it is this scorching of the edges of the leaves, even when nothing else occurs, that causes the absence of that fine golden colour in the Muscat of Alexandria, which we so often see as evidence of some defect of management. If it is not so, what other argument can be advanced to account for it? Most of us know that every gardener is proud of his muscats when they present a good depth of amber or golden colour. But I have always noticed that it is not present when the foliage has been disfigured by the action of the sun. I came to the conclusion some years ago that it was bad for this grape when any part of the roof space was not covered by the growth of the vines up to the time they begin to colour. After that it is good for them to have a reasonable amount of light to play about the bunches, but by the time that is required, all danger of scorching by the sun will be past.

When there is uncovered space on the roof the sun's influence acts with great force on the internal temperature, so that the leaves are scorched by a sudden rise in the temperature before the cultivator is aware of it. Nor is the mischief apparent for a day or two afterwards. I may, however, tell the inexperienced reader that something may be done to prevent the leaves burning by judicious ventilation, by which I mean he must begin to give air early in the morning to dry up any moisture that may be about the foliage, for if the sun reaches it before it is quite dry greater injury is done. I have, however, proved in my practice that the most careful system of ventilating will not in some cases prevent scorching of the leaves. When such is the case, I seriously advise the cultivator to resort to a thin shade on the glass as the only sure preventive. J. C. Clarke.

Notes of Observation.

PINE BARREN BEAUTY.

At the last meeting of the R.H.S., in a group of beautiful alpine flowers, contributed by Messrs. George Paul and Son, of Cheshunt, occurred the bronzy-leaved Diapensia, *Pyxidanthera barbatula*, a sweet little gem that none could look on without experiencing some degree of fascination. It grows in a close mossy tuft, the leaves in minute dense rosettes forming a close cushion of a bronzy or brownish-green hue, the flowers small, circular, white, dotted over the bronzy tuft like little jewels on a velvet cushion. This beauty was justly recognized as of high merit, a pleasing proof that the Floral Committee maintains the broad principle of catholicity that has been the mainstay of the confidence reposed in it as a just and wise board of discrimination in things pertaining to its line of duty. It was amusing to see that seedlings of Greig's tulip were passed over as not of special merit, doubtless, on the ground that gay subjects of that kind should have some high floral qualities to secure favour while this modest gem "of purest ray serene" was instantly appreciated by an official award of merit. P.

WEEDS ON LAWNS.

Where the grass is infested with plantains, dandelions, and other coarse weeds which are detrimental to the appearance of a well kept lawn, no time should be lost in removing these objectionable weeds if this was not done in the autumn. Many remedies are recommended to kill them such as lawn sand, vitriol, &c., but from experience of many of these so-called cures, I find none are better than the simple plan of digging them up by the root, dropping some finely sifted soil into the hole made, and afterwards sowing a few seeds of suckling clover which in a short time will grow. This and the grass around will cover the bare spot almost directly, rendering the lawn tidy in a short time for the whole year. The important point is to remove the root intact, cutting it off an inch or so under the surface is worse than not touching it because the check given causes three or four growths to appear in place of the one previously. We use what is termed a caulking chisel, which is about ten inches inch long, three quarters of an inch broad at the point, so bent in the centre that a good grip is obtained of the weeds by levering them up with the right hand, the left being at liberty to pull out the root. With some soil at hand in a bucket to fill in the hole it is surprising what a number a smart boy can get out in a day.

The objection I have to lawn sand is that although it kills the weeds for a time, they come up not only stronger but more numerous than ever because the sand does not kill the root entirely. More than this, the grass around the spot where the sand was applied receives such a stimulus that it grows very rapidly causing the lawn to have a "spotty" appearance, which nothing will prevent until the rapid growth of the grass is exhausted, which is not for some months. After the leaves wither and die from the effects of the sand, the holes caused by the growth of the plantain roots require filling in with soil or the lawn will be full of such holes which for tennis especially is very disagreeable. The grass over the spot where the sand or vitriol was applied does not grow nearly so quickly as it does where the weeds were simply dug up. Therefore after considerable experience with turf very much infested with coarse weeds such as those named, I have come to the conclusion that digging them up and treating the holes in the manner indicated is by far the best way to rid the lawn of weeds and make it presentable in the shortest space afterwards. Just now when the grass is growing fast is a capital time to do such work, afterwards give the lawn a good rolling to level over the places operated upon. M.

PARSLEY.

The winter now closing has been a bad one for parsley in gardens where an absolute failure was previously unknown. This fact has now to be chronicled, owing perhaps to the prevalence of so much foggy weather, combined with severe frosts at times after spells of mild weather. Now is the time to set about preparing for a supply for next winter so that a second failure should not take place. The position in which it is growing has much to do with the success or otherwise of the crop. Two years since we sowed some seed on a sharp-sloping bank, facing the south, on the top of which were growing spruce firs. The bank was made up with refuse soil from the making of a pond and in consequence was anything but of good quality, being scarcely better than clay and stones. A year's exposure to the weather had pulverised the surface, making it workable at the time, the weather being dry. All through the winter we have been able to pick abundance of beautifully curled leaves from these two-year-old plants, which at the present time show no signs of decreasing. Last year some seed was sown in a box in a gentle heat. When large enough the plants were transplanted to another part of the same bank; these grew rapidly, the roots stood the winter well and produced plenty of fresh green parsley. It is a mistake to grow parsley on rich soil, the plants being rendered soft and liable to damage by frost and unfavourable climatic conditions. The present is a good time to sow seed in a gentle heat, hardening off the plants in a cold frame previous to putting them out, and when planted they should not be crowded, allowing a distance of at least eight inches square for each. Toward the end of summer if the growth is very luxuriant it is a good plan to remove the large leaves, allowing those in the centre to have more room for development, which will cause the after-growth to be hardy and more likely to live through the winter. Crowding the plants is a great evil, for the growth then is weak and tender and when damp prevails the mortality is great, for the plants rot off at the collar. E.

BICOLOR DAFFODILS.

There happens every year a kind of conflict amongst the bicolor trumpets, and generally the well known Empress, Bicolor, and Horsfieldi are the subjects, on one side the contention being that the first is the best, while, on the other, the second and third are advanced as each the best of its group. If the litigants were to put the matter to the test of sending to a distance parcels of each of the three varieties that take the lead in the bicolor group, it would be found that Empress travels best of all for the simple reason that it is stouter, firmer, longer lasting, and possessed of a higher vitality. It is the best also in appearance as may be proved by putting bunches on a table with the names concealed and calling in an expert in floral criticism to select the best of the three, for the trained eye will see in Empress the marks of superiority. There are about twenty two-coloured varieties of which in addition to the foregoing the more distinct are *Dean Herbert, Grandis, J. B. M. Camm*, and *Michael Foster*, the remainder are for collectors whose pride it is to have complete or in any case extensive collections, and they are beautiful enough for a place in any garden. If only two are wanted take Empress and Grandis. P.

DOUBLE POPPIES.

Those who have not grown the double white and scarlet poppies would do well to invest in a packet of seed of both colours, which can be bought for one shilling each. These poppies are useful for filling up any vacant places in the herbaceous or shrubbery borders toward the back, as they grow to a height of three to four feet in good soil, and flower freely most of the summer and early autumn. Ten or a dozen seeds should be sown in each patch of about one foot square, covering the seed with some finely sifted soil. The plants should be thinned to about six inches apart, therefore five plants are sufficient for the space named. They will not bear crowding, neither will they transplant readily. Therefore the best thing is to sow thinly and thin to the distance named. The first or second week in April is a good time to sow the seed. The flowers are borne on stout stems and are nearly six inches in diameter, very showy in the places named if the soil be good enough to produce a vigorous growth. E. M.

AMERICAN PLANT BEDS.

Now is a good time to renew any of the American plants such as rhododendrons, azaleas, kalmias, heaths, &c., or renovate the beds containing these, or any of the plants named. The advantage of doing such work as this at the present time over any other season is that growth starts away at once, the plants feeling little or none of the check of removal if carefully done. Where the soil naturally is suited for the growth of American plants, no trouble need be experienced in obtaining success, but where the district is one in which chalk or limestone abounds, considerable expense is incurred in planting such objects as constitute an American garden. Where the least bit of chalk is to be found in the soil rhododendrons betray its presence by their refusal to grow at all freely, the foliage assumes a yellow cast and presents an altogether unhappy appearance. Even the mixing of loam from a chalk district with peat with a view to economise the latter, although the turf be situated several feet above the strata, it will not answer; the turf somehow is impregnated with lime which checks the growth of the rhododendrons. The best method of renovating plants growing in naturally suitable soil is to spread three inches of cow-dung over the surface allowing it to rot there, the soluble constituents wash down to the roots giving a stimulus to the plants; but where the soil is the opposite of that last named a totally fresh supply must be secured. Partly decayed leaves may be mixed with peat to the extent of one half, silver sand may also be added which will help to keep the decayed leaves congenial to a free growth of the plants when in a mixed soil. It is useless to have less soil than a depth of eighteen inches for rhododendrons, one foot will suffice for kalmias, azaleas, and any other dwarf-growing subjects. The soil must be pressed firmly about the roots at planting time, a light mulching of partly decayed leaves or horse manure afterwards will be an advantage, serving to keep the soil moist and doing away with the necessity of watering directly after planting.

If any of the beds be so placed as to feel the effects of easterly or south-west winds a few plants of pernettya mucronata placed at the windy side will shield the other subjects perfectly. This pernettya seems not in the least affected by strong winds, but grows rapidly in any position, providing the roots are in a peaty soil. S.

AUBRIETIAS.

Now is the time to note the difference between old roots and seedlings of the various kinds of aubrietias in the time of their flowering. There is such a difference between old and young plants that those who have not noticed this fact would do well to make a note of it. Here the old plants of the græca variety are covered with blossoms while seedling plants from last year are only just showing here and there a flower. Where spring bedding is carried out to any extent it must surely be an advantage to employ the plants which will give the earliest results, rather than to wait a fortnight at least for the same effect. Of course, I am well aware that a stock of plants has to be raised before a sufficient number of old roots can be secured to rely upon. When aubrietias are used as a permanent edging to cover stones, at the side of a path for instance, one plan is to cut them down to within one or two inches of the soil after flowering is past. New growth springs up from the base, grows even, has a neat appearance, and flowers early in the spring. When a stock of plants of any variety of this family has to be raised from seed, this should be sown in sandy soil in a pan or box in a cold frame during July, the seedlings will flower the following spring when a selection can be made, as they vary so much in colour and form of growth. E.

CANKER IN MARECHAL NIEL ROSE.

I have lost several of the Marechal Niel rose through canker. On one occasion I observed that a drip had been the cause, and on another occasion it was caused by the cracking of one of the rods. But I have seen the canker take this rose without crack or drip; therefore, I believe that something must be wrong at the roots. For several years I have adopted the plan of planting the rose outside and training the branches inside in the same way as the grape vine. I have found the Marechal Niel rose planted outside with others in this neighbourhood, and the rose is doing much better than when the roots are inside. But it is safe to mulch the roots with stable dung during winter when planted out. I have a Marechal Niel planted in the way described above with several hundred buds just breaking into bloom, and doing better than when the roots were inside. I have found a good coating of lard tied over with a piece of linen a cure for canker on apple trees but I have not had of late the opportunity to give it a trial on the Marechal Niel. But some readers of the Gardeners' Magazine may have an opportunity to give it a trial.

Tenby. John Jenkins.

[Lard will kill every part of the bark it may happen to touch.—Ed.]

SEEDLING BEGONIAS.

The best way to obtain large bulbs in a short time of the tuberous begonias is to plant out the young seedlings in a bed of rich soil in a pit or frame, where they can have the protection of the lights for a few weeks regularly, and after that whenever the weather is stormy and the temperature low. The end of May is as soon as the plants are generally large enough to bear being transplanted in this way. It is surprising what a difference there is in the size of the tubers at the end of the autumn—when planted out as I have suggested—compared to those grown in pots. Those roots that have the benefit of a bed of soil all the summer will be much larger than those grown in pots. This is very important when they are required for bedding out. Looked at in another way the saving in labour in watering is considerable. The seedlings must not be crowded when growing, or they will not get the full benefit of the planting-out system. They should be placed at least six inches apart. Moderate shading in very bright weather will be beneficial to assist the plants in getting established in the soil.

J. C. C.

PRIMULA ROSEA.

Probably this has disappointed as many as it has delighted. And no wonder, for many take up with alpine plants without having the true enthusiasm that masters difficulties and serves as a kind of intuition when difficulties arise. Like ten thousand other plants that occasion disappointment this most beautiful primula is one of the easiest to manage, for its one sole requirement is water. By "sole requirement" I of course mean as an exceptional subject, for of course it requires earth to grow in and light and air as any other child of the mountains. The best place for it is a low shelf in a half shaded part of the rockery, although the full light appears not to be detrimental to it. A deep loamy or peaty soil will suit it well, but the one leading requisite is moisture. Many plants are lost through frost and fog near London, but in a pure air it is perfectly hardy. Generally speaking, losses are caused by keeping it too dry, for it should be liberally supplied with water throughout the whole of the summer. P.

METHYLATED SPIRIT AS AN INSECTICIDE.

It may not be generally known that the above is one of the best remedies in existence for cleansing foliage plants from insects with which they are generally infested more or less at various times, such as brown and white scale, thrips, red spider, and mealy bug. Amongst stove plants crotons require much attention to keep the leaves clean and free from the pests named. By the use of methylated spirit in an unadulterated form the leaves can be made quite clean and without injury to the leaves. This spirit can be bought of ordinary chemists at 10d. per pint; if it be considered dear at that price it has the merit of being effectual. The best means of applying it is to wet a small piece of sponge with the liquid, wash several leaves with the sponge until it becomes dry, when it should be washed in water to get rid of the dirt which would naturally adhere to the sponge. Afterwards again moisten the sponge with the spirit, which has the merit of killing such insects as small brown scale which will live through many applications of some insecticides. Methylated spirit does not injure the leaves at all. E. M.

BIRDS NINE MILES FROM LONDON.

Living as I do but nine miles from our great metropolis, it might seem absurd to say that the number and diversity of our local wild birds invites special mention. But such, I think, is the case; so the following list will doubtless be interesting to those living within so small a distance from the City:—Woodlark, tawny owl, wren, jay, night-jar, barn owl, sparrow, robin, stone-chat, grasshopper warbler, grouse, wheat-ear, goldfinch, jackdaw, titlark, bullfinch, redpole, siskin, pied flycatcher, magpie, wryneck, teal, skylark, starling, gold-crest, golden plover, chaffinch, thrush, kite, raven, linnet, greenfinch, whitethroat, rook, redstart, blackbird, great tit, black-headed gull, woodpeckers (two varieties), kingfisher, moorhen, nightingale, lapwing, carrion crow, swallow, sparrow-hawk, blue tit, partridge, blackcap, cuckoo, pheasant, pied wagtail, heron, swift, snipe, jack-snipe, chiffchaff, martin, hedge sparrow, water ousel, garden warbler, missel thrush, water rail, yellow-hammer, shrike, fieldfare. The above list is not complete, as there are more birds of which I am not certain. One or two mentioned are only rare birds here, but the majority I have seen myself or have heard about from old inhabitants of the village. M.

Literature.

DARWIN'S JOURNAL OF RESEARCHES.

Journal of Researches into the Natural History and Geology of the Countries visited during the Voyage round the World of H.M.S. "Beagle." By Charles Darwin, M.A., F.R.S. With Illustrations by R. T. Pritchett (Murray). The publication by Mr. John Murray of a new edition of the Voyage of the "Beagle," with upwards of a hundred beautiful illustrations and some serviceable maps, renews our interest in a book that has long had a place in our affections, scarcely second, perhaps, to that of White's Selborne, for though less venerable in respect of age, it is of far higher aim, larger scope, and deeper learning. Darwin's celebrated journal is well known to most of our readers, but it is one of the few books that cannot be exhausted whether as to its information and philosophy, or its hold upon us as prompting inquiry and as teaching the true method of scientific observation. To those who are not familiar with the book we have to say that as regards intellectual equipment they are singularly wanting, and the sooner they change all that the better for their peace and reputation. The cheap editions have been of incalculable service in the enlargement of the sphere of popular enlightenment, and the time had fully come for such a beautiful reproduction as that now before us enriched with drawings from the scenes of Darwin's explorations. The maps are of priceless value; we have, indeed, laboured long in preparing maps of the voyage for our own use, and gladly accept better things, and congratulate the readers of the new edition that this part of the work is made as easy as the rest for them.

The object of the Beagle being to survey certain portions of the coast of South America, the business begins seriously at Bahia, the first port touched at on the great Continent. Captain Fitz-Roy, the initiator of the modern system of forecasting the weather, was desirous of the co-operation with him in this work of a scientific person competent to take advantage of opportunities for acquiring information on the geology and productions of the countries visited, and for this part of the enterprise Mr. Charles Darwin, who volunteered his services, was accepted. The maps in the volume before us show that the Beagle touched at Rio Janeiro, the embouchure of the River Plate, the gulf of St. Matias, and proceeded thence to the Falklands, to Tierra del Fuego, through the Straits of Magellan, and thence northward skirting the coast as far as Lima, when she struck a tangent westward to touch at New Zealand and pass round the southern coasts of Australasia to the Indian Ocean and thence to Bahia for a last look at Brazil before returning home. Our naturalist pushed into the country at every opportunity; made long journeys on horse and foot, suffering thirst and hunger on sterile plains, enduring cold and fatigue in ascending mountains, encountering danger in contact with savages, and everywhere making note of things seen and heard for the entertainment and advantage of mankind. The book became great on the instant of its appearance, but the lapse of time has augmented its importance. Now that Darwin's task is done, we find herein revelations of his character and method that were scarcely suspected in the early days of its publication. The book was from the first profoundly interesting for its scientific information; *now* it is a kind of autobiography in which we see foreshadowed the outlines of the work of the great naturalist.



VIRGIN FOREST IN RIO DE JANIERO.

It is at Monte Video that we begin to be completely in companionship with the keen observer. The people were hospitable, inquisitive, and strangely ignorant. He says "it excited the liveliest admiration that I, a perfect stranger, should know the road to places where I had never been. At one house a young woman, who was ill in bed, sent to entreat me to come and show her the compass. If their surprise was great, mine was greater, to find such ignorance among people who possessed their thousands of cattle, and 'estancias' of great extent. It can only be accounted for by the circumstance that this retired part of the country (Maldonado) is seldom visited by foreigners. I was asked whether the earth or sun moved; whether it was hotter or colder to the north; where Spain was, and many other such questions. The greater number of the inhabitants had an indistinct idea that England, London, and North America were different names for the same place; but the better informed well knew that London and North America were separate countries close together, and that England was a large town in London."

The treeless region of the Banda Oriental appears to have interested Darwin by reason of the problems it propounded. Why is it treeless? He says "extremely level countries, such as the Pampas, seldom appear favourable to the growth of trees. This may possibly be attributed to the force of the winds; or the kind of drainage." On a further consideration he finds in the climate the solution of the problem, "confining our view to South America, we should certainly be tempted to believe that trees flourished only under a very humid climate; for the limit of the forest-land follows, in a most remarkable manner, that of the damp winds. In the southern part of the continent, where the western gales, charged with moisture from the Pacific, prevail, every island on the broken west coast from lat. 38° to the extreme point of Tierra del Fuego is densely covered by impenetrable forests. On the eastern side of the Cordilleras, over the same extent of latitude, where a blue sky and a fine climate prove that the atmosphere has been deprived of its moisture by passing over the mountains, the arid plains of Patagonia support a most scanty vegetation."

Here is a bit of genuine Darwinism; it refers to the Tucutuco (*Ctenomys Brasiliensis*), a gnawing animal with the habits of the mole. "The man who caught them asserted that very many are invariably found blind. A specimen which I preserved in spirits was in this state; Mr. Reid considers it to be the effect of inflammation of the nictitating membrane. When the animal was alive I placed my finger within half an inch of its head, and not the slightest notice was taken; it made its way, however, about the room nearly as well as the others. Considering the strictly subterranean habits of the tucutuco, the blindness, though so common, cannot be a serious evil; yet it appears strange that any animal should possess an organ, frequently subject to be injured. Lamarck would have been delighted with this fact, had he known it when speculating on the gradually acquired blindness of the Aspalax, a gnawer living underground, and of the Proteus, a reptile living in dark caverns filled with water, in both of which animals the eye is in an almost rudimentary state, and is covered by a tendinous membrane and skin."

The birds seen in the course of the expedition furnish abundant material for entertaining observations. On the condor and the albatross the naturalist is more than ordinarily eloquent; indeed the condor is one of the heroes of the book. The sea coast affords abundant food for carrion hawks and cormorants, while the cattle feeding districts and the plains whereon horses abound are vigorously scavengered by their relatives the vultures. The carrion-vulture is common on the coasts of the Falklands; it is tame and fearless, and "if a hunting party kills an animal, a number soon collect and patiently await, standing on the ground on all sides. After eating, their uncovered craws are largely protruded, giving them a disgusting appearance. They readily attack wounded birds; a cormorant in this state having taken to the shore, was immediately seized on by several, and its death hastened by their blows. The Beagle was at the Falklands only during the summer, but the officers of the Adventure, who were there in the winter, mention many extraordinary instances of the boldness and rapacity of these birds. They actually pounced upon a dog that was lying fast asleep close by one of the party, and the sportsman had difficulty in preventing the wounded geese from being seized

from before their eyes. It is said that several together wait at the mouth of a rabbit hole, and together seize on the animal when it comes out. They were constantly flying on board the vessel when in the harbour; and it was necessary to keep a good look out to prevent the leather being torn from the rigging, or the meat or game from the stern. These birds are very mischievous and inquisitive; they will pick up almost anything from the ground; a large glazed black hat was carried nearly a mile, as was a pair of heavy balls used in catching cattle. Mr. Usborne experienced during the survey a more severe loss, in their stealing a small Kuter's compass in a red morocco leather case, which was never recovered."

A visit to the salt lakes near El Carmen brings forth the interesting observation that pure salt is less useful than salt "contaminated" with deliquescent chlorides. Thus the salt of Patagones is remarkably pure, and for that reason is not valued equally with the sea salt from Cape de Verd which is imported to mix with the pure article to give it a character in the market. Brine pits and salines are no more destitute of life than bogs and morasses in which there is only pure water. Numbers of burrowing worms are happy in the briny mud, and vast numbers of flamingos haunt these regions, and also happy in digging out the worms for their daily food. Nor is vegetation wanting even where the salt is constantly crystallising, and Darwin remarks that a minute crustacean is plentiful in the brine-pans at Lymington.

A considerable extent of the South American continent was in ancient time inhabited by large quadrupeds of which the remains are in some districts abundant. Darwin makes particular note of the fact that these creatures appear to have occupied a country that to the casual observer appears utterly unfit to support them. He says, "that large animals require a luxuriant vegetation, has been a general assumption which has passed from one work to another; but I do not hesitate to say that it is completely false, and that it has vitiated the reasoning of geologists on some points of great interest in the ancient history of the world." He refers to the deserts of southern Africa in illustration of the possible conjunction of vast numbers of large quadrupeds and a land scanty of vegetation. On the other hand, Brazil possesses a splendid vegetation, but has no large quadrupeds. On the general subject of the animal life of the American continent he discourses at length, and an extract will be interesting.

"The existence in South America of a fossil horse, of the mastodon, possibly of an elephant, and of a hollow-horned ruminant, discovered by MM. Lund and Clauson in the caves of Brazil, are highly interesting facts with respect to the geographical distribution of animals. At the present time, if we divide America, not by the Isthmus of Panama, but by the southern part of Mexico in lat. 20, where the great tableland presents an obstacle to the migration of species, by affecting the climate, and by forming, with the exception of valleys and a fringe of lowland on the coast, a broad barrier, we shall then name the two zoological provinces of North and South America strongly contrasted with each other. Some few species alone have passed the barrier, and may be considered wanderers from the south, such as the puma, opossum, kinkajou, and peccari. South America is characterised by possessing many gnawers, a family of monkeys, the llama, peccari, tapir, opossums, and, especially, several genera of edentata, the order which includes the sloths, ant-eaters, and armadillos. North America, on the other hand, is characterized by numerous peculiar gnawers, and by four genera (the ox, sheep, goat, and antelope) of hollow-horned ruminants, of which great division South America is not known to possess a single species. Formerly, but within the period when most of the now existing shells were living, North America possessed, besides hollow-horned ruminants, the elephant, mastodon, horse, and three genera of edentata, namely megatherium, megalonyx, and mylodon. Within nearly this same period South America possessed a mastodon, horse, hollow-horned ruminant, and the same three genera of the edentata. Hence it is evident that North and South America in having within a late geological period these several genera in common, were much more closely related in the character of their terrestrial inhabitants than they now are. I know of no other instance where we can almost mark the period and manner of the splitting up of one great region into two well characterized zoological provinces."

Until Darwin recorded the results of his observations little was known of the general aspects of life in South America save and except in the more populous centres. Here are some observations on the relation of temperature to vital phenomena showing that arithmetical rules will not carry us far in natural history—"When we first arrived at Bahia Blanca, September 7, we thought nature had granted scarcely a living creature to this sandy and dry country. By digging, however, in the ground, several insects, large spiders, and lizards were found in a half torpid state. On the 15th a few animals began to appear, and by the 18th (three days from the equinox) everything announced the commencement of spring. The plains were ornamented by the flowers of a pink wood sorrel, wild peas, ænotheras and geraniums; and the birds began to lay their eggs. Numerous lamellicorn and heteromerous insects, the latter remarkable for their deeply sculptured bodies, were slowly crawling about; whilst the lizard tribe, the constant inhabitants of a sandy soil, darted about in every direction. During the first eleven days, whilst nature was dormant, the mean temperature taken from observations made every two hours on board the Beagle was 51 F., and in the middle of the day the thermometer seldom ranged above 55 F. On the eleven succeeding days, in which all living things became so animated, the mean was 58 F. and the average in the middle of the day between sixty and seventy. Here then an increase of seven degrees in mean temperature, but a greater one of extreme heat, was sufficient to awaken the functions of life. At Monte Video, from which we had just before sailed, in the twenty-three days included between the 26th of July and the 19th of August, the mean temperature from 276 observations was 58·4, the mean hottest day being 65·5, and the coldest 46. The lowest point to which the thermometer fell was 41·5, and occasionally in the middle of the day it rose to 69 or 70. Yet with this high temperature, almost every beetle, several genera of spiders, snails, and land shells, toads and lizards were all lying torpid beneath stones. But we have seen that at Bahia Blanca, which is four degrees southward, and therefore with a climate only a very little colder, this same temperature with a rather less extreme heat, was sufficient to awake all orders of animated beings. This shows how nicely the stimulus required to arouse hybernating animals is governed by the usual climate of the district, and not by the absolute heat. It is well known that within the tropics, the hybernation, or more properly æstivation, of animals is determined not by the temperature, but by the times of drought. Near Rio de Janeiro, I was at first surprised to observe that, a few days after some little depressions had been filled with water, they were peopled by numerous full-grown shells and beetles, which must have been lying dormant. Humboldt



CORDILLERAS FROM SANTIAGO DE CHILE, The home of *Cereus Chiliensis*.

has related the strange accident of a hovel having been erected over a spot where a young crocodile lay buried in the hardened mud," but we are not told what happened when the young crocodile awakened, and it is a pity that the story is not completed.

In so vast a region as South America with its tropical heat at one end and wintry cold at the other accompanied by great diversity of geological conditions, great variety of vegetation may be looked for as a matter of course. Darwin was not a botanist and often lamented the fact, but he was rich in general information; knew much of plant life and was a careful and assiduous observer. All that he records of observations on plants is of value, and a certain few plants acquire a kind of heroical importance in the book. The thistle is one of them. On certain of the great plains, say of Buenos Ayres, the thistles form impenetrable forests and the animal that finds its way into the midst of them is considered lost for ever; it is not so much as thought of again. These thistles, long since described by Sir F. B. Head, not only overtop the tallest horse but the tallest man on the horse, and they completely bar the way in many directions to the traveller, and in fact render the country they occupy uninhabitable and unapproachable. Two thistles are prominent in various parts of the continent; one is a giant thistle with variegated leaves, the other the cardoon that we cultivate as an esculent. Darwin says "the fennel in great profusion covers the ditch banks in the neighbourhood of Buenos Ayres, Monte Video and other towns. But the cardoon (*Cynara cardunculus*) has a far wider range; it occurs in these latitudes on both sides of the Cordilleras, across the continent. I saw it in unfrequented spots in Chile, Entre Rios, and Banda Oriental. In the latter country alone, very many (probably several hundred) square miles are covered by one mass of these prickly plants, and are inpenetrable by man or beast. Over the undulating plains where these great beds occur, nothing else can now live. Before their introduction, however, the surface must have supported, as in other parts, a rank herbage. I doubt whether any case is on record of an invasion on so grand a scale of one plant over the aborigines."

It would be hard were the thistles absolutely useless. They supply building material (such as it is) and fuel, and means of defence, and no one can doubt they contain some kind of reserve of larger usefulness to supply fibre or pulp or something for the service of man when the appropriating genius has taken commercial stock of the situation. But to deal with facts we find the travellers in these regions forming their hovels for the night of thistle stalks, and when war brings large parties on the scene the camp is made comparatively safe by palisades and outworks of thistles. It is a hard life for such as have to live on what they can catch, and fashion a hut every night of thistles, but the men who are used to this sort of thing enjoy splendid health. Here is a bit of camp fire gossip.—"The country was quite level, with a coarse herbage and a soft peaty soil. The hovel was remarkably neat, the posts and rafters being made of about a dozen dry thistle stalks bound together with thongs of hide; and by the support of these ionic columns the roof and sides were thatched with reeds. We were here told a fact which which I would not have credited if I had not had ocular proof of it; namely, that during the previous night hail as large as small apples, and extremely hard, had fallen with such violence as to kill the greater number of the wild animals. One of the men had already found thirteen deer lying dead, and I saw their fresh hides; another of the party, a few minutes after my arrival, brought in seven more. Now I well know that one man without dogs could hardly have killed seven deer in one week. The men believed they had seen about fifteen dead ostriches (part of one of which we had for dinner); and they said that several were running about blind in one eye. Numbers of small birds as ducks, hawks, and partridges were killed. I saw one of the latter with a black mark on its back as if it had been struck with a paving stone. A fence of thistle stalks round the hovel was nearly broken down, and my informer, putting his head out to see what was the matter, received a severe cut, and now wore a bandage."

In Tierra del Fuego where beeches form dense forests of vast extent, some of the more elevated plateaux exhibit trees so dwarf and crowded as to form at a moderate distance a fair imitation of grass turf. In chapter X. is a very pretty parallel to the celebrated oak forest of Dartmoor where there are "a thousand trees a thousand feet high." These little beeches are "as thick together as box in the border of a garden." The Gunnera scabra that forms so fine an adornment of boggy and waterside scenes in our gardens, is common as a native in Chile, where the inhabitants eat the stalks and tan leather with the roots. A note on apples in Valdivia will interest readers unfamiliar with it and will be the last of our quotations—"The town is situated on the low banks of the stream, and is so completely buried in a wood of apple trees that the streets are merely paths in an orchard. I have never seen any country, where apple trees appeared to thrive so well as in this damp part of South America; on the borders of the roads there were many young trees evidently self-sown. In Chile the inhabitants possess a marvellously short method of making an orchard. At the lower part of almost every branch, small, conical, wrinkled points project; these are always ready to change into roots, as may sometimes be seen, where any mud has been accidently splashed against the tree. A branch as thick as a man's thigh is chosen in the early spring, and is cut off just beneath a group of these points; all the smaller branches are lopped off, and it is then placed about two feet deep in the ground. During the ensuing summer the stump throws out long shoots, and sometimes even bears fruit. I was shown one which had produced as many as twenty-three apples, but this was thought very unusual. In the third season the stump is changed (as I have myself seen) into a well-wooded tree, loaded with fruit. An old man near Valdivia illustrated his motto 'Necessidad es la madre del invencion,' by giving an account of the several useful things he manufactured from his apples. After making cider and likewise wine, he extracted from the refuse a white and finely-flavoured spirit; by another process he procured a sweet treacle, or, as he called it, honey. His children and pigs seemed almost to live during this season of the year in his orchard." The two points of interest in this record may be freely interpreted for horticultural purposes as referring to apples of the "burr-knot" class, and propagation thereof by "truncheons."

The inviting volume Mr. Pritchett has so admirably illustrated has its special literary uses as apart from its pictorial beauty, for it seems to open the whole subject afresh, and give new life to records of the highest interest. There is much said at the present time on the various modes of producing book illustrations, and the examples before us may be referred to as amongst the very best results of process we have seen. We admire Mr. Linton's enthusiasm for lines, but we cannot go with him so far as to question if a genuine work of art for book purposes cannot be produced without them. The views of mountain scenery in this book are not only beautiful as pictures, but truthful in expression, while the smaller vignettes preserve the artists delicate touches, lacking neither decision nor feeling. The trochilus at page 268 is a perfect gem in its minute delicacy of expression, and the group of Fuegians at page 151 may be described as a proper study for a picture that might rank high in the realms of art. In many instances plants and insects are delineated from pen and ink drawings which ensure the sharpness of outline needful for specific characters. All things considered we must say that it appears that justice is done, and that Darwin comes before us once more in one of his best books and the one that has the largest claim to popular attention, and this in the best form imaginable short of the costly style in which Mr. Gould operates, which puts a book far away from such as can only afford a pound or so for it.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

Meeting at Ellesmere.

Under the auspices of the Ellesmere Horticultural Society (Salop), the above Association made arrangements for a lecture by Mr. John Wright on "Fruit Culture in Britain," and a meeting to be held in the Town Hall, Ellesmere, on Saturday, March 22nd. There was a large attendance of the leading agriculturists in the district, Brownlow R. C. Tower, Esq., Hon. Sec. of the local Society, presiding. The following abstract of a report appearing in the *Salopian and Montgomeryshire Post*, March 29th, gives an outline of the business and substance of the lecture.

The Chairman, who was most cordially received, in opening the meeting said that at a meeting of the Ellesmere Floral and Horticultural Society held not long ago, it was decided to take steps for the encouragement of and improvement in the culture of fruit in the district which the Society occupied, and he was requested to write to the British Fruit Growers' Association and ask them if they could kindly send down a lecturer or lecturers to address a meeting in Ellesmere as soon as possible. The Association very kindly consented to oblige them, and they had sent down three able representatives of the Association. They had Mr. Wright, who had written a very excellent book called "Profitable Fruit Growing." He called it a book, but it was really a prize essay, an essay which won the gold medal presented by the Lord Mayor of London. Then they had Mr. Bunyard, of Maidstone, and Mr. Baillie of Chester. The subject of fruit growing was one which he thought would interest them all, especially as their neighbourhood was better adapted for the growth of fruit than many others in the country. The growth of fruit in that district had declined within the last half century very considerably. They very seldom saw an orchard round about properly taken care of, or old trees removed and fresh trees planted, and now was the time when they had to turn their attention to every possible method by which a little money could be made. They were favoured with a good district, and it seemed a pity that they should not try to make the best use of what was given to them.

Mr. Wright commenced his lecture by referring to the differing views that were entertained on the subject of fruit growing—the optimists, he said, regarding it as only another name for fortune-making, while the pessimists described it as all fudge, from which nothing could be gained. He thought the truth on this and other matters was to be found somewhere between extremities of assertion. He dealt somewhat trenchantly with persons who proclaimed their incapacity as cultivators by preaching in newspapers the doctrine of fabulous profits for all who would plant certain trees, and reminded his hearers that it was very necessary to beware of quacks. He directed attention to the action of the Royal Horticultural Society, the Fruiterers' Company, and the British Fruit Growers' Association in procuring and disseminating information with the object of increasing and improving the fruit supplies of the kingdom as altogether more reliable than the preaching of popularity-hunting crusaders. He pointed out the unwisdom of trusting to any one kind of fruit alone, such as apples or pears, for producing profitable crops yearly, and adduced instances showing that losses had been incurred by such ventures, especially when a tree each of a great number of varieties had been planted. He strongly advocated a directly opposite course—of planting many trees of a few of the best varieties, not omitting a due proportion of the more certain bearing small or bush fruits; and said that under the combination system he had never known a total failure, but on the contrary, with a good choice of sorts, good soil, and good management, a fair return would accrue to cultivators, and much better than they could obtain from farm crops. He would not, however, advise inexperienced persons to invest all their money in fruit growing, and thought farmers should only regard it as an adjunct to other crops. He should like to see good collections of fruit well grown around the stately homes of England, both for supplying those homes with the rarest and choicest samples as well as for educational purposes, in showing the tenantry the varieties that would be the most remunerative to them.

Several examples of land being increased in value by fruit culture were given, and of the consequent higher rents obtained on the termination of tenancies. An extension of the best Kentish methods was advocated, and a distribution of production over a much wider area, as trees were often barren in one district and laden with fruit in another, it might be 200 or 300 miles north of London, through the later blossoming of the trees. The fallacy of the reiterated allegation of fruit to the value of £8,000,000 being imported annually that might be grown in this country was exposed, and it was because the statement had scarcely an approach to truth that there was such a wide field open for British cultivators, who were advised to adopt American methods in selection, culture, packing, and marketing, then the time would not be long in coming when our enterprising rivals would be beaten in our markets. After indicating the periods after planting at which different kinds of fruits become profitable, Mr. Wright gave practical hints on situations and shelter for trees, soil and its preparation, planting, pruning, and manuring, some of the more important manipulative points, including the arrangement of trees, being illustrated by large coloured drawings.

Situation and Shelter.—As far as is possible avoid damp hollows where fogs or mists are prevalent, no matter how rank the grass may grow and how rich the soil may be. Trees in such positions grow rapidly, often too luxuriantly, and the wood does not then ripen, while if it does, and blossoms expand, they will be in great jeopardy of destruction by frost. I had for many years two orchards under my eye in the same parish; one was in the water course of the district, the other on the ground about 100 feet higher. The bottom orchard consisted of splendid young trees that blossomed freely, but spring after spring the beautiful prospect of fruit was turned into desolation by the action of frost in the moisture-laden atmosphere, while the trees grown higher and drier escaped injury. The lower orchard has not, over a series of years, given anything approaching a profitable return, but the one above the fog line, so to say, has been highly remunerative. An extensive

riverside plantation in Worcestershire has produced nothing but disappointment; another, not a quarter of a mile from it, on higher ground, has afforded rich harvests of fruit. Still, when practicable the other extreme of great exposure and bleakness should be avoided, for a little shelter such as that afforded by hills or trees is desirable, and especially from the south-west and north east, for a keen driving easterly gale often nips the blossoms in spring, while a tornado from the other direction in autumn strips the trees of fruit.

Soil and its Preparation.—For practical purposes it is sufficient to know that land in condition to grow first-rate crops of potatos, turnips, wheat, and clover will grow first-rate fruit. Light or sandy soil on gravel will not do so. It must be of a holding character, and perhaps the stronger it is, provided it can be brought into good tilth, the better. It must contain potash, phosphorus, lime, and soda, and it is because of the presence of these essentials that the crops above-mentioned exceed the average in bulk and quality. When spade culture is employed double digging pays well if properly done. The right way is to break up the ground to a depth of two feet or thereabouts, keeping the best at the top and the poorest subsoil below, or only an inch or two of the latter should be mixed with the upper layer. The wrong way most decidedly is to bury all the top, or best, soil at the bottom of the trenches with a foot of the subsoil dug out of them. If land is prepared with horse power the subsoiler should follow the ordinary plough both lengthways and across the field. The land may be stirred in that way to a depth of 18 inches, the bulk of the best being kept in the best position. A good tilth can then be secured with other implements in suitable weather. See that the land has good natural or artificial drainage. The water table should seldom rise higher than within three feet of the surface.

Choosing Trees.—Small clean, thrifty young trees of two seasons' growth from the buds or grafts with a plenitude of fibrous roots are not only cheaper but better than trees of twice the age and size with few roots. Trees may be studded all over with blossom buds, and perhaps bear a dozen or two of apples or pears the first season, but this abnormal productiveness does not deceive "old hands" in fruit culture, but only the young and inexperienced. Trees of this nature are the stunted prodigies of the fruit world, and can no more be made of substantial service than a stunted snappish little poodle can be trained into a valuable shepherd's dog or retriever. So-called cheap trees are often seen in markets with the roots as dry as hay, and the swelling buds shrinking in spring Leave such trees severely alone. They may be the dearest of trees in the end, for many that do not die refuse to thrive, and not a few so obtained have proved untrue to name and inferior in variety. Of all the disappointments in culture few can be greater than growing trees for some years only to prove their worthlessness. The time thus lost can never be regained, and a bad variety occupies as much space and takes as much nutriment out of the land as does a good one. In buying trees always take particularly into account the characters and reputations of vendors. This, with natural trade competition, is the best guarantee purchasers can have for getting good value for money.

Planting.—The sooner fruit trees are planted after the leaves can be shaken off them the better. They will grow afterwards if moved, even when the buds are swelling in spring, provided the roots are kept moist when out of the ground, and the soil is in free working condition. At no season plant when the ground is in a wet sticky state. Cut off mutilated roots and jagged ends, then the wounds will heal quickly and produce new fibres. Spread the roots out straight, and do not cover them deeper than they were in the nursery, the earth mark on the stems being a line of guidance. Do not place manure either in contact with the roots or under them, but spread it on the surface of the soil over them, and for a foot beyond their extension, leaving it to decay. Do not check roots near the surface by deep digging, but encourage them by top-dressings of manure and vegetable refuse, especially in hot dry weather, for keeping the top soil moist. Roots will then multiply there and produce fruitful growth; if driven down to the poorer subsoil for moisture the resulting growth may be strong but not productive.

Pruning.—This is a puzzling subject to not a few amateurs. There is no mystery about it, and the learned who would make one are perhaps not quite so learned as they seem. Broadly speaking, it is a question if more fruit has not been prevented than produced by the action of the knife. The principle to grasp is this: If there is a well-balanced proportion between root growth and branch growth, and the branches are so thinly disposed that the sun's rays can pass between them, fruit buds will form plentifully. First, then, have a sufficient number of stout main branches for forming a tree, then thin to prevent overcrowding, instead of shortening the branches to create it, or the growths will be crowded or shaded and the leaves spoiled. Good leaves are manufacturers of fruit. Shoots may be shortened after planting, because the roots have been shortened in digging up, and the balance between the two for the time destroyed. We want to restore it as soon as we can, and as we cannot stretch out the broken roots to the length of the branches or shoots we cut back these to correspond with the roots. When an apple or any other tree grows too luxuriantly in summer, cutting back the shoots in winter is simply followed by more and stronger growths, and so the combat between man and nature may go on for a generation, and nature will win in forcing growth. The branches of a strong-rooted tree, if kept thin and not shortened, will in time counteract the root power, form blossom buds, and bear fruit, weather and insects permitting; but if for special reasons the growth must be arrested and kept within certain bounds the roots must be shortened to an equal or greater extent than the branches.

Insects.—These must be subdued, and not many can resist the effects of a soap and petroleum mixture made by dissolving 2 ozs. of soft-soap and a teaspoonful of soda in a gallon of boiling water, stirring very briskly in at the same time a small wineglassful of petroleum, such as is burned in lamps. Applied at that strength in the evening, not in the morning, it does no injury to anything but insects, though if the leaves are wet when hot sun reaches them they are apt to be scorched. Some of the best trees known to me are well syringed with that mixture every winter, and are free from American blight, moss, and caterpillars, though it may not be equally effectual in districts where the latter greatly abound. The remedy then to apply is Paris green.

Manuring.—A word may be useful on manuring fruit trees. They are often too generously treated when young, and over-exuberant growth follows; while when exhausted by bearing, or impoverished soil, they are left to starve, or, in other words. are first pampered, then neglected. All fruits contain more potash than any other substance in their composition, and a simple mixture generally useful will be found in four parts, lbs. or cwts., of nitrate of potash (saltpetre), and superphosphate of lime, two parts of sulphate of lime (gypsum), and one part of common salt, this last to be excluded near the sea coast. But it is obviously wasteful to apply these or any other manure to feed weeds. These must be kept down, and hoeing the ground frequently will greatly promote the growth of fruit trees, bushes, and plants. In reference to applying manure a plain line of guidance is this:—If trees make young growths 18 inches in length or more the soil is, generally speaking, rich enough; if they make less than a foot of growth a moderate dressing of manure is desirable; if less than 6 inches a liberal application is demanded. A moderate dressing means 2 ozs. of chemicals to each square yard of surface, a liberal one twice the quantity, and it must always be remembered that the best feeding roots of trees that have been left to forage for themselves are not near the stems, but at a distance from them at least equal to the length of the branches. The roots will not travel so far if they find what they need nearer home, and the first need is moisture during summer, hence the advantage of surface dressings of stable manure or vegetable refuse, though circumstances often prevent their application. Liquid manure given copiously is of enormous benefit to trees that need additional support, and many have been invigorated by the contents of cesspools, which may be applied at any time, even in winter.

Extension of Planting.—One other aspect of the fruit question, and a most important one, remains to be noticed—namely, the result of an extension of planting. If this is considerable will not the supply of fruit soon exceed the demand? My answer to that question is this: It will be soon enough to consider the matter when 25,000 acres of the miserable unproductive orchards of this kingdom cease occupying the land they waste, and an equal extent of other land is occupied with thrifty trees of the best varieties. But why that particular acreage? Because it is equivalent to the apples now imported. It is from every point of view better to grow that bulk of fruit than to buy it from distant lands, as the nation is now doing. Moreover, mouths are ever increasing; and further, a better supply of first-class home-grown fruit will create a greater demand, as is the case with all useful commodities. We have also to consider that educational agencies are at work that will result in fruit being more regarded as food than it is at the present time. If we do not meet the demand that will arise other nations will do so, notably our go-ahead kinsmen in the land of the west. Have we not a fair chance to oompete successfully with them? Land is about or quite as cheap here as it is in America, where the best fruit is grown. The average productiveness of cultivated land is much greater here than there, as is conclusively shown by the wheat averages—ours being above 29 bushels, theirs being less than 19 bushels per acre. Labour is much cheaper here than there. They have hotter summers that make the fruit drier, and colder winters that often kill the trees; but they have better and more systematic methods. Their fruit culture is garden culture, so must ours be. Given this, with careful handling, sorting, and proper marketing, we shall regain our lost supremacy as a fruit producing nation, enhance the value of land, increase the field of employment for workmen, and afford our populations what we do not afford them now—a full supply, a good supply, a wholesome and enjoyable supply of the purest food that can be produced—fruit, home-grown, well-grown British fruit. Let us all join heartily and intelligently in this most worthy endeavour, and we shall not fail.

Mr. Baillie, of Chester, emphasized many of the points referred to by Mr. Wright, and said that if people that were fruit growers, or intended to commence the cultivation of fruit, were to follow the advice they would not be misled. He said good land, good trees, and good management were the secret of production. The people, too, wanted educating as to the value of fruit as food, for he thought it a shame that fruit should so seldom be seen on the tables of the people, except the wealthier classes. He pointed out that half an acre of land would produce £20 worth of fruit per annum, and said he knew many men near Chester who, with a garden attached to their cottage, more than cleared their rent out of it.

Mr. Bunyard gave some most instructive hints to the gardeners present on fruit growing, which were listened to with great attention.

The Rev. O. M. Fielden proposed a vote of thanks to the speakers for their excellent addresses, which was responded to by Mr. Baillie, who concluded by moving a vote of thanks to the chairman, remarking that such gentlemen as Mr. Tower were just the class of people to introduce fruit growing in a district.

The Chairman, in response, said he was in favour of fruit growing, and would do all he could to encourage it in this district. He advised all tenants to make arrangements with their landlords before commencing to plant fruit trees, feeling sure there would be practically no difficulty in their doing so in most cases. Speaking on behalf of Lord Brownlow, he was quite ready to enter into arrangements which he believed would be satisfactory to the tenants on the Bridgewater estate.

TURNIP TOPS.

The markets have been freely supplied with turnip tops in the course of the past two months, and it may interest many who have eaten them to learn how the case stands with the producer of the delectable vegetables. Here is a portion of a letter that appeared in the *Times* of April 10, that may amuse many and perhaps instruct a few who are not fully posted up on the commercial view of the subject:—

"On March 21 I sent 150 bags of turnip tops to the Borough Market, which were well sold at 1s. 3d. per bag. A bag weighs about 60 lb. to 70 lb. This is the return sent me—

150 bags tops at 1s. 3d...					£9 7 6
Carriage	£2	10	4		
Commission	3	2	6		
Carriage of empties	0	2	0		
	£5	14	10	5 14 10	
Cheque..				£3 12 8	

"On March 24 I sent to Stratford Market 70 bags of tops. This is the return—

70 bags tops					£2 14 3
Carriage	£0	19	11		
Commission	1	3	4		
	£2	3	3	2 3 3	
Cheque..				£0 11 0	

"I may state the bags were supplied by the salesmen. My 220 bags of tops brought home £4 3s. 8d., but from this must be deducted 3d. per bag for gathering the tops, £2 15s.; carting and labour to station at least 20s., leaving me the magnificent balance of 8s. 8d. I may say I should not have sent any but for several letters informing me tops were selling well. I have not sent anything to London for some time; in fact, the last I sent were walnuts, which brought me home about 1s. per bushel, which would not pay for gathering. It is needless to say I gave away the remainder.

"*Westley Hall, Bury St. Edmunds.* "Robert Burrell."

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Stove Plants in Bloom comprise Agalmyla staminea; Amaryllis in variety; Clerodendron Thomsoniæ; Franciscea calycina major; F. eximea; Ipomea Leari; Ixora crocata rutilans, I. Dixiana, I. javanica floribunda; Meyenia erecta; Sanchezia nobilis; Scutellaria Mocciniania.

THE HOUSE.

The sun is now acquiring power and it may therefore be useful to mention the fact that strong light is very hurtful in its effects upon the occupants of the aquarium. In all cases where it occupies a more or less sunny position the blinds must be carefully regulated to screen it as far as possible from the direct action of the sun. Aquaria placed in the conservatory should have a shady position from early in the spring until quite late in the autumn, if not throughout the year, and where it is practicable those indoors should be removed to apartments having a north aspect. But this is not always convenient, and if the aquarium is moved a little distance from the window, and when the sun is shining brightly the precaution taken to draw the blinds down, any serious mishap will be prevented. There is not perhaps any better place for an aquarium than an entrance hall, and where the arrangements will admit it should as a rule be placed in it. The water will not require changing so long as the fishes continue in good health, but the glass must be kept clean on the inside, and there is no better plan of removing impurities from it than by simply wiping it over with a large sponge.

CONSERVATORY AND GREENHOUSE.

Camellias not yet started into growth must have assistance now, if no more than keeping rather closer and more moist than usual.

Cinerarias require abundance of water now; if allowed to be dry for any length of time the lower leaves will turn yellow and fall. Give plenty of air when weather allows, and shade only when the sun is very powerful.

Fuchsias require shifting on; keep them warm; give plenty of water at the root and overhead; let the soil be rich and light, the position rather shady. Never stop and repot at the same time.

Pelargoniums showing their trusses will be greatly benefited by liquid manure of a moderate degree of strength. Tie out carefully as required, never neglecting this operation, as if the shoots get hard before tying the operation is apt to snap them. Shade as little as can be helped; the sunshine acting now on the advancing buds will ensure brilliantly-coloured flowers, which will not be the case with plants that are much shaded during the formation and growth of the buds.

FORCING AND FRUIT HOUSES.

Cherries changing colour to have as much light and air as possible, and less water at the roots. Gross shoots may be better checked by stopping once or twice than by hard cutting back, which only results in another growth as rank as the first.

Melons must have all the sunshine possible, and to prevent scorching give plenty of air during midday hours on very fine days. Plant successions, taking care to make good beds for them, as with plenty of heat at command a little air may be given night and day in mild weather, and a free strong growth secured without any forcing.

Peaches in the early houses are swelling fast, and the final thinning must be accomplished without delay. Give a good soaking of water at the roots, and from this time till the fruit begins to show colour use liquid manure freely.

Strawberries require abundance of light and air, and a decidedly cool temperature by night as compared with the day temperature—say, 65 deg. day, 50 deg. to 55 deg. night.

FLOWER GARDEN AND PLEASURE GROUNDS.

Asters sown immediately will grow freely from the first, and make as fine plants as the earliest sown, though a week or so later to bloom. But this is the latest period to sow to do anything like justice to these superb annuals.

Auriculas require the most airy position possible now, with shade and shelter and covering, as wind, frost, rain, sunshine, and heat are all alike injurious to them.

Carnations and Picotees to have as much air as the state of the weather will allow, and not on any account to suffer through lack of water. As soon as possible place them in their blooming quarters, fully exposed to all weathers.

Pansies sown now will bloom well at the end of July, when many herbaceous and annual flowers are over. Choose a shady spot for them.

Stocks sown at once will give less trouble than those sown early, and the annual kinds will flower well this season, and the biennials will acquire strength to stand the winter.

FRUIT GARDEN AND ORCHARD.

Very little can be done by the cultivator to assist outdoor fruits at this season, but the fruit garden must not be neglected. Trees newly planted may require stakes to prevent their being rocked about by the wind. Wall trees will require to be freely disbudded, but only a skilful hand should be set to such work. The object of disbudding is to remove all useless buds at the first start, to lessen the after labour of pruning, and to prevent the gumming that too often follows pruning with the knife; also to save the trees the trouble of producing shoots that are not wanted. Never thin any tree severely at one time; if there are many shoots to remove let it be done in several operations, so as not to cause any serious check to the flow of the sap. Raspberries not yet mulched should have two or three inches of fat manure spread over the ground as far as their roots extend. Trees under protection to have plenty of air, but do not remove the material yet.

KITCHEN GARDEN AND FRAME GROUND.

Beet must be sown now, if not done already. Choose soil that has not been recently manured, but which has been deeply dug, and is in a thoroughly pulverized state, the object being to obtain roots of moderate size and regular shape. All the dark-fleshed and short-topped varieties are good.

Cauliflowers may now be planted out. Let the ground be abundantly manured; plant firm; give a little water to each if needful.

Cucumbers in bearing to be kept as nearly as possible at a uniform temperature. Air-giving must be regulated by circumstances, giving air when needed. Fork up the beds, and apply linings if necessary; and, as air-giving is a pretty safe operation now, the heat may be allowed to rise to rather a high pitch—much higher than would have been safe a month ago, when it was often impossible to give air.

Lettuces of all kinds may now be sown on open borders, the Cos and quick-growing large kinds of cabbage lettuce being most useful.

Onions will be greatly benefitted by a sprinkling of soot, which will both quicken the growth and drive away the vermin that usually destroy them. Onions for pickling to be sown this week on poor ground. Sow thick, and, if possible, cover the seed with a sprinkling of fine siftings of charred rubbish.

Scarlet Runners may be sown on dry sheltered borders, but it is early yet for the main crop.

Spinach to be sown again, but not in great quantity, as the later-sown breadths will be liable to become seedy before they are all used.

VILLA FARM.

Mangels constitute one of the most important of the root crops grown upon the villa farm, and in their cultivation it is necessary to first of all take into consideration the character of the soil, and to determine which of the types is the most suitable. There are about six types of mangels, and of those the long red and yellow are the most productive where they can have a good depth of soil, and are unquestionably the best for deep loams. The next in productiveness are the red and yellow Intermediates, and these should be selected for soils of medium depth, and for thin or shallow soils the Yellow Globe is the most suitable, for although not producing such large bulbs as either of the others, it will when allowed just sufficient space, and no more, produce a heavy weight of roots per acre. As mangels require more time than swedes for the full development of the roots the seed should be sown about the middle of April, varying the time slightly according to the character of the season and the condition of the soil; and the inexperienced will do well to bear in mind that it will be better to wait until the beginning of May than to sow when the soil is cold and wet, for the seed will not germinate until the ground is moderately warm, and when it lies dormant in the soil for any length of time there is a risk of its perishing and large blanks occurring. The soil should have a dressing of farmyard manure in the early part of the winter, and be ploughed up deeply and the surface soil left as rough as possible to more fully expose it to the action of the weather. Previous to breaking down the surface before drilling the seed a dressing of common salt at the rate of 2 cwt. per acre should be applied, and at the same time as the seed is drilled apply guano at the rate of 1 cwt. per acre. Similar applications of guano at the first time the space between the rows is horse-hoed will be most beneficial in promoting and sustaining a vigorous growth. When no farmyard manure is available artificials should be employed at the rate of about 6 cwt. per acre. The drills for the seed should be on the flat, and from twenty-four to thirty inches apart. The plants will require a space ranging from fifteen to twenty inches, or more if extra large roots are required; and in thinning it will be necessary to take into consideration the time of sowing and the character of the soil, for as the roots raised from late sown seed will not in the ordinary course attain so large a size as those produced by seed sown early, or those in poor soils become so large as others in soils more or rich less, the distances must be varied somewhat to avoid any loss of space and a failure to harvest what may be described as a full crop. Thinning must be commenced as soon as necessary, and the hoe plied freely from the time the young plant can be seen until the leaves begin to spread freely over the spaces.

A FEW BROCCOLIS FOR USE IN APRIL.

At meeting of R.H.S., April 8, a collection of broccolis appeared, sent up from the society's garden. As they were arranged and labelled, the following notes were made:—

Leamington.—Of medium size, a neat, close, creamy curd; looking well for exhibition or market.

Smith's Protecting.—Rather wanting in neatness of appearance, but a good variety of medium size, and yellowish in colour.

Mammoth.—Large, close, neatly rounded, yellowish; a fine broccoli.

Sulphur or *Chappel's Cream.*—This well-known broccoli makes a good appearance when staged with others. It is of medium size, neat form, compact, the colour greenish or yellowish.

Sutton's Dwarf Favourite.—Medium to large, a little rough in form, yellowish white.

Paragon.—Medium size, yellowish, good.

Sutton's Perfection.—Large, compact, creamy, of excellent appearance, and extra good.

Sharpe's Monarch.—Of medium size, neatly formed, compact, and looking well for exhibition or market, colour creamy; one of the best.

Cooling's Matchless.—Medium to large, a well-rounded, compact, creamy curd, the whitest of the series, and probably the best. It is certainly excellent on the dinner table.

Purple Sprouting is well known as one of the most useful vegetables for the early months of the year, being thoroughly hardy and lasting well into the spring if properly managed to give successional supplies. The samples sent up from Chiswick were in such fine condition with copious sprouts of a full purple colour, that we must commend the cultivation as above average merit. Many persons enjoy this vegetable who have a distaste for broccoli.

White Sprouting agrees with purple sprouting, save that the flower heads are white. It may suit many who are fastidious in their selection of vegetables, but as compared with the purple sprouting it is certainly of secondary merit.

The Cottager's Packet of Flower Seeds is a new notion, invented by Daniels Brothers, of the Royal Norfolk Seed Establishment, Norwich. It is a showy parcel of twelve sorts of seeds, all such gay things as dwarf tropæolums, candytufts, godetias, clarkias, stocks, asters, &c., in each packet enough and to spare for any cottage garden, and on the outside a portrait of the plant in its full splendour, and a few plain directions for cultivation. We hope our friends at Norwich will lead a busy life in supplying these packets to cottagers everywhere.

Exhibitions and Meetings.

DAFFODIL CONFERENCE AT CHISWICK, April 15 to 18.

The exhibition of daffodils held in conjunction with the conference in the gardens of the Royal Horticultural Society during the past week fell considerably short of expectations. It was of sufficient extent to fill nearly the whole of the available space in the great vinery, and comprehensive enough to include nearly all the finest varieties in cultivation, but with a few trifling exceptions the whole of the flowers were from the Royal Gardens, Kew, and trade cultivators. Regarded simply as a trade display the exhibition may be described as a great success, but as representing the present position of daffodil culture in private gardens it was far from satisfactory, inasmuch as only two private growers staged flowers. Sometimes things are conspicuous by their absence, and on this occasion it was conspicuous to all that the contributions of the members of the Daffodil Committee, other than those engaged in trade, were absent. They, however, contributed themselves, and it is to be hoped that their deliberation at the committee table may prove of service to that portion of mankind who are in any way interested in daffodil culture.

The flowers were arranged on a broad stage along the centre of the vinery; and overhead Mr. Barron had judiciously suspended a light canvas awning, which by subduing the light and breaking the sun's rays, enhanced the appearance of the flowers, and contributed to the comfort of the visitors. Immediately to the right of the principal entrance Mr. J. Walker, Ham Common, Surrey, had a remarkably effective collection. It included about one hundred varieties, each of which was represented by at least one large bouquet of finely-developed flowers. Chief amongst the yellow trumpets were Emperor, Rugilobus, Maximus, remarkable for its rich colouring; Obvallaris, or Tenby daffodil, Spurius and Hume's Giant. The bicolors included Empress, Horsfieldi, Grandis, Dean Herbert, Michael Foster, J. B. M. Camm,and John Walker. The white and pale sulphur trumpets so remarkable for their distinct character and exquisite beauty, comprised Moschatus, Cernuus, and Tortuosus. The most noteworthy of the varieties of the Burbidgei type were Falstaff, Golden Mary, Constance, and John Bain. The best of the forms of the Poet's Narciss, was Ornatus, now so popular with all classes of cultivators. Leedsi varieties included Duchess of Westminster, Duchesse de Brabant, Harper Crewe, Amabilis, and William Ingram. In other sections were John Nelson, Frank Miles, Gloria Mundi, Sir Watkin, Beauty, and Cynosure.

On the opposite side of the doorway, Messrs. Barr and Son, 12, King Street, Covent Garden, W.C., and Long Ditton, had a collection comprising about two hundred varieties and occupying about three hundred square feet of staging. The flowers were tastefully set up with foliage and so arranged that each group could be readily distinguished. The yellow trumpets formed an important and highly attractive group, conspicuous amongst them being Johnstoni, and its exquisitely beautiful variety, Mrs. George Cammell; Daniel Dewar, a new form with medium-sized flowers of a deep yellow colour excepting the upper half of the perianth segments which is pale sulphur; Countess of Annesley, Bastemil, a medium sized flower of a rich yellow colour; Edith Barber, Glory of Leyden, a beautiful new variety, the flowers large, the perianth primrose yellow, the trumpet rather long and of a rich yellow colour; Golden Spur, John Nelson, Spurius Coronatus. The bicolor group included finely developed blooms of Horsfieldi, Empress, Grandis, John Walker, Michael Foster, J. B. M. Camm, a distinct variety with soft lemon yellow trumpet, and Dean Herbert, all of which are of great excellence. The group of which Moschatus and Albicans are types comprised a considerable number of varieties of great beauty. Especially deserving of mention are Madame de Graaff, one of the finest of the trumpet daffodils in the exhibition, the flowers are large and of superb form, the perianth white tinted sulphur, the trumpet large, recurved at the edge, and of a delicate yellow colour; Mrs. Vincent, Snowflake, a pure white variety of great beauty, Cernuus pulcher, distinct and of high quality; Tortuosus, W. P. Milner, Lady Grosvenor, and Mrs. J. B. M. Camm. The incomparabilis varieties of special merit were:—Beauty, Goliath, Albert Victor, Semi-partitus, Splendens, Stella, C. J. Backhouse, King of the Netherlands. Sir Watkin, and Cynosure. The finest varieties in the Barri selection were perhaps Crown Prince, Conspicuus Sensation, Miriam Barton, and Sensation. The Leedsi varieties of special excellence in the collection included:—Grand Duchess, Marie de Graaff, Hon. Mrs. Barton, Katherine Spurrell, Duchess of Westminster, Princess of Wales, Beatrice, and Minnie Hume. In the Burbidgei and Poeticus sections Agnes Barr, Ornatus, Falstaff, a distinct variety of great beauty; Mercy Foster, Model, Baroness Heath, Hume's Giant, C. J. Backhouse, Wolley Dod, S. A. de Graaff, and the several yellow and sulphur coloured forms of the Hoop Petticoat narciss were shown as were the yellow and white forms of Triandrus.

Messrs. J. Veitch and Sons, King's Road, Chelsea, staged a collection remarkable alike for its extent and the high quality of the flowers. The collection included about one hundred and fifty varieties, which were so arranged that the several sections could be distinguished at a glance. The collection was especially strong in the polyanthus or Tazetta varieties, of which Bathurst, lemon perianth, with orange cup; White Pearl, pure white, exceptionally useful for the supply of cut flowers; Grand Primo, white, with lemon cup; Soleil d'Or, bright yellow, with orange cup; and Bazelman major, white, with yellow cup, were perhaps the best. The yellow trumpets of special excellence comprised Spurius coronatus, Henry Irving, Countess of Annesley, Golden Spur, and Emperor. The finest of the bicolors represented were Empress, Horsfieldi, Grandis, and John Walker. Especially good of the white and sulphur-coloured trumpets were Albicans, Moschatus, Cernuus pulcher, and Tortuosus. Conspicuous in the Barri, Leedsi, and Incomparabilis groups were Conspicuus, Lorenzo, Stella, Minnie Hume, Katherine Spurrell, Duchesse de Brabant, Miriam Barton, Princess Mary, and C. J. Backhouse. The finest of the Poeticus varieties were Ornatum and Poetarum; the double varieties included Cernuus plenus, Telamonius plenus, Aurantius plenus, and Albus plenus sulphureus, the last-named being especially useful for cutting. These double forms were also well represented in the collections from Mr. J. Walker, and Messrs. Barr and Son. The last-named also had in perfection Odorus plenus, a medium-sized flower of a rich golden yellow. Mr. J. Poupart, Twickenham, had a medium-sized and excellent collection, the varieties being chiefly the same as those already enumerated, and included Madame de Graaff. Messrs. R. Veitch and Son, Exeter, sent a rather small but select collection, the varieties shown being represented at their best.

The collection from the Royal Gardens, Kew, comprised one hundred and fifty varieties, which were represented by large bouquets of finely-developed flowers. The bicolor varieties were particularly good, and included Empress, Horsfieldi, Grandis, Variiformis, an interesting flower of comparatively small size; James Walker, and Michael Foster's two medium sized and beautiful flowers; Harrison Weir, a handsome variety, the flowers rather small with long trumpet; and J. B. M. Camm, a beautiful variety with lemon-coloured trumpet. The yellow trumpets were particularly good, and included Maximus, one of the most richly-coloured varieties in the section; P. R. Barr, a small flower of good quality; Johnstoni, Mrs. G. Cammell. Cyclamineus. Well represented in the Moschatus section, were Albicans, Colleen Bawn, and F. W. Burbidge. In the Incomparabilis group the varieties deserving special mention were Lorenzo, Gog, a large and finely-formed flower, with yellow cup; Sulphureus splendens, an extremely beautiful flower of comparatively large size; King of the Netherlands, Figaro, Princess Mary, C. J. Backhouse, and Mary Anderson, an exquisitely beautiful variety, but rather "miffy." Prominent in the Barri group were Sensation, John Stevenson, M. de Graaff, Conspicuus, Duchess of Marlborough, and Maurice Vilmorin. The most noteworthy of the varieties represented in the other groups were Duchesse de Brabant, Fanny Mason, Nelsoni, Backhousei, Triandrus, Triandrus albus, Constance, Agnes Barr, Mary, Hume's Giant, Ornatus, Odorus rugilobus, and Angustifolius.

The amateur exhibitors were Rev. W. Wilks, Shirley Vicarage, Croydon, and Mr. C. W. Cowan, Valleyfield, Pennycuik, both of whom competed in the class for collections, in which a silver challenge cup was offered. The collection comprised about fifty varieties, and the flowers of which from three to six of each variety were shown were of excellent quality. The most important of the varieties were Sir Watkin, C. J. Backhouse, J. B. M. Camm, W. Wilks, Maximus, Gloria Mundi, Dr. Hogg, Barri Conspicuus, Princeps, Leda, and Ornatus. Mr. Cowan's flowers were comparatively small, but fresh and otherwise good. Mr. Cowan also staged neat collections in the class for fifty varieties and in that for twenty-five varieties, and was the only exhibitor in these classes.

New Varieties.

The list of new varieties staged was by no means a long one. Messrs. Barr and Son staged in addition to Madame de Graaff and Glory of Leyden, which were certificated at a meeting of R.H.S. in 1887, several varieties of great promise. The best were *Samson*, a yellow trumpet variety, the flowers very large and of fine form, the periath sulphur yellow, the segments broad, the trumpet large, of great length, and a bright lemon yellow. *Wideawake*, a beautiful bicolor, the pale primrose perianth large with broad segments; the trumpet large, finely formed, and bright lemon yellow; *Monster*, a yellow trumpet variety in the way of Emperor, from which it differs in its larger size and finer form; *Mrs. Bowa*, a pleasing bicolor, the perianth white, the trumpet lemon yellow; *Ouida*, a bicolor, the flowers of medium size, with white perianth and lemon yellow trumpet; *Fred Moore*, a yellow trumpet, the perianth primrose yellow, the trumpet lemon yellow, and of large size.

Messrs. J. Veitch and Sons submitted several interesting novelties, the most important being *New Prodigy*, a remarkably distinct and very attractive variety. The perianth about three inches across, white tinted primrose, the trumpet one to one and a half inches in length, about half an inch in diameter, cylindrical, and contracted at the edge, the contraction giving the flowers a very distinct appearance. *James Veitch*, a distinct and beautiful trumpet variety, the flowers large, the perianth white with segments of medium breadth, the trumpet large, finely formed, white, very faintly tinted with orange. *Exquisite*, a beautiful trumpet, perianth pale lemon colour, the trumpet yellow. *Bessie Hume*, a distinct flower of the Humei type, with comparatively small lemon-coloured perianth, and large deep yellow trumpet.

Conference.

The conference was opened on Wednesday at two p.m., Professor Michael Foster, president of the conference, in the chair.

The President said that he felt it his duty at the commencement of the proceedings to congratulate the society on the fact that, instead of meeting as on the occasion of the first Daffodil Conference, in a place which was occupied on sufferance, they now met in a place which the Fellows could call their own. It was also satisfactory to know that whilst, in 1884, many of those who took a special interest in daffodils were outside the society, the greater portion were now Fellows. They were, he would remind those present, brought together for the love of flowers, and one of the objects of the conference was to promote a love for the daffodil. It was certainly their duty to take care of the beauty of the daffodil, and one way of doing this was to take care of the names. It would be a happy state of things if they would dispense with names, and by some occult signs indicate what forms were referred to without the necessity for verbal expression. But to those who took an interest in the flowers and cultivated the different forms names were a necessity. On the other hand, those who were unable to appreciate the great diversity to be found in them, and simply regarded them all as yellow daffodils, did not want names. As a matter of fact, it was absolutely necessary to have a variety of names for daffodils as for other classes of plants. The forms that originate amongst those growing wild and those raised in gardens from seed, whether the result of natural or artificial fertilization alike required names to enable cultivators and others interested to distinguish them. There were two canons to be observed in naming daffodils One was no name should be applied except in cases of necessity. The other that names should be given to those only which have sufficient individuality to be observed by the majority of cultivated people. Varieties in which there are but slight differences ought not to be named. The names given should be such that they could be written readily and spoken without difficulty, and it is an advantage if the names in some way indicate the characteristics of the objects to which they are affixed, but this advantage is very difficult of attainment. The question as to the disposal of seedlings was a difficult one. Some consider that those not sufficiently distinct or good in quality should be destroyed. To destroy large numbers of beautiful plants was no light matter, and he felt that were he requested to consign to the rubbish heap seedlings producing beautiful flowers he would be constrained to reply, "Thou asketh me to do a hard thing." It was in the highest degree essential that the varieties selected for naming should be kept true, that those who purchase any particular variety shall be sure of having that variety and nothing else. The seedlings not perfectly distinct or superior to others of the same class ought not to be distributed under name, but they might be kept as a part of a curiosity shop to show amongst other things the wonderful potentiality of the plant. With reference to the knowledge that might be obtained from the several papers to be read at the conference, he would say that all knowledge is of use if rightly applied, but that no knowledge is of use if wrongly applied.

The prizes were then distributed as follows: The silver challenge cup, the gift of the Rev. W. Wilks for a collection, to the donor of the cup. The large silver medal offered for a collection of fifty varieties, and the small

silver medal for a collection of twenty-five varieties, to Mr. Cowan, who was the only exhibitor in these two classes. The gold medal to Messrs. Barr and Son, the silver-gilt Flora medal to Mr. J. Walker, the silver Flora medal to Messrs. J. Veitch and Sons, and the silver Banksian medal to Mr. J. Poupart for their respective collections.

Mr. Sorase Dickens, secretary of the Daffodil Committee, next presented a report of the work of the committee since its formation in 1884. Having recited the resolution as to the naming of daffodils, passed at the conference held in 1884, he said that the committee at once directed attention to the revision of the names in catalogues, with the result that the Latin names had been substituted by common names. They had been able to determine that Calanthinus was a variety of Triandrus, and not as previously supposed, specifically distinct. The question of the doubling of daffodils had been under consideration, and it had been satisfactorily determined that single varieties will, under certain conditions, undergo considerable modifications and produce double flowers. A disease had broken out amongst the daffodils a few years since, and had occasioned considerable anxiety. Arrangements had been made to investigate it, but little had been seen of it during the past two years. The committee had at the several meetings had a large number of varieties submitted to them, and they had registered fifty-four varieties as perfectly distinct and the best of the several types. Eleven of these were placed on the list on the first day of the conference. The fifty-four registered varieties are as under:—Pseudo—*Automedon, Ard Righ, Challenger, Captain Nelson, Troilus, Achilles, Vicar of Lulworth, Golden Prince.* Major—*Henry Irving, Emperor, P. R. Barr, Distinction, The Czar, Glory of Leyden, Madame de Graaff, Samson, Santa Maria.* Bicolor—*Empress, John Horsfieldi* (*Horsfieldi*), *Camoens, Dean Herbert, J. B. M. Camm.* Moschatus—*Leda, Minnie Warren, Gladys, Niobe, Little Nell.* Incomparabilis—*Sir Watkin, Autocrat, Queen Bess, Gloria Mundi, Mary Anderson, Lulworth, C. J. Backhouse, Princess Mary.* Backhousei—*William Wilks, Nelson's Orange.* Bernardi—*H. P. Buxton,* Tridymus—*A. Rawson.* Leedsi—*Duchess of Westminster, Acis, Beatrice, Gem, Minnie Hume, Madge Matthews.* Barri—*Conspicuus.* Intermedius—*Sunset.* Also *Madame Plenp, Lena, Mrs. Walter Ware, Duchess of Teck, Golden Vase, Miss White.*

Mr. F. W. Burbidge, M.A., then delivered a lecture on the "History of Cultivated Narcissi."

Mr. Burbidge prefaced his lecture by quoting the children's sing-song lines—

"Queen Daffadoundilly has come into town
In yellow petticoats and a green gown,"

and remarked how appropriate it seemed to him to be this holding of a four days' tournament, under the auspices of Queen Daffodil in the time hallowed, and memory haunted precincts of the Chiswick garden—a garden visited years ago by Haworth, and Herbert, Salisbury, and Sabine, Sweet, Lindley, Ellacombe, and many others of the former admirers of the narcissus as a beautiful spring flower. The lecturer then pointed out that a love for these flowers was almost as ancient as human history itself, and quoted from Homer and Sophocles, both of whom mentioned Narcissus tazetta for its glittering beauty and fragrance, nearly three thousand years ago.

The written history of this flower showed the universal and dual state of progress in the world, since all the noblest objects of human interest first had obtained honourable notice (as in the present instance of the flower narcissus) from the poets who were seers or prophets instinctively gifted, hence the bards were still the true and original guide posts along the great highway of human life. Again, the best of practical workers were successful, and their best work permanent in proportion to their instinct, rather than to artificial training, although both apt, instinct and careful training were of course better than either alone. The main fact remaining that while the poets lead all progress, the practical men and the scientists follow and illustrate the truth and force of the poet's teachiug.

The lecturer here observed that we may never know the favourite flowers of Helen of Troy, or of Egypt's fascinating Queen Cleopatra, but he remarked that both must often have seen and inhaled the odour of N. tazetta, and even if blue-eyed Helen did not, like Persephone, stoop to gather this flower, it was quite probable that when tired of the fire-like buds of the pomegranate, incense loving Cleopatra had worn a cluster of the odorous narcissus in her coal black hair, just as the wives and daughters of sunshiny Egypt do to-day.

Turning from poetry and possible doubt to absolute certainty, he then emphasized the fact that Mr. W. Flinders Petri had recently discovered at Hawara, in Egypt, actual flowers of Narcissus tazetta, which had been woven into funeral wreaths in the first century before the Christian Era. These votive offerings to the dead are supposed to have been made by Greek residents in Egypt, and are now preserved in the collections at Kew.

After the poets of Greece in chronological order, however, come the Greek physicians Hippocrates (and Galen), both of whom recommended the roots of narcissi for medical purposes.

Then Theophrastus described the plant, and is the first (B.C. 374—286), to mention its cultivation by seeds, and also by planting the fleshy roots.

So far as English gardens are concerned the narcissus seems to have become famous first in Elizabethan times, when all the greatest poets mention it, and in the same epoch both Gerard and Parkinson, the Royal herbalists of their time, described nearly a hundred kinds. In England also as long before in Egypt and in Greece, the native narcissus or daffodil acquired great popularity as a flower for the making of wreaths and garlands, as mentioned continually by the poets of the time. The kind so used was the wild or native daffodil, and when the great wave of early seventeenth century culture spread over Europe, choice narcissi were imported from Constantinople and the Levant, along "with other bulbed flowers."

Mr. Burbidge next alluded to the old Dutch paintings of garden flowers, including many narcissi as existing in the Louvre, where one picture, No. 477, Triomphe d'Amour, by Leghers, le Jesuit d'Anvers, contains portraits of no less than fourteen species and varieties of daffodils and narcissi. Other pictures exist in the Musée des Arts Decoratifs, and in many other collections wherein narcissi find a place, and this is especially so in the pictures of the Dutch and Belgian colorists of the early seventeenth century. In the rare old books of the same epoch many species are illustrated, and two white daffodils exquisitely embroidered in coloured silks were pourtrayed on a fire screen, which Salisbury saw at Fontainebleau in 1786. He specially tells us that the portraits were life-like, and quotes the legend and date worked below them as being "Coquelourdes Blancs, 1598," or the year before John Gerard published his famous herbal, which lent such an impetus to the study of botany and gardening in England.

Next followed notes on the history of the cultivated wild narcissi, and on the now numerous garden hybrids and seedlings, and the men like Herbert, Leeds, Backhouse, and Horsefield, who in the main have raised them. A large portion of Mr. Burbidge's paper which he did not read (as being too long, and full of dates and detail for a mixed audience), consisted of a chronological history of the genus narcissus, from the days of Homer to the time of Oscar Wilde, or say a period of three thousand years. In this tabulated list mention is made under date of the poets, physicians, philosophers, botanists, etc., who have alluded to this favourite flower, or with whose names it has been connected. It is probable that this historical account will be published in *The Journal of the Royal Horticultural Society*, where it will form a most attractive index of reference for those interested in the flower.

At the close of Mr. Burbidge's paper, Mr. J. Fraser, of Kew, submitted that the crossing of distinct species by bees was improbable, as when in search of honey they confined their attention for the time being to one species only. Rev. Woolley Dod said he had read something to the same effect in some of the old books, but had not determined whether there was any truth in it or not. Rev. W. Wilks said he was not at that moment in a position to say what the bees did in the case of daffodils. but he knew that in his orchard house they visited the flowers of the peach, the pear, and the apple indiscriminately.

Rev. G. H. Engleheart, who was to have read a paper on "The Poeticus Group," gave instead a few interesting particulars of his experiments in raising seedlings. At the commencement of his remarks he referred to the remarkable increase in the knowledge as to the origin of some of the more important forms, and the light the raising of seedlings threw upon this important and interesting question. He then proceeded to show that the result of crossing the Poet's narciss with a trumpet daffodil is Incomparabilis, and that the result of a cross between the last-named and Poet's narciss is Burbidgei. He further explained that the bright red colouring of the cups of some of the varieties in the Burbidgei, Barri, and Incomparabilis group is due to the influence of Poeticus. The raising of seedlings was described as imposing a rather severe tax upon the patience at first, in consequence of the length of time required by the bulbs to reach a flowering size. But when they once began to bloom the raising of seedlings would, if an annual sowing was made, be found highly interesting. It would be found that the varieties differed considerably in their value as seed parents, some showing a strong tendency to go back, whilst others had an equally strong tendency to improve. His practice was to carefully fertilize the flowers, and to remove the anthers from the flowers from which the seed was to be saved, previous to their being sufficiently developed to shed their pollen. The seed is sown in pans, which are plunged to their full depth in a bed of coal ashes, made up in a cold frame. The pans remain in the frame for two years, because of the risk of the seedlings being devoured by snails when planted out at a very early stage. At the end of the second year the bulbs are planted out in lines, where they remain until they flower. Mr. Engleheart also mentioned the fact that he had raised a double daffodil of a pleasing cream colour from seed saved from a flower of the common double yellow daffodil fertilized with pollen from a white trumpet. Several other seedlings from the same cross had flowered, and one had flowers of the same character as the pollen parent, but of a bright yellow colour.

ROYAL HORTICULTURAL SOCIETY.

Scientific Committee, April 8.

D. Morris, Esq., in the chair.

Scale on Fig Tree.—Mr. McLachlan reported that the scale on the fig tree was a species new to Great Britain, and named Mytilaspit ficus.

Purple Primrose.—Mr. Wilson exhibited a plant of a primrose, a seedling from Scott Wilson, showing a greater advance to the deep blue colour than has yet been made. A series of intermediate forms were also shown.

Root Galls on Poa annua.—Professor Marshall Ward showed a specimen of this grass with spiral knobs on the rootlets, due to the irritation of the cortical tissues caused by root worms, Heterodera rexdicicola. Mr. Morris alluded to the recent publication of a report on this subject by the American Department of Agriculture.

"Fingered" Oranges.—From Mr. Rivers of Sawbridgeworth, came specimens of oranges showing a partial dissociation of the carpels similar to the corresponding anomaly in the citron of which drawings were recently laid before the committee.

Cytisus Adami x.—Mr. Wilks showed a flowering shoot of Cytisus purpureus, which had been grafted on a seedling laburnum. Professor Marshall Ward called attention to the explanation offered by Professor Strassburger, of the occurrence of the famous Cytisus Adami, viz., that it was due to an accidental fusion of two nuclei, one from one species, one from the other.

Diseased Vines.—Mr. Blackmore sent a specimen, with the following note: "The specimen submitted is the entire upward growth of a young Gros Colmar planted in a vinery border, and started into growth some two months since. About three weeks ago it was suddenly struck with this fatal complaint, having, up to that time, been strong and healthy, with richly-coloured foliage. I have not examined the roots, but believe that they are quite healthy, as in fifty similar cases I have always found them to be. There are no cold draughts in the house, neither has there been any sudden fall of temperature. Other vines close by are in luxuriant health and full growth." The specimen was referred to Professor Marshall Ward for examination and report.

Botanical Certificates.—Awards were made on the ground of botanical interest and novelty to Dendrobium albo-violaceum and Disa sagitalis.

BRUSSELS AMATEUR ORCHID SOCIETY.

The monthly meeting of the above society took place on the 13th and 14th inst. at Brussels, in the Central Gallery of the establishment L'Horticulture Internationale (Linden). It has been found advisable, for the convenience of the members of the society, to alter the arrangements hitherto observed, and extend this show to two days, and has proved very successful.

Although the plants shown on this occasion were not so numerous as at the meeting held in March, they were of excellent quality, in fact, the majority of the plants shown were models of cultural skill. The jury, over which M. Kegeljan presided, included: MM. Lubbers, secretary; Massange de Louvrex, Rodigas, Miteau, Wallaert, and de Meulenaere.

M. G. Warocque contributed a large group of choice plants, among which were Cattleya Mossiæ Madame A. Warocque, a magnificent variety; Odontoglossum crispum guttatum, O. crispum fastuosum, O. lutco-purpureum, a superb variety of O. Ruckeri, and others. Prince Metschersky contributed Cattleya speciosissima Reginæ Olga, a large flowered variety of a superb rose

colour, veined and irregularly blotched with dark purple over all parts. M. J. Heye-Leysen staged in his choice collection a superb variety of Cattleya Mendeli, divers fine forms of Odontoglossum triumphans, and a very good variety of O. Ruckeri. Madame Gibez, Sens, France, as usual sent a number of cut blooms worthy of commendation.

Dr. Capart presented a well-flowered specimen of Oncidium sarcodes; and examples of Odontoglossum crispum, O. luteo-purpureum, and others. M. van Imschoot staged a nice group, amongst which was a very good variety and well-flowered plant of Miltonia Warscewiczi. Dr. van Camvelaert exhibited several spotted forms of Odontoglossum crispum, also O. tripudians, and others. M. Pourbaix, Mons, sent, amongst others, a well-flowered plant of the sweet hawthorn scented, Cœlogyne occellata maxima, a form often not much thought of, but a lovely thing when seen to perfection, as on this occasion. M. van Lansberge sent Pholidota gracilis, not a very showy species, but very graceful. The Comte de Bousies contributed various Cypripediums, of which C. Mastersianum and C. Harrissianum superbum were noticeable.

From M. Linden came a large group, which contained a most magnificent variety of Odontoglossum vexillarium, which, as regards size of flower and brilliancy of colouring could not easily be surpassed; the specimen carried four spikes, with twenty-eight flowers. Other objects of special interest in the collection were Odontoglossum Edwardi violaceum, O. luteo-purpureum aureolum, several fine varieties of Vanda suavis, V. tricolor, and V. gigantea; Oncidium ampliatum majus, Lycaste gigantea, Phaius Wallichi, Cattleya intermedia alba, and Phalænopsis Stuartiana stellata. M. Halkin staged a small group, among which were Cattleya Trianæ var., Odontoglossum luteo-purpureum, and others. Mr. Peeters exhibited a large and interesting collection containing many choice and fine varieties, including Odontoglossum hystrix giganteum, O. nebulosum, O. Pescatorei, O. Oerstedti majus, O. Jenningsianum, O. luteo-purpureum, O. crispum, very fine spotted variety; O. cuspidatum, a large specimen, well-flowered; Lycaste Skinneri alba, and L. gigantea, Ada aurantiaca, Cœlogyne cristata alba, Cymbidium eburneum, and, last but not least, Epidendrum Wallisi, seldom seen so well flowered; and a fine specimen of Cypripedium hirsutissimum.

The following awards were made: First class Diploma of Honour, for

Odontoglossum triumphans Hyeanum,	from M. J. Hye-Leysen.

Second class Diploma of Honour, for

Odontoglossum crispum,	from M. Peeters.

First class Certificate of Merit, for

Odontoglossum vexillarium splendidum,	from M. Linden.
Odontoglossum hybrida,	from M. G. Warocque.
Odontoglossum Rossi rubescens,	from M. van Imschoot.
Odontoglossum nebulosum,	from M. Peeters.
Cattleya Mossiæ Mme. A. Warocque,	from M. G. Warocque.
Cattleya Mendeli,	from M. J. Hye-Leysen.
Oncidium sarcodes,	from Dr. Capart.
Lycaste Skinneri alba,	from M. Peeters.
Cœlogyne cristata alba,	from M. Peeters.
Epidendrum Wallisi,	from M. Peeters.

Second class Certificate of Merit, for

Cattleya speciosissima Reginæ Olga,	from Prince Metschersky.
Miltonia Warscewiczi,	from M. van Imschoot.
Odontoglossum triumphans,	from M. J. Hye-Leysen.
Odontoglossum hybrida,	from M. J. Hye-Leysen.

First class Cultural Certificate, for

Odontoglossum luteo-purpureum,	from M. G. Warocque.
Ada aurantiaca,	from M. Peeters.
Cypripedium hirsutissimum,	from M. Peeters.

Second class Cultural Certificate, for

Odontoglossum Reichenheimi,	from M. G. Warocque.
Odontoglossum Edwardi,	from M. Linden.
Cymbidium eburneum,	from M. Peeters.
Ada aurantiaca,	from M. Linden.

THE HORTICULTURAL CLUB.

At the usual monthly dinner and conversazione on Tuesday, April 8, at the rooms, Hotel Windsor, Victoria Street, the chair was occupied by the Rev. W. Wilks, and there were present also the Rev. E. Handley, Messrs. Cousens, Druery, Walker, and others, Mr. W. Ingram being the guest of the club. Afterwards a paper was read by Mr. C. T. Druery on the "Wonders of Fernland." It was illustrated with some excellent diagrams and some beautiful specimens of dried fronds. The paper dealt very carefully with the germination of ferns. It was stated that in the case of all ferns, whether the gigantic tree ferns of New Zealand, &c., or the delicate maidenhair, the spores from whence the plants proceed are absolutely microscopic. He then showed the various methods of propagation, the ordinary one by spores, and the abnormal ones of bulbules and apospory. It was shown that of all the species of British ferns there were to be found tasselled or crested forms, and Mr. Druery believed that if the habitats of the foreign ferns were searched as carefully as our own land had been, similar departures from the normal growth would be found. The paper was a model of what such papers should be—severely correct as to its botany and scientific side, yet delivered in language that any intelligent hearer might understand even although previously unacquainted with the subject. A cordial vote of thanks was given to Mr. Druery for his valuable paper. Messrs. Thomson, of Drumlanrig, and Mr. Bruce Findlay, of Manchester, will be the guests of the club at a special dinner on the 22nd on the occasion of their receiving the Veitch Memorial medal, and a large gathering of the members is anticipated.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

The quarterly meeting of the above society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last, Mr. Nathan Cole in the chair. The committee report that the society is making very satisfactory progress, fifteen new members having been elected at this meeting, making a total of thirty-two during the quarter. Messrs. Lane and Sons, of Berkhampstead, have also joined the list of honorary members. The sick list has been a heavy one, chiefly due to the influenza epidemic, £31 7s. 8d. having been paid to sick members during the quarter, but at the present time there is but one member on the sick list. A convalescent fund is being established to assist members to obtain a change of air after illness.

CATALOGUE OF POMPON AND SINGLE CHRYSANTHEMUMS.

(*Continued from page 208.*)

Mexico (Pele). *Pom.* Bright yellow; early.
M. Micon (Delaux). *Pom.* Crimson red tipped gold.
M. de Marsac. *Pom.* Red orange.
M. Lefevre-Valere. *Pom.* Chrome yellow.
M. Minet.. *Pom.* Bright red and orange border.
M. Van Houtte. *Pom.* Chestnut.
Mignardise. *Pom.* 1881. Light lilac.
Mignon (Pertuzes). *Pom.* 1884. Bright yellow; early.
Mimi Crouzat (Lebois). *Pom.* 1864. Red and yellow.
Miss Bateman. *Pom.* Orange-brown.
Miss Beckwith (Teesdale). *Single.* 1884. Blush, tipped deep rose.
Miss Brown (Owen). *Single.* 1889. Rose-salmon.
Miss Cannell (Teesdale). *Single.* 1884. Pure white.
Miss Capell (Teesdale). *Single.* 1885. Silvery blush.
Miss Davis (Davis). Pink. Sport from *Mrs. Cullingford.*
Miss Lavinia Hutchings (Langlois). *Pom.* 1881. Blush tipped purple.
Miss Julia (J. Salter). *Pom.* 1859. Chestnut red.
Miss Nightingale (Brown). *Anem. pom.* 1864. Blush, sulphur disc.
Miss Phyllis Broughton (Ware). *Pom.* 1889. Pure white.
Miss Rose (Teesdale). *Single.* 1885. White, suffused pink.
Miss Lily Stevens (Stevens). *Pom.* 1888. Pure white.
Miss Talfourd (J. Salter). *Pom.* 1859. Pure white.
Miss E. Terry (Teesdale). *Single.* 1884. Brilliant magenta.
Miss Towers (A. Pele). *Pom.* 1859. Blush white shaded rose.
Miss Wheeler (Greenaway). *Pom.* 1875. Pucy carmine, yellow centre. Sport from *Rose d'Amour.*
Miss Eleanor. *Pom.* Reddish cinnamon.
Miss Fox. *Pom.* Golden yellow; dwarf and late.
Minnie Warren (J. Salter). *Pom.* Rosy blush with yellow centre.
Miranda. *Pom.* Bright rose; scented.
Mr. Astie (Lebois). *Pom.* 1868. Purple-rose.
Mr. Astie (J. Salter). *Anem. pom.* 1858. Rich yellow.
Mr. Dale (Salter). *Pom.* 1856. Fawn and purple.
Mr. Shirley Hibberd (J. Salter). *Anem. pom.* 1859. Rose lilac, golden disc.
Mr. Holmes. *Pom.* Orange brown; fimbriated.
Mr. Mist (Teesdale). *Single.* 1887. Chestnut red and yellow.
Mr. W. Piercy (Piercy). Red-brown sport from *Madame Piccol.*
Mr. Schmitt (Lebois). *Pom.* 1864. Red and yellow.
Mr. Frederick Smee. *Anem. pom.* Pale rose.
Mr. Selly (Piercy). *Pom.* 1890. Blush white.
Mrs. Bassett (Owen). *Single.* 1889. Rose-lilac.
Mrs. P. Deane (Teesdale). *Single.* 1884. Pure white.
Mrs. Dix (J. Salter). *Pom.* 1859. Blush, suffused rose.
Mrs. Gush (J. Salter). *Anem. pom.* 1856. Bright rose.
Mrs. Hutt (Hutt). *Pom.* Chestnut and orange.
Mrs. Kellock (Teesdale). *Single.* 1884. Rose-lilac.
Mrs. Langtry (Teesdale). *Single.* 1884. Silvery white.
Mrs. C. Langlois (Langlois). *Pom.* 1881. Rose-pink.
Mrs. Mardlin (Mardlin). *Pom.* 1886. Light rose. Sport from *President.*
Mrs. Francis Ricardo (Ware). *Single.* 1886. Pure white.
Mrs. Sutton (Owen). *Single.* 1889. Magenta-rose.
Mrs. Turner (J. Salter). *Pom.* 1860. Pure white.
Mrs. Westwood (J. Salter). *Anem. pom.* 1856. Silvery lilac.
Mrs. John Wills (Teesdale). *Single.* 1884. White suffused pink.
Mrs. W. Wood (Ware). *Single.* 1886. Snow-white; late.
Mrs. Wyness (Wyness). *Anem. pom.* 1864. Lilac, disc shaded yellow.
Mrs. Campbell. *Pom.* White-edged cherry.
Mrs. Cullingford (A. Salter). *Pom.* White.
Mrs. Wood. *Pom.* Amber; early.
Modele (Lebois). *Pom.* 1852. Pure white.
Model of Perfection (Forsyth). *Pom.* 1873. Lilac edged white.
M. Achille Dutour *Anem. pom.* 1858. Pure white.
M. Bechambre (Delaux). *Single.* 1887. Brilliant rose.
M. Boucharlat Aine (Delaux). *Pom.* 1877. Lilac rose.
M. Le Comte Contenix (Boucharlat). *Pom.* 1877. Amaranth.
M. Deleuil (Delaux). *Pom.* 1884. White tipped rose.
M. Camille. *Pom.* Rosy amaranth.
M. Duarte Oliveira (Delaux). *Pom.* Yellow striped carmine.
M. Domage (A. Pele). *Pom.* 1861. Bright yellow.
M. Elou (Boucharlat). *Pom.* 1877. Paper-white shaded rose.
M. Felix Seignor (Delaux). *Pom.* 1880. Yellow and red.
M. Jacotot (Delaux). *Pom.* Rose-carmine.
M. Jose Marques Loureiro (Delaux). *Pom.* 1881. Red, striped yellow.
M. Hoste. *Pom.* Flesh pink.
M. Luquet (Delaux). *Pom.* 1883. Rich purple, tipped white.
M. Robillard (Delaux). *Pom.* 1882. Rose-lilac.
M. Perducet (Lebois). *Pom.* 1857. Dark crimson.
M. L. de Germont (Delaux). *Pom.* Vinous rose.
M. de Planet (Lebois). *Pom.* 1869. Bright crimson.
M. de Puntis (Pertuzes). *Pom.* Rose-purple; fimbriated.
M. de Soulages (Lebois). *Pom.* 1868. Rose-purple.
M. Schmidt. *Pom.* 1865. Red and yellow.
M. Ulrich (Lemoine). *Pom.* 1874. Purple-pink, tipped white.
Mont Blanc (Pele). *Pom.* 1855. Snow-white.
Monte Christo (Teesdale). *Single,* 1884. Bright rose-pink.
Mozart (Cannell). *Single.* 1886. Brown-red and yellow.
Musidora (J. Salter). *Pom.* 1860. Bright chestnut red and orange.
Mustapha. *Pom.* 1856. Dark brown-crimson.
Nain Perpetuel (Delaux). *Pom.* 1887. Purple amaranth.
Nanon. *Pom.* Bright orange.
Nanum Indicum. *Pom.* Syn. *Methven's.* White, pure white; early.
Nanum Tolosanum (Delaux). *Pom.* 1887. Mauve.
Nelly (Teesdale). *Single.* 1886. Lilac-pink and white.
Nelly. *Pom.* Sulphur white.
Nellie Rainford (Davis). *Pom.* Buff yellow.
Netida. *Pom.* White.
New Marabout. *Pom.* 1883. White and lilac.
New York (Delaux). *Pom.* 1885. Amaranth and gold.

(*To be continued.*)

Replies to Queries.

F. F.—Thermometer scales for the aid of readers of books of travel will be found in the *Garden Oracle*.

J. B.—You must not remove the trees or roses, but you may remove the burrs and the summer house.

Names of Plants.—Young Gardener: 1, Aubrietia græca: 2, Phlox setacea; 3, Saxifraga hypnoides; 4, Adiantum Pacotti.

Verity.—You should become a Fellow of the Royal Horticultural Society. Then you would have what you want as a matter of right and your difficulty would be disposed of.

V. A. G.—Seeds sown as you propose will probably finish earlier and smaller than if managed in the usual way. There is nothing gained by sowing where they are to finish.

Cyclamens.—Inquirer: The usual time to sow seed of cyclamen is immediately it is ripe, but as you have purchased the seed the sooner it is sown the better. Fill the pots with loam, leaf-mould, and sand; distribute the seed thinly over the surface and cover lightly with fine soil, and place in a pit or house in which the seed pots can be readily screened from the sun. When the seedlings are large enough to handle prick them off into seed pans filled with much the same mixture as that used for the seed pans, place in an unheated pit, and screen from bright sunlight.

Pompon and Single Chrysanthemums.—R. L: The following comprise some of the best for general culture, but they do not exhaust the list of the really good varieties. Twelve early flowering pompons: Alice Butcher, Anastasia, Blushing Bride, Fiberta, Flora, Frederic Marronet, Gentilesse, Lyon, Pierre Verfiel, Pomponium, St. Crouts, Toreador. Twenty late-flowering pompons and anemone pompons: Adele Prissette, Antonius, Black Douglas, Bob, Crœsus, Flambeau Toulousain, Golden Mdlle. Marthe, Golden Cedo Nulli, La Bien Ami, Mdlle. Marthe, Mdlle. Elise Dordan, Maid of Kent, Marie Stuart, Miss Bateman, Mr. Astie, Osiris, President, Queen of the Anemones, Rosinante, St. Michael. Nine Singles: Alice Owen, Admiral Sir T. Symonds, D. Windsor, Exquisite, Jane, King of the Yellows, Lady Churchill, Mary Anderson, Souvenir de Londres.

Dandelion Culture.—F. B. C.: In the cultivation of dandelion for the supply of blanched leaves for winter salads it is necessary to provide a moderately rich soil and to sow the seed in May. The thick-leaved variety is the best for salads and the seed should be sown in drills about fifteen inches apart and the plants be thinned to a distance of twelve inches apart in the rows. The only attention required during the summer months will be to keep down the weeds by means of occasional hoeings. The roots may be forced during the winter by turning pots over them and covering with fermenting materials, but it is less trouble to lift the roots and place them in a cellar or mushroom house. They may, if more convenient, be packed rather close together in an erect position in a deep box and be then placed in the greenhouse or forcing pit, the precaution being taken to cover it with mats or some textile fabric to shut out the light. It will be well to leave a few rows undisturbed and cover the roots with pots before new growth commences to produce a supply of blanched leaves in the spring.

Chrysanthemums.—J. D. G.: To be able to cut twelve blooms, distinct varieties on a given date, you must grow at least twenty-six varieties, and the varieties most suitable are Alfred Salter, Abbe Passaglia, Barbara, Empress Eugenie, Empress of India, Golden Empress of India, Hero of Stoke Newington, Jeanne d'Arc, Jardin des Plantes, John Salter, Lord Alcester, Lady Hardinge, Lord Wolseley, Mr. Brunlees, Miss M. A. Haggas, Miss Violet Tomlin, Mrs. Heale, Mrs. W. Shipman, Nil Desperandum, Princess of Wales, Prince Alfred, Pink Perfection, Queen of England, Refulgens, Venus, and White Venus. The most suitable Japanese varieties for your purpose are Album Plenum, Belle Paule, Baronne de Prailly, Boule d'Or, Comte de Germiny, Criterion, Duchess of Albany, Edwin Molyneux, Etoile de Lyon, Elaine, Fair Maid of Guernsey, Golden Dragon, Japonais, Jeanne Delaux, La Triomphante, Meg Merrilees, Madame C. Audiguier, M. Bernard, Madame Baco, Madame Lacroix, Mr. H. Cannell, Mrs. Falconer Jameson, Ralph Brocklebank, Sarah Owen, Stanstead Surprise, Sunflower, Stanstead White, Thunberg, Val d'Andorre, and Volunteer. "Orchids" by Mr. L. Castle, published at 171, Fleet Street, E.C., is an excellent work, and will be sufficient for your purpose.

Auriculas for Bedding.—It would seem almost a mystery that these popular flowers should not be more grown as bedding plants. We have two beds here, each containing over a hundred plants, on a north aspect which retards their flowering period somewhat, but when in bloom they are certainly beautiful filling the air all around with their delicious odour. They have been uncovered for years, and consequently the bees, etc., have operated on them. Others seem to have had their characteristic colours washed away, but a few of the dark selfs and pure yellows seem to retain their natural colours unmindful of their neighbour's deterioration. I should be glad to know the cause of this picking and choosing on the part of the bees or nature, and also to know if it would be safe to move them after so long a period without first obtaining a young stock. After flowering they look somewhat dilapidated amidst the other summer flowering subjects, but if one could arrange for a second display without running the risk of losing the former, it would be a boon, as the ordinary bedding is generally over before the auriculas have done flowering. I intend planting the beds with summer flowering chrysanthemums, which I think would follow as well as anything I know of.

Kirklington Hall Gardens, Notts. George Dyke.

[It would be well to form a new plantation of auriculas, and in the course of the flowering season the best should be marked for the purpose and all not marked should be destroyed. Those you say the bees have deteriorated are plants from self-sown seeds that give flowers of less merit than their parents; a quite common case and one that gives special life to floriculture, for that has for its primary object selection of the best. There can be no more agreeable amusement for one interested in auriculas than raising and planting out seedlings with a view to establish a race of handsome, distinct, and hardy border flowers. In country gardens the border auriculas are now becoming delightfully attractive.]

British Fruit Growers' Association.—W. Robins: The objects of this association, as set forth in the rules, are to promote the profitable culture of fruit in Great Britain and Ireland, to facilitate the distribution of fruit to consumers, and to disseminate practical information on these subjects. It proposes to effect these objects by the means of meetings and conferences in the metropolis and the provinces, by the collection of reliable information, by the publication of such reports and essays as the funds may permit, by securing the adherence of local societies, by the award of prizes, medals, and certificates to successful cultivators and those who have assisted in the extension of knowledge in fruit subjects, and by such other methods as shall be determined by the general committee. With reference to the admission of members the rules state that "any person who desires to become a member of the association shall be proposed by one member and seconded by another at any meeting, and if duly elected shall, on payment of his subscription, be entitled to the privilege of membership in accordance with paragraph B of this rule. Donations of not less than 5s. shall confer the same privileges (for the current year) as subscriptions, if the donor so desire. Elections shall be effected by ballot or by show of hands. Subscribers of 5s. per annum shall be entitled to personal admission to all general meetings and conferences, to a vote at the annual and other general meetings, and to a copy of the association's annual report. Subscribers of 10s. shall be entitled to a transferable ticket of admission to the meetings specified in section 1, to a copy of every publication issued by the association, and all privileges named in section 1. 3. Subscribers of one guinea shall be entitled to the privileges named in sections 1 and 2, also to such assistance as the committee can render in naming varieties of fruit, and to advice by letter on matters connected with fruit culture. Subscriptions for the current year shall be due at the date of joining the association, and subsequently annually on Jan. 1st, and no member whose subscription is unpaid shall be entitled to take part in the proceedings or to the other privileges of membership." Rules and particulars of the meetings and conferences arranged for the current year may be obtained of the honorary secretary, Mr. Lewis Castle, Hotham House, Merton, Surrey.

Obituary.

On the 11th inst., Mr. W. Harvey, of 30, Little Russell Street, Bloomsbury, for 25 years with Messrs. Minier, Nash, and Nash, seed merchants, of 60, Strand, and for 21 years Secretary to the Brotherly Society, aged 56 years.

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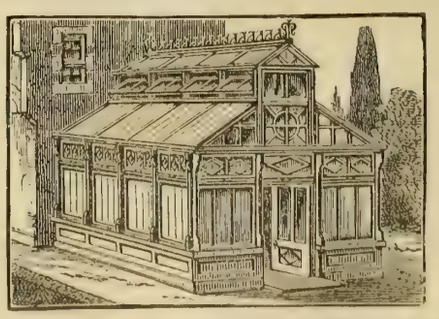
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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths before Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		180
27	S	**3rd Sunday after Easter.** ☽ First	4 43	2 28	7 14	10 38	2 14	6 59	7 29	3 57	4 24	49·8	Calanthe veratrifolia..... East Indies.	117
28	M	Mutiny of the Bounty, 1789. [Quarter.	4 41	2 37	7 16	11 44	2 44	8 5	8 45	4 54	5 30	50·1	Chysis bractescens..... Peru.	118
29	Tu	Russian War ended, 1856.	4 39	2 46	7 17	After.	3 8	9 29	10 10	6 10	6 54	50·4	Cypripedium superbiens ... Java.	119
30	W	London University founded, 1827.	4 37	2 54	7 19	2 4	3 28	10 47	11 19	7 35	8 12	50·7	Dendrobium Jamesianum.. Moulmein.	120
		MAY.												
1	Th	Duke of Connaught born, 1850.	4 35	3 2	7 21	3 16	3 46	11 47	—	8 44	9 12	51·0	Epidendrum cinnabarinum South America.	121
2	F	*St. James.*	4 33	3 9	7 23	4 28	4 3	0 12	0 34	9 37	9 59	51·3	Odontoglossum triumphans Ocaña.	122
3	S	Postal Union ratified, 1875.	4 31	3 16	7 24	5 44	4 19	0 52	1 11	10 17	10 36	51·5	Phalænopsis Schilleriana... Manilla.	123

CRYSTAL PALACE.
GREAT SUMMER EXHIBITION OF PLANTS AND FLOWERS,
SATURDAY, MAY 10.
Entries close on May 3. Forms and Schedules post free on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

ROYAL AQUARIUM, WESTMINSTER.
SECOND SPRING EXHIBITION,
TUESDAY AND WEDNESDAY, APRIL 29 AND 30.
AURICULAS, POLYANTHUS, OLIVIAS, &c., &c.
Schedules, WILLIAM HOLMES, Frampton Park Nurseries, Hackney, London.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, APRIL 29.—MANCHESTER ROYAL BOTANICAL SOCIETY.—Second Spring Show.
TUESDAY, APRIL 29, AND WEDNESDAY, APRIL 30.—ROYAL AQUARIUM.—Second Spring Show.
THURSDAY, MAY 1.—LINNEAN SOCIETY.—General Meeting.

Auction Sales for the Ensuing Week.

TUESDAY, APRIL 29.—Messrs. Protheroe and Morris, at their Central Sale Rooms 67 and 68, Cheapside; Orchids.
WEDNESDAY, APRIL 30.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Greenhouse Plants, &c.
WEDNESDAY, APRIL 30.—Messrs. Protheroe and Morris, at the Eltham Nurseries, Eltham; Greenhouse Plants and Glass Erections.
WEDNESDAY, APRIL 30.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Stove and Greenhouse Plants, Shrubs, Border Plants, &c.
THURSDAY, MAY 1.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids.
FRIDAY, MAY 2.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
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The Gardeners' Magazine.

SATURDAY, APRIL 26, 1890.

ELEMENTARY EDUCATION IN AGRICULTURE AND HORTICULTURE is proposed for the consideration of the Imperial Parliament in a measure whereof we gave particulars at page 190 of our issue for April 5. The subject is larger in scope than might appear from the brevity of the Bill introduced to the House of Commons by Mr. Jesse Collings, the title of which is "The Elementary Education Act, 1890." In its way, though a mere expansion in the direction of industrial training of the system of elementary education long since by law established, yet, as augmenting the public expenditure on education, and demanding aids of a kind not hitherto employed, it may almost be described as revolutionary. Having from the first days of the existence of the Board School system urged the need for Board School gardens, we scarcely need to assert our hearty sympathy with this new endeavour. But the questions raised by the proposed initiation are many and grave, and should the Bill obtain a favourable reception there must ensue upon the second reading considerable discussion, and possibly considerable opposition; for at the present time the public mind is greatly exercised on the subject of free education, and until the major question is disposed of no minor or subsidiary proposal will make way without encountering stubborn opposition. We are prepared to see the Bill dismissed and shelved, but we are confident that, should this occur, the day is not far distant when the School Board garden will become a working institution, and Mr. Jesse Collings, M.P., will have the honour of making the first forward effort in aid of a consummation devoutly to be wished.

In the abstract given at page 190 it will be seen that it is proposed to empower School Board managers to provide means and facilities for giving instruction in all branches of horticulture, and in addition poultry, bee and pig keeping, the structure and life of plants, and the action of birds and insects on crops. The statement of the proposed curriculum may perhaps admit of improvement, but there is at least no ambiguity in the terms. It follows that school gardens will become as necessary as the schools themselves, and the first cost will be provided for to the extent of one-half by the Committee of Council on Education or Science and Art Department. It will be observed that, as the Bill now stands, the greatest freedom is allowed to managers and teachers, provided their plans of operation are sanctioned by the powers they are subject to, the Committee of Council or Science and Art Department. It will be further noticeable that there is no mention in the Bill of the Board of Agriculture, which is a new State engine; nor is there of the Royal Horticultural Society, which is an ancient corporation supported by voluntary effort, and governed solely by its supporting members.

It is a matter for satisfaction that the Committee of Council is a well-tried body, enjoying public esteem and confidence, and may be as well trusted with the controlling power now in view as any department that might otherwise be suitable. The Board of Agriculture will eventually be brought into direct contact with the scheme, we cannot doubt, but it stands apart for the present, although this can scarcely be regarded as accidental. It is of great importanee, however, for in the first installations, whenever they may happen, the rules followed will constitute precedents of the first importance, and will hold good until their deficiency has been proved by abundant instances. For this and other reasons the most careful consideration should be given to the general plan or model of the rural school in which horticulture is to be systematically taught with the aid of a garden, a store of tools and implements, and teachers competent and morally suitable.

To many of our readers it will appear, as it does to us, that the Royal Horticultural Society might with advantage confer on this Bill with a view to render available in its promotion the reserve of practical talent it can command in aid of horticultural teaching. In its several committees the society commands a force nowhere else and in no other form having any kind of parallel, and it cannot be doubted, if it were to direct its energies to this subject, the measure would derive strength and safety from its influence. And when the Bill becomes law, and is in actual operation, there will be no more competent body to advise on practical matters and to assist in the expansions of practical work that will inevitably become necessary as experience is acquired in the management of school gardens. The Council refused to appoint a Law and Parliamentary Committee as desired by a resolution of the Apple and Pear Conference, on the ground that it can have no proper place in the arena of party politics. This Bill carries on the face of it a rebuke to all who persist in shunting grave questions touching the welfare of the State on the ground of avoidance of party politics. It concerns no party, but it claims the sympathies of all men irrespective of party, and will be approved by many who will vote against it on grounds that to them will be sufficient, such as fear of augmenting public expenditure, and over much faith in some abstract power of industry to obtain the attachment of the young without State aid. It is a fact of peculiar interest that it is already supported by members representing all the parties, for least of any now before the House can it be regarded as a party measure. The opportunity for the R.H.S. to exercise a salutary influence will not be embraced, although in one sense at least a part of its future constituency is about to be modelled and prepared with both the spirit and the means to contribute to its horticultural endeavours.

The school garden being established, the Bill proposes to assist in the formation of continuation classes and evening schools to give instruction in higher departments of horticulture than those in the

scheme of the elementary schools, and thus the young men who have made a beginning will be aided in acquiring competency in garden work. The prospect of emulation in the most interesting of industries in place of the serious study of short pipes and cigarettes that young men in villages and country towns at the present time engage in so earnestly, is not to be regarded lightly or as a matter of indifference. All men are conscious of an impending struggle for bread that cannot be long deferred. There is indeed struggle enough as the case now stands, but a far severer strife looms in outline on the most probable picture of the near future. The nations of Europe are pressing hard in the direction of war for the occupation of Africa as the last bit of territory left for their surplus population, and the labour organizations that are represented by strikes and congresses tell of conflicts but half concealed that are but too likely to develop into warfare of another kind, that will affect all industries ruinously for a season. It is not a reign of freedom, or intelligence, or benevolence that is so much wanted now as a reign of common sense, which appears to be somewhat out of favour. But whatever movement appears likely to favour common sense in the popular mind and its outgoings should have all possible support, and it is the very embodiment of common sense in industrial matters to teach the children the first principles of the cultivation of the earth, and to follow up that teaching by encouraging the young men to add to their elementary knowledge in a way to render themselves usefully and honourably independent. We are bound to wish well to the Bill promoted by Mr. Jesse Collings, and we take comfort of the thought that cynicism will find in it no more material for its exercise than may be found in any other scheme of common-sense beneficence.

Trentham Horticultural Society's exhibition, July 10.

Grosvenor Gallery Exhibition will be opened on Monday next.

Southampton Horticultural Society Spring show, Whit Monday, May 26; Summer show, August 2 and 14.

Potatos Imported in March amounted to 18,034 cwt., as compared with 34,821 cwt. in March, 1889.

Importation of Onions in March shows a considerable falling off as compared with last year. The quantity imported this year was 147,005 bushels, and in 1889 it was 295,096 bushels.

Apples Imported during March amounted in the aggregate to 89,746 bushels, as compared with 347,398 bushels in the corresponding month of last year.

The Legend of the Brier Rose is the subject of four large pictures painted by Mr. E. Burne Jones, which are now on view in the galleries of Messrs. Agnew, Old Bond Street.

Northern Auricula and Primula Show of the National Auricula Society (northern section) will be held on Tuesday next in the Botanical Gardens, Manchester.

Auricula Show in Royal Aquarium, Westminster, on Tuesday next, should suit many of the southern growers, for in the past week many were wanting flowers, the bloom being somewhat backward.

Slough Collection of Auriculas will be well out after Tuesday next, and many cultivators from the home counties will be making their visit to the classic ground.

Mr. W. Spencer, for the last seven years head gardener to Mr. S. King, Fin Hill, Droxford, has been appointed to the charge of the gardens at Northbrook House, Bishop's Waltham, the residence of H. W. Trinder, Esq.

Wildsmith Memorial Orphan Fund was completed on Tuesday by the contribution of the Horticultural Club. It will now constitute a precedent for action in like cases of a memorial being needed other than one of merely local import.

A Lawn Mower for Ladies has been specially designed and manufactured by Messrs. Chadborn and Coldwells, of 223, Upper Thames-street. It is called the "New Model." It is of 14-inch cut, very compact in make, and light in working. No doubt many ladies will take to it for keeping their tennis lawns in order.

Mr. Stanley has been so grandly fêted in Brussels that it is to be feared we shall fall short of the standard of a proper reception he may have formed as the result of his agreeable experiences. But he is due in London within a few days, and will be the guest at a dinner party given by Mr. and Mrs. Douglas Murray, at 33, Grosvenor Place, on Tuesday, May 6.

The Royal Military Exhibition in the grounds of the Royal Hospital, Chelsea, will be somewhat of a horticultural exhibition, for extensive works have been carried out by Messrs. Dick Radclyffe, and, according to present promises, these will develop attractive features as the summer opens. This exhibition, which will consist of military sports, soldiers' artistic and industrial work, ambulance demonstrations, &c., will be opened by H.R.H. the Prince of Wales.

Primrose Day saw abundance of primroses everywhere, except in Covent Garden. The market was insufficiently supplied, but the streets of London were very primrosy, and the solemn functions pertaining to the day in Parliament Square, where the statue of the Earl of Beaconsfield was abundantly embedded in primroses and violets; and in the demonstration of the Primrose League in Covent Garden Theatre, must be pronounced successful beyond the ordinary meaning of the word.

Olympia has become a Skating Rink, and appears to be the best of its kind seen in the metropolis. The matter may not concern many of our readers, but the fate of Olympia has some claim to our consideration, because, for a time, certain friends of the R.H.S. contemplated the possibility of purchasing the huge thing as a hall for horticulture. It would be about as appropriate as the Meat Market in Smithfield.

The Weather has varied so much in the past few weeks that the phenomena common to the season appear very much out of order. Many things are in advance of their usual time, while others are equally in arrear. For the most part unpleasant conditions prevail, and there is great need of warmth with rain. It will be well, perhaps, if rain is deferred until the fruit crop is further advanced, but unless we have a considerable supply within a reasonable time, the productiveness of the season will be seriously prejudiced. The grass lands greatly need moisture, and wells and springs are running low.

The Nightingale and Cuckoo were heard by Mr. E. Molyneux, at Swanmore Park, Bishop's Waltham, for the first time on the morning of the 16th. He writes that the night of the 15th-16th was especially warm, and followed upon three mild days, in which the temperature did not fall below 45. In that part of Hants the cuckoo is generally heard on the 15th. At a place only two miles distant, the same bird is usually heard two days earlier. The difference between the two sites consists chiefly in the fact that the earliest is in a warm valley, and the latter is 400 feet above sea level.

The Committee of the Inhabitants of Finsbury Square have accepted a design by Crompton and Fawkes, horticultural builders, of Chelmsford, for a pavilion for the centre of the square. The building will be 24 ft. by 18 ft., and about 40 ft. high, cruciform in plan, with ornamental gables facing four ways, surmounted by an octagon lantern, in which a four dial clock will probably be placed at a future time. The base will be red-rubbed brickwork, and the sides will be glazed for the remainder of the height. The roof will be covered by red tiles. It is contemplated that the building will be opened the first week in June. All the details will be designed by Mr. Fawkes, the well-known expert in horticultural buildings.

Holiday Homes for the children of the poor are the objects of a special effort by the Ragged School Union, as represented by Mr. John Kirk, dating from Exeter Hall, London. He says: "Amongst the needs are friends competent to make a holiday all the more enjoyable by telling them the stories of tree, shrub, plant, and flower, and in that direction readers of the Gardeners' Magazine are admirably qualified." As a matter of course, in promoting such a movement, money is the first requirement, but the idea of locating poor children for a holiday term in the midst of the country, and there opening their minds to the beauties of nature, is one well deserving of practical exposition. The Ragged School Union benefits 3,000 children annually, and might do more were larger means supplied.

Presentation to Mr. Richard Dean.—At the beginning of the present year Mr. R. Dean resigned the office of hon. secretary to the Ealing, Acton, and Hanwell Horticultural Society, which he had held for a period of fourteen years. In order that some suitable acknowledgment of Mr. Dean's services to the society during the past nineteen years should be made, a committee was formed to obtain subscriptions so that some suitable present should be handed to him, with the result that on the evening of the 22nd inst. a number of subscribers to the fund met at the London and County Bank, and Mr. Robert Willey, on their behalf, presented to Mr. R. Dean a gold keyless English lever watch, by Benson, value £20, and Mr. G. F. Nixon a purse of sovereigns, both bearing testimony to Mr. Dean's services to the society. A suitable acknowledgment was made, and the proceedings closed with a hearty vote of thanks to the committee.

The Proposed Horticultural Hall was formally considered at a meeting in the Council Chamber of the Royal Horticultural Society on Tuesday last and a certain measure of success must be reported. The meeting was but a shadow of what such a meeting should be, and this fact has no connection whatever with the merits of the subject. Months ago arrangements were made, not only for the exhibition of Auriculas and Primulas by the National Auricula Society, but for the supporters of that institution to take luncheon at 1.30 the same day. Other business of the day included presentation of medals to Messrs. Thomson and Findlay, lectures by the Rev. Wolley Dod and Mr. Henwood; business meetings of National Carnation Society and the Horticultural Club. Suddenly the meeting for horticultural hall was sandwiched into the midst of them and men who spoke of keeping their appointments and being therefore unable to attend were in the position of appearing hostile or at the best, indifferent to the proposal. But the meeting was held, Sir Trevor Lawrence, Bart., M.P., presiding. The general object having been stated, Baron Schroder explained with lucidity and a sufficient amount of pleasantry, the details of his proposal, Mr. William Bull, of Chelsea, moved a resolution expressive of the approval of the meeting and the pledge of the members of the nursery and seed trades to support it. This being seconded by Mr. George Bunyard, was carried unanimously. A second resolution appointing a committee of the nursery and seed trades in furtherance of the first proposition was also adopted, and the following gentlemen were at once nominated members thereof:—Mr. William Bull, Mr. George Bunyard, Mr. N. Sherwood, of Mark Lane; Mr. Dickson, of Chester; Mr. Ker, of Liverpool; Mr. H. Williams, Holloway; Mr. James Backhouse, York; Mr. Smith-Carington, Worcester; Mr. Arthur Sutton, Reading; Mr. Harry Turner, Slough; Mr. Harry Veitch, Chelsea; Mr. Peter Veitch, Exeter; Mr. J. Cheal, Crawley; Mr. Sander, St. Albans; Mr. D. Thomson, Drumlanrig; Mr. Bruce Findlay, Manchester; with power to add to their number.

Berlin Horticultural Exhibition, opened yesterday, and to continue to May 5, is especially strong in illustrations of the relations of architectural and plastic art with horticulture. Devices in which plants and flowers supply the principal material; decorations arranged to emphasize the æsthetics of construction; and the artistic association of plants and flowers with ceremonies, festivities, and the requirements of domestic life, have a leading place in the great assemblage. The prizes are medals, money, diplomas, and certificates. The exhibitors number nearly 600, and Germany and Belgium are the most largely represented.

Fruit Prospects have Improved, and the observers in all directions are now as hopeful as lately they were despondent. A great plum crop we cannot have, and that point is settled. But for the present it may be said that a moderate crop of plums is within possibility, as in many places a fair set has been made in spite of unfavourable weather. For pears and cherries there is some promise, and although much of the early bloom was rendered futile, the later bloom had better fortune, and in the north the prospect appears to be as good for pears as anywhere. There are great expectations in respect of the apple crop, for the trees look well, the bloom is strong and forward, and the weather appears to be on its best behaviour. There will be plenty of caterpillar, but the larger growers are beginning to look calmly on its occurrence, having great faith in London Purple with a little soap to aid the mixing, for application with a distributor. The application does not kill all the caterpillar, but those that survive do not prosper; their sins appear to "find them out," for the London Purple poisons their food.

Auriculas and Primulas were grandly shown on Tuesday at meeting of R.H.S., and they were appreciated, for a great party, headed by Baroness Burdett-Coutts, made a tour of inspection, and many were the approbations bestowed upon the cultivators. It was certainly the greatest day of the season at the Drill Hall, and the light was so good and the show so attractive, that people who do not happen to know everything, were inclined to ask what were the grounds of complaint against the place of meeting? But we will let all that pass, for the place is endurable only when endurance is seasoned with the hope that something better will be achieved ere long. Amongst the contributions of special excellence were fifty large pans of Primula Sieboldi, from Messrs. Ryder and Son, of Sale, Manchester. They were put up with adiantums, to enrich the green tone and add variety with pans of a beautiful auricula called Golden Queen, to aid the rosy and purple flowers with its rich tone of old gold. The hall was filled with good things, including pot roses, orchids, clivias, rhododendrons, daffodils, amaryllis, and various fruits.

Aristolochia Goldieana has been flowering at Kew, and for a few days made a special attraction in the Victoria house. It is admirably figured by Mr. Walter Fitch, in B.M., 5,671, but for all the beauty and accuracy of the figure, the reality is far preferable, both for its grotesque disproportion to the plant that produces it, and its intrinsic beauty. As for the plant, the one on view, which was in perfection on Sunday last, might have been crumpled up into a man's hand, but the one flower it produced could not have been perfectly concealed in a peck measure. The tube was ivory white, the spreading limb formed a huge goblet, on the outer side dull green, lined and veined dull purple; on the inner side, superbly coloured with bold lines and arabesque markings of a deep purplish chocolate on a rich ground of old gold. The pencilling in the throat was even more beautiful than in the cup, and the translucent texture added an indefinable charm, as though the material were of a kind hitherto unknown in the vegetable kingdom. A description of the plant, with figure prepared from a specimen that flowered in the Regent's Park Botanic Gardens, will be found in G.M, June 4, 1881.

GRAPE HYACINTHS.

The grape hyacinths] are singularly beautiful when arranged in groups along the front of the mixed border, but to ensure a good effect it is necessary to plant rather thickly in clumps of medium or large size. Planted thinly in accordance with the practice which generally obtains in gardens they fail more or less in effectiveness, and obtain but scant attention. In Messrs. Barr and Son's nurseries at Long Ditton the muscari have a large space devoted to them, and when there a few days since they formed a feature at once interesting and attractive. The collection was interesting from the fact that it contains several good species and varieties that as yet are grown in but few gardens. The several forms of Muscari botryoides were, as a matter of course, conspicuous, but as they are comparatively well known it is not necessary to do more than say that they should be planted more largely than is at present the case. Of the kinds not generally cultivated the more important are M. neglectum, a distinct species producing comparatively large spikes of finely-formed flowers of a deep violet-blue, and apart from its beauty, useful for contrasting with the light shades furnished by the other kinds. M. concinnum, a very handsome species, the flowers borne in large spikes and of a brilliant blue colour; one of the most effective in the collection. M. commutatum, a neat growing species with well-developed flower spikes, the colour bright blue. M. argyræa, a beautiful form, with large spikes of brilliant-blue flowers. M. Armeniacum and M. Atlanticum, which have ultramarine blue and azure-blue flowers respectively, are remarkably good, the spikes being large in size and the colouring very effective. The grape hyacinths are admirably adapted for naturalization in the wild garden and alongside woodland walks, but in the majority of cases the groups should consist of from two to three bulbs in each. In planting them in the mixed border, each group should contain from twelve to eight bulbs each. G.

DAFFODIL CONFERENCE.

Our report of the Daffodil Conference held in the gardens of the Royal Horticultural Society at Chiswick, from April 15 to 18, included the whole of the proceedings up to the close of Wednesday. We have now to add that the conference was continued on Thursday with Mr. J. G. Baker, F.R.S., in the chair, when papers were read by the Rev. Wolley Dod and Mr. J. Walker.

The Chairman, in opening the proceedings of the day, briefly referred to the classification of the genus, and said that daffodils had now passed from the hands of the botanists into those of the hybridists. He also stated that when he first turned his attention to the flowers they were only to be met with in small gardens, or as wildings, and it gave him much satisfaction to know that they were now grown in large numbers in gardens of all classes.

The Rev. Wolley Dod then proceeded to deal with the classification, characters and distribution of the varieties of Narcissus pseudo-narcissus. He referred to the geographical distribution of daffodils, and stated that the large number of varieties found growing wild in Ireland was in some degree due to the fact that at one time these flowers were supposed to possess valuable medicinal qualities, and that probably the monks from Italy and Spain brought bulbs with them for planting in the monastic gardens. In discussing the classification he proposed that there should be five sections: 1. Discolor, in which the perianth and corona differ in colour; 2. Concolor, in which the perianth and corona are of the same shade of yellow; 3. Pallidas; 4. Albus; and 5. Muticus.

Mr. J. Walker followed with an eminently practical paper on "The Cultivation of Daffodils for Market," in which he is so successful. He commenced by observing that during the past six years the cultivation of daffodils had undergone such a rapid extension that if in 1884 there were ten millions in cultivation, it was safe to estimate the number now grown at two hundred millions. It was important to the grower for market to consider whether they would continue to pay, with such a large increase in the numbers grown. There had been a fall of quite 50 per cent. in the price, and last year some flowers were sold as low as ninepence per dozen bunches, each bunch containing a dozen flowers. At the same time, he would mention that on some occasions the prices ranged as high as twelve shillings for twelve bunches. Large quantities are now sent from the Scilly Islands, the Channel Islands, and the south of France, and the supplies in the market extend from January to May.

The yellow trumpets are of much value for market culture, and of these Emperor is one of the best, the flowers being large, stout, and richly coloured. Maximus is also desirable, because of its rich colour; and Golden Spur, Countess of Annesley, Edward Leeds, Obvallaris or Tenby, and Spurius are also suitable. Of the bicolors, Empress was the best because it increases more rapidly, blooms more freely than do the other varieties in the section, and the flowers stand better; Horsfieldi, although not in his opinion equal to Empress, was of much value for the market. The sulphur and white trumpets were of but little use for market. The flowers are soft and do not stand well, with the result that there is very little demand for them. The two best were Cernuus pulcher and Mrs. F. W. Burbidge. The best of the incomparabilis group were Sir Watkin, Lady Watkin, and Gloria Mundi. The most desirable of the Barri section were Conspicuus, Maurice Vilmorin, and W. Ingram. The finest of the Leedsi section are Duchess of Westminster, Gem, Minnie Hume, and Madge Matthews. Burbidgei varieties were regarded with but little favour in the market, but Mary, John Bain, and Constance were the best for those who might desire to grow a few. Of the Poeticus section Ornatus occupied a foremost position, with Poetarum and Recurvus for succession. Odorus and Odorus rugulobus are both desirable; and of the doubles, the double Poet's narcissus was specially valuable. This he had tried to force but he had not been successful, as it had a tendency to go blind.

With reference to culture he stated that the varieties differed considerably in their requirements in the matter of soil, some requiring a much heavier soil than others. In 1881 he planted a bed with several varieties, the soil being a strong loam, and at the end of the second year Capax and Cernuus plenus had disappeared, whilst both Empress and Emperor had largely increased. What are generally known as garden varieties require to have the soil liberally enriched with manure, but the other kinds require but little, if any, manurial matter. The land in being prepared for the reception of the bulbs is ploughed, harrowed, and rolled, and the bulbs are planted in lines, the depth being regulated by the character of the varieties. The bulbs are lifted, dried, and cleaned, and replanted in August and September. The first to be planted is Ornatus. In gathering the flowers they are cut before they expand and put in vessels containing water, placed in sheds or glass structures. Considerable judgment was necessary to ensure the flowers being gathered at the proper stage. As the result of his experience he felt justified in saying that by lifting and planting annually, good cultivation, and judgment in marketing, there need be no fear of competition.

At the close of Mr. Walker's paper, which was received with marked expressions of approval, votes of thanks were passed to the readers of papers and exhibitors of flowers. A vote of thanks was then passed to the Chairman, and the proceedings terminated.

CUTTING IVY.

Now is the best time of the whole year to prune or clip ivy on walls, especially where it is annually performed. In this case the leaf stems are not so long as when the growth is allowed to extend for two or three years untouched. Walls covered with ivy are all the better with a yearly clipping of the leaves and outgrowths. The reason why it is best done during the month of April is because the wall is bare a shorter space than at any other time of the year, as the new growth is now on the move. The new leaves develop and cover the space again, and the admission of more light to the leaves and stems prevents the leaf stalks being drawn out to an inordinate length. Moreover, so many opportunities are not given to the birds—sparrows especially—to build their nests where annual attention is given to keeping the ivy in good order. Ivy newly planted, or indeed that which has had three or four years' growth, need not be subjected to such hard clipping as that longer established. After the cutting a thorough drenching with water from the garden engine will be of much service in cleaning the wall from dead leaves and accumulated matter about the roots and stems of the ivy. E. M.

Notes of Observation.

SOWING SCARLET RUNNERS IN TRENCHES.

I recommend those who have to grow scarlet runners on light land to plant them in trenches. I have done so for the past four years, and the result is eminently satisfactory. The trenches should be prepared the same as for celery, only they need not be so deep. If the top of the trench is four inches below the surrounding level that is enough; a layer of manure should be placed in the trench and three inches of soil on the top of it. Anyone who has not tried this plan would be surprised how well the beans grow and bear with only moderate supplies of water in dry weather. It is pretty generally known that on poor ground scarlet runners suffer from drought as much as any other vegetable, and in such cases require a lot of water to keep them productive. It was for this reason that I first resorted to planting in trenches. I am very glad I did so, as the plan saves me a good deal of labour, and I get much better crops. The only thing to avoid is not to make the trenches too deep; the depth I have mentioned should not be exceeded, as, in the majority of cases, the staple soil is very poor. Those who can grow good crops of runners without the trouble of forming trenches will perhaps not value the advice I have given; but I may tell them that it is not for such that I write this note. My desire is to assist those who, like myself, have not had their lines cast in such pleasant places with regard to soil. A man who has to cultivate a light and poor soil has to do many things that those who are more fortunately situated would not think of doing. J. M.

DOUBLE MEADOW SAXIFRAGE.

Saxifraga granulata fl. pl. is one of the best of the family; its flowers are produced freely, last a long time in good condition, and are very showy, either in the front of the herbaceous border or on the rockery. For the latter position is it the more suitable, although to secure the best results upon the rockery sufficient depth of soil should be allowed for the roots, which, although they do not run deeply, object to being parched up during dry weather when but a shallow space is provided for them. Therefore, a position where constant moisture can be had is all in favour of luxuriant growth, which means abundance of blooms. E. M.

MOUNTAIN KNAPWEED OR CORNFLOWER.

The showy *Centaurea montana* is of great value for providing early bloom for the herbaceous border, or for cutting from during the month of April. The perennial cornflowers are capital subjects to have in the reserve ground to cut from where such flowers are in demand, as the varieties supply blue, red, and white flowers. Ever such a small piece taken from the old clumps quickly increases in size as growth is rapid, especially if the soil is inclined to be heavy and consequently moist. The great mistake made with this centaurea, as with many other herbaceous plants, is that of allowing the growth to fall upon the ground before staking, which should be done in as loose a manner as possible and in good time. When the growth is allowed to become irregular through the reason named, the flower spikes in trying to right themselves into an upright direction grow crooked, and are consequently not nearly so useful in a cut state. E. M.

PRESENTATION OF VEITCH MEMORIAL MEDAL TO MR. DAVID THOMSON AND MR. BRUCE FINDLAY.

One of the most agreeable incidents of the busy and pleasant day of the Auricula Show was the presentation of the Veitch Memorial Medal to the two gentlemen named above. The trustees of the memorial fund for a series of years followed a rule of offering the medal for some special competition at a horticultural exhibition, and a number of subjects of the most diverse kinds have in this way been recognized and encouraged. But the happy thought occurred to them that a man might occasionally be a better subject than a flower or a fruit for distinction in connection with such a memorial, and following out the idea, Mr. A. F. Barron, the renowned gardener-in-chief to the Royal Horticultural Society was selected, and the presentation of the medal to him served as a splendid precedent for a new order of bestowal. The trustees have now selected two eminent horticulturists of the north; and there will be no question anywhere of their well-earned rights to such honours as the medal may carry with it, these being neither few nor slight, for this memorial has acquired increased importance by this enlargement of its purpose in strict accordance with the spirit of the founders.

The presentation was made on Tuesday last, after the bustle of the judging and the formalities of the day were disposed of; a large meeting of horticulturists being brought together by the interest of the event. Sir Trevor Lawrence, Bart., M.P., performed the pleasing task of handing to Mr. David Thomson, of the gardens at Drumlanrig, and to Mr. Bruce Findlay, curator of the Royal Botanic Gardens, Manchester, the beautiful memorial silver medals, which are of unusual weight and substance, and are, of course, suitably inscribed with the name of the recipients. Sir Trevor briefly but pointedly alluded to the horticultural achievements of the distinguished gentlemen who were the subjects now of special attention, and they, with the best of taste, made their response, gratitude being the moving sentiment in each case; while the listeners were moved to enthusiastic approbation.

In the evening, at the dinner of the Horticultural Club, Hotel Windsor, a large party assembled to receive as guests Mr. David Thomson, Mr. Bruce Findlay, Mr. F. W. Burbidge, M.A., Mr. Samuel Barlow, J.P., and other gentlemen, who desired to participate in the reception of the medallists. Mr. George Bunyard had organised a musical performance, in which Mrs. Plant Coldrey (piano), Mr. H. Turner (concertina), Mr. Elphick (violin), and Mr. Albert Snow (violoncello) took part, greatly to the delight of all; and songs were sung by Mr. Arthur J. Veitch and Mr. Albert Snow, and a recital of a ballad was given by Mr. C. T. Druery. Dr. Hogg presided, and the Rev. H. H. D'Ombrain occupied the vice-chair.

When the loyal toasts had been duly honoured, Dr. Hogg proposed the healths of Mr. David Thomson and Mr. Bruce Findlay, dwelling with happy emphasis on their labours and achievements in the interests of horticulture, and the marked changes that had resulted from the efforts of practical horticulturists in the past half century. Mr. David Thomson replied at some length, in a speech consisting chiefly of personal reminiscences—a sort of autobiography in brief of quite thrilling interest. Mr. Findlay was more sententious, and for illustration of his hopeful auguries of the probable expansion of horticulture, referred to recent events, and more especially to the more recent movements of the Royal Horticultural Society. The musical honours accompanying this toast were the genuine expression of the enthusiasm and deep respect of the company for their distinguished guests.

The Rev. H. H. D'Ombrain proposed other visitors, associating with the toast the names of Mr. F. W. Burbidge, of Dublin, and Mr. Samuel Barlow, of Stakehill, who severally responded, and, like previous speakers, were anecdotal and reminiscent. Mr. Shirley Hibberd proposed the health of the chairman, Dr. Hogg, and this having been responded to, the party broke up after a good dinner and a most enjoyable entertainment.

Correspondence.

ASPARAGUS.

There can be no doubt that many of the Fellows of the Royal Horticultural Society who, like myself, are specially interested in the kitchen garden and its occupants, were gratified to receive the report of the Vegetable Conference held at Chiswick in September last. I had long been looking anxiously for its appearance, and in glancing through its well-filled pages I cannot repress a feeling of regret that it was not issued earlier in the year. It would assuredly have been a great advantage to fellows to have had at their disposal the information contained in the several papers and reports when making up their seed orders and arranging their scheme of cropping for the current year. I should have preferred also in the interest of gardeners who, from financial reasons, are unable to become Fellows, that the reports of vegetable and chrysanthemum conferences should have been published separately, and each sold at half the price charged for the combined reports.

The paper that has interested me most is that on asparagus, by Mr. Shirley Hibberd, for it contains much that is of the highest value to cultivators. It may be said that it is not possible to say anything that is absolutely new, but I must say that, although I do not agree with all his conclusions, Mr. Hibberd has presented the cultivation of this vegetable in a quite new light. I agree with him when he says that "It is customary to see in English gardens asparagus beds that cannot possibly pay a reasonable rent for the ground they cover." To me it appears surprising that a vegetable so highly appreciated should in many cases be so indifferently grown. As he so clearly states the case, "Usually the seed is sown too thickly in the first instance, and is never after sufficiently thinned. Beginning in this bad way, the case is soon made worse by the appearance of additional plants from self-sown seeds and thus we have a crowd fighting for food with the usual result of a puny unprofitable growth. The practice of cutting all that rises until the end of June completes the system of how not to do it, and many who should have a fine example from their own ground are compelled to purchase when creditable asparagus must be seen on the table." With these remarks all who have had any experience in asparagus culture will readily agree. But upon some other points there is room for difference of opinion. We are told for example that the beds should be formed by sowing the seed in them. The practice of raising the plants where the crop is to be grown is of course sound, but it is doubtful whether it is the best that could be adopted in the majority of cases. I am of the opinion that it is not, and in forming an asparagus bed, I invariably begin with plants. By putting out plants two or three years old, you gain two distinct advantages. One is the beds come into bearing in a much shorter time from the time of their formation. The other is, the plants when supplying the table with their toothsome shoots have the full advantage of the manure incorporated with the soil in the preparation of the beds. When the beds are sown much of the fertilising properties of the manure are probably washed out of the soil before the plants are of sufficient strength to be cut from. When the seedlings are raised on the beds the seed should, as Mr. Hibberd states, be sown as soon as possible after February 1. A considerable proportion of the plants required for the formation of new beds are raised at home, and the seed is usually sown about the middle of the month mentioned, as plants raised from seed sown thus early in the year make a strong growth provided care is taken to thin them to the proper distance apart at a comparatively early stage, and to keep them free from weeds.

There is another point upon which I differ from Mr. Hibberd, and that is the number of varieties. He says, "there is no peculiar variety of asparagus; there is but one, and when differences are observable they are due solely to cultivation." Cultivation will, of course, influence the size of the heads, but it will not make such a difference as that between the produce of the Argenteuil district and the English beds. My opinion is shared by other English cultivators. It is, moreover, supported by what M. Vilmorin stated in the course of the discussion that followed Mr. Hibberd's address. He said that he "was in a position to state that the production of large samples was the result of both selection and cultivation." Moreover, he stated that it was the practice of the growers at Argenteuil "to select seed from the plants for producing stems of the greatest thickness." This appears to me to be pretty conclusive as to there being more than one variety, but if I am wrong in my conclusions I hope to be set right. F. R. H. S.

Wildsmith Memorial.—Amount previously acknowledged, £91 9s. 6d.; John Noble, Esq., £2 2s.; Horticultural Club, £2; Friends (per Mr. C. Ilott), £1 4s.; Mr. and Mrs Evans and Family, £1 10s.; Collected by Miss E. Butler, £1 10s.; Mrs. E. Quartermaine and friends, £1 11s. 6d.; Torquay Horticultural Society, £1 1s.; Mr. J. Ollerhead, £1 1s.; Mr. E. Nichols, £1 1s.; Mr. A. Outram, £1 1s.; Miss F. Tate, £1 1s.; Mr. J. H. Rose, £1; Mr. T. Jones, £1; Mr. B. Cromwell, £1; Mr. W. J. Novell, 10s. 6d.; Charles Turner, Esq., 10s. 6d.; Mr. J. George, 10s. 6d.; Mr. C. Ross, 10s. 6d.; Captain Tucker, 10s.; Mr. C. Denning, 10s.; Mr. J. Davidson, 10s.; Two Friends (per Mr. G. Stanton), 10s.: J. Omer Cooper, Esq., 10s.; Mr. A. Blazey, 10s.; Mr. G. Seymour, 10s.; Miss Tate, 10s.; Bournemouth Gardeners' Association, 10s.; Mr. J. Moffatt, 10s.; Mr. E. Butts, 10s.; T. Francis Rivers, Esq., 10s.; Alfred Palmer Esq., £2 2s.; Mrs. R. Cook, £1; R. Benyon, Esq., J.P. £1; The Misses Newen (per Mr. Bowly), £1; Messrs. Lane and Son, Berkhampstead, £1 1s.; Messrs. W. Thomson and Son, £1; Miss Marson, £1; Mr. J. Crook, 10s.; Mr. T. Weaver, 10s.; Mr. J. Bowerman, 10s.; Mr. H. Swansborough, 10s.; Mr. W. Chown, 10s.; Amounts under 10s., £5 6s. 6d.; total, £133 13s. 6d.

THE AURICULA.

By James Douglas.

We are now, as I write these lines, getting into the full bloom of the main collection, and those of us who have taken pains to grow our plants well may rest contented, and enjoy the bloom. There are some growers who seem to lose interest in their plants when they pass out of bloom, and only begin to wake up to their responsibilities about the time they should flower again in the next season. Such amateurs do not get a tithe of the pleasure out of their plants they ought, and cannot be included amongst fanciers. There is real pleasure to the fancier all the year round, and it is only by careful attention to the wants of the plants almost every month in the year, that satisfactory results are obtained at flowering time. Another class of amateurs are those who are too careful. They coddle their plants too much under glass, especially at the time the flower trusses are coming up; with the result that leaves and trusses are much attenuated, and the pips themselves are of very poor quality. Sometimes the poor auriculas are pushed into a forcing house at a considerable distance from the glass; where the fresh free air of heaven cannot reach them, and the result is such as might be expected.

I am not drawing upon my imagination at all here; for I have seen a good collection of auriculas going through the forcing process, in the very midst of growers who might be supposed to know all the requirements of the plants. Letters have also come to me quite recently for information on this subject; growers wanting to know when they ought to begin to force their plants. Now it cannot be too strongly urged upon the attention of auricula growers; that unless the plants are required to be got in early, for some special purpose, they never ought to be forced at all.

The Auricula in its natural conditions is an Alpine plant; and grows in districts that cannot be said to be hot at any time; but they are cold in winter and spring, and they are always well exposed to atmospheric influences; and in the culture of our favourite garden flowers we never ought to lose sight of the natural conditions under which they grow in their native habitat; and try to imitate it if we can. My experience has led me to the belief that we get the best and brightest coloured flowers when the plants are grown all the year round, and flowered as well in cold frames. The lights should be drawn off entirely at all times, when the weather is favourable. But I do not care to expose the plants to rain or high winds when they are in flower, although winds do them no harm at any other time. Exhibitors place their plants in an auricula house to get them in by a particular date, but, as a rule, they require very little forcing, and the less the better for the plants.

The best routine of cultivation has often been described in the pages of the Gardeners' Magazine, and I wish amateurs would go there for their information, instead of writing privately to growers who are too busy to answer such letters, let alone being taxed a penny to pay for the answers. Our own plants now in bloom are in a house where they can be arranged on a stage to be critically examined whether the weather be wet or dry. The lights are, however, made so that they can be entirely removed, and in fine calm weather in April the plants, even though they are in full bloom, are fully exposed to the open air. They are also shaded from bright sunshine, for we like to keep the flowers in good condition as long as we can. If seeds are wanted from any of the plants, these remain in the house until they ripen in July; all other plants are taken out of the house and placed in cold frames, the frames themselves being placed on the north side of a wall or high fence. They seem to do much better in such a position during the summer months than in any other. We repot them in May, being careful to clean them from aphis by fumigating them either in the frames or in the house. The aphis (green-fly) may be killed by dipping the plants in soft soapy water, but this makes a horrible mess of the beautiful white leaves. It does not matter about the green-leaved varieties; the aphis is most destructive to these, but they may be dipped in the soapy water without injury.

Some of our amateur friends are in much perturbation of spirit about the potting material. They really need not indulge in great anxieties about the nature of the loam they are able to obtain, for the leading growers get the soil where they can and do not trouble to go far from home for it. Mr. Horner, who is unsurpassed as a cultivator, told me that he obtained his potting soil from the potato quarter in the kitchen garden; to this is added about a third part of good decayed manure, some leaf-mould, sand, and charcoal, broken up into small pieces. Those who can obtain good fibrous loam from an old pasture should think themselves fortunate; a little peat added to heavy loam lightens it a little and seems to suit the plants admirably.

We have also learned in these latter days to avoid large flower pots. I shall never forget being taken by Mr. Barlow to see an old grower's garden at Middleton, in Lancashire, one of the old, old school, who despised glass lights, and favoured wood shutters to shelter his plants from wind and rain; but such plants! puny in the extreme; and each miserable specimen planted in the centre of a seven-inch pot; a few roots might struggle to the sides of the pots, but this is doubtful. The laced polyanthuses used to be treated in the same way. We have learned better now, and find that the largest plants of either do not require larger pots than four and a-half inches, or at the outside five inches diameter. Drain them well before repotting the plants, being careful to remove any decay attached to the base of the tap roots. All decay must be removed with a sharp knife.

The plants set aside to save seeds from cannot be repotted until the seeds are saved, but they should be seen to as soon as possible after this. Sow the seeds as soon as they are ripe, and a number of plants will appear in two or three weeks after sowing, but the larger portion of the seeds will lie dormant until the spring; they will come up freely in mild weather in January and February. The young plants must be pricked out and potted on as they require it, and they will grow into a flowering size by the end of the season. I may add that it has been found to answer admirably to plant the young seedlings out in the open garden in May, and pot them up in August; they have time to become established by the end of the season to flower well in April. The plants at all times must be freely exposed to the air, for a close atmosphere at any time is injurious to them.

POLYANTHA ROSES.

Polyantha roses present such an attractive appearance when in bloom, both in pots and in the open borders, that it would not be an easy matter to determine whether they are of the greatest value for growing in pots or for outdoor culture. Happily it is not necessary to settle this knotty question, and it will now suffice to say that in gardens in which roses of small size are appreciated they should be grown for the embellishment of the conservatory and drawing-room, and for giving a finish to the beds and borders devoted to roses. As yet they have not been extensively grown in private gardens for decorative purposes during the spring months, and this I attribute to the beautiful varieties of recent introduction not being generally known. They are shown occasionally at some of the spring shows held in the metropolis, but, unfortunately, few gardeners have an opportunity of taking any part in these gatherings. Hence the necessity for directing attention to their usefulness.

The polyantha roses may be divided into two distinct groups, one to comprise those of scandent habit and flowering during the summer, and the other to consist of those of dwarf growth and producing their flowers in succession for a considerable period. The second of the two groups is unquestionably the most valuable, because of the adaptability of the varieties for pot culture. Several important additions have been made to this section during the past three or four years, and the most recent of the varieties is Clothilde Soupert, which, in the size and form of its flowers, evinces a great advance upon those previously in cultivation. The flowers are about three inches in diameter, somewhat globular in form, and with stout, well-formed petals, the colour bright flesh-pink deepening to carmine-pink in the centre. The flowers are produced in much smaller clusters than are those of the well-known Mignonette, but it is nevertheless fairly free in blooming, and cannot fail to prove useful for the supply of flowers for hand bouquets and decorative purposes generally. Gloire de Polyantha has proved a valuable acquisition, and promises to take the place of Mignonette, from which it differs chiefly in the flowers being of finer form and of a deeper shade of pink. The flowers are about one and a-half inches in diameter, and are borne successionally in huge clusters, strong plants bearing immense quantities in the course of the season. George Pernet is a free blooming variety, with neat flowers of the colour of the peach blossom, and is remarkable for the length of time over which its season of flowering extends. Mignonette, which has done so much to obtain attention for the dwarf polyantha roses, is not equal in quality to Gloire de Polyantha, but it is so free and attractive that it must be included in a selection, however small. Perle d'Or is of a quite distinct colour from the foregoing, the flowers being shaded with nankin and orange. It is not equal in freedom of flowering to some of the others, but it is worth growing for the pleasing shade of colour it affords. Anna Marie Montravel and Ma Pacquerette are two exceedingly useful varieties, bearing pure white flowers, the last-named being perhaps the best of the two.

In speaking of the cultivation of the dwarf polyantha roses there is no occasion to write a long essay, for they are by no means peculiar in their requirements. In commencing their culture the preferable course to take is to purchase strong plants in three or five inch pots during the winter or spring, and towards the end of April to shift them into larger pots or plant them out, as may be desired. The flowers are borne on the shoots that rise from the base, and in the case of plants in a vigorous state they are produced in succession for a considerable period. Hence the length of the season of flowering is in some degree determined by the vigour of the plants. Therefore they should have the advantage of a moderately rich soil. In preparing the compost for potting I use good turfy loam, to which a small quantity of old hotbed manure and a liberal proportion of bone meal has been added. I have for several years abandoned the practice of using a liberal proportion of manure in the compost for roses, as the manure soon becomes exhausted, and has a tendency to promote sourness. But the bone meal, which, by the way, is more soluble than crushed bones, affords a steady and continuous supply of food for a long period and assists to keep the compost open. If it is seen during the season of growth that a little additional assistance is required they receive a top dressing of some suitable fertilizer, or are supplied with liquid manure of a moderate degree of strength. In growing these roses in the open the principal points appear to be to have the soil in a friable state and moderately rich. Hotbed or farmyard manure may be more freely used than in the case of pot plants, and they should receive a top dressing annually, preferably during the winter.

But little training is required by the dwarf polyantha roses, and the practice which so generally obtains of tying the shoots down in a more or less horizontal position is not only unnecessary, but objectionable. They appear to the best advantage when the shoots are allowed to grow more or less erect, and should the shoots become overcrowded a few of the older shoots may be cut away, and some portion of them be utilised for increase of stock. The several varieties may be propagated in the same way as the other sections, but one of the best methods of increase is by means of cuttings of half-ripened wood, which can be readily struck during the summer months with the aid of a frame.

Viator.

CATALOGUE OF POMPON AND SINGLE CHRYSANTHEMUMS.

(Concluded from page 231.)

Ninette (J. Salter). *Pom.* 1857. Sulphur yellow.
Ninette (Lebois). *Pom.* 1861. Purple-crimson.
Nino. *Pom.* White, pink edged.
Niobe. *Pom.* Dark red, gold margin ; fimbriated.
Nonsuch (Miellez). *Pom.* 1852. Yellow.
Noisette (Cullingford). *Single.* 1884. Red, shaded yellow.
Observation (Pelé). *Pom.* Red and salmon ; early.
Oceana (Teesdale). *Single.* 1886. Silvery blush.
Orange Beauty (A. Salter). *Pom.* 1883. Orange-yellow.
Orange Quill (A. Salter). *Pom.* 1884. Orange-red.
Orange Boven (J. Salter). *Pom.* 1862. Golden yellow.
Oranger. *Pom.* Orange.
Or et Rouge (Lamare). *Single.* 1889. Yellow, striped red.
Oriflamme (Teesdale). *Single.* 1886. Red-brown,
Osiris (Delaux). *Pom.* 1886. Amber.
Ouida (Delaux). *Pom.* 1886. Rose pink.
Pablo (Bull). *Pom.* Purple rose.
Paques Fleuries (Lebois). *Pom.* 1864. Blush-white.
Paquerette (Boucharlat), *Pom.* 1884. Rose-lilac, shaded white.
Paul Clifford (Ware). *Single.* 1885. Rose-mauve.
Pequillo (Lebois). *Pom.* 1850. Rose crimson.
Petit Mignon (Delaux). *Pom.* 1885. Rose and white.
Perfection (Delaux). *Pom.* 1883. Brown red, tipped golden yellow.
Perfectum (Lebois). *Pom.* 1852. Rose-lilac.
Perle (J. Salter). *Anem. pom.* 1857. Rose, lilac disc.
Perle des Beautes (Delaux). *Pom.* Dark crimson.
Pericles (Lemiere). *Pom.* 1874. Purple, edged yellow.
Perpetuel Toulousain. *Pom.* Syn. *Pompon Toulousain.* Bright red ; dwarf ; early.
Peri (Salter). *Pom.* Dark red and yellow.
Petillant. *Pom.* 1885. Cream colour.
Pierre Verfiel. *Pom.* 1885. Orange, shaded carmine ; very early.
Piercy's Seedling (Piercy). *Pom.* 1884. Orange yellow.
Pluie d'Or. *Pom.* 1855. Canary yellow.
Polycarp (J. Salter). *Pom.* 1858 Red and orange.
Pompon Rose (Delaux). *Pom.* 1884, Lilac-rose, tipped white.
Pompon Toulousain. *Pom.* Red-orange.
Pomponium (Delaux). *Pom.* 1885. Rich orange.
Pouledetto (Lebois). *Pom.* 1849. Bright rose pink.
Precocite. *Pom.* Golden yellow.
Precocite (Delaux). *Pom.* 1886. Rich crimson.
President (syn. Mr. Murray). *Pom.* Rose-carmine.
President Arthur (Hallock). *Single.* 1884. Purplish crimson.
President Decaisne (Lebois). *Pom.* 1852. Blush tipped rose.
President Morel. *Anem. pom.* 1856. Cinnamon-red, with yellow disc.
Prince Victor (J. Salter). *Pom.* 1865. Marone-crimson.
Princess Alice (J. Salter). *Pom.* 1861 Dark rose-carmine.
Princess Mathilde (Delaux). *Pom.* 1881. Purple-violet.
Prince Kenna (J. Salter). *Pom.* 1866. Rose pink.
Priscilla. *Pom.* Clear orange ; dwarf.
Primrose Duruflet (Henderson). *Pom.* 1874. Straw colour. Sport from *Duruflet.*
Primrose League (Cannell). *Pom.* 1887. Primrose yellow. Sport from *Snowdrop.*
Professor Fawcett (Ware). *Single.* 1885, Rich lemon yellow.
Pygmea (J. Salter). *Pom.* 1866. Orange yellow.
Pygmaleon (J. Salter). *Pom.* 1852. Deep rose.
Pyrethrum (Hallock). *Single.* 1884. Lavender-pink and white.
Quasi modo (Lebois). *Pom.* 1852. Yellow and red.
Quatre'es (Delaux). *Pom.* White-shaded rose.
Queen of Anemones (Bird). *Anem. pom.* Rose-crimson.
Queen of Beauties (A. Pele). *Pom.* 1859. Rose-purple.
Queen of Liliputs (J. Salter). *Pom.* 1855. Rose blush.
Queen of the Yellows (Teesdale). *Single.* 1855. Bright yellow.
Queen of Stripes. *Pom.* White, striped rose crimson.
Red Luxembourg (Piercy). *Pom.* 1884. Bright red.
Reine des Anemones (Miellez). *Anem. pom.* 1852. White.
Regulus. *Anem. pom.* Cinnamon brown.
Reine d'Or (Delaux). *Pom.* Dark orange.
Reine des Panachées. *Pom.* Blush, pencilled rose.
Renoncule (Lebois). *Pom.* 1850. Blush tipped rose.
Renonculiflorum (Delaux). *Pom.* Orange red.
Rigolo. *Pom.* Fine sulphur.
Ringleader (A. Salter). *Pom.* 1883. Light purple.
Riquiqui (Lebois). *Pom.* 1854. Violet purple.
Robert le Diable. *Anem pom.* 1856. Red-salmon.
Roquelare (J. Salter). *Anem. pom.* 1857. Red, orange-yellow disc.
Rubrum perpectum (Boucharlat). *Pom.* 1884. Purple-crimson.
Rosabelle (Lebois). *Pom.* 1866. Blush pink.
Rosalind (Hallock). *Single.* 1884. Bright pink.
Rose Cherie (Lebois). *Pom.* White shaded rose.
Rose d'Amour (J. Salter). *Pom.* 1866. Rose-pink.
Rose d' Ete (Delaux). *Pom.* 1886. Rose-lilac shaded white.
Rose Owen (Owen). *Single.* 1889. Rose-red.
Rose Pompon. *Pom.* 1852. Silvery lilac.
Rose Trevenna (J. Salter). *Pom.* 1859. Bright rose.
Rose Marguerite. *Anem. pom.* Rose.
Rose of Castile. *Pom.* Rose carmine, white centre.
Rosette (Ware). *Single.* 1885. Pale buff shaded rose lake.
Rosinante (J. Salter). *Pom.* 1856. Light peach.
Sacramento (Lebois). *Pom.* 1852. Yellow tinged buff.
Sagitta. *Pom.* Blush dwarf.
Salamon (J. Salter). *Pom.* 1858. Rose-carmine.
Sam Slick. *Pom.* Violet crimson.
Sanspareil (Delaux). *Pom.* 1886. Crimson.
Satanella (A. Pele). *Pom.* 1859. Rich amber.
Scaramouche. *Pom.* 1856. White and yellow.
Scarlet Gem (Cannell). *Single.* 1886. Bright red.
Scarlet Gem (J. Salter). *Pom.* 1855. Bright crimson.
Secretaire Daurel (Pertuzés). *Pom.* 1884. Rose lilac, striped ; early.
Sensation (Bull). *Pom.* 1865. Leaves margined with cream-yellow.
Septimus Lyon (Hallock). *Single.* 1884. Rich golden yellow.
Sicile (Pelé). *Pom.* Lilac and blush.
Sidonie (J. Salter). *Anem. pom.* 1866. Lilac, blush centre.
Sienna (J. Salter). *Pom.* 1862. Orange red.
Signora Pepin. *Pom.* Red carmine and yellow.
Silver Star (Owen). *Single.* 1889. White.
Sims Reeves (Teesdale). *Single.* 1885. Bright chestnut red.
Single White (A. Salter). *Single.* 1884. Pure white.
Sinbad (J. Salter). *Pom.* Bronzed rosy purple.
Sistou Lapierre. *Pom.* 1883. Plush.
Sir Richard Wallace (Lemoine). *Pom.* 1877. Clear rose.
Snowflake (Stevens). *Pom.* 1888. Pure white ; fimbriated.
Snowdrop. *Pom.* White.
Sœur Melanie (Lebois.) *Pom.* 1869. Pure white.
Soiree d'Ete (Delaux). *Pom.* Blush shaded rose.
Soleil Brilliant (Delaux). *Single.* Rose-carmine.
Soliman (Lebois). *Pom.* 1866. Rose-pink.
Sophy (N. Davis). *Pom.* Bright rose, tipped gold.
Souvenir d'un Ami (Lebois). *Pom.* 1864. White, tipped rose.
Souvenir de Londres (Delaux). *Single.* 1887. Brilliant crimson.
Souvenir de l'Amiral Courbart. *Pom.* Chestnut, tipped gold.
Souvenir de M. Domage (Lebois). *Pom.* 1871. Orange yellow.
Souvenir de la Reine Mercedes (Lacroix). *Pom.* Rose-lilac.
Souvenir de Jersey (Forsyth). *Pom.* 1872. Rich orange yellow.
Souvenir de Salter (Delaux). *Pom.* Rose violet.
Souvenir de M. Rampont. *Pom.* Crimson red.
Souvenir de M. Rampont. *Pom.* Violet.
St. Crouts. *Pom.* 1878. Pink.
St. Michael (J. Salter). *Pom.* 1866. Rich yellow.
St. Radegonde (J. Salter). *Pom.* 1858. Pale rose.
St. Thais. *Pom.* 1855. Orange and chestnut.
St. Mary. *Pom.* Syn. *Souvenir d'un Ami.* White ; early.
St. Justia (Hayes). *Pom.* Red and orange.
Star of Whyke (Teesdale). *Pom.* 1883. Paper white.
Stella. (J. Salter). *Anem. pom.* 1866. Pucy pink guard, yellow disc.
Sauvita (Lebois). *Pom.* 1863. Orange yellow.
Sunset (A. Pele.) *Pom.* 1859. Rich orange.
Sulphur Marabout. *Pom.* Sulphur yellow. Sport from *Marabout.*
Sulphureum Album. *Pom.* White, tipped sulphur.
Surprise (Delaux). *Pom.* 1885. Bright rose and white.
Swanley Gem (Cannell). *Anem. pom.* Blush yellow disc.
Taida (Lebois). *Pom.* 1871. White.
Telitza (Lebois). *Pom.* 1866. Purple, tipped white.
Tendresse (Delaux). *Pom.* 1882. Rose, tipped white.
The Friary Beauty. (Ware). *Single.* 1886. Blush white.
The Countess (J. Salter). *Pom.* Blush-tinted lilac.
Thetis (J. Salter). *Pom.* 1857. Bright yellow.
Tiber (Delaux). *Pom.* 1889. Red crimson; fimbriated.
Tissandier (Marrouch). *Pom.* Rose-lilac.
Toinette (J. Salter). *Anem. pom.* 1856. Rose-lilac centre.
Toreador (Pertuzes). *Pom.* 1884, Bright red.
Torfrida (J. Salter). *Pom.* 1866. Golden amber.
Toussaint l'Ouverture (Delaux). *Pom.* Bright rose.
Toussaint Morizot (Marrouch). Rose-lilac ; fimbriated.
Tragedie. *Pom.* 1883. Purplish rose.
Tresorier Lacoste (Pertuzes). *Pom.* 1883. Red shaded orange ; early.
Tristram (Ware). *Single.* 1886. Bright amaranth.
Trophée. *Pom.* Mottled silvery lilac.
Turris Eburnia. *Pom.* Fine white.
Ubald Scanvic (Audiguier). *Pom.* 1889. Amaranth, tipped yellow ; fimbriated.
Uranie. *Pom.* Amaranth pencilled white.
Val d'Or (Lacroix). *Pom.* 1884. Jonquil yellow.
Vesuve (Boucharlat). *Pom.* 1886. Red-purple.
Vesta (Bernard). *Pom.* Blush, shaded rose.
Victorine (Delaux). *Pom.* 1889. Marone crimson.
Viola (Smith). *Pom.* Violet lilac, blush points.
Virginia (A. Salter). *Pom.* 1882. Pure white ; early.
Virginale (J. Salter). *Anem pom.* 1870. Pure white ; late.
Volcan (Delaux). *Pom.* 1882. Dark chestnut-red.
W. E. Gladstone (Ware). *Single.* 1886. Deep golden yellow.
White St. Crouts (Piercy). *Pom.* 1884. Pure white.
White Trevenna (Mount). *Pom.* 1864. White. Sport from *Rose Trevenna.*
William Bealby (Delaux). *Pom.* 1886. Rose-mauve.
Yellow Gem (Teesdale). *Single* 1883 Bright yellow.
Yellow Petite Marie *Pom.* 1885 Canary yellow. Sport from *Petite Marie.*
Yellow Cassy (Piercy). *Pom.* Yellow ; early.
Zanetta. *Pom.* Rose pink ; late.
Zenobie. *Pom.* 1883. Orange yellow ; early.
Zobeide (J. Salter). *Anem. pom.* 1866. Guard and disc pinkish rose.

Meteorological Stations in the North of Scotland.—The Council of the Scottish Meteorological Society, in their report submitted at their annual meeting on Monday 31st. ult., state that a station has been founded at Boynde, Banffshire. The observer, Rev. William Anderson, has furnished the instruments. A number of stations have been inspected during the year. Weekly observations of temperature, rainfall, and sunshine were forwarded regularly to the Meteorological Council of London, from the Society's stations at Glencarron, Lairg, Fort-Augustus, Braemar, Glenlee, Ochterlyne, and Marchmont. Ben Nevis and Fort-William observations have been prepared and brought down to date. In a week or two the buildings of the low level observatory will be completed, and immediately thereafter the council will erect the self-registering instruments, which were originally at Armagh, and otherwise supply a complete set of instruments for a first class meteorological observatory. The directorate of Ben Nevis observatory expect soon to be in a position to put scientific men in possession of two sets of hourly observations of the most complete description, one from the summit, and the other from the foot of the mountain. By these observations the changes in the condition of the weather may be followed, particularly those great changes so essential to the advancement of knowledge of the approach of storms.

THE GREEN TREE-FROG.

Hyla viridis.

This interesting little creature is scientifically known as Hyla viridis, Hyla arborea, or Rana arborea.

It is chiefly to be found towards Southern Europe and Northern Africa; in England it is never seen in a wild state.

A beautiful reptile; it makes a delightful pet and a charming addition to the fern-case, both on account of its quaint habits and lovely colours, Being of such small size, it does not break or damage the fern fronds, and requires little attention beyond a good supply of fresh food and water. In this country it is often kept by ladies, who are able to appreciate its useful and ornamental qualities, having ample leisure time.

Some people turn a dozen or two into a stove or greenhouse, where they eat many of the insects on the plants and elsewhere. But I do not like this method of keeping tree-frogs, as they are so apt to hide, thus avoiding observation, and, if this is the case, why not employ toads or some other cheap agent for the destruction of insect pests?

An excellent receptacle for these frogs, in the absence of a fern-case, can be made from a square garden hand-light, with moveable top —not the bell shades.

Within the receptacle little lumps of sandstone, burrs, and the like, should be placed, amongst which selaginella will grow well, a pan of water, and a pot fern or little tree completing the arrangement, which will hold some dozen frogs or more. A little bottom heat, if procurable—say by position over a hot-water pipe—will be very beneficial. In the spring the frogs should have all the sunshine possible, but, at the same time, free ventilation, in this case best effected by the substitution of perforated zinc for one or two panes of glass in the upper part of the light. Later on in the summer they should be shaded after about eleven or twelve o'clock in the morning. For food they should have fresh cabbage or lettuce leaves frequently given to them, the old ones being removed when new are put in. Flies are enjoyed immensely, and the more of them the frogs can have the better. Mealworms are not eaten very readily, and there is no doubt that flies and bluebottles are the favourite food. It is amusing to see how nimble and artful they are in catching them; not that the frogs are perfect "shots," for often their jump is a failure, and, though capable of enormous extension, their mouths are sometimes too small for the large insects they try to catch, which, however, are then ejected, possibly to be a second mark for the wary frogs. As regards breeding, these creatures are very peculiar, sometimes spawning freely, at others utterly refusing to do so. I have never had them breed myself, though I offered them every inducement. With a lady friend of mine, however, these frogs spawned largely, though, through an accident, the tadpoles never reached their majority. The pond should be as large as possible, two or three inches deep, with shingle and a few weeds at the bottom, and, if partly overshadowed by foliage, it might be well. The eggs, when they appear, should have plenty of sun—a most important point. When hatched the little animals from the spawn live on the microscopical animalculæ in the water, which should not be changed, but frequently aërated by the addition of fresh. Always rain water should be given, not the hard calcareous water-works supply. In warmer climes breeding takes place in the month of April, but here not until June or July. The process of transformation from egg to frog occupies about nine weeks or rather less, but three or four years must pass before they reach maturity.

The loud croak of the male can be heard from a long way off, and when heard for the first time it is rather astonishing. It is in the evening that the concert begins, and likewise when the frogs are most active and especially enjoy the water, from which, with widely distended throat, they so often utter the peculiar sounds. It is remarkable that on some evenings they are perfectly quiet and on others so very noisy. The colour of this tree-frog is a beautiful green on the top, with white under side, but there is little doubt that various emotions affect it, as do also the locality and general surroundings. M.

[This elegant and amusing creature may be kept in the orchid house with advantage, but for observation of its beauty and curious habits the parlour table is the best place for it. Mrs. Hibberd kept a number for several years in glass vessels fitted with a few pieces of rock, and covered with light wire-work to prevent the escape of the nimble creatures, and at the same time afford abundant ventilation. A figure of one of these receptacles with a frog holding as a fly does to the smooth glass will be found in Mr. Hibberd's "Recreative Science," vol. I., p. 49. The aid of bottom heat in winter appears to be quite unnecessary, as the colony now referred to were perfectly healthy in the temperature of an ordinary room, though somewhat dormant in cold weather. Peculiar measures were invented to provide them with a liberal diet of flies during the summer, but for weeks together in winter they did not touch food or appear to need it.—Ed.]

Enemies of Fruit Trees receive a full share of attention in the recently-published report by Miss Eleanor Ormerod on the insects most destructive to farm and garden crops in 1889. It appears that last year the most destructive pests in the orchard and fruit garden were the caterpillars of various moths, which did considerable damage during the early summer in the chief fruit-growing counties. The caterpillars of the winter moth, the mottled umber, and the March moths, the web-nest makers of the lackey and small ermine moths, the "blue-head" caterpillars of the figure-of-eight moth, and other larvæ, inflicted very serious injury upon orchard fruit trees. Destructive beetles were represented by the apple blossom weevil, whilst the woolly apple aphis, or American blight, also did considerable damage. Pear trees were again the victims of the easily preventible attacks of the pear saw fly, and plum trees were attacked not only by their old enemies, the aphides, but by new persecutors in the form of shot-borer beetles. The plum shot-borer beetle (*xyleborus dispar*) bores a channel in the stem of the plum tree which presents the appearance of having been penetrated by a gun-shot. Currant bushes continue to be the prey of the gallmite, and were also attacked by a new pest, the white woolly currant scale.

A SHORT LIST OF THE FINEST DAFFODILS.

It is possible to sympathise with those who ask for a limited selection of the most distinct and handsome narcissi, and yet to be impatient with persons who, in a comprehensive exhibition, point out certain varieties in order to denounce them as having no right to existence anywhere. One thing at least may be said for the inferior kinds, and it is that without them we should not attain to proper cognizance of the merits of the best. The whole business is one of comparison. What is called "intrinsic" merit possibly does not exist, for the merit is intrinsic only until something better appears, and then our admiration is transferred to the newer object, and we have little to say in favour of the thing we once regarded as the finest of its race. For the twentieth time, perhaps, certainly not for the first, I have made note of the characters of varieties in my own collection, which is the most complete I have seen save in Messrs. Barr's nurseries, and the result of a selection of "the best" may be summed up in a short selection that probably will be useful to many.

And the question will arise, what do we mean here by the best? The amateur of daffodils will prefer to select for himself, and therefore his interests need not be kept in view in any special manner. Many who call themselves amateurs of daffodils desire only to secure a few of the most showy kinds in the several classes, and to help them is a most proper proceeding. But these are not true amateurs, and many of the choicest varieties will have but little interest for them. For cultivators who do not make a study of the subject, such beauties as Montanus, Macleai, Capax, Gracilis, and even the true Juncifolius, an exquisite gem, will have but few attractions. From such a list as the present we exclude all such interesting oddments. There are others, again, that are wanting in floral qualities, and these are looked on with some degree of indifference even by the narcissus men who delight in large collections. For example, Propinquus, one of the showy trumpets, is poor in form and unpleasantly stained with green at the base, while some of the double varieties are coarse and ugly, and really not worthy of a place in any garden. Again, we have many nearly alike in all the large classes, and a selection should include only the best in form, colour, and habit of these nearly alike kinds, throwing out all the rest for the all-devouring amateurs who can never have too many sorts of daffodils. Thus we have a rule to guide us, and it is the good old rule of the florists, a rule that obtains general assent even from the many who hope to appear clever by abusing it.

Corbularia is too tender for the universal garden, but where it can be grown in a frame the best is *Conspicua*, brilliant in colour and well-behaved when made safe against the frost that soon destroys it when in the open border.

Narcissus Pseudo-narcissus.

Ajax or Trumpet Daffodils.—*Yellow:* Emperor, Golden Spur, Henry Irving, Maximus, Santa Maria, Spurius Coronatus, Shirley Hibberd, Nanus (for rockery and edging), Obvallaris. *Bicolor:* Empress, Horsfieldi, Grandis, James Walker, J. B. M. Camm, Princeps. *White and Sulphur:* Moschatus, Pallidus præcox, Mrs. J. B. M. Camm, Cernuus. *Double Yellow:* Telamonius plenus, Plenissimus.

Narcissus incomparabilis.

Nonsuch or Chalice Daffodils.—C. J. Backhouse, Mrs. A. F. Barron, Beauty, Sir Watkin, Titian (distinct from Titan), Cynosure, Stella, Semi-partitus.

Barri group of hybrid Nonsuch.—Conspicuus, Flora Wilson, Sensation.

Leedsi group of hybrid Nonsuch.—Leedsi, Duchess of Westminster, Elegans, Katherine Spurrell, Mrs. Langtry, Superbus, Hume's Giant, Backhousei, Nelsoni major.

Double Nonsuch.—Aurantius plenus (Butter and Eggs), Albus plenus Aurantius (Orange Phœnix), Albus plenus sulphureus (Sulphur Phœnix).

Narcissus Poeticus.

Burbidgei group of hybrid Poet's Daffodil.—Burbidgei, Falstaff, Mary, Constance, Ellen Barr.

True Poet's Daffodil.—Ornatus, Poetarum, Grandiflorus, Patellaris. *Double:* Gardenia flowered.

Narcissus Tazetti.

Polyanthus Narciss.—Bazelman major, Gloriosus, Grand Monarque, Her Majesty, Paper White, White Perfection.

GLADSTONE BROCCOLI.

This was altogether a new name to me for a broccoli until last year, about this time when I had a packet of seed sent me for trial. Whether it is a sort that is old or new or who is the introducer, I know nothing; all that I know or am interested in is the fact that it is a good sort, and that in point of hardiness it surpasses Late Queen or Model which for several years have been my favourite sorts for a late supply. Growing side by side with the two last mentioned sorts the Gladstones have passed through the winter with less injury by frost than either Model or Late Queen. It is also worthy of remark that it is quite distinct in character from any other late kind. It grows higher and more erect, its present condition showing that it is as late as any other sort. The foliage being ample and self protecting, the flower promises to be as white as could be desired in a broccoli. J. C. C.

Exports of Flowers and Vegetables from the Scilly Islands last year included two hundred tons of daffodils and other flowers, eight hundred tons of potatos, three tons of seakale, five tons of tomatos, and one hundred and fifty tons of miscellaneous vegetables.

A LACED POLYANTHUS.

At the glorious meeting of primularians on Tuesday, laced polyanthuses were grandly shown, making a sparkle of colour distinct from all else, and quite justifying the term "gold lacing" that is in common use as descriptive of their distinguishing characteristic. We present a figure of a plant of the famous variety *George the Fourth*, as shown by Samuel Barlow, Esq., J.P., of Stakehill House, Castleton, near Manchester. It is occasionally rashly stated that the best of the older forms of laced polyanthuses are irretrievably lost, but Mr. Barlow has many of them, and has added to the class they represent a series of splendid seedlings raised by him at Stakehill. The growers of these delightful flowers are few in number, but happily they are increasing, and to many of them the figure now presented will be welcomed as a model of properties, combined with a fine freedom which enhances the beauty of the faultless lacing.



LACED POLYANTHUS, *George the Fourth.*

Pitcairn's Island is reported to be absolutely destitute of butterflies, which is doubtful. Mr. J. J. Walker, who has searched the globe for butterflies, reported not long since to the Entomological Society that Pitcairn's Island was the only place he had visited in which butterflies were entirely absent.

Calls at Nurseries.

MESSRS. JOHN LAING AND SONS, FOREST HILL.

For some years past special attention has been paid by this well-known firm to the improvement and cultivation of the Clivias, and as a result of their labours, the collection of these highly ornamental plants forms one of the most important of the many good features of the Forest Hill Nurseries. Not only is the collection remarkable for its magnitude and the cultural skill that has been brought to bear upon it, but it is distinguished by the number of novelties it contains, these, with but one or two exceptions, having been raised by the firm. Just now the collection is at its best, and the effect produced by the immense number of splendidly-developed flower heads is surprisingly rich and beautiful. Equally important and not less attractive is the feature formed by the caladiums, of which the collection is extensive, and rich in novelties. In addition, the tuberous begonias, which, as so well known, are grown here in enormous numbers, are just coming into bloom, and the orchid houses are gay with colour, so that visitors have plenty to interest them.

Clivias, which occupy a position in one of the spacious span-roof structures, are now in perfection, and no more favourable opportunity for determining their value for the embellishment of the conservatory early in the year could well be had. Arranged in bold masses and interspersed with palms and other plants grown for the beauty of their leafage, they present an extremely beautiful appearance and fully justify the high degree of popularity to which they have recently attained. Not less important than their effectiveness when in

bloom is the length of time over which their flowering season may be extended. At Forest Hill they have been flowering freely since the beginning of February, and as they promise to continue in good condition some time hence it will be well within the mark to say that their flowers may be had in abundance fully four months. By accelerating the flowering of some and retarding others, they may, of course, be had in bloom for a much longer period than this. In admiring the beauty of the clivias it is impossible to avoid being struck by the bold leafage and stately habit of the plants as well as being charmed by the rich colouring of the flowers, and it may be mentioned that well developed specimens are extremely handsome when not in bloom. That the collection contains all the finest varieties of both English and Continental origin follows as a matter of course, and it must suffice to refer to a few of the more important varieties raised, and others introduced by the firm. Foremost amongst them is John Laing, a robust growing form, producing massive flower heads about twelve inches in diameter, the individual blooms large with stout rounded segments, and the colour deep rich scarlet; Mrs. Laing also produces immense flower heads and flowers of fine form, the chief point of difference being in the colour, which is a vivid orange red; Lady Wolverton is exceptionally good, the trusses of immense size, the flowers large, with broad reflexed segments, and the colour light salmon; Mr. Poë is very effective, the flowers are large and borne in noble trusses, and the colour vermilion, bright yellow in the centre; Bronze Beauty has flowers of a bronzy-red hue with yellow throat, and is remarkable for its distinct character and effectiveness; Salmonea, a beautiful variety remarkable for its distinct shade of colour, the flowers large, with broad well-rounded segments, and the colour salmon red with yellow centre; Stanstead Beauty, a charming variety, with large finely-formed flowers of a bright rosy red colour, the centre pale yellow; Magnet, effective, and bearing neat trusses of bright scarlet hue; Robusta, an excellent variety, bearing medium-sized salmon-red flowers; Sulphurea, a charming variety, the flowers large and finely formed, the colour sulphur-yellow tinted rose, especially valuable for its distinct shade of colour; Vivid, a desirable variety, the flowers of good form, the trusses of medium size, and the colour bright orange red; Mdlle. Marie Van Houtte, Mdlle. Marie Reimers, and others of the best of the Continental varieties are flowering, and contribute their share to the attraction of the collection, although not equal to the most recent of the varieties introduced by the firm.



CLIVIAS AT FOREST HILL. Group of named varieties in the nurseries of Messrs. John Laing and Son.

Caladiums have long formed a special feature of these nurseries, and the structure devoted to them is from early in the spring until the autumn one of the principal centres of attraction to those who fully appreciate the exquisite leaf tints of these handsome arads. The development which the caladiums have undergone during the past twenty years is simply marvellous. The plants have been improved in habit, the leaves increased in size, and the colours have materially increased in effectiveness. This improvement is rendered very apparent in such a comprehensive collection as this, for whilst all the finer forms have a place in it many of the old varieties have to be grown to meet the demand which still exists for them, although long since superseded. A brief reference to a few of the finest forms may perhaps be useful to cultivators, more particularly to those who have but few opportunities for becoming acquainted with the more recently introduced kinds. Especially noteworthy amongst those of the current season are Comtesse F. de Lesseps, a robust variety with large leaves, bright rosy red, veined with crimson and edged with green; Mrs. Harry Veitch, brilliant red with deep red veins, very effective in all stages; Marquis F. d'Albertas, leaves large, silvery white, spotted with rose and margined with green; Gabriel Legros, silvery white, marked with green along the the ribs; J. H. Laing, leaves large, silvery white, suffused rose-pink and veined with rose-carmine. Especially good amongst the varieties introduced previous to the current season are Anna de Condeixa, rose, marked with carmine along the ribs and margined with green; Aurore Boreale, leaves very large dark red, marked with bronzy-green blotches, and veined carmine red; Baron James de Rothschild, leaves large pale rose, veined red; Candidum, pure white, veined emerald green, very fine; Charlemagne, rosy-red, veined crimson; Comte de Germiny, rose-red, with deep red veins, and white flakes; Gaze de Paris, leaves white and translucent; L'Automne, creamy white with rose spots, leaves large, useful for contrasting with those having high-coloured leafage; Leopold Robert, leaves large, rose, with carmine-red ribs and green margin; Le Titien, bright red, veined lake, and margined with green; Mithridate, leaves large, crimson lake, with bronzy-green margin; M. d'Halloy, pale rose, veined carmine; Raymond Lemoinier, carmine-red, with white margin; Souvenir de Madame Bernard, bright red, spotted green and white and margined green. It may be added that all the foregoing are specially adapted for specimens.

Begonias are now flowering freely, and some remarkably beautiful varieties are already in bloom, but the greatest interest, perhaps, centres in the myriads of seedlings which are now keeping a large staff of men busily employed, and serve to show the great popularity of the begonias.

Orchid Houses are gay with cattleyas, odontoglossums, dendrobiums, cypripediums, oncidiums, lycastes, masdevallias, and amongst those in flower are many that well deserve special mention, but for the present they must remain unnoticed.

Property in Trees on the Land of Another is the subject of an essay in the Journal of the Anthropological Institute. The author, Mr, Hyde Clarke, treats the subject historically, and traces the rights that have obtained recognition to the existence of a curious custom in Asia Minor.

House, Garden, and Bee House.

PLANTS IN FLOWER.

Orchids.—Ædes Fieldingi; Cattleya Mossiæ; Dendrobium chrysanthum; D. Deari, D. Dalhousianum, D. Densiflorum album, D. fimbriatum, D. fimbriatum oculatum, D. lituiflorum, D. Pierardi latifolium, D. primulinum, D. Wallichianum; Epidendrum bicornutum, E. macrochilum, E. macrochilum roseum; Odontoglossum Alexandræ, O. Pescatorei; Oncidium ampliatum majus, O. sarcodes, O. sessile; Phalænopsis Schilleriana, P. Stuartiana; Saccolabium miniatum; Vanda insignis, V. suavis.

THE HOUSE.

Cage birds of all kinds should now enjoy plenty of air without exposure to draughts, and have fairly abundant supplies of green food. When it can be done with safety, they may now be placed out of doors for a short time during the forenoon of fine days with considerable benefit to their health. A sunny position should be selected and the precaution taken to place the cages beyond the reach of cats, for even if the birds are not attacked they are so frightened when the cats come within a short distance of the cage that they do not quickly recover, and occasionally an attack of epilepsy results. More especially is this the case with canaries, which, by the way, are usually so timid that the cages should be moved and the birds handled with great care. The supply of green food must be abundant without being excessive, and chickweed, groundsel, and the tender tops of watercress may be mentioned as specially suitable for this season of the year. Most birds have also a decided partiality for lettuce leaves, particularly those that have not been tied up or subjected to any other blanching process.

CONSERVATORY AND GREENHOUSE.

Azaleas that are out of bloom must be encouraged to grow freely by being placed in a structure in which they will have the assistance of a brisk temperature and moist atmosphere. Give weak liquid manure to old plants that have filled their pots with roots, and shade during midday. Any pruning needed should be done at once, to bring the plants into shape for next year. Taken at the right moment—that is, just as they are about to break into new growth—Indian azaleas may be very hard pruned, if required to give them any desirable form. At the same time it will be well to turn them out, reduce the ball, and repot in smaller pots with peat and turfy loam as firmly as possible. Shut them up with a moderate bottom-heat and syringe frequently; but give very little water at the root till they start away; then give plenty of water, and keep growing till the points show the formation of bloom-buds; then harden off, and in due time put them out of doors to ripen the wood.

Calceolarias for exhibition must now have abundance of water, and be shaded during midday; as the trusses rise give very weak liquid manure twice a week. Keep the plants cool and airy, and tie in time to keep them from getting out of shape.

Fuchsias not yet repotted must be attended to quickly. Large shifts suit these admirably. Those advancing to bloom must be frequently looked over to keep down vermin, and have plenty of moisture.

Ferns in pots require annually either a shift or renewal of the soil. In either case turn them out, and break away some of the old stuff from the outside of the ball, and repot either in the same or larger pots, using good turfy loam for all strong growing kinds, and those that must have peat to have the best peat in rough lumps. Ferns are too often starved, owing to the common but erroneous notion that a poor sandy peat is sufficient for them, which is a mistake.

STOVE AND ORCHID HOUSE.

Orchid House.—While we have brilliant sunshine with east wind great care is requisite in regard to shading and air-giving in the orchid house. Remove the shading as early in the afternoon as circumstances will allow, so that, in fact, there will be some amount of actual sunshine on the house at the time of shutting up. Damping of walls, floors, and stages must be assiduously attended to, and plants growing freely must have water enough.

Stove Plants recently potted to be kept on a good bottom heat. Shift gesnerias, gloxinias, clerodendrons, and other fast-growing plants. Justicias out of bloom to be potted in peat, rotten dung, and loamy turf, equal parts. As fast as plants come into bloom remove them to a cooler atmosphere. There must be no crowding in the stove now. Whatever can be propagated now will be better done than in autumn, as the young plants will have a long growing season before them to fill their pots with roots.

FORCING AND FRUIT HOUSES.

Melons to be kept regular in growth, and the vines some distance apart, to ensure a healthy leaf development. Plenty of sun and moderate watering are essentials of success. As soon as the crop is set soak the bed with tepid liquid manure, and continue syringing until the fruit is fully formed, then discontinue it.

Pines showing fruit to have clear liquid manure given warm and weak. Syringe to be used before shutting up. After they have been shut up for an hour at 85 deg. give a little air before night, but cautiously, for fear of a chill. As soon as the fruit shows colour discontinue the syringing, and give very little water at the root. Succession plants to be kept liberally ventilated to induce a robust growth.

Orchard House.—Trees in pots must have plenty of water and plenty of air. A free circulation of air through the house will do them good, and it will be a help to shut up with a little sun heat. If this house is now crowded with all sorts of odds and ends that have been brought in through the overcrowded state of other houses, it must be cleared at once, or it is possible that the crop will be materially injured, for the trees must have air and light. The crowding of fruit houses with plants that have no right to a place in them is most objectionable.

FLOWER GARDEN AND PLEASURE GROUNDS.

Annuals will require thinning out, and the straggling kinds will be the better for topping. There are very few who know all that may be done with annuals by giving them a rich soil, plenty of room, and occasionally pinching out the points of the leading shoots.

Flower Beds that are unoccupied are supposed to be turned once or twice during winter, and to be manured if necessary in spring. Supposing them to have had such proper attention, now is the time to turn the soil once more and break the clods and make all tidy. But beware of making the ground over fine.

KITCHEN GARDEN AND FRAME GROUND.

Cucumbers in frames may be kept going now by linings of grass mowings mixed with dry straw and other such waste.

Parsley.—Sow thinly on a rich border, and cover the drills with tiles or stones for about ten days; then remove the covering, and the parsley will be found peeping through. This plan hastens the germination of the seed, which is generally very slow.

Kidney Beans may be sown in the open ground now; sow also a few in pots, to make good any that miss in the rows. Sow also in pots or pans sufficient seeds of scarlet runners for a first planting, to give an early supply. They will be a fortnight earlier in fruit than those sown in the open ground next week.

BEE HOUSE AND COMING SWARMS.

As swarms may be expected from the strongest stocks in a short time hence, it will be necessary to take advantage of an early opportunity for overhauling the stock of empty hives, and thoroughly cleansing all that have been used before, repairing such as require it, and making additions, by purchase or otherwise, if the number of hives available is not likely to be equal to the requirements. Previous to making purchases it will be well for the bee-keeper to take into consideration the characteristics of the several hives now in use, and determine, so far as it is practicable to do so, which is the form best adapted to the end he has in view. To settle this point is not particularly easy, more especially by those whose experience has been chiefly confined to the old straw skeps. There are now a very large number of hives in the market, but, practically speaking, they may be divided into three groups, namely, the straw skeps, the Stewarton, and the Woodbury, and most of those now manufactured are modifications of the Woodbury hive, which, taking all things into consideration, is unquestionably the most generally useful. There is no form of hive that is so simply managed or is so cheap as the straw skep, but it is practically impossible to obtain the same bulk of honey from it in a saleable form as from a bar-frame hive in the hands of a skilful apiarian, other things being equal. English bee-keepers have hitherto attached too much importance to the production of huge hives and large supers of honey, and have entirely lost sight of the fact that honey in the comb and in small quantities would realise a far higher price than when in bulk, whether in the comb or run, and moreover by having the honeycomb in a portable form it is possible to commence the sale or consumption of honey early in the summer, instead of being compelled to wait until quite the end before taking advantage of the labours of the bees. The Woodbury hive affords facilities for taking the honey at a very early date, and in quantities proportionate to the requirements, and in favourable seasons the combs may, with the aid of the extractor, be emptied of honey as soon as the cells are filled, and then be replaced in the hives for the bees to fill again.

REVISION AND CLASSIFICATION OF PICOTEE CLASSES.

By Rev. F. D. Horner and E. S. Dodwell, Esq.

Mr. Horner to Mr. Dodwell.

Many thanks for your leaflet of March 3 on the "Revision and Redivision of the Picotee Classes in Single Blooms." At present, there is to the medium edge, no *locus standi*, except among the heavies, where it is practically a weaker vessel—a light heavy, so to say—and, therefore, of short weight. As things are, we cannot give this style of picotee its fair expression, and so I think the main divisions in single blooms might well and happily be heavy, medium, and light. But I would certainly, by no means whatever, run all the edge colours together. It would, I think, be too much centralization; and single blooms, classed only by depth of edge, would be unwieldy, perplexing masses, incapable of sufficient gradation and recognition in awards, except by some such inordinate length of class prizes, that all attempts at comprehending the magnitude of the prizes at planetary distances from the first, would be vain. The colours of the edges are great natural divisions, forming very easy bases of distinction on the whole. Some tints, indeed, so verge and merge that two descriptive names are better than one—*e.g.*, "rose or salmon edge"—but this, I think, would be less confusing than mixing up one type of marginal breadth in a "compôte" of all the colours that edges come. I think that your resting "division upon the breadth of the marginal colour" would rather give scope for, than put restriction upon, "the preference of individuals for particular shades of colour." In a mixture of all the colours in a class constituted alone by depth of edge, there would simply be the fullest opportunity for a judge to side with his favourite edge colour. Whereas, with each type of colour separate in its own type of depth in edge, there is none but the safe choice of "Hobson" possible, so far as colour goes. If we get a new colour—say, blue (!)—let us have heavy, medium, and light-edged blues if they arise. I do not take you for one to be frightened by the "'arf-a-brick" charges of exclusivism heaved at us as florists. Never mind what the outer critics say. What they call exclusive, we term distinctive. I think decided edge colours in picotees are more satisfying than nameless blends, just as in the auricula we disfavour the "undecided edge," and in the tulip the "rosy byblœmen," as being variably between two classes, and weak flowers in either. The ranunculus, I know, is hardly ever wrong in colours; but she has peculiar class colours in her "roans" and "olives," capable of wide classification. (I don't know how "roan-edged" picotee would sound or look!) Far am I behind you in familiarity with varieties of the picotee—past and present, new and old. But I fancy there are not many that could not be classed under the existing types of colour; and that, if these were given a triple expression by depth of edge, as heavy, medium, and light edged flowers, in purple, red, and rose edges, we could adequately classify the picotee as we have it. As for myself, I grow only more and more "hard and fast" in many florist ways. I would, and do seek new developments, and none would more warmly appreciate some new type of beauty, "on well understood intrinsic merits." Only I cannot away with un-florist forms of florist flowers, as ranking with and among florist flowers. That is the point. They are right and pretty among themselves; and in "a flower show," as generally understood, they would be a legitimate feature. But in special shows of a special society, for the development of a flower in special lines of its beauty, it seems to me to be idling with our time and space to introduce flowers that are beside the mark, or simply represent the shortcomings in our efforts. In this light they irritate my eyes as would an ill-spelt word, or a piece of execrable grammar! I fear and feel I don't quite "pan" with you and Brother Barlow on this point. Well, never mind me! I will go and be "hard and fast." It may be sterner work, but the opposite would be more melancholy to me, even from the impression I have never forgotten of seeing an old florist so enamoured and lost amid the bewilderment of keeping nearly

everything he raised, for the sake of some point of beauty, that he did not know at last when he had a bad one, and saw nothing better in the best flowers at the National Show than he had in many a hundred truly weak sorts. But here is a long yarn—let me wind it up! F. D. Horner.

March 6, 1890.

Mr. Dodwell to Mr Horner.

I am greatly obliged by your most interesting letter of the 6th; especially for the permission you gave me of using it in the interests of our common brotherhood, and as I think none of your words should be lost, I propose to ask the editors to give them to the public, with the few remarks I hope may follow. I am gratified to note your acceptance of the proposed recasting of the picotee section by marginal breadth, and I humbly trust I may truthfully aver I hold with you in its entirety the same floricultural faith. We stand one and indivisible on the same immutable law, so ably expounded by Mr. Jeans, and, happily, no longer a virtually-buried book. You do me only justice in assuming I have no fear of the clap-trap of our critics. I would bend neither to the raging "of the heathen," nor to the sometime vain imaginings of our own "people." We differ, I proudly believe, upon no cardinal point. If we seem to diverge it is not upon principle, but upon questions of expedient practice, and even upon these questions I believe wherever we could bring them to practical test we shall be found in substantial agreement. Fifty years ago, before the growers of the north and of the south had a practical knowledge of each other, there was endless controversy upon the asserted difference of the flowers and the estimates of florists in the respective districts. Well, the trial exhibitions of 1850 dissipated the illusion. Come then to our next meeting of August 5th, and I think the difficulties you anticipate in a "compote" of colours would be found to be of small relative account; less by far at least than those existing in the present system, and which threaten indefinite extension. What justification can be found for laws which shut out from class showing a bizarre-edged picotee? Form a class possibly you may say. But this cannot be relied upon to remedy the evil. It extends a system already practically unmanageable for the effective presentation of an exhibition to the outside public; of only initial value to the florist himself; and very unequal in its incidence of competition. Let me not be thought to undervalue the single bloom. All floral knowledge and floral enjoyment must begin with it, and my estimate of its importance may be inferred when I say that at the earliest time I could make occasion—the exhibitions of the Midland Horticultural Society at Derby in the forties—I gave a prize for the best carnation, and similarly for the best picotee, selected from the whole exhibition, and it was at my instance the prizes for the premier carnation and the premier picotee became part of the schedule of the National. But in the multiplication of the classes I have noted great evil. Of the seeming difference in our views of the self and fancy classes I need scarcely speak. Of course we recognize the fact that both self and fancy occupy relatively a lower place than the Bizarre and Flake and picotee. But I feel sure we shall equally agree the life of the carnation cannot be fully illustrated without their recognition. And though, for all the higher enjoyment of the florist, the self and the fancy stand on the lower level, yet for some purposes, mainly those of import to the outside public, they have a very definite and important use. And this brings me to consider the question—What should be our attitude to the general public? Of course we give no regard to the caprices or excesses of mere fashion. They come and go, and are not. But I think with our good friend Hibberd, as expressed at our luncheon table, "Florists have an important duty to see that the public have the best in their several classes," therefore we lose no dignity if, for the nonce, we step down from our higher level to consider these lesser things, and as we are firm believers in the importance of comparison, these lesser things fitly occupy a place upon our exhibition tables. I have no thought of restricting the "legitimate" preferences of taste. Let the judge, if he thinks well, prefer his purple, his pink, his rose, or his red; well-defined and well understood intrinsic merits being equal, his choice may well come in. But I do not anticipate practical difficulty in this. We find no difficulty in determining the premier flower from the whole exhibition, whether red, or rose, or purple, and I should be surprised to find any difficulty in deciding the merit respectively of a broad-edged purple, or rose, or red. On the other hand, an extension of the classes is, in the case of the "Union" at least, impossible. We haven't space. But if we had, I should be as stiffly opposed to such a solution of the difficulty. We now have eight divisions of hues or tints of colours. Last year we had six only. But it is said in the rose, or salmon, or scarlet edge, Mrs. Sharp is distinct from Mrs. Payne, from Edith d'Ombrain or Royal Visit, so a separate class is set up. The distinctiveness is unquestionable, but if distinctiveness of hue is to govern, what reason can prevent the separating into classes of the imperial purple of Amy Robsart and the soft lilac-purple of Mrs. Chancellor? And so for the marone-reds and the cherry-reds? Where would it end? And if three subdivisions be sufficient respectively for bizarres and flakes, why should not a similar number suffice for the picotee? This is no new subject to me. It has filled many an hour of thought in many a year of my life, and I embodied, generally speaking its outcome in the note attached to the yellow-ground special prizes, "the judges are instructed to award these prizes to the *best and most effective flowers.*" That instruction was the best I knew how to give. What could call more alike upon exhibitors and judges to make a wise and intelligent selection? And I desire, above all things, at all times to stimulate and be stimulated to the exercise of intelligence. I know no better way whereby I can adequately express my sense of the great favour and sympathy which has been given me in these my later days. Hoping, dear Mr. Horner, that you will be with us at our next meeting, and that there may be no gap in our circle of friends, with every kindly wish, I am, faithfully yours,

E. S. Dodwell.

P.S.—There is yet one other point—the question of £. s. d. Extension of classes means, of course, extension of prizes. Who shall provide the means? This is a subject which ought to be borne in mind, and, above all, we should be careful that the strong should not be given an advantage over the weak. I do not think you have given full weight to this point, nor to the point that florists are bound to present their exhibitions effectively to the public. Again and again in my experience we have been overwhelmed with the number of single blooms, and the litter and confusion incident to their production. To put exhibitors upon an equality, it should be one man one flower in each class. As regards means, I think we have gone to the utmost limit of necessity, and if, instead of very narrow, I had unlimited means, I should not willingly offer more. Proposing to send our correspondence to the gardening papers, I return herewith your own note, so that if you desire to add thereto, you may have the means. When read, will you kindly return to me with my letter also, for I am really unable to copy it. E, S. D.

Mr. Horner to Mr. Dodwell.

Many thanks for the generous advantage of seeing your reply to my letter before publishing it. I do not know that I have much fresh to say, except that wherein we may differ, it will not be in any unkindly way. You have had but one lifelong floral attachment, and I have many; and I do not, therefore, seek to pit my acquaintance with the picotee against your mature and concentrated intimacy with it. I quite agree with you in your desire to cheer up the smaller grower, though I would hardly put it "as against the larger." We should encourage the one, and not discourage the other. It would be a pity that the small grower should be educated and scheduled to look upon the big grower as his natural enemy; or that the big grower should be ruled down and outclassed into feeling that he has no friends, and may be stamped on. The large grower, who with a large collection has also a largeness of care, anxiety, and expense, naturally looks to reaping as he has sown, in a larger recognition and reward than the small grower can reasonably expect with his lesser outlay of time and labour. In collections, or "pan"-showing, the small grower is abundantly fortified. He may sally into the big man's lines by showing upwards into any class above his mark for which he can produce the flowers; while the big man may not show down by crossing the small man's frontier. But in single bloom classes, perfectly open ground, both small and great men meet together, generally without fear, certainly without favour. I do not see how you can handicap the large grower here without being unfair to him. Handicap both, and let neither show, in any class for single blooms, more than his best two flowers. That would do away with the merciless imposition on the judges, and the great absorption of space that must come of exhibitors pushing all their spare flowers into the singles because "they may win a shilling." But however you put it, the large grower must have more power of choice, and in any arrangement this will tell, and I submit, ought to. If you have, in single blooms of picotees, the flowers classed solely by depth of edge; one huge mixed class of heavies, the same of mediums, and the like of lights, here will the large grower come down strongly, with no restriction as to edge colour, so long as the depth of edge is there. If, however, you maintain, in heavy, light, and medium edges, the well-established colour divisions, it may be that the big man shall here and there find himself spent or weak, and the small man bowl him over. I think the general effect of the single bloom classes, as now displayed, is very beautiful in the play of purple, red, and rose shades in those respective classes, while the powers of variation are seen at a glance in close comparison, which could hardly be in a motley crowd of all edges. Judging mixed edges in collections or divisions by depth of edge, and selecting the winners, is scarcely, I think, analogous to the task of finding the premier flower of a whole exhibition. The premier lies within narrow bounds. It cannot decently be outside the winning stands, or below the first prize flower in single-bloom classes. It is not likely to shine, the sole jewel in some rejected stand. Not alike easy, it seems to me, would be the filling of a long graduated prize list by assortment from materials mingled in all their mixed multitudes of edge colours. "There is no trust like trial"; but so far as I dare prophesy before I know, I think it would be more workable to keep the established classes by colour of edge, with sections in each for heavy, light, and medium, than to merge all colours upon chance of a new one breaking out, or because in the rose edged some are rose scarlet and some salmon rose. I think our attitude towards the general public (as florists, in the peculiar sense in which we are peculiar!) is to show a florist flower in—and only in—its highest florist types. I think that we have no need to exhibit our mistakes, and say—like Beau Brummel's valet, when met returning from his master's dressing-room with an armful of crumpled cravats over his arm—"These are some of our failures!" The "life" of the carnation, auricula, tulip — any florist flower in other than its florist forms – is surely a little beyond the range of our florist societies, which exist for the one definite aim of developing the flower in what are known as its florist types. I like a thing true to name, and a florist society is for the improvement of florist flowers as such. I cordially agree with you in agreeing with our friend Hibberd's remark that "Florists have have an important duty to see that the public have the best in their several classes." But not out of them! Scarcely, to have to admit to a stranger of "the public" who may admire a run carnation, or a nondescript prettiness in "fancies";—Ah, yes! but that is not relatively a flower of a high standard in this scale of beauty. This is rather the "doing" our duty in the shady sense of getting out of it. Again, as to your comparison between the three classes of bizarre and flake carnations, and the six of edged picotees—with the suggestion why there should not be only three of each—I think the edge in colour and depth marks off the picotee as distinctly as the stripes distinguish the carnation; and that "to lump" the edge colours in picotees would be analogous to lumping the carnation colours into simply bizarres and flakes. It would be the easier perhaps, for the eye that sees dimly the difference between the crimson and the pink and purple bizarre, but it would not interpret the flower fully. So, if we had picotees classed only by depth of edge, the florist would miss all the delicate distinctiveness to which he is accustomed, and feel the calculation too rough and ready. Well! You must not take me for an autocrat on the carnation or any flower. I only give you my opinion freely as you ask it. You may say of me playfully, "Ah! rather thin of petals on the picotee question!" As playfully let me gently whisper, "Don't burst your pod!" F. D. Horner.

March 26, 1890.

Mr. Dodwell to Mr. Horner.

I will add a few words only in notice of your letter of the 26th. You have done, and admirably done, that I asked for when I invited comments germane to my proposition of March 3rd. There is, I think, a little misunderstanding as to my feeling for the smaller as contrasted with the larger grower. Certainly, I desire in nothing to handicap the larger for the benefit of the smaller; I seek, as throughout our exhibitions, to establish the nearest practical approach to equality, by compelling the exhibitor to select, not contribute, in gross. Your suggestion to limit the number the exhibitor may produce in each class—which had previously reached me from more than one quarter, and which, I think, should be adopted—goes a long way towards meeting the difficulty, and will, I think, be most beneficial in practice. As regards the colours, you do not touch upon the extension of the classes already adopted by the National, or quite sympathise with me possibly in my estimate of the effect such extensions may have. Practically, I do not think a difficulty would be found to attend a competition of mixed colours. But if it be strongly urged the competition should not be of all colours and hues of colours, let us at least try to find some solid ground for division, and separate only by primary colours, say of red and its hues, rose-pink, salmon, salmon-pink, and salmon scarlet; purple and its hues, to lilac. This would give us two divisions, including every colour at present developed in the white

ground picotee, and all, I think, likely to be developed. Be that as it may, it would give us a sure starting-point at once, which the present system does not. I regret our divergence of views as to the selfs and fancies. But I cannot consent to look upon these sections as our "failures." Interpreting our laws in the strictest possible sense, I hold they are well within our lines, so I think to exclude would be a sin of the gravest magnitude. Granting we are specialists, and our shows should be special, could we illustrate the life of the carnation without these sections? Could I, because I thought there was more variety, more brilliance, more power in the bizarre, be justified in rejecting the less-gifted self or the motley, whilst these latter, for certain purposes of grouping or decorative effect, beyond dispute excel the former? Personally, of course, I might; and no man, whatever he might think of my caprice, could rightfully impose his law upon me. But in my character as chief servant to the Carnation and Picotee Union, what then? We have four hundred supporters at this time—to be five hundred, surely, before the year is out. Fifty of our friends come into line with you and I. Seven times fifty admire the carnation, and seek its use from a slightly different standpoint. Can we ignore their requirements? Ah, no. Because we are virtuous, we are not to forbid the innocent "cakes and ale"—veritable enjoyments to friends with tastes and requirements slightly varying from ours. Again repeating my hope you will be with us on August 5th, and cordially reciprocating all your kindly thought.

E. S. Dodwell.

March 28, 1890.

GARDEN FLOWERS.

The gardens are everywhere gay with wall-flowers, daisies, primroses, daffodils, saxifragas, anemones, crown imperials, hyacinths, tulips; while overhead the flowering trees, and the new golden green leafage of trees generally form a festival of colour appropriate to the promise of the spring. The weather has been peculiarly unfavourable for plants of tender constitution, but for natives to the manner born it has been quite suitable, for bright days and cold nights agree perfectly with the true alpines, and with their associates that lead the way from the hill sides to the plains.

Megaseas are in full beauty in many gardens; in others they are quite past and look much the worse for wear. We have some that are now making a grand display and they are in level moist borders, which appear to suit them much better than dry rocks where we often see them perched, looking out at elbows as though wanting a meal. *Megasea ciliata* is worthless with us and with many others, and the question arises, why grow it? For frame culture and the alpine house it is a fine plant. *M. cordifolia* is always good though variable, and in fact the varieties rank as species with specific names, the differences being but slight and chiefly confined to the colour of the flowers. It is always of bold free character with commanding roundish leaves, and flowers freely and with agreeable effect. The varieties include flowers of several shades of rosy pink, one of them a deep rich glowing rose colour called *Purpurea*, being of the greatest value, whether as a spring bedding plant or to supply cut flowers. Messrs. Smith, of Newry, have some varieties that promise well, as *Gigantea* of large growth, flowers of light rose; *Hybrida splendens*, rich in colour. We find them do best in a moist rich soil with the shade and shelter of light smallish trees. Heavy shade would be injurious and frame culture does not quite suit them; they are better in the open if safe against frost. *M. ligulata* is valuable for its earliness and cheerfulness, but often suffers from frost. This, like the others, is safer and better every way on a rich moist soil with shelter, than when seated on rocks in an exposed position. The varieties include *Alba*, pure white; *Milesii*, white with a little rosy tint on the margin of the petals; *Rubra*, rich rose; *Speciosa*, light pink; all good and forming a pretty and useful series. *M. purpurascens* has troubled many. It is occasionally seen in superb colours, rich ruby or port wine purple, but is so scarce that the question arises, what becomes of it? Well, the truth must be told; it grows to a flowering age, then flowers and gives delight, and then it dies! We will not say that this happens regularly, but certainly it happens so often that those who possess the real thing may be advised not to allow it to flower until they have secured a reasonable stock of young plants. It is easy work to make stock of all these megaseas by cutting up the rhizomes and potting the pieces in a sandy mixture and giving them careful frame culture for a year. *M. crassifolia* must be regarded as specifically identical with *M. cordifolia*. As a variety, however, it has distinctive characters and gives a range of colours from the typical rosy lilac of the common form to the rich deep colour of *Ovata* and *Rubra*. This form is as useful as any, and will prosper under the treatment we recommend. In very many gardens they are but ugly lumps because placed in positions that do not suit them. *M. Stracheyi* is a superb thing not far removed from *M. ciliata*, and like it requiring shelter to ensure a good bloom. The colouring is delicate and delightful.

Primulas abound, and the alpine house can justify itself by the kindly shelter it affords them and the comfort it affords their admirers, who, like the flowers have no particular love of the east wind. *Primula Sieboldi* in glorious varieties serves for the big furniture of the house in the shape of noble specimens carrying gay flowers in prodigal profusion. We have at this time specimens with heads two feet over of *Lilacina*, *Lavender Queen*, *Mauve Beauty*, *Cærulea*, *Fimbriata*, *Vincæflora*, and a dozen more in perfect condition, the result of using a porous soil with perfect drainage and liberal supplies of water with weak liquid manure from the time the flowers appear, keeping the plants in frames and pits until they are in a fit state for the show-house where they do better without heat than with it. This primula is quite unfit for the open air near London, or indeed anywhere in the east of England.

It is a sudden transition to the minor primulas of the mountains which readily group themselves in classes of which one group may be represented by P. auricula; another by P. verticillata; another by P. denticulata, and the rest run together in a similar manner by their obvious affinities. The names of a few of the beauties now in perfection with us will interest some of our readers. *P. auricula* in its proper form with mealy leaves and yellow flowers is as gay and as pleasing as any. *P. Heeri* is of dwarf habit with green leaves and beautiful rosy purple flowers. *P. alpina* makes a delicious tuft of green leaves, overspread with neat purple flowers. *P. Eschuri*, flowers small, dull purple with yellowish centre, scarcely pleasing. *P. calycina*, dwarf plant with superbly beautiful purple flowers. *P. Kitaibalana*, very dwarf, leaves grass green, flowers in short tufts of threes, deep purple. *P. pubescens*, red, and *P. nivea*, white; *P. farinosa*, *P. Fortunei*, *P. denticulata*, *P. erosa*, *P. capitata* are shades and shadows of each other, though in themselves distinct and individually interesting. There is an especial pleasure in arranging all together on the stage for comparison, more especially when the geographical locations can be defined in connection with their distinctive characters. One of the prettiest curiosities in this group is *Farinosa v. stricta*, a very dwarf plant, the flowers deep ruby tinted purple. *Primula verticillata* is the "Abyssinian Primrose" *P. involucrata* of B. M. 2842. The beautiful long-tubed yellow flowers are borne in whorls as are those of P. Japonica and P. nivalis. *P. floribunda* is flowering now in better colour than the flowers have in summer.

Saxifraga will presently withdraw from the competition, for most of the species have made their last effort for the season, and their business will be to prepare for the next season. We have still good examples of *S. oppositifolia*, *S. Burseriana*, *S. Sancta*, *S. Lindleyana* and half-a-dozen others. The last named is not much known; it is of close tufted growth, vivid green with patches of red; the flowers many, smallish, pure white. *S. Rocheliana* is one of the little beauties that exactly suit the alpine house, and are not quite so happy in the open rockery except when the air is pure. It forms close sedum-like tufts, the little leafy rosettes margined with white which consists of a kind of efflorescence of carbonate of lime; the flowers are produced in threes, they are large for the plant, and pure white. *S. aretoides* forms a fine specimen in a pan; it is one of the smallest with leaves in close sedum-like tufts of a deep grey colour, the flowers golden yellow on stems only one inch high. This gem takes kindly to the open rockery and likes a moist sheltered spot and to be kept safe against intruding plants that would overrun it if allowed. *S. stenoglossa* has but little beauty and yet is worth a place in every good collection. It may be likened to a cerastium; its habit is to throw out side branches in a regular manner and to bear terminal clusters of inconspicuous white flowers.

Dog's Tooth Violets.—*Erythronium giganteum* is in perfection in the open rockery, and is the best of its genus. Give it a peat bed in a sheltered spot, and it will need no more care but to be protected against encroachments. *E. grandiflorum* is, of course, worth a place with it, though differing but little, and *E. dens canis* must be reckoned one of the first desiderata of any good rockery. We have *E. Smithi*, a quite middling thing, and a dozen more, but they lose sadly by comparison with the first in the list.

Fritillarias are as interesting as they are beautiful, and as for beauty the least attractive forms of *F. Meleagris* with their curious colours are as pleasing as any. *F. armena* is a sweet gem with yellow flowers. *F. aurea* is more showy, the plant bold in habit, the solitary flowers yellow striped brown. Finer than than either of these is *F. Moggridgei*. It is quite hardy and a true alpine, the flowers rich yellow, with shades of brownish crimson. And yet finer perhaps is *F. pudica*, a perfect gem when its golden flowers come in a cloud on the turf in a nook that has been made for it. And shall we continue to ascend in the scale of merit? Why not? Well, seek out *F. recurva*, when its rich red flowers are at their best, and you will at least have a plant that will please, and you can then re-arrange them in the order of merit according to your own estimate. The last plant is difficult to do, and if you do not give your mind to its peculiar requirements you may expect to lose it. We can only manage it as a frame plant, and even at that, find it troublesome.

Whitlow Grass is the old English name of *Draba azoides*, a pretty little thing with yellow flowers. *D. lasiocarpa* is a good companion for it. There are half-a-dozen more at the command of those who want them. They are like tufts of green moss with yellow flowers spread over them. As we cannot keep them in the open rockery, we are compelled to grow them in pans in frames. Their enemy in London is winter damp.

Daffodils are passing away, but we have yet to come a few of the Poet's and the magnificent double or Gardenia daffodil. For the effective display of these flowers, The Mount, near the Cumberland Gate at Kew, has taught a grand lesson. Lately, in looking round there we seem to have learned another lesson. We have never been able to keep the corbularias in the open border beyond two or three years, for they grow too early in the spring, and the frequent destruction of their leaves by frost so weakens the bulbs that they rarely live beyond the second season, but the third appears to be their extreme limit of life in full exposure. But in a border of some fifty yards length at Kew, corbularias are now in flower and look well. Have they learned the secret of doing them, or are they so rich in basket daffodils as to be able to afford the loss of a few thousands? Though in this long border the flowers are plentiful, its appearance is not particularly pleasing. The cultivation we have many times described in Gardeners' Magazine appears not to be anywhere superseded, and now we shall have to keep a look out to see if Kew has solved the problem of planting out to advantage, this best of the daffodils for the alpine house.

Trilliums obtain but partial recognition, although the noble *T. grandiflorum* is not the only good species for cultivation. There are at least half-a-dozen worthy of attention, and all are amenable to the treatment that suits the great white-flowered beauty. One of the prettiest of the smaller kinds is *T. fœtidum* with neat flowers of a rich reddish brown colour. The name need not alarm one, for it has no such odour as to be unpleasant. *T. sessile* is a good species and *T. atropurpureum* has some merit.

Dielytras may pass as Dicentras, and the lively *D. spectabilis* will keep the lead it has long enjoyed as one of the best of our hardy spring flowers, the one grave defect of which is that it is not hardy. Wherever it can grow before the weather is suitable to its tender nature, grow it will, only to be killed back and crippled for the season. But when the shelter is sufficient and the soil deep and moist, there is nothing in the English flower garden that can surpass it for distinctive beauty. The great service an alpine house renders is to ensure safety to such plants without the injury that often results from artificial conditions, and while it does this for the plants, it secures safety and comfort for their admirers who under the glass roof may enjoy at leisure what in the open ground might often be seen only in a hasty glance; and at many a critical moment when things were less worth seeing the weather would decree they should not be seen at all. For the alpine house *D. canadensis* is one of the sweetest plants known; its leaves are a study for the lace designer and the decorative artist, and the white flowers are exquisitely simple and pleasing. *D. eximia* does not need the aid of glass, and though one of the most brilliant in leaf and flower of all our hardy plants, with the grace of a fern combined, it does not make a good house plant, though for the border and rockery first rate. *D. cucullaria* is interesting, perhaps grotesque, but not of great consequence.

Corydalis contributes to the spring garland a few plants of great beauty that have a fine faculty for taking care of themselves. *C. bracteata* is a perfect gem for leafage and pale yellow flowers of most elegant form. As a pot plant it is perfect. *C. Ledebouriana* is another, hardy enough for the open rockery, though quite suitable for the alpine house. The peculiar glaucous colour of the leafage is a special attraction, the flowers are rich vinous purple. *C. solida* and *C. nobilis* make a fine pair for the rockery, and it is not usual to give them frame culture, though they are quite worth it in places where the conditions of out-door life are too hard for them, as happens in many places northward where coal smoke prevails.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, April 22.

Floral Committee.

Present: William Marshall, Esq., in the chair; the Rev. H. H. D'Ombrain, and Messrs. Shirley Hibberd, H. Herbst, Bruce Findlay, E. Molyneux, J. Walker, F. W. Burbidge, F. Ross, W. C. Leach, H. B. May, C. T. Druery, T. Baines, C. Noble, H. Cannell, G. Paul, J. Fraser, W. Holmes, and G. Nicholson.

The contributions to the meeting of the Floral Committee were numerous, and in conjunction with the orchids and the auriculas, polyanthuses and primroses staged in competition for the prizes offered by the National Auricula Society formed a very attractive exhibition. One of the most important of the contributions was the magnificent collection of varieties of Primula Sieboldi from Messrs. Ryder and Son, Sale, to whom the silver-gilt Banksian medal was awarded. The collection consisted of about forty baskets of well-flowered plants, set in a groundwork of ferns, and included the finest of the many beautiful varieties raised by the firm. Chief amongst the varieties were Bruce Findlay, Mrs. Ryder, Beauty of Sale, Rosy Morn, Mrs. F. S. Woodward, Nymph, and Distinction. Messrs. H. Lane and Son, Great Berkhampstead, exhibited a large group of well-flowered rhododendrons, and the bronze Banksian medal was awarded the firm. A medal of like value was awarded to Messrs. J. Veitch and Son, Chelsea, for well-flowered examples of Staphylea colchica and Azalea rosæflora.

Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, exhibited a large and beautiful group of flowering plants, and were awarded the silver Banksian medal. Especially good were the amaryllis and clivias, which now form such strong features at the Victoria and Paradise Nurseries. Rhododendron Williamsi, of which several admirably-flowered examples were shown, was remarkable both for its interest and beauty, and fully deserved the recognition it received at the hands of the committee. Mr. W. B. May, Dyson's Lane, Edmonton, staged a bank of ferns, and was awarded the silver Banksian medal. Messrs. Barr and Son, 12, King Street, Covent Garden, contributed as usual a large and tastefully arranged collection of daffodils and miscellaneous spring flowers. Mr. Gilbert and Mr. T. Burroughs sent large gatherings of anemone flowers, and were awarded votes of thanks. Hardy flowers were admirably shown by Messrs. Paul and Son, Cheshunt, who also received the compliment of a vote of thanks. From the Royal Gardens, Kew, came an interesting collection of cut flowers, in which was a finely-developed bloom of the comparatively rare and remarkably handsome Aristolochia Goldieana, several spikes of Echium callithyrsum, now flowering freely in the temperate house, and racemes of Amherstia nobilis, seldom seen in bloom in this country. Two boxes of superb blooms of Marechal Niel rose were shown by Mr. J. Walker, Thame, Oxon, to whom a cultural commendation was voted. A well-fruited specimen of Ochna multiflora was exhibited, and was by no means the least interesting of the numerous objects staged.

Orchid Committee.

Present: T. B. Haywood, Esq., in the chair; Dr. Masters, J. O'Brien, A. H. Smee, S. Courtauld, F. Moore, Lewis Castle, H. Williams, E. Hill, J. Dominy, H. Ballantine, H. M. Pollett, F. Sander, De B. Crawshay, and J. Douglas.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, contributed a splendidly-developed raceme of Phalænopsis grandiflora, an example of Dendrobium sulcatum, a yellow-flowered species of dwarf growth, and a well-bloomed specimen of Oncidium phymatochilum, a distinct species remarkable alike for its elegance and beauty. Messrs. J. Veitch and Sons, Chelsea, exhibited a hybrid lady's slipper, bearing a striking resemblance to Cypripedium villosum, which was one of the parents, and Cattleya calummata, a beautiful hybrid between C. Aclandiæ and C. intermedia, the flowers are of medium size, the sepals and petals blush, profusely spotted with rose purple, and the labellum amethyst-purple. Mr. Cullinmore, gardener to S. Cooke, Esq., Kingston Hill, staged nicely-flowered examples of Odontoglossum nebulosum, and other good kinds. Mr. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallingford, contributed fine specimens of Dendrobium thyrsiflorum, and Odontoglossum triumphans. Mr. Cummins also submitted a very distinct form of the last-named species, for which he was granted a first class certificate. Mr. F. Lee, Lyndford Hall, Mundford, submitted several racemes of flowers of Cymbidium chloranthum, an interesting species with small green flowers.

Fruit Committee.

Present: Sir Charles W. Strickland, Bart., in the chair; and Messrs. T. J. Saltmarsh, P. Crowley, R. D. Blackmore, T. F. Rivers, G. Cliffe, J. Cheal, G. W. Cummins, A. Pearson, G. Bunyard, J. Wright, J. Smith, G. Wythes, J. Hudson, F. Q. Lane, H. Balderson, A. Watkins, D. Thomson, and J. Willard.

The most important of the contributions to the Fruit Committee was the large collection of apples from Messrs. J. Cheal and Son, Crawley, Sussex, to whom the award of the silver Banksian medal was awarded. The collection consisted of about twenty dishes of apples all of which were in excellent condition for so late in the season. Mr. Wythes, The Gardens, Syon House, Brentford, sent good dishes of President and Keen's Seedling strawberries, and a promising seedling described as having been raised from the last named. Mr. Baylor, Hartland, Cork, sent under the name of April Queen, a broccoli, producing large solid heads of excellent colour.

Novelties.

First-class certificates were granted as under:—

To A. H. Smee, Esq., for

Odontoglossum triumphans aureum.—A distinct and handsome variety; the flowers similar in size and form to those of the type; the sepals and petals rich golden yellow marbled with green, the labellum bright yellow margined with white.

To Baron Schroder, The Dell, Egham, for

Cattleya Lawrenceana Vincki.—A form of this well-known species, remarkable more for its distinct colouring than for its beauty. The flowers of average size, the sepals and petals blush lightly suffused with dull purple, the labellum dull purple-slate.

Awards of merit were made

To Messrs. Garaway and Co., Bristol, for

Mignonette, Garaway's Double White Improved.—An excellent strain, producing large spikes of pure white flowers, and of much value for decorative purposes generally.

To Mr. H. B. May, Edmonton, for

Nephrolepis exaltata plumosa.—A distinct variety, with elegantly crested fronds.

To Messrs. B. S. Williams and Son, for

Rhododendron Williamsi.—A beautiful hybrid, obtained from a cross between Rhododendron arboreum and Azalea sinensis. The growth is neat, the trusses of medium size, and the flowers are campanulate in form, and of a pale blush colour.

To Messrs. Ryder and Son, Sale, for the undermentioned varieties of Primula Sieboldi:—

Bruce Findlay.—A beautiful variety, with large, finely-formed flowers of bright blue colour.

Distinction.—A charming variety; the flowers of average size and high quality, the colour deep rose.

To G. F. Wilson, Esq., Heatherbank, Weybridge, for

Primrose Red Gauntlet.—A distinct variety, the flowers of large size, the colour rich purple-blue with bright red band round the yellow centre.

To Rev. G. H. Engleheart, for

Narcissus George Engleheart.—An interesting variety raised from a cross effected between Bazelman major and N. poeticus ornatus. The flowers were similar in size and form to the last-named, the perianth paper-white and the cup pale yellow with bright yellow margin.

To G. W. Palmer, Esq., Elmhurst, Reading, for

Odontoglossum Pescatorei Mrs. G. W. Palmer.—A beautiful variety, with large, finely-formed flowers spotted and blotched with bright purple.

To G. Le Doux, Esq., East Moulsey, for

Odontogtossum vexillarium, Le Doux's Variety.—A handsome form, with flowers of immense size, the petals and sepals bright rose pink, and the labellum white.

NATIONAL AURICULA SOCIETY.

Annual Exhibition, April 22.

The annual exhibition of the southern section of the National Auricula Society was held at Westminster, on Tuesday, in conjunction with the meeting of the Royal Horticultural Society, and was a splendid success. Auriculas and polyanthuses were staged in larger numbers than at any previous exhibition, and the quality of both was considerably higher. Fancy polyanthuses and primroses were staged in considerable numbers, and their bright colours secured for them a full share of attention, but the species of primulas were less numerous than on some previous occasions, and, with but few exceptions, were not remarkable for the cultural skill that had been brought to bear upon them.

Show Auriculas were admirably shown throughout, and the competition was exceptionally brisk, more particularly in the smaller classes. There were four entries in the class for twelve, which in some respects is the most important in the schedule, and in this the post of honour was occupied by the Rev. F. D. Horner, Kirkby Lonsdale, with remarkably fine examples of Horner's Favourite, a beautiful violet self; Horner's Atalanta, Horner's Desdemona, Simonite's Rev. F. D. Horner, a fine green edge, selected as the premier flower in the exhibition; Horner's Iris, Horner's Magpie, Headly's George Lightbody, Horner's Monarch, Horner's Melanie, Horner's Snowdrift, Horner's Laura, and Woodhead's Rachel. Mr. T. E. Henwood, Hamilton Place, Reading, was a good second, with a collection in which the flower trusses were neat and well finished. The varieties were: Horner's Monarch, Woodhead's George Rudd, Woodhead's Black Bess, Douglas's Dr. Kidd, Simonite's Rev. F. D. Horner, Douglas's Mrs. Moore, Woodhead's Rachel, Barlow's Mrs. Potts, and Lancashire's Lancashire Hero. Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, was third, and Mr. A. J. Sanders, gardener to Viscountess Chilton, Brookham Lodge, Cobham, fourth. There were four entries also in the class for six, and here Henwood was first with admirable specimens of Mellor's Reliance, Horner's Heroine, Simonite's Rev. F. D. Horner, Headly's George Lightbody, Woodhead's Mrs. Dodwell, and Barlow's Mrs. Potts. Mr. J. Douglas was a good second, with Douglas's Mabel, Douglas's Conservative, Traill's Prince of Green Edges, Read's Acme, Simonite's Rev. F. D. Horner, and Horner's Heroine. Rev. F. D. Horner and Mr. Sanders were third and fourth respectively, with capital collections.

There were ten competitors in the class for four, from which exhibitors of six and twelve were excluded. Here Mr. C. Phillips, Reading, was first with excellent examples of Simonite's Rev. F. D. Horner, Headly's George Lightbody, Douglas's Dr. Kidd, and Barlow's Mrs. Potts; Mr. G. W. Wheelwright, Oxford Road, Reading, followed closely for second place with Reade's Acme, Traill's Prince of Green Edges, Simonite's Heather Bell, and Barlow's Mrs. Potts; Mr. Badcock, 175, Oxford Road, Reading, was third; Mr. W. L. Walker, Dunollie, Reading, fourth; Mr. P. J. Worsley, Rodney Lodge, Clifton, Bristol, fifth; and Mr. J. Keen, Bevois Town, Southampton, sixth. The entries were also very numerous in the class for pairs, and the premier award was made in favour of Mr. C. Phillips, who had Headly's George Lightbody and Barlow's Mrs. Potts in capital condition; Mr. Wheelwright was second with Simonite's Rev. F. D. Horner and Barlow's Mrs. A. Potts; Mr. S. Barlow, Stakehill House, Castleton, was a close third; and Mr. Walker and Mr. Badcock, Oxford Road, Reading, were fourth and fifth respectively.

Single Specimens of the show auriculas were well shown, but in consequence of the system which obtains, it was only by a comparison of the tallies, the make of the pots, and the style of growth that the ownership of the plants in the several specimen classes could be determined. In the green edge class Rev. F. D. Horner was first with Horner's Emerald and seventh with Horner's Monarch, Mr. Wheelwright second with Leigh's Colonel Taylor, Mr. Phillips third with Lancashire's Lancashire Hero, Mr. Douglas fourth with Horner's Heroine and eighth with Simonite's Talisman, and Mr. Henwood fifth with Simonite's Rev. F. D. Horner. Grey edge: Mr. Wheelwright first with Douglas's Mabel and fourth with Lancashire's Lancashire Hero, Mr. J. Douglas second, Mr. Henwood third, and Rev. F. D. Horner fifth with Headly's George Lightbody, and Mr. Phillips was sixth and Mr. Walker seventh with Douglas's Marmion. White edge: Mr. Sander first and second and Mr. Badcock eighth with Douglas's Conservative, Mr. Douglas third and fourth and Mr. Phillips sixth and seventh with Read's Acme, and Rev. F. D. Horner fifth. Selfs: Mr. Henwood first with Barlow's Mrs. Potts and fourth with Mellor's Black Bess, Rev. F. D. Horner second and third with Horner's Heroine, Mr. Badcock fifth with C. J. Perry, Mr. Phillips sixth and seventh with Mellor's Black Bess, and the eighth prize was awarded for Topsy.

Premier Auricula was the remarkably fine specimen of Simonite's Rev.

F. D. Horner, a valuable green edge flower, shown by the Rev. F. D. Horner in his first prize twelve.

Fancy Auriculas were represented by several good collections, but as they had a place in one of the darkest corners of the hall, their colours did not appear to advantage. Mr. J. Douglas was first with an excellent collection, consisting of Bolton's Innocence, Douglas's Rasselas, Douglas's Belle, and seedlings. Mr. S. Barlow was a very close second, and Mr. R. Dean, Ealing, a close third.

Alpine Auriculas were shown in large numbers, and their rich colours produced an effective display. Mr. T. E. Henwood had the premier award made in his favour in the class for twelve, with well developed specimens of Edith, Charles Turner, Mungo McGeorge, Sunrise, Mrs. Blackburn, Philip Frost, Defiance, Horner, and seedlings. Mr. C. Turner was second, with Charles Phillips, Sunrise, Wrestler, Troubadour, Jewess, Nemesis, Alarm, Countess Olympia, Royal Standard, T. E. Henwood, and seedlings. Mr. J. Douglas third. In the competition for the prizes for six, Mr. Phillips was first, staging good examples of Emperor, Mrs. Dodwell, Diadem, and other well-known varieties. Mr. J. Douglas was second, and had Miss Mollie, Diadem, Love Bird, and Toujour. Mr. Wheelwright third, Mr. C. Turner fourth, and Mr. Henwood fifth. Mr. Wheeler obtained premier honours in the class for four, with good specimens of Rosalind, Sunrise, Mungo McGeorge, and T. E. Henwood. Mr. C. Phillips was a good second, with Pallas, Sunrise, Mariner, and Edith. Mr. Walker third, Mr. Keen fourth, and Mr. R. Dean fifth.

Laced Polyanthuses were on the whole fairly good. Mr. S. Barlow was first for six and for three staging in each class specimens of a high degree of excellence. The varieties forming the first prize six were: Cox's Prince Regent's, Lancer, Cheshire Favourite, Exile, John Bright, and George IV. Mr. R. Dean was second for six and third for three; Mr. J. Douglas was second for three and third for four.

Fancy Polyanthuses and Primroses were admirably shown and formed a very attractive feature. Mr. R. Dean was first for twelve polyanthuses and for twelve single primroses, and in each case staged large and splendidly bloomed specimens which were remarkable alike for the rich colouring and fine form of the flowers. Mr. Douglas and Mr. Harper, Guildford, were second and third respectively in each of the two classes. In competition for the prizes for six double primroses, Messrs. Paul and Son were first with Double Sulphur, Double Crimson, Double Lilac, Double White, Croussei, and Platypetala plena in the best possible condition. The first and second prizes for baskets of primroses were respectively awarded to Mr. R. Dean and Messrs. Paul and Son.

Primulas were represented by two or three good collections. Mr. J. Douglas were first for twelve with excellent examples of Nelsoni, Obconica, Verticillata, Rosea, Nivea, Intermedia, Obtusifolia, Marginata, Auricula, Japonica, and Cashmeriana. Mr. Harper and Mr. O. T. Hodges, Lachine, Chislehurst, were second and third. For six primulas Mr. S. Barlow was first with excellent examples of Intermedia, Viscosa, Verticillata, Obconica, and Cashmeriana.

The luncheon took place at the Hotel Windsor, in the rooms of the Horticultural Club, by the kind permission of the club, a large party being assembled. Mr. Shirley Hibberd, President of the Society, occupied the chair, Samuel Barlow, Esq., J.P., in the vice-chair. When the loyal toasts had been disposed of, Mr. Hibberd proposed "The Judges," associating with the toasts the names of Mr. Harry Turner and Mr. Ben Simonite, who suitably responded. He then proposed "The Exhibitors," naming the Rev. F. D. Horner and Mr. Samuel Barlow as distinguished exhibitors of many years, and again distinguished that day by their splendid contributions. The party separated early, as a special meeting had been called to make arrangements for the exhibition of carnations and picotees to be held at Chiswick, July 22 and 23.

ROYAL BOTANIC SOCIETY.—Second Spring Show, April 23.

The second of the two exhibitions of spring flowers, forming part of the programme of the Royal Botanic Society for the current year, was held on Wednesday, and proved fairly successful. The principal features were the azaleas, roses, rhododendrons, daffodils, auriculas, and the miscellaneous contributions of nurserymen, the latter forming the most important part of the show.

Roses in pots were admirably shown, and proved remarkably attractive. Messrs. Paul and Son, Cheshunt, were first for nine with large, superbly-flowered specimens of Violette Bouyer, Alphonse Soupert, Magna Charta, Celine Forestier, William Warden, Avocat Duvivier, La France, Innocente Pirola, and Ulrich Brunner. Mr. W. Rumsey was a close second with large specimens, bearing the impress of cultural skill of the highest class, especially noteworthy being the examples of John S. Mill, Innocente Pirola, Magna Charta, Dupuy Jamain, and Duchesse de Valombrosa. Mr. Rumsey also exhibited a beautiful group of roses in pots, and Mr. John Walker, Thame, staged four boxes of exceptionally fine blooms of Marechal Niel rose. Messrs. Paul and Son submitted several new roses, the most important being Hon. Edith Brownlow, a beautiful rose-pink tea, and Edouard Michel, a promising hybrid perpetual, the flowers globular and full, and the colour rich crimson purple.

Cinerarias and Pelargoniums, although below the average, produced a rich display. Mr. D. Phillips, Langley, Slough, was successful in having the premier award made in his favour in the class for nine cinerarias, and Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, was second. Mr. Phillips was first for nine pelargoniums, staging well-flowered examples. The principal varieties were Duchess of Edinburgh, Rosetta, and George Shepherd. The last named is a comparatively little known variety, of much merit, the growth being neat, and the flowers freely produced, large in size, and of a brilliant carmine colour.

Azaleas were exhibited in large numbers, and on the whole in excellent condition. In the trade class for six, Mr. C. Turner was first with splendidly flowered specimens of Roi de Hollande, Mrs. Turner, Irma, and Franklini, pure white, occasionally striped with rose. In the corresponding class for private cultivators, Mr. H. Eason, gardener to B. Noakes, Esq., Hope Cottage, was first with excellent specimens; and Mr. R. Scott, and Mr. R. Butler, gardener to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, were second and third with good specimens.

Hardy Alpine and Herbaceous Plants were presented in excellent condition, and formed a feature of much interest. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, was first for a collection of hardy herbaceous plants with a remarkably fine group, in which were good specimens of Cypripedium parviflorum, C. calceolum, Orchis fuscas, Doronicum austriacum, and Trillium grandiflorum. In competition for the prizes for alpines in flower. Messrs. Paul and Son were first with a beautiful collection. The first and second prizes for hardy primulas were respectively awarded to Mr. J. Douglas and Messrs. Paul and Son. The exhibitor last named also contributed several boxes of hardy flowers to the miscellaneous class, in which Megasea cordifolia purpurea was well represented.

Amaryllis and Begonias had classes provided for them, but only one collection of each was staged. The exhibitors of amaryllis were Messrs. Paul and Son, who staged an excellent collection, consisting exclusively of varieties raised at Cheshunt. Messrs. H. Cannell and Sons, Swanley, were the exhibitors of begonias, and remarkably good were the specimens staged.

Auriculas and Polyanthuses were both well represented. In the class for twelve show auriculas Mr. J. Douglas and Mr. A. J. Sanders were first and second, and in competition for the prizes for twelve alpines Mr. J. Douglas Mr. C. Turner and Mr. Sanders were first, second, and third respectively. Mr. Douglas occupied the first place in the class for twelve polyanthuses, with good fancies. Mr. Douglas also contributed a collection of auriculas to the miscellaneous class, and Messrs. Paul and Son staged several boxes of polyanthuses.

Miscellaneous Contributions were more numerous than usual, and formed the largest part of the exhibition. Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, staged a large and highly effective collection of flowering plants, in which the clivias and amaryllis predominated. Messrs. H. Lane and Son, Great Berkhampstead, contributed a large collection of rhododendrons and azaleas. Messrs. Barr and Son and Mr. T. S. Ware presented immense collections of daffodils with other hardy flowers. Messrs. Ryder and Son, Sale, Manchester, exhibited the magnificent collection of varieties of Primula Sieboldi which attracted so much attention at Westminster on Tuesday. Messrs. J. Laing and Sons, Forest Hill, had a large and very interesting collection of flowering and ornamental plants, in which the orchids were conspicuous, and Mr. W. Morle, Regent Street, staged a bank of decorative plants.

Novelties were numerous, and were dealt with in a generous manner. The following floricultural certificates were granted: To Messrs. H. Cannell and Sons, Swanley, for *Begonia Lord Salisbury*, a beautiful single variety with large, finely-formed vermilion coloured flowers, and *B. Duke of Sutherland*, a handsome single variety, the flowers large and of fine form; the colour rich purplish carmine. To Messrs. Garraway and Co., Clifton, Bristol, for *Mignonette Double White Improved*. To Messrs. Ryder and Son for the following varieties of Primula Sieboldi: *Alba Magnifica*, a beautiful variety, the flowers pure white, large, and elegantly fimbriated; *Ruby Queen*, a handsome variety with large, finely-formed ruby-red flowers; *Bruce Findlay*, a distinct and beautiful variety, with bright blue flowers; *Harry Leigh*, a charming variety, the flowers of high quality and the colour lavender-blue; and *Mrs. Ryder*, an exquisitely beautiful variety, the flowers large and of superb form, the colour white tinted with pink. To Mr. J. Douglas, for *Auricula Magpie* (Horner), a fine white edge flower, the body colour blackish-marone, the edge well defined, the paste smooth, and the tube rich lemon-yellow. To Mr. Phillips for *Pelargonium Duchess of Fife*, a useful decorative variety, the flowers white, marked on the upper petals with small rose-coloured blotches. To Messrs. Barr and Son, for *Madame de Graaff* and *Mrs. George Cammell*, narcissi, two beautiful varieties previously described. To Messrs. J. Laing and Son for *Pœony Mrs. S. Low*, a beautiful moutan variety, the flowers large and of superb form, the colour carmine-pink shading to white. *P. Triomphe de Milan*, a handsome moutan, with large, finely formed flowers of a soft rose hue; *Carnation Madame A. Warocque*, a perpetual flowering variety of dwarf growth, and bearing large, full flowers of a rich crimson-scarlet colour. To Mr. T. S. Ware for *Primula lilacina marginata*, an exquisitely beautiful variety of P. Sieboldi, the flowers large and of good form, with white centre, and suffused with lilac at the margin. To Messrs. B. S. Williams and Son for *Clivia cruenta* and *C. Ambroise Verschaffelt*, two magnificent varieties, both of which have been already described in these pages.

NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.

The monthly meeting of this association was held in the Upper Hall, Christian Institute, Aberdeen, on Wednesday evening, 16th inst. There was a large attendance of members, and Mr. Smith, the president, occupied the chair. The chief business before the meeting was the reading by the secretary, Mr. W. Reid, of a paper by Mr. George Leslie, Covent Garden, London, on "Daffodils." In the paper some practical suggestions were made concerning the cultivation of the daffodils and narcissi generally, either as border flowers or for the embellishment of the conservatory or greenhouse when grown in pots. At the present time nearly five hundred varieties of narcissus were known, many of them not being in commerce. As a commercial flower the daffodil had no equal, as shown by the immense quantities brought into the markets during the spring months, and at a time when outdoor spring flowers were scarce. Dealing with the cultivation of the daffodil in the open ground, he said it was impossible to plant the bulbs too early. All should be planted by the end of September or middle of October at the latest. Before planting the soil should be prepared by digging to the depth of two feet, taking care, if the subsoil be poor, not to bring it to the surface. As to depth, four to six inches was deep enough for most of the varieties, but planters must be guided to a great extent by the size of the bulbs to be planted. A safe guide was to plant a bulb at a depth of twice its own length. The daffodil delighted in a light sandy or loamy soil, with a little turf chopped up or road grit mixed in the bed, adding a little leaf soil. According to the opinion of the most experienced growers, manures should be avoided altogether in the culture of daffodils. If convenient, a top dressing of good turfy loam was advisable. Afterwards the essayist mentioned a few distinct sorts that were suitable for occasional flowering out of doors, and then proceeded to make a few remarks on pot culture. The soil, he said, should be composed of good ordinary potting loam, to which might be added a small quantity of decayed leaf soil, and a small proportion of sand. Six-inch pots were a suitable size for using, and the bulbs might be planted in threes or sixes in a pot. When the potting was completed the pots should be transferred to a bed of coal ashes, and covered to a depth of four to six inches with ashes. It was not necessary to water after potting. From excessive rains a little overhead protection was required. At the end of December the plants might be removed to the greenhouse or conservatory, care being taken to guard against too much heat. It was a good rule to cut daffodils in the bud stage, especially if the flowers were wanted for table decoration, or for sending by post. A long and interesting discussion followed the reading of the paper, and was taken part in by Messrs. Muirhead, factor to the Earl of Aberdeen, Haddo House; C. S. France, Harper, Cocker, Robson Edwards,

Grigor, and Mr. Smith the president. All the speakers agreed as to the excellency of the paper, but exception was taken to the advice that manures should be avoided. Afterwards the members proceeded to inspect the exhibition, a report of which will be found below.

Exhibition of Spring Flowers.

This association deserve to be congratulated on the magnificent collection of daffodils, hyacinths, tulips, and other spring flowers, which they brought together, for free public inspection, in the Christian Institute, Aberdeen, on Thursday, 17th inst. The object the association had in view, in getting up the exhibition, was to create and stimulate an interest in spring flowers, which have been to a large extent neglected, in the north-east of Scotland. If the large numbers of visitors who attended the display be construed by the association as the object to be gained they certainly did so. The collection was perfectly unique, and was pronounced by competent judges to be one of the finest, if not the finest, ever exhibited in Scotland. The flowers were displayed with fine effect, and their rich and varied colours presented a most attractive appearance. Mr. Thomas S. Ware, Tottenham, London, sent a fine collection of daffodils, embracing 76 varieties, and which included all the best and most popular sorts. Mr. C. W. Cowan, Valleyfield, Penicuik (near Edinburgh), had forwarded a collection embracing 56 varieties. In this instance the individual flowers were reckoned much finer and better coloured than in any of the other collections; and as they were grown at an elevation of some 600 or 700 feet above the sea level, they afforded to the spectator proof of the suitability of the daffodil for out-door cultivation in the comparatively exposed parts of Scotland. Messrs. Barr and Son, London, contributed 50 varieties of the daffodil, among which was a very choice collection of the smaller alpine varieties, and a notable display of scarlet anemone fulgens. Much attention was shown by the visitors to a large collection of hyacinths from a Dutch grower, embracing no fewer than 100 varieties, double and single, all correctly named. The collection showed the best varieties in each class, representing all the shades of colour, and included varieties best adapted for pot culture and culture under glass. There was another exceptionally fine collection well worthy of notice from Holland, of hyacinths, tulips, and daffodils, but from the fact that they were not named they did not possess to the spectator the same educative interest they might otherwise have done. Mr. Proctor, gardener to Mr. William Henderson, Devanha House, Aberdeen, had forward a valuable display of orchids, and greenhouse plants, for which the association awarded their cultural certificate; and Mr. Grigor, gardener to Mr. A. O. Gill, of Fairfield, sent a very fine pot of mignonette, for which he received the thanks of the Association. It is needless to add that the members of the Association heartily agreed to convey their warmest thanks to those who had so kindly contributed to the exhibition. It was at the desire of the exhibitors that the exhibition was made free.

Replies to Queries.

Auriculas with Blind Trusses.—W. Potter: You are singularly unfortunate in having so many stout stems with nothing on them. This occurs occasionally with the most experienced cultivators, but your case suggests that your plants must have had some unhappy conditions to contend with in the past autumn or winter. It is not advisable to cut away the blind stems. Let them wither away, as in that case the plants will be unharmed. If you cut them away, there will be a liability to the decay of the plant from the point at which the flower stems rise.

Topping Beans.—F. F.: It is usual to pinch off the tops when the plants are in flower, as a double purpose is thereby accomplished, the concentration of the energies of the plants on fewer pods than it would naturally produce and the removal of the black aphis which is usually plentiful on the top young growth. Topping is not at all essential for the production of a crop, but it promotes the formation of larger pods containing larger beans than would be obtained were the total number not reduced.

Variegated Negundo.—W. Bartlett: The variagated leaved Acer negundo is always worked on the common green negundo, consequently those of your trees that have lost their tops by dying back to the work, will, if left alone, produce green shoots and form themselves into green-leaved negundos, and as such will be useful, for it is quite a respectable tree of its class. In some catalogues, a separate genus is made of this tree which then becomes Negundo fraxinifolium. This genus differ from acer in having pinnate leaves, and the dicœcious flowers are without a disk. We cannot advise whether you should keep or destroy the stems that have lost their heads, because it rests with yourself now to wait until they form green-headed trees or to buy and plant again.

Names of Plants.—J. Hall: 1, Clematis Mrs. Bateman; 2, Adiantum formosum; 3, Polypodium Stewarti; 4, Platycerium alcicorne; 5, Selaginella mertensii; 6, Abutilon vexillarium.—G. R. J.: You send too many and they are little scraps screwed up in paper, and shrivelled out of character; it is not an easy matter to determine if they really are plants of any kind whatever. 1, Spiræa prunifolia; 2, Arabis lucida variegata; 3, send again when in flower; 4, Antennaria tomentosa; 5, Ajuga reptans, dark variety; 6, Sedum acre; 7, send again when in flower; 8, Sedum rupestris; 9, Acæna microphylla; 10, Sedum glaucum; 11, send again when in flower; 12, Sagina procumbens; 13, Erica Willmoreana.—M. T.; Scolopendrium vulgare angustata cristata.—H. B.: Dicksonia Barometz.—F. Stewart: 1, Trillium fœtidum; 2, Primula viscosa; 3, Primula pubescens; 4, Saxifraga aretoides; 5, Milla biflora; 6, Asparagus dahuricus.

Ivy Edgings.—Verax: The bold edgings in the gardens on the Thames Embankment are formed of common Irish ivy laid down and pegged, and twice or thrice a-year clipped in to keep them in order. This is as good a time as any to plant ivies out of pots, and you could probably obtain all the plants you require in strong pot plants of five or six feet run by making an arrangement with a nurseryman. If he could not supply the quantity required from his own stock, he could easily purchase them from other nurseries, and would do so as a matter of business. As regards using the variegated ivies for edgings, you will have to take careful measures to secure the necessary quantities true to name, for it will be a serious matter if they prove to be mixed when they become established and are growing freely. The best variegated ivies for edgings are those Mr. Hibberd has classed in the "Marginate" series, and of those, which number about a dozen, Marginata major and Marginata robusta are the best. The little Marginate minor and and M. rubra that you have taken a fancy to because of their autumnal colours, are quite unfit for large work, being weak growers, and liable to suffer in a severe winter. For rockery and small beds on a warm soil they are admirable, but they cannot well battle against town smoke or severe cold. This is the worst time in the year for propagating ivies, and it would be better to wait until July, and then take cuttings of the young growth, which will root quickly, and soon make fine young plants.

Annuals.—Novice: We cannot give you in a few words, as you expect, particulars of all the annual flowers that are cultivated in gardens. But you can have no need for such particulars while you have a respectable seed catalogue to refer to. The seeds of annuals are usually sown in patches and lines; for general purposes patches, or clumps of a foot in diameter answer well in borders. But then some of the kinds will require a space of a square foot, or even three square feet, for the proper growth of one plant, whilst others are of such small growth that half a-dozen plants may be compassed in a space of a foot diameter. Even in face of such an apparent difficulty, the beginner who knows absolutely nothing need not be at any great disadvantage, for the plants will indicate their characters pretty early by their growth, and if you will follow the rule of thinning wherever they touch one another until the flower-buds appear, you will have a golden rule for the accommodation of their several habits. Have courage to draw out plants and throw them away or transplant them, to ensure for those that remain sufficient space for development. Do not perplex your mind about watering or shading, for they will probably do well enough without water and with the full sunshine upon them. But they can only thin themselves by a process of mutual destruction, and when left thick on the ground a certain number die to give a little more room to the survivors, and these make but a poor show through being overcrowded. It does not matter much in the end where or how you sow the seeds, for in all probability you will do that work well enough to ensure a lot of gay flowers; but it does matter that the clumps should be severely thinned of the inner plants that are much crowded; those on the outside will have more air and light than the crowd in the centre. One plant of so humble a thing as the Virginia Stock or the Limnanthes Douglasi standing alone, "gaily to burgeon and broadly to grow," will become quite an interesting object by its free branching and long lasting, while a crowd of similar plants covering a square foot of space will be weak and poor through lack of light and air.

Bones in Vine Borders.—R. M.: No question can possibly arise as to the utility of bones in vine borders, but there is room for difference of opinion as to the best form in which they should be employed. It was long considered by those who appreciated the value of bones in composts for vines that it was best to use them broken up somewhat roughly, and for many years half-inch bones enjoyed a high degree of popularity. During the past two or three years a considerable change has been effected in the opinion of grape growers, and the fact is now recognized by the most observant of practical men that half-inch bones are so slow in breaking up that the borders have to remain an immense length of time to enable the vines to derive the fullest possible advantage from them. Bone dust is much quicker in action, although slow as compared with bone-meal, which is obtained by fermenting half-inch bones, still more soluble is superphosphate of lime obtained by dissolving bones with sulphuric acid. A very quick acting manure is not required as a part of a newly made vine border, hence a superphosphate is not desirable. Bone dust and bone meal in about equal proportions are the best forms in which to use bones, and when superphosphate is employed it should be "reduced" by the addition of bone meal, or bone dust in the proportion of one part to every two parts of the superphosphate. With reference to the fertilizing properties of bones, it must be said that nearly two-thirds of the weight of bones consists of mineral matter, which consists chiefly of phosphate of lime. Their value depends to a material extent on their phosphoric acid, which in combination with lime forms phosphate of lime. The organic matter contained in bones such as gelatine, contains nitrogen, which in process of decomposition forms ammonia, and assists in the fertilizing action of the phosphate of lime. Consequently meal and dust made from boiled bones are not equal in value to the preparations made from bones manipulated in a raw state.

Obituary.

On the 22nd inst., at his residence, Upper Clapton, Mr. Stuart H. Low, head of the well-known firm of Messrs. Hugh Low and Co., of Upper Clapton, and Bush Hill, Enfield, in his sixty-third year. Mr. Low, who was well known in horticultural circles, both in this country and on the Continent, was highly esteemed by his wide circle of friends, and held in great respect by the members of the large staff employed by the firm.

Markets.

COVENT GARDEN.

Fruit.

Apples	per ½-sieve	2s. 6d. to	7s. 0d.
Apples, American	per brl.	12s. 0d. ,,	30s. 0d.
Grapes	per lb.	5s. 0d. ,,	8s. 0d.
Lemons	per case	10s. 0d. ,,	15s. 0d.
Melons	each	2s. 6d. ,,	5s. 0d.
Pine-apples, English	prlb.	1s. 0d. ,,	1s. 6d.
Pine-apples, St. Michael's	each	3s. 6d. ,,	10s. 6d.
Strawberries	per lb.	3s. 0d. ,,	6s. 0d.

Vegetables.

Asparagus, English	per bun.	7s. 6d. to	10s. 6d.
Asparagus, Sprue	per bun.	1s. 0d. ,,	1s. 6d.
Beans, French	per lb.	1s. 0d. ,,	2s. 0d.
Beet	per doz.	1s. 6d. ,,	2s. 0d.
Cabbages	per doz.	1s. 0d. ,,	2s. 0d.
Carrots	per bun.	0s. 4d. ,,	0s. 6d.
Cauliflowers	per doz.	2s. 0d. ,,	3s. 0d.
Celery	per bundle	1s. 6d. ,,	2s. 0d.
Cucumbers	each	0s. 6d. ,,	0s. 9d.
Endive	per doz.	1s. 6d. ,,	2s. 0d.
Herbs	per bunch	0s. 3d. ,,	0s. 4d.
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Seakale	per pun.	1s. 0d. ,,	2s. 0d.
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Small Salading	per pun.	0s. 3d. ,,	0s. 4d.
Spinach	per bushel	3s. 6d. ,,	4s. 6d.
Sprouting Broccoli, prsck		1s. 6d. ,,	2s. 6d.
Tomatos	per lb.	0s. 9d. ,,	1s. 0d.
Turnips	per bunch	0s. 4d. ,,	0s. 5d.
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Abutilons	per doz. bun.	2s. 0d. to	4s. 0d.
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Bouvardias	per bunch	0s. 8d. ,,	1s. 0d.
Callas	per doz.	2s. 6d. ,,	4s. 0d.
Camellias	per doz.	1s. 0d. ,,	3s. 6d.
Carnations, per doz. blms.		1s. 0d. ,,	2s. 0d.
Daffodils	per doz. bun.	2s. 6d. ,,	5s. 0d.
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Roses, Coloured, per doz.		2s. 0d. ,,	4s. 0d.
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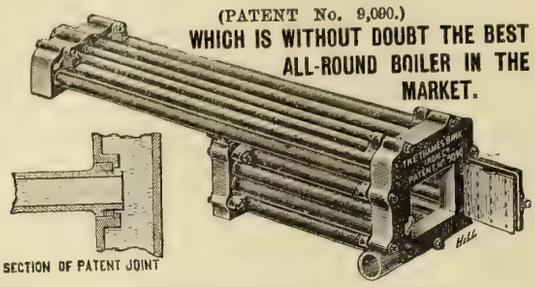
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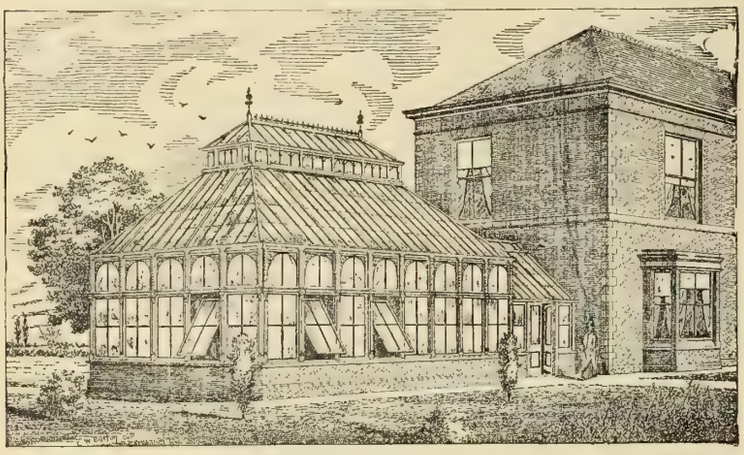
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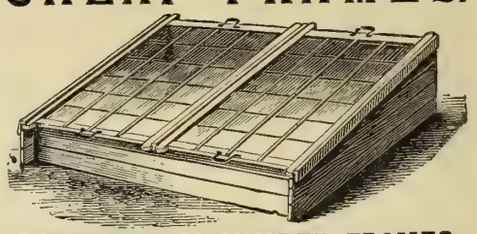
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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths before Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890		[Moon.	H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
4	S	**4th Sunday after Easter.** ○ Full	4 29	3 23	7 26	7 4	4 37	1 29	1 47	10 54	11 12	51·7
5	M	[assassinated, 1882.	4 28	3 27	7 27	8 26	4 59	2 5	2 21	11 30	11 46	52·0
6	Tu	Lord Frederick Cavendish and Mr. Burke	4 26	3 32	7 29	9 48	5 25	2 39	2 59	—	0 4	52·2
7	W	The Schiller wrecked, 1875.	4 24	3 37	7 30	11 5	5 59	3 18	3 38	0 24	0 43	52·5
8	Th	Half Quarter Day.	4 22	3 41	7 32	Morn.	6 46	3 59	4 19	1 3	1 24	52·8
9	F	Religious Tract Society instituted, 1799.	4 21	3 44	7 33	0 13	7 47	4 42	5 5	1 44	2 7	53·0
10	S	Indian Mutiny commenced, 1857.	4 19	3 47	7 35	1 7	8 59	5 29	5 55	2 30	2 54	53·2

Orchids in Flower.		Day of Yr.
Ada aurantiaca	Pamplona.	1890
Cattleya speciossima	Caracas.	124
Dendrobium nobile	Assam.	125
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Phalænopsis intermedia	Manilla.	127
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		130

CRYSTAL PALACE.
GREAT SUMMER EXHIBITION OF PLANTS AND FLOWERS, SATURDAY, MAY 10.

Entries close on May 3. Forms and Schedules post free on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E.

ROYAL BOTANIC SOCIETY. GARDENS, REGENT'S PARK.
FIRST SUMMER EXHIBITION of PLANTS and FLOWERS will take place on WEDNESDAY, MAY 14.

Schedules of Prizes, &c., to be obtained at the Gardens.

RIPLEY, NEAR DERBY.—ROSE SHOW.
Held SATURDAY, AUGUST 2ND, 1890.

36 Roses, Cut Blooms, Distinct. Open to All England. 1st prize, £5; 2nd, £3; 3rd, £2; 4th, £1. 24 Roses, Cut Blooms, Distinct. Open to All England (Amateurs). 1st prize, £3; 2nd, £2; 3rd, £1; 4th, 10s.

For further particulars and schedules apply to

S. BAILEY, Secretary.

THE THIRTY-SECOND ANNUAL SHOW of the TUNBRIDGE WELLS HORTICULTURAL SOCIETY will be held in the SPA GROUNDS, TUNBRIDGE WELLS, on WEDNESDAY, JULY 9th, 1890.

Prizes to the value of over ONE HUNDRED AND EIGHTY POUNDS. First Prize, for Eight Stove and Greenhouse Plants, £8; First Prize, for Eight Foliage Plants, £6. Also N. R. Society's Medals. Open to all England. Schedules, Entry-forms, and all particulars of the Secretary.

21, Culverden Park Road, Tunbridge Wells. WILLIAM E. BRAMPTON.

Exhibitions and Meetings for the Ensuing Week.

FRIDAY, MAY 9.—ROYAL BOTANIC SOCIETY.—Lecture.
SATURDAY, MAY 10.—ROYAL BOTANIC SOCIETY.—General Meeting.
SATURDAY, MAY 10.—CRYSTAL PALACE.—Great Summer Show.

Auction Sales for the Ensuing Week.

TUESDAY, MAY 6.—Messrs. Protheroe and Morris, at the Exeter Nurseries, Exeter; Stove and Greenhouse Plants, Orchids, &c. (Three days).
WEDNESDAY, MAY 7.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Carnations, Picotees, Greenhouse Plants, &c.
FRIDAY, MAY 9.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

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ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

TERMS OF SUBSCRIPTION.—Post free from the Office, 4, Ave Maria Lane, London, E.C. to any part of the United Kingdom, One Copy, 2½d.; 3 Months, 3s.; 6 Months, 6s. One Year, 11s. 6d. (including the Christmas Number). To America, Australia, Belgium, Canada, Denmark, France, Germany, Holland, India, Italy, Spain, Sweden, and Switzerland, 14s. per annum.

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The Gardeners' Magazine.

SATURDAY, MAY 3, 1890.

THE MARKET SALESMAN AND THE GREENGROCER are once more put on trial, and are hastily condemned and sentenced to banishment by the Reverend Harry Jones in a paper contributed to the *National Review*. Mr. Jones has earned a right to speak with decision because he has actually made inquiries, and comes before the public with proposals founded on facts. We intend no stroke of humour when we say he is eloquent upon carrots, for he shows that the farmer obtains next to nothing for them in the market, and yet they are finally retailed at a half-penny each. The farmer has to grow as many as 63 carrots for 3½d. Railway carriage adds but little to the total cost of any considerable bulk that is carried to the market, and consequently people who eat carrots ought to obtain three or four for a half-penny instead of a miserable one. If we bring in turnips, potatos, onions, green vegetables and the like, the same tale will have to be told, and the end of it is that the "middleman" ought to be abolished.

Now, our readers do not need to be told of our sympathy for both producer and consumer, and in a general way our objection to the middleman, for he is ever aiming to making things dear that ought to be cheap. But just for a change we propose to defend the middleman, and we begin by saying that there are two sides to the question submitted. Is the middleman to be forthwith abolished? Say yes. Then the question arises, how will you obtain your carrots? Will you go to the farmer, taking with you in one hand a basket and in the other ready money, and so being prepared to buy and carry? But it is not enough to do this, for you must first ascertain if the farmer will sell you, say, a dozen, for a penny, which is at the rate of 42 for 3½d., the margin between that and 63 being extra profit to the farmer to pay for the trouble of retail business, while the gain to the buyer represents the railway carriage to which the purchaser is entitled as being his own carrier? The probabilities are all in favour of the buyer declining to buy and the farmer declining to sell; the one cannot be at the trouble of going into the country for a dozen carrots, nor will the other be at the trouble of doling out the produce of acres in such driblets as are required. So we begin to abolish the middleman by the aid of two impossibilities, and he will simply smile at the endeavour and proceed with his business.

But why put an extreme case? Because there is no other way of obtaining a quick view of the vital points of the case. In defence of the middleman, therefore, we have to say first that he earns his living by his usefulness; that he exists by sufferance solely, for he cannot prevent the grower of carrots selling, nor the consumer of carrots buying at the rate of four for a farthing, and the simple reason these parties do not meet and strike bargains is that the middleman is convenient for both of them, and they like him even when they denounce him as scraping the carrots too freely. We are here touching on the whole subject of trade, which rests entirely on exchange of commodities, money being a mere medium of no value in itself, but a pledge accepted by society in behalf of good faith, and so reducing the carriage of goods, which means economy of strength and the saving of time all round. Within the memory of men now living an organization for actual barter was projected, and was in operation for a time. The shoemaker carried his shoes to the exchange, and brought home in the bag he carried the shoes in, the food and other necessaries obtained in exchange for them. The thing collapsed so quickly as to look like a practical joke, but it was attempted in seriousness, and it failed with more or less of agony to all the parties. Therefore, remembering the occurrence, we cannot advise the abolition of the middleman by the abolition of money; but the use of money may be said to make the middleman, and up to a certain point he is worth all he costs, as those will discover who honestly and earnestly attempt to carry on the business of the world without him.

The greatest accusation that can be made against the middleman is that he makes money. The accusation is true sometimes, but not always. Sometimes he loses money, and there is an institution called the Bankruptcy Court where tales of losses are far from uncommon. But, generally speaking, the middleman must be declared guilty at least of trying to make money, and it will be found that such a vice pervades the entire body of merchants, from the rich Antonio, with his horses and argosies, to the humble Coster with his donkey and barrow. And it may be observed with advantage that while the man who grows carrots is for the most part intent on the business of growing them, and the man who eats them is much concerned about scraping and cooking them properly, the middleman is intent on getting money out of them, and being habituated in money-making he generally, whatever line he may be in, amasses money faster than the producer whose goods he sells or the buyer whose convenience he promotes and whose interests he usually studies. It should be remembered in behalf of the middleman that in proportion as he understands his business, and is intent on deriving advantage from it, he gives his best attention to details, and he does not therefore simply serve out carrots across the counter, but he uses judgment in buying them, and in keeping them; and has to lose by all that spoil or for any reason are not purchased for consumption within a reasonable time.

T

There are many matters that make a difference to a trader who may desire to do the best in his power to gain the confidence of his customers. We have lately seen in a fruiterer's shop a lady enter and order a lettuce, and having done so leave the place with most becoming dignity. The polite purveyor entered the transaction in a book, then rolled up the lettuce neatly in blue paper, then called three times for a boy, and the boy having tardily arrived, sent him off to deliver the lettuce. Being for a moment curious, we ask, "Is the lady one of your large customers?" and the answer is, "No, sir; just a penny article now and then." "Ah, and you book it and send it home?" "Yes, sir; the distance is half a-mile, and I send the account monthly." It is not for us to object to the arrangement. If it suits both parties, it is nobody's business but theirs. But we should strongly object to the lady making a claim, on the same terms as the lettuce was purchased, to carrots at the rate of four a-penny. And here is the gist of the whole case: The customers want the thing brought to their doors, and they must pay for the carriage to the market from the farm, and the carriage from the market to the shop, and the carriage to the house at the end of the story. If people want to live without the aid of the middleman, they may certainly to some extent find the way; but while they bring no science into their own domestic economy, they have no right to abuse the middleman to the extent they do, as though he should simply sacrifice himself for their sakes. Nine-tenths of the householders of every town have their household requirements supplied to them at great cost for porterage and other labours by the middleman, and they must pay accordingly.

The Rev. Harry Jones, who persuades us to consider this matter, proposes the formation of an association of farmers, who would have a good stock of seasonable produce always ready, and put themselves in touch with a number of retail dealers within reach of a London terminus or wharf, and of growers over a sufficiently wide district joining together with a large definite aim, putting themselves in communication with a number of retail dealers. But what is all this but a rearrangement differing but slightly from the state of things prevailing, with the middleman in the middle as usual. Instead of going to the market, the market gardener and the shopkeeper meet at a convenient centre and do business at first hand without the aid of the salesman. It will interest the reverend gentleman, should he at this time be unacquainted with the fact, that a system such as he proposes has for some time past been in operation at Chiswick and Kew, localities in which we look for a higher standard of intelligence in matters pertaining to rural economy than prevails generally. There are two markets in the high road, one near the Pack-horse and Talbot, the other at the foot of Kew bridge on the Middlesex side. These road-side markets are natural growths of circumstances, and they certainly afford examples of what may be done in many other places where the growers and purchasers are separated only by moderate distances. But however such markets may be extemporised, they will not affect the markets sanctioned by charters and statutes, where the salesman rules supreme, and takes toll of all the merchandize that passes through. Nor will the producers cease to employ the salesman, for he, as a necessary agent, plays an important part in promoting and regulating the distribution of produce, and what he earns in the business is, generally speaking, no more than reasonable wages.

WATFORD CHRYSANTHEMUM SHOW, November 11 and 12.

BROCKHAM ROSE SHOW, July 2.

MR. JOHN JUSTICE has been engaged as head gardener to J. S. Howitt, Esq., The Firs, Norton, Worcester.

ROYAL BOTANIC SOCIETY'S EVENING FETE will take place on Wednesday, July 2.

MR. A. J. LONG has been engaged as head gardener at Compton House, Stockbridge, Hants, the residence of J. Spiller, Esq.

MR. W. J. WELCH has been engaged as head gardener at Hartham Park, Corsham, Wilts, the residence of Sir John Poyndre, Bart.

TREE PÆONIES form a very attractive feature in the Fulwell branch of Mr. W. Gordon's nurseries at the present time.

MR. JOHN JEFFERSON has been engaged as head gardener at The Hyde, Luton, the residence of Lord Bury.

MR. HENRY CHINNELLS has been engaged as head gardener to Captain Mitford, Pits Hill, Petworth, Sussex.

MR. R. WADHAM has been engaged as head gardener at The Grange, Steeple Aston, Oxford, the residence of Admiral Bradshaw.

MR. G. H. SMITH has been engaged as gardener and bailiff to Rev. Canon Chapman, Paul's Cray Hill, Kent.

BRITISH FRUIT GROWERS' ASSOCIATION. The Duke of Bedford has contributed £25 to the association as an aid to the publication of a report on the present aspects of fruit culture in Great Britain.

CRYSTAL PALACE SHOW on Saturday next promises to be a brilliant affair, for the subjects proper to the season appear to be in admirable condition everywhere and exhibitors are quite in the humour to display some spirit in their display of flowers.

MR. THOMAS JOHNSON, demonstrator in botany at the Normal School of Science, South Kensington, has been appointed professor of botany at the Royal College of Science, Dublin.

TUNBRIDGE WELLS HORTICULTURAL EXHIBITION will be held in the Spa grounds, Wednesday, July 9. The schedule is liberal and comprehensive, and National Rose Society's medals will be competed for.

THE HARDY AZALEAS IN THE ARBORETUM, at Kew, are beginning to show that they mean business. In about a week from this, with favourable weather, they will be making a show, but so far as we can judge at this moment, they will be at their best about the 20th.

THE OLD UNPRUNED PYRUS JAPONICA in the entrance to R.H.S. Gardens at Chiswick is now in full dress, and presents such a brilliant appearance that it is worth an hour or two of journeying by any who would delight their eyes and perhaps improve their health by paying it a visit. A few other things have interest in the garden just now, but the pyrus is a great thing, both for a show and a lesson. It is magnificently eloquent on the propriety (sometimes) of letting Nature have all her own way that she may display her power to gratify the blunderir animal called man.

EDINBURGH INTERNATIONAL EXHIBITION was opened on Thursday by the Duke and Duchess of Edinburgh, and was pronounced by all present a grand demonstration of the present state of applied electrical science. There is, of course, the usual display of shoppiness in the courts, but the great hall is the prominent feature, for there is assembled the best examples obtainable of the machinery and appliances at present employed in the generation and distribution of electrical force. We have looked around for indications of the applicability of the electric light to plant culture, and we find none, absolutely none.

SPRING FLOWERS AT THE ROYAL AQUARIUM made a magnificent display on Tuesday last and brought a new golden crown with any number of jewels in it for Mr. William Holmes as a king amongst managers. All the classes were well filled and all were competitive; there was no trade make-up and no bolstering or padding needed or attempted. Auriculas were plentiful and in fine condition. It speaks loudly and largely for the increased popularity of this flower that one of the winners came from Newcastle, and another from Sunderland, and while there were these two northern growers in force, Manchester was rejoicing in a good show of the same class of flowers under the auspices of the northern section of the National Auricula Society.

FRENCH EXHIBITION at Earl's Court is making rapid progress towards completion and is the subject of great expectations. Amongst special novelties for the sensation mongers there will be a display of lions in harness. These feline favourites appear to be advancing in usefulness. Having been taught to leap on to the backs of horses, they are now to take the place of horses, and as a matter of course we shall shortly have our cabs and omnibuses drawn by what was once upon a time known as the "king of beasts." And the French exhibition is to be great in Africa, as it ought to be, seeing that the only successful French colony is the one it has established in the light part of the dark continent.

NEW ZEALAND INTERNATIONAL EXHIBITION, 1890.—The *Otago Daily Times* of Thursday, March 6, announces the following awards:—Class 24. Agricultural Products. Jurors, Messrs. J. Grindley and G. M. Morris. British Exhibits: Preserved fodder and substances specially cultivated for food for cattle, Sutton and Sons, Reading, England, first class award; collection of models of improved vegetables from nature, to the same, first class award; models of agricultural roots from nature, to the same, first class award. Collective Exhibit: Sutton and Sons, Reading, special first class award; Hurst and Sons, England, first class award; Arthur Yates and Co., Manchester, first class award.

THE CORNISH BROCCOLI SEASON is ended. From October to Christmas broccolis sold well, though what would be considered a good price was never reached. The winter was so mild that the broccoli came on faster than they were wanted, and prices fell almost to nothing. Nor did prices recover until after a sharp frost at the end of February. Since then prices have fluctuated, but have been generally low. While growers at Penzance were getting only 8d. a crate, consumers paid at the rate of from 15s. to 20s. per crate. Cornish potato crops look well, and a trifle more forward than is usual at this time of year. The *Cornishman* reports that potatos will want sunshine to finish them.

EARLY TULIPS IN HYDE PARK, KEW GARDENS, and other large places near London are now in brilliant condition and will interest all who are responsible for decorative business in gardens, as well as the many who enjoy out-door colouring and have no responsibilities whatever. We hear of and we see many examples of "blight" in tulips, hyacinths, and the new rising growth of liliums. In many cases the malady has become a kind of local plague. Dustings with sulphur appear more directly effectual to check this plague than any other method that has been tried, but absolute cure or preventive is unknown. To know the cause is said to be half the cure of any ailment. It is certainly in some cases the equivalent of a complete cure, but in this case we fear a knowledge of the cause will help us but little. Our own observations both of plants that are constantly under view and of such as we see in moving about the world confirm us in the faith we have often expressed, that sudden check by frost is the principal and probably the sole cause of these disasters, the agent of destruction being invariably parasitical fungi for which the tissues are prepared by unseasonable cold. Frost at the beginning of the season when the growth is immature is a very different affair to frost at the end when the green growth has done its work.

May Day has come and gone, and the cities of Europe remain where they were. The moral epidemic that culminates in a strike has received a salutary check in this country, and the effect has been visible in continental centres. There is much to command attention, and something, certainly to claim our sympathies in the proposals of the representatives of labour having in view to advance the interests of the working classes. But there appears a general tendency to ignore the working of laws that are as unalterable and unavoidable as the laws of the solar system, and in fact, are in some sense cosmic, because the human race can but divide for mutual use what the earth produces by the powers of nature and the industry of man. Less work means less wealth, and when the distribution takes place in the form of wages, profits, &c., the total of wealth will correspond to the total of work. Happily our friends the gardeners are not in the category of strikers and agitators. They have their troubles as candidates for a place of honour in the fields of labour, and may not be without special reasons for complaint. But their daily work teaches them the fundamentals of the structure of society, and the government of states, and they will prefer to retain individual independence, and fight the battle of industry on its merits to any kind of organisation for putting words in the place of deeds.

Albinism in Plants formed the subject of an interesting note communicated by Mr. A. H. Smee to the recent meeting of the Scientific Committee of R.H.S. Mr. Smee writes: Some nine years ago when experimenting with flowers and plants placed in a weak solution of silicate of soda, I noticed that the plants and flowers were affected by the solution according to their colour. The colours I found disappear in the following order: blue, lilac, red, and brown, whilst yellow was the most persistent. Greens behaved according to whether blue or yellow predominated in the composition. It has occurred to me whether the whole varieties of flowers are not found among plants in a similar order. We have an example in the blanching of the old flowers of Franciscea latifolia. Then, again, in the poor varieties of Vanda cœrulea, the petals are almost white, with very pale blue veining. In Cattleyas, the colour of the petals and lip disappears, leaving the yellow throat; and the pale pink tints which so often spoil a white Cattleya from a florist's point of view are the remains of the red tint in the mauve colour; therefore, as yellow is so persistent we cannot expect that a white Cattleya citrina or Odontoglossum polyanthum will turn up among our white varieties. The white Odontoglossum crispum marks the disappearance of the brown blotches, leaving only the yellow markings, and in the case of the yellow Odontoglossum triumphans exhibited, which is a poor form of the ordinary variety, the brown blotches are either absent or in process of disappearance into white. The only pure white form of orchids are Cœlogyne cristata alba, Dendrobium Kingianum albidum, and Saccolabium Heathi.

Tenants' Improvements.—Under the Agricultural Holdings Act of 1883 which regulates the compensation payable to tenants for improvements, the consent of the landlord is required as to some improvements in order for compensation to be payable; and as to one improvement notice is required to be given to the landlord. The improvements to which the landlord's consent is required include—(1) the erection or enlargement of buildings; (2) the formation of silos; (3) the laying down of permanent pasture; (4) the making and planting of osier-beds; (5) the making of water meadows or works of irrigation; (6) the making of gardens; (7) the making or improving of roads or bridges; or (8) of water-courses, ponds, wells, or reservoirs, or of works for the application of water power, or for the supply of water for agricultural or domestic purposes; (9) the making of fences; (10) the planting of hops; (11) or of orchards or fruit bushes; (12) the reclaiming of waste land; (13) the warping of land; and (14), embankment and sluices against floods. The improvement in respect of which notice to the landlord is required is drainage. Thereupon the landlord may himself undertake the matter and charge the tenant 5 per cent. upon the outlay. In default of this or any agreement the tenant can proceed with the work and will be entitled to compensation. The improvements to which the landlord's consent is not required include—(1) boning of land with undissolved bones; (2) chalking of land; (3) clay-burning; (4) claying of land; (5) liming; (6) marling; (7) application of purchased artificial or other purchased manure; and (8) consumption on the holding by cattle, sheep, or pigs of cake, or other feeding stuff not produced on it. It is proposed in a Bill introduced by Mr. Seale-Hayne, M.P., to abolish all these restrictions as to the landlord's consent or notice to him; and to give tenants compensation for all improvements alike. With a view to requiring that the improvement must not be injurious to the landlord, there is a restriction by which the tenant is expressly prohibited from erecting a building of such a nature as to obstruct the view from the mansion, house, or residence of the landlord, or to form an unsightly object in the view. Another prohibition relates to diverting water from the landlord's ornamental waters, or preventing water from flowing from the holding of the tenant to the other lands of the landlord in its accustomed manner. In the ascertainment of the amount of compensation payable to a tenant in respect of an improvement the following additions are made to the matters to be taken into account in reduction:—(1) Any injury or damage done to the other lands of the landlord, not part of the tenant's holding, by the improvements for which compensation is claimed, or by any other works executed by the tenant; and (2) any injury done to the landlord or to his lands by a breach of the proviso in the Bill as to obstructing the view or diverting water. At any time during the currency of a tenancy it is to be open to the landlord to apply to the County Court for an injunction to restrain his tenant from doing any act which, in the opinion of the Court, would be injurious to the land and premises occupied or to the other land and premises of the landlord.

Exhibitions and Meetings.

NATIONAL AURICULA SOCIETY, April 29.

The exhibition of the Northern section of the National Auricula Society on Tuesday last was so thoroughly good in the whole of its features as to fully justify the opinion so generally expressed as to its being one of the best exhibitions of its kind that have yet been held in the city. The show was as usual held in the Town Hall, and spacious as is the principal hall, its space was taxed to the utmost. Nearly all the leading growers in the northern counties were well represented, and in the majority of the classes the competition was very keen. The auriculas were supplemented by numerous collections of miscellaneous flowering and ornamental-leaved plants.

The most important of the several classes for auriculas was that for six show varieties. The entries being numerous and the plants remarkably well flowered. Here Rev. F. D. Horner, Burton-in-Lonsdale, was first with an excellent collection consisting chiefly of varieties of his own raising. Mr. T. Lord, Todmorden, was a capital second, and Mrs. Kyrke-Penson, Ludlow, was a close third. Rev. F. D. Horner was first also for four show varieties with finely developed examples. Mr. W. Taylor was successful in taking the second prize, and Mr. T. Lord was third. There was a spirited contest in the class for pairs, and the post of honour was occupied Mr. E. Shepley, Middleton, whose specimens were remarkable for their high quality. Mr. G. Middleton, Prestwich, and Mr. E. Shaw, Moston, were second and third respectively, with capital collections. In the class for pairs, in which the competition was limited to those who had not previously taken prizes, the successful exhibitors were Mr. James Wood, Mr. T. Hind, and Mr. E. Walker, Leek. Alpines were of great excellence, more especially in the class for four, in which the prizes were awarded to Mr. J. Beswick, Mr. H. Geggie, Bury, and Mr. J. Butterworth. The premier auricula was Horner's Magpie, shown by Rev. F. D. Horner.

There was a very good competition in the class for single specimens, and the majority of the plants were staged in excellent condition. Green edge, Mr. B. Simonite, Sheffield, was first, and the Rev. F. D. Horner was second. Grey edge, Mr. T. Lord was first and second, and Mr. J. Butterworth was third. White edge, Rev. F. D. Horner was first, Mr. E. Shepley second, and Mr. T. Lord third. Selfs, Rev. F. D. Horner was first, second and third. Alpines with yellow centre, Mr. J. Clements was first and second, and Mr. S. Barlow third. Alpines with white centre, Mr. J. Beswick first and second, and Mr. J. Butterworth third.

There was a good representation of laced polyanthuses, the plants generally being remarkable for the high quality of the flowers. For three polyanthuses with black ground Mr. J. Butterworth was first, and Mr. J. Beswick and Mr. A. Oldham were second and third. In the corresponding class for red ground varieties Mr. J. Butterworth was again first, and Mr. G. Thornby, Middleton, and Mr. W. Brockbank, Didsbury, were second and third. Mr. J. Butterworth was first and second for single specimen red ground flowers and Mr. A. Oldham occupied the third place. Mr. J. Butterworth obtained the premier award for specimen red ground flowers, and Mr. W. Brockbank and Mr. A. Oldham were second and third respectively.

Chief amongst the miscellaneous contributions was the collection of Clivias from Messrs. B. S. Williams and Son, of Upper Holloway. The firm had also some excellent orchids. Messrs. Ryder and Son, Sale, exhibited an immense collection of varieties of Primula Sieboldi and were awarded the silver medal. Messrs. Barr and Son, 12, King Street, Covent Garden, staged a representative collection of daffodils with other hardy flowers. Daffodils were exhibited by Messrs. Dickson and Robinson, of Manchester, who also contributed tulips and other spring flowers. Mr. Joseph Brown staged a collection of hardy flowers, and Messrs. Dickson, Brown, and Tait presented an attractive collection in which Dendrobium Wardianum was conspicuous.

Novelties were numerous and first class certificates were conferred upon *Clivia cruenta*, *Cypripedium Harrisianum superbum*, *C. caudatum roseum*, and *Calanthe Sanderiana* from Messrs. B. S. Williams and Son, and upon *Mrs. J. B. M. Camm*, *Johnstoni*, *Queen of Spain*, and *F. W. Burbidge* from Messrs. Barr and Son.

ROYAL AQUARIUM, SECOND SPRING FLOWER SHOW, April 29 and 30.

The second of the series of horticultural exhibitions at the Royal Aquarium, Westminster, under the superintendence of Mr. William Holmes, was held on Tuesday and Wednesday, and proved in every way a brilliant success. The whole of the available space within the spacious building was filled to its utmost capacity, the several classes of plants for which provisions were made in the schedule were presented in the best possible condition, and the arrangements were so well carried out as to reflect much credit upon the taste and judgment of the superintendent. The exhibition was not less interesting than attractive, for with but two or three exceptions the whole of the collections were staged in the competitive classes, a fact of so much importance that special attention may well be directed to it.

Auriculas had liberal provisions made for them, and as the competition was keen in the whole of the classes, these flowers constituted of themselves an important and interesting exhibition. The whole of the principal southern growers were represented, and in addition, several of the principal cultivators in the neighbourhood of Newcastle-upon-Tyne took part in the competition. There was a very keen competition in the class for twelve show varieties, and Mr. G. W. Wheelwright, Oxford Road, Reading, was first with a fine collection in which were Turner's C. J. Perry, Leigh's Colonel Taylor, Barlow's Mrs. A. Potts, Simonite's Rev. F. D. Horner, Simonite's Heather Bell, Lancashire's Lancashire Hero, Woodhead's Black Bess, Traill's Prince of Green Edges, Read's Acme, Douglas's Dr. Kidd, Lightbody's Richard Headly, and Headly's George Lightbody. Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, was a close second with Simonite's Rev. F. D. Horner, Douglas's Tiresias, Douglas's Mrs. Moore, Read's Acme, Walker's John Simonite, Douglas's Duke of Albany, Traill's Prince of Green Edges, Douglas's Abbe Lizst, Turner's C. J. Perry, Douglas's Mabel, and Horner's Magpie. Mr. R. Patterson, Ashburne Gardens, Sunderland, and Mr. E. Adams, Swalwell, Newcastle-upon-Tyne, were third and fourth respectively. Very spirited also was the contest in the class for six, and in the result Mr. T. E. Henwood, Auricula Villa, Hamilton Road, Reading, and Mr. C. Phillips were placed first and second respectively. The varieties shown by Mr. Henwood were: Headly's George Lighbody, Douglas's Dr. Kidd, Turner's C. J. Perry, Simonite's Rev. F. D. Horner, Woodhead's Black Bess, and Woodhead's Mrs. Dodwell. Mr. Phillips staged Duke of Albany, Woodhead's Black Bess, Douglas's Dr. Kidd, Simonite's Rev. F. D. Horner, and Headly's George

Lightbody. As in the preceding class so in that for four show varieties Mr. Henwood was first with finely developed examples of Mellor's Reliance, Headly's George Lightbody, Simonite's Rev. F. D. Horner, and Barlow's Mrs. A. Potts. Mr. G. W. Wheelwright followed closely for second place with Douglas's Conservative, Simonite's Rev. F. D. Horner, Headly's George Lightbody, and Barlow's Mrs. A. Potts. There were three entries in the great class for fifty, and the post of honour was occupied by Mr. J. Douglas with a fine collection consisting chiefly of show varieties. Mr. C. Turner, Slough, was second with a collection strong in Alpines, and Mr. R. Patterson was a close third with well developed examples.

ALPINE AURICULAS were staged in large numbers and in capital condition. Mr. J. Douglas obtained premier honours in the class for twelve, with admirable specimens of Ada Hardwidge, Miss Black, Nellie Hibberd, Miss Moore, Hotspur, Sensation, Love Bird, Toujours Gaie, and seedlings. Mr. C. Turner was an uncomfortable close second with Surprise, T. E. Henwood, Roland, Charles Turner, Garnet, G. Wheelwright, Countess, Sunrise, Emblem, and seedlings. Mr. G. W. Wheelwright and Mr. W. L. Walker, Reading, were third and fourth. Mr. Henwood was successful in obtaining the premier award in the class for six with good specimens of Hotspur, Homer, Defiance, Mary, Frances, and Love Bird. Mr. Phillips was a capital second with Queen Victoria, Homer, Reginald, Melanie, Mrs. Llewelyn, and Edith. Mr. R. Dean, Ealing, was third, and Mr. A. J. Weston, Cavendish Nursery, Balham, were third and fourth with good collections. Mr. Douglas occupied the first place in the class for four with Circassian, Ada Hardwidge, Toujours Gaie, and Love Bird. Mr. Henwood was second with Tennyson, Hotspur, Princess of Wales, and Charles Turner. Mr. Wheelwright and Mr. R. Patterson occupied the third and fourth places.

SINGLE SPECIMEN AURICULAS were well shown, and the awards were made as follows: Green edge, Mr. Douglas first with Leigh's Colonel Taylor in exceptionally good condition, and second and fourth with Simonite's Rev. F. D. Horner; Mr. Henwood third with Rev. F. D. Horner. Grey edge, Mr. Henwood first with Headly's George Lightbody; Mr. J. Douglas second with George Lightbody, and third with Douglas's Mabel; and Mr. C. Phillips fourth with Lancashire's Lancashire Hero. White edge, Mr. J. Douglas first with Horner's Elaine, and fourth with Walker's John Simonite; Mr. T. E. Henwood second with Read's Acme, and third with Traill's Smiling Beauty. Selfs, Mr. Henwood first and third; and Mr. Wheelwright second with Woodhead's Black Bess, and Mr. Douglas fourth with Tiresias, Alpine, with golden centre; Mr. Douglas first with a seedling, and second with Mrs. Moore; and Mr. C. Turner third with Mr. Gibson. Alpine, with white centre, Mr. R. Dean first with Phidias; Mr. C. Turner second with The Duke, and third with Mrs. Knighton; and Mr. E. Adams fourth with Slough Rival.

PREMIER AURICULAS were Prince of Green Edges in the show section, exhibited by Mr. Wheelwright, and Nellie Hibberd in Alpine section, staged by Mr. J. Douglas.

FANCY POLYANTHUSES AND PRIMROSES were superbly shown, and formed an extremely attractive feature. For twelve polyanthuses Mr. R. Dean was first with large, splendidly-flowered specimens; Mr. J. Douglas was a close second; and Mr. W. H. Frettingham, Beeston, Notts, was third with excellent examples. Mr. J. Douglas and Mr. R. Dean were first and second for twelve primroses with good examples; and Mr. Douglas was first also for a collection of primulas, Mr. R. Dean being second. There was a keen contest in the class for baskets of primroses, and the awards were made in favour of Mr. R. Dean, Mr. Douglas, and Mr. Lambert.

COLLECTIONS OF PLANTS were well represented. Messrs. J. Laing and Sons, Forest Hill, were first for a collection of miscellaneous plants with a superb arrangement, in which the orchids and begonias were especially meritorious; Mr. C. Nunn was a good second. Messrs. Laing were first also for a group of clivias with finely-flowered specimens of Mrs. Laing, John Laing, Bronze Queen, and other of the beautiful varieties raised at Forest Hill. In the class for forced flowers, Mr. W. Morle, Regent Street, was first with a large and beautiful group. Mr Morle was first also for twenty-four spiræas and twelve genistas, staging in each case examples evincing cultural skill of the highest class. Mr. C. Nunn was first for six genistas; and Mr. Lambert, Elfindale Lodge, Herne Hill, was first for six spiræas and six dielytras, with superbly-flowered examples. Messrs. C. Nunn, Maze Hill, was a capital second for spiræas.

MISCELLANEOUS CONTRIBUTIONS included a magnificent group of clivias and amaryllis from Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, to whom an extra prize was awarded. Messrs. Sutton and Sons, Reading, exhibited about twenty large, finely-flowered specimens of herbaceous calceolarias and collections of border and alpine auriculas, and were awarded a special prize. Messrs. H. Lane and Son, Great Berkhampstead, contributed a large group of hardy rhododendrons and azaleas, which produced a brilliant display. As in the preceding cases, a special prize was awarded.

DAFFODILS formed a great and attractive feature. In the class for collections of unlimited extent, Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, was first with an immense bank of flowers, which were tastefully arranged, and comprised all the principal varieties now flowering. Messrs. Barr and Son, 12, King Street, Covent Garden, followed closely for second with an immense collection of finely-developed flowers. For thirty-six bunches, Messrs. Barr and Son were first with an excellent collection, and in the class for eighteen bunches, Mr. C. W. Cowan, Valleyfield, Penicuik, was first with flowers of great excellence.

NOVELTIES were numerous, and first-class certificates were granted as under: To Messrs. Sutton and Sons for *Calceolaria Cloth of Gold*, *Achimenes Rosy Queen*, and *Auricula Bridesmaid*, the last named an attractive fancy variety; to Messrs. J. Laing and Co. for *Princess of Wales*, *Gigantea*, and *Miss E. F. Cooper* begonias, and *Bronze Queen* and *John Laing* clivias; to Mr. T. S. Ware for *Primula lilacina marginata;* to Mr. W. Gordon, Twickenham, for *Pœony Lady Lottie;* to Messrs. B. S. Williams and Son for *Clivia Surprise;* to Messrs. Barr and Son for *Queen of Spain*, *Queen Sophia*, *Dorothy E. Wemyss*, and *Falstaff* narcissi; to Mr. J. Douglas for Alpine auriculas *Toujours Gaie*, *Love Bird*, and *Nellie Hibberd;* to Mr. R. Dean for *Charmer* polyanthus, *Brightness* and *Gladstone* primroses; and *Bedfont Yellow* wallflower; and to Mr. J. Chambers, Isleworth, for *Viola Snowflake*.

NEWCASTLE-UPON-TYNE SPRING FLOWER SHOW.

THE recent exhibition of spring flowers held by the Newcastle-upon-Tyne Horticultural Society was in every way a splendid success. The Corn Exchange and Town Hall, which, as usual, were devoted to the show, were filled to their utmost capacity with the competitive and miscellaneous collections, and the quality of the specimens was remarkably high throughout. Not the least satisfactory part of the exhibition was the attendance of visitors, who mustered in such large numbers as to show that much interest is taken in the society and its work by the residents in the city and its suburbs, and that spring flowers are fully appreciated. The arrangements were admirably carried out by Mr. Wilson and other members of the staging committee, and as the result everything worked as smoothly as could be desired. Stove and greenhouse plants were remarkably good for so early in the season, forced plants were highly satisfactory, bulbous plants were well shown, and, as is customary at the Newcastle spring show, auriculas were staged in large numbers and in excellent condition.

Show and alpine auriculas formed one of the most interesting features of this important gathering. There was a keen competition in the class for nine show auriculas, and in the result the premier award was made in favour of Mr. R. Patterson, gardener to Mrs. Backhouse, Ashburton Hall, Sunderland, who had excellent specimens of Read's Acme, Simonite's Frank Simonite, Simonite's Rev. F. D. Horner, Horner's Heroine, Woodhead's Black Bess, Hindly's George Lightbody, Simonite's Heather Bell, Campbell's Green Edge, Turner's Charles J. Perry. Mr. W. H. White, Killingworth, was a good second, with similar varieties. Mr. W. Thompson scored a capital first in the class for six show auriculas, and had Traill's Beauty and Read's Acme, with exceptionally fine trusses. Mr. Patterson followed closely for second place, having Simonite's Frank Simonite and Campbell's Green Edge, remarkably good. Mr. Patterson was first for four show varieties, for pairs, and for single specimen grey and green edged varieties. Mr. Battersby was successful in taking the first prize in the single specimen white edge class. The class for twelve alpines comprising not less than nine varieties was a very strong one, there being no less than seven entries. Mr. Patterson occupied the post of honour with well-finished specimens of Mrs. Dodwell, Mrs. Llewellyn, Diadem, Queen Victoria, King of the Belgians, George Lightbody, Reuben, and Charles Turner. Mr. White, who occupied the second place, staged a collection that did much credit to his cultural skill. The first collection of six laced polyanthuses was that from Mr. Stobbs, who had George IV., Prince Regent, Cheshire Favourite, and other well-known varieties, in capital condition.

Foremost amongst the exhibitors in the classes for stove and greenhouse plants in flower were: Mr. F. C. Ford, gardener to Mrs. Pease, Pierremont Hall, Darlington; Mr. J. Wood, gardener to T. Lange, Esq., Heathfield, Lowfield, Gateshead; Mr. J. McIntyre, Darlington. Mr. Ford was successful in occupying the first place in the class for four plants in bloom, and had Clivia miniata superba, Erica Victoria Regina, Tremandra verticillata (one of the most elegant of New Holland plants), and Rhododendron Veitchi, an extremely beautiful species, bearing a profusion of large flowers of snowy whiteness. Mr. Wood and Mr. E. Adams, of Swalwell, were second and third respectively. Mr. Ford was first also for three orchids, the trio consisting of Dendrobium nobile, Cœlogyne cristata, and Oncidium leucochilum, all of which were of large size and well flowered. Mr. Wood was a capital second with finely-finished dendrobiums. Mr. Ford, Mr. J. McIntyre, and Mr. Wood were the successful competitors in the class set apart for azaleas, with reference to which it must be said that they represented cultural skill of a high class, and produced a bright and effective display.

Hyacinths and tulips were admirably shown, and formed an important feature. In the great open class for hyacinths there was a keen contest, and Mr. W. J. Watson, Fenham, Mr. Henry Dewar, Newcastle, and Messrs. A. Kerr and Sons, Kelso, were the prizetakers in the order of their names. The principal varieties in the winning collection were Souvenir de J. H. Veen, King of the Blues, Von Schiller, Lord Derby, La Grandesse, Sultan's Favourite, Czar Peter, Mont Blanc, and Blondin. Mr. Watson was first also for twelve, and Mr. H. Dewar and Mr. E. Laidlaw, Sunderland, were second and third respectively. Mr. J. Wood was first in the two classes for hyacinths in the division in which the competition was limited to gentlemen's gardeners. The most successful of the competitors in the class for turnips were Mr. Watson, Mr. Dewar, Mr. J. Ward, and Mr. J. Wood. Mr. Watson was first for six pots of trumpet daffodils, and Mr. McIntyre obtained premier honours in the class for six pots of polyanthus narcissi, and Mr. Watson was second. The exhibitor last named was first in the open class for six pots of lily of the valley. Dielytras and spiræas were admirably shown.

The classes for cut flowers were numerous, and the contributions to them produced a bright and pleasing effect. Mr. J. Wood was first for twelve blooms of Maréchal Niel rose with superb flowers. Mr J. Wood occupied the post of honour in the class for twelve camellias and for a similar number of trusses of rhododendrons Mr. Ford had the premier award made in his favour. The most tasteful epergnes were those from Mr. O. Lamb, South Hill, Chester-le-Street, and Mr. J. Battersby. The exhibitors specially successful in the classes for bouquets were Messrs. Perkins and Sons, of Coventry, Mrs. E. Armstrong, Newcastle, and Miss Handyside, Newcastle.

YORK SPRING FLOWER SHOW.

The Ancient Society of York Florists held its first show of the season on the 23rd ult., at the Guildhall, the public being as usual admitted free, a privilege of which a large number of citizens availed themselves. The arrangements were admirably made by the members of the committee. Messrs. Douglas, Cowper, C. Holme, and Fieldhouse were efficient judges. There was an excellent exhibition, as proved by the fact that over five hundred specimens were staged. The display of hyacinths was exceptionally fine, upwards of two hundred examples being staged. There was a fair average collection of show and alpine auriculas and polyanthuses, good tulips, and excellent specimens of Polyanthus narcissi. The new rules of the society for restricting auriculas and polyanthuses to pots not exceeding four inches in diameter lent uniformity to the exhibition. The spiræas were very fine. Of cut flowers, the hand bouquets, gentlemen's button-holes, ladies' spray bouquets, and bunches of flowers were much admired. The chief winner in the classes for auriculas and polyanthuses was Miss Steward, and Dr. Baker, Mr. T. Smith, Mr. G. Cooper, and Mr. G. Hudson were very successful. Mr. S. Hardcastle, Mr. J. Nicholson, Mr. B. Pannett, Mr. Fielden, Mr. W. Douglas were also winners in these classes. Dr. Baker took all the first prizes for tulips, and most of the premier honours for hyacinths, including a prize given by Messrs. Clues Bros. for six hyacinths dissimilar, Miss Steward and Mr. E. Gray being second and third. Miss Steward, Mr. W. Douglas, Mr. Fielden, and Mr. Leadley were awarded prizes in other classes for hyacinths. Mr. S. Hardcastle, Dr. Baker, Mr. W. Heppell, Miss Barstow, Miss Steward, Mr. B. Pannett, and Mr. J. Nicholson shared honours in the classes for primulas, cyclamens, cinerarias, spiræas, stove plants, &c. Other awards went to Mr. M. Dyson, Mr. H. E. Wilkinson, Mr. G. Horner, Miss Kirlew, and Mr. W. Heppell.

CARNATION SOUVENIR DE LA MALMAISON AT HALSWAY MANOR, CROWCOMBE.

I made a special journey a few days since on purpose to see the Malmaison carnations that are grown at Halsway Manor. I had heard that the plants were well worth seeing and so I found it. As a matter of fact, I was not prepared to see such magnificent examples of skilful cultivation as I found there. Mr. Clements, the gardener, tells me that he began cultivating this carnation with young and thriving plants three years ago. The oldest of the stock now occupy pots, varying from ten to sixteen inches in diameter, the largest plants being more than three feet high and nearly as much in diameter of branches. On the day of my visit all the strongest shoots of last year were carrying either well expanded flowers or fast swelling flower buds. The experienced readers will be able to judge pretty near the number of blossoms that such plants would furnish in the course of a season. It will be more satisfactory for them to endeavour to do so than for me to state the number that some of them were carrying, as I have no desire to make more of the subject than their condition merits. But I may be allowed to say, that although I go into a good many different gardens in the course of the year, I have never met with this carnation (in private places) so well grown and in such numbers as in the case under notice. The plants are in the most perfect health with thriving branches reaching nearly down to the pot, while the main stems and oldest side growths are well ripened. It is to this latter condition that the grower of this lot of plants attributes his success, as in the course of our conversation he remarked that he could not keep the plants alive for so long if he did not aim at securing well ripened growth. This is done by standing them in the open air as soon as the bulk of the blossoms are over, which is generally about the middle of July. The plants are then stood on a hard bottom fully exposed to the sun, only receiving sufficient root moisture to keep the growth from flagging. Mr. Clements, however, admits that this resting—if I may so term it—and supplying water to the roots during the time they are in the open air is the crucial test of a grower's ability to manage them properly. Indeed he goes further, and says that it is the rock on which so many wreck their hopes in dealing with this carnation, as an excess either way will lead to disappointment. However it appears very plain that an observant cultivator will not experience much difficulty in mastering this part of the details of management, as their behaviour indicates when the treatment they are receiving suits them.

There are many plants of three different ages at this place, as up to the present time a lot of young ones have been raised every year. This, however, does not appear to be necessary as regards the keeping up of the number is concerned; for the old ones are still increasing in size without showing the least indication of weakness. Indeed it was this vigorous condition and large size of the oldest plants that struck me as being remarkable, as the number of plants is not two or three but a score or more all in the same robust health with every appearance that they will continue to go on in the same way for an indefinite time.

There is not a doubt, as the grower in this case remarked to me, that a judicious use of stimulants has something to do with his success, as he finds when judiciously applied, and that means when given at the right time and in small quantities stimulants are useful. No experienced grower would of course apply stimulants of any kind when the plants were resting, and they must have only gentle doses when young growth is being formed; but when the flower stems are well advanced and the blossom buds showing on them, then is the time to assist the roots with some stimulating liquid. As strengthening this view of the practice of high feeding at the wrong time, I can report that a portion of my own stock of this carnation, properly put on its trial to test the influence of liquid sewage on the behaviour of the plants proves that it is to a certain extent injurious to young plants until the flower buds are well advanced. When given to them before that it forces the growth too much and I shall not be surprised to see an early collapse of the portion of my plants that have been untimely stimulated. The man who therefore takes them in hand for the first time had better be cautious in the use of stimulants.

In dealing with plants that have already occupied pots for one year that are ten inches or more in diameter, the cultivator must not conclude without an examination of the roots that they want placing in pots of a larger size. The operation should be guided entirely by the condition in which he finds the roots. If they are numerous and there is no unoccupied soil a larger size pot will be desirable, but not otherwise. When plants are as well furnished with growth as those to which I have alluded, there will be as a natural result a good number of roots. But the plants to be met with in that condition are not numerous; they are often long-legged and thin of growth near the pot, in that state roots are not so freely made; caution in giving them larger pots is therefore necessary.

With regard to soil, I may remark that if the drainage is sufficient the plants do better in a fairly heavy soil than in soil of a lighter description. Good fibrous loam with one sixth part rough peat to keep the compost fairly open and the whole pressed firm in a pot will not fail to secure satisfactory growth if other conditions are equal.

In the matter of propagation, Mr. Clements tells me that he always increases his stock from cuttings at this time of the year and they are taken from growth obtained from plants in flower. The cuttings are inserted in pots; the latter are then plunged in bottom heat in a cucumber frame and remain there until rooted.

It is a common occurrence for this carnation to produce flowers with green centres. Knowing that this has caused some degree of perplexity in the minds of different growers, I thought I could not do better than obtain the opinion of one who evidently so well understands their treatment. According to the view entertained by the grower above referred to it is not possible to prevent these flowers coming with green centres, nor is it of any consequence their doing so; the cultivator has only to have patience and the green centres will develope into perfect flowers. I was shown plenty of them which had done so as well as others in different stages of growth, all of which were showing a tendency to make well furnished centres of delicately coloured petals.

From what I have seen of the treatment these flowers receive from different people I feel sure that they are often taken from the plant before they are ready, or in other words they are cut too soon, as in no instance do I remember ever seeing such large and highly developed flowers as the plants under notice presented. Yet the blooms lost none of their character, there was no more coarseness in them than what is common to the majority of the specimens seen.

It appears necessary to give a gentle caution to the inexperienced growers that they will gain nothing by attempting to force the plants into flower by an increase of heat, but they will rather lose by it. A warm greenhouse temperature, or to be more minute, a temperature of fifty degrees by fire heat is as much as it is safe to give them, and this must be accompanied with plenty of air whenever the weather is suitable. The cultivator must remember that they are nearly hardy plants, therefore to attempt to cultivate them under an extreme of altered conditions can only end in failure. J. C. Clarke.

OXALIS.

Wood Sorrels, though met with occasionally throughout America and Europe, belong more especially to the Cape of Good Hope. Judging by the delicate and very beautiful leaves, so especially characteristic of the natural order, Oxalidaceæ, the heat of the Cape, accompanied by its daily dry winds, so powerful, carrying dust in such showers, would seem to be the least suited to the oxalis amongst many countries, yet there is its real home. The fact is during the rainy season its bulbous, herbaceous, and annual species, make sudden and rapid growth, have a hurriedly beautiful yearly existence, and then return to rest. Some species propagate in immense numbers. Apart from the seeds produced, they form annually at the base of the old growth from fifty to a hundred minute bulblets. Should these be disturbed by insect or other agency they are set free and driven by wind force long distances, until, lodged in bush or rock, they await the next rain season, and at once commence growing and perpetuate new colonies in kind. Other kinds have large, or long thick transparent roots, which carry forward the enlargement of upper growth as underground reservoirs supply fountains.

Another interesting feature is to be seen in the sensitive foliage. The majority, if not all, close their leaves at night, neatly, compactly, even as animals' eyelids separate occult sense from the world around preparatory to sleep. This characteristic is stronger in the Chinese *Oxalis sensitiva* than others. There seems in this diurnal closing of some genera at night time, notably oxalids, acacias, trifoliums, &c., a protest on behalf of nature against what appears ably digested dicta of vegetable physiologists as to the powerful incitement night air has upon growth. If plants do as much as our teachers have taught us under the influences of night's cloak of dew and darkness, how comes it these plants clasp their leaf surfaces so tightly together, and so unmistakably reject all foreign aid or influence?

Taking our cue from the chief home of these oxalids, judging also by the habits of our pretty native small-horned wood sorrel, *Oxalis corniculata*, which selects quiet shades and moist sites to grow in, we may the more readily determine that the shelter, moisture, and collateral advantages existing within glass structures are highly suited to their wants. This being so it is difficult to explain why the genus is not more popular and, as regards its few more beautiful species, more generally grown. Take, for instance, the very beautiful *Oxalis versicolor*, with beautiful vermilion margined white flowers, large sized comparatively to its small leaves, which folds its flowers nightly in imitation of some ladies' parasols, the colours being twisted spirally very prettily. The quaint bulblets are obtainable at about 1s. 6d. per dozen, which would suffice for planting liberally in pots, being of little trouble to grow, when in bloom very striking, and capable of easy propagation by division of bulblets indefinitely, hence held in permanent possession without further outlay. Other very desirable varieties held in stock by the trade are the large-leaved, large-flowered *O. Bowiei* with *O. Deppei*, both with dark rosy-red satiny flowers. The yellow-flowered O. sensitiva previously referred to, albeit the last is somewhat expensive.

Probably the most showy of all is the double-flowered form named *O. cernua flore pleno*, with its large clusters of drooping yellow blooms, each being about the size of a florin; when well grown in pots, for which it is so well adapted, this last makes a very fine display. *O. floribunda*, the American herbaceous variety, in a diversity of colours, is also desirable, more especially the white-flowered form known as *O. floribunda alba*.

On the Continent far finer collections exist than are in possession of British growers. Messrs. Ant. Roozen enumerate more than two dozen distinct species, amongst which *O. lasiandra*, the woolly stemmed variety; *O. rosea*, the dwarf Chilian species; the trailing *O. venusta*, &c., which are severally gems in their own particular way. On the Continent, moreover, these better forms are often bedded out during the summer with charming effect, for which purpose *O. rosea* and *O. Deppei* are well suited, to say nothing of many others. Planted out into deep rich soil during the first week in June, they grow, bloom, and by the autumn ripen off, preparatory for winter, when, if taken up and stored away, they come in conveniently for a repetition of the same treament the following year.

The species as a whole are not so tender as may be imagined

Often have I observed stray plants arise upon borders or the rubbish heaps in gardens, grow and bloom well. Such as are enumerated above would exist in open borders if protected by a few inches of cocoa-nut fibre, decayed manure, or ashes. The division comprising hardy annuals, may besides be sown on sheltered sites in open borders late in the month of April, not excepting the more sensitive O. sensitiva. All succeed tolerably well in any light open soil. An admixture of peat and loam is, however, most suitable. Some of the stronger growing, having long fleshy roots, require somewhat large pots, as it is owing to want of more root space they do not generally succeed.

William Earley.

SHADING VINES.

My experience coincides exactly with that of Mr. J. C. Clarke, on page 222, when speaking of the advantage and necessity in special instances of applying shade to Muscat of Alexandria vines when they are not in the best of health. Where the roots of this variety are not in a satisfactory state the foliage is sure to suffer, no matter whether there be a sufficiency of air admitted to the house at the same time or not to meet other requirements of the vines. Where vines are badly attacked with red spider one season it will be a difficult matter to thoroughly rid them of this pest, so that none will appear on the leaves the following season. It generally takes two or three years to effectually settle this insidious enemy when it has become thoroughly nested into the foliage of any particular rod of the variety in question. In such a case as this, a thin shade placed upon the glass, over that part of the vine which generally loses its best foliage through the ravages of red spider, will be found a decided gain, if done early, that is, before much damage is done to the foliage. The leaves nearest the main stem are those generally attacked first. These, I take it, are the more useful leaves to the vine itself than any other, if any can be singled out specially.

To tiffany or scrim canvas shadings, worked with aid of rollers on the outside of the roof of the vinery, I prefer a thin mixture of lime dissolved, put on with a common whitewash brush in preference to syringing it on to the glass. The latter plan necessitates the sash bars and rafters being besmeared over, which does not add to the outside appearance of the house. Another simple plan is to syringe occasionally, over the roof some milk: this forms a shade without being in any way dense, and does not mark the wood-work nearly so much as the lime, when syringed on, I am told also that lime is injurious to the paint. We have here a vinery planted entirely with this variety; for the last ten years good crops of fruit have been produced by the vines, but after the first four years, and during the following three, the foliage was annually destroyed over the greater part of the house. Yet in spite of this defect in the foliage, by the aid of a light shade we were enabled to fairly well finish the crop of grapes. The cause of scorching was a puzzle to many men; it never happened through want of air, as the greatest pains were taken in the admission of air to the house with a view to conquer the mystery of scorching of the leaves, which was generally the worst about the middle of the day in bright weather and when the ventilators were wide open, and had been so for some time.

Afterwards it was noticed that the worst scorchings took place after the border had received a good soaking of water. This latter fact led me to examine more closely the border which, when newly made, was composed mainly of turf cut from a strange locality, and at that time was one mass of fibre, appearing to be just the material for grape culture. A fair proportion of old lime rubbish was added to the turf to help to keep it porous, but it was proved afterwards that the quantity used was not nearly enough. After the first year, when decomposition of the fibrous parts took place, a mass of inert soil was the result, which, in spite of the old lime used, became an uncongenial mass for the roots to run in, and when removed, cut out for all the world like cheese, but of a different colour. The consequence was that the water applied to the border could not pass through so rapidly as could be wished. The application of water to the roots appeared to gorge them so much as to injure what little activity they were possessed of. Shading then, in the manner described, was practised, with vastly improved results. As there were no signs of improvement taking place in the vines as regards the foliage, we decided to take out the border entirely, which appeared a strange proceeding considering the short time that it had been made.

In the new border less depth of soil was given, more drainage instead, the soil taken this time from another locality, considerable more lime rubble used, also a good supply of charcoal and wood-ashes was added. The roots were laid in near to the surface, and were kept moist during the time they were uncovered by soil. In a week's time a good soaking of water was given to the border, afterwards mulching it over with partly-decayed horse manure. The vines were occasionally syringed for a time, it being the first week in October, and dry at the time. A light crop of fruit was taken from the vines the following year, but an improvement was manifest by better foliage and considerably less scorching than had previously been the case. Shade was resorted to the following summer, from the time the bunches were being thinned, in the early part of May, until they commenced to colour in August. Ever since then we have not found the necessity of applying shade to these vines, such an improvement having taken place through the lifting of the roots. We do not now apply any shade to the roof of the vinery in question, and good grapes are annually cut from the same vines.

Previously to the lifting of the vines taking place, it was impossible to grow grapes without the aid of shade on the roof, therefore this is a case where shade is essential to procuring any sort of success. I ought to say that an outside border also was in existence at the same time as the inside one was removed. This additional rooting medium assisted materially the vines to bear the check of lifting, caused by replacing the soil in the inside border. If the border had been always in the same state as at the present time, the necessity of applying shade to the roof would never have arisen. Therefore circumstances must be seriously taken into consideration before the shading of vines can be dispensed with entirely. To some it is a decided necessity, while to others it would mean no crop.

No one need be afraid of using shade to vines of Muscat of Alexandria, as in peculiar circumstances it is a necessity absolutely. In the same manner is it the case with Gros Colmar. The finest-coloured bunches that it has been my lot to witness were grown in a small lean-to vinery. The foliage was a good colour, healthy, although small. I have never seen the leaves in this particular vinery other than in good order, except once, and then when red spider had the upper hand.

In another vinery, only two miles away, but situated on a hill, quite the opposite to which the previous place was situated, the case was different. Here I never saw well-coloured berries of this variety. It cannot be said that red spider was the means of disfigured leaves, as such many times was the case. Here a light shade would no doubt have proved a service, as it is a well-known fact that all black varieties of grapes colour best in the shade. My advice to cultivators is to study the various cases on their merits, and if found necessary, to apply shade to obtain the necessary results. H.

NOTES ON CARNATIONS.

Spring, summer, autumn, and winter something may be written and said instructively on the culture of these. I have for some years stated the old rule of thumb practice need not of necessity be strictly followed in the cultivation of these flowers.

I have proved that not so much depends upon the particular season as the condition of the plants when propagation, especially by pipings or cuttings, is resorted to. When this operation is about to be performed the operator must be fully assured that the plants are in a proper condition so as to ensure success. The sap must be in active circulation, and such being the case pipings will root freely in a very short time. I may say the quickest that I can record in my own experience is nine days from the time the cuttings were put in to the potting of the same.

Now, assuming that we have a few new and choice varieties purchased from the raiser, or of those appointed to send them forth to the public, these, in all probability, have been potted into small 60's or three or four-inch pots, and from these into five-inch pots, and ultimately transferred to seven-inch pots for the last shift, and in which it is intended to flower them. It often happens, more especially with some of the free-growing kinds, that a superabundance of lateral growth is made during the spring, and, in many instances, when a simultaneous growth takes place for blooming. In this case it is my practice to take away the larger portion of this growth and insert them as cuttings or pipings on a genial bottom heat. Thus I have treated *Mrs. Muir*, a new white that I obtained last autumn from Messrs. Campbell, of Blantyre, sent out for the benefit of the widow of the raiser (Mr. Muir), and also several of Mr. Dodwell's choice ones sent out by that painstaking veteran florist last autumn. I may mention that I have already bloomed some of these; others are freely throwing up for bloom. I deem *Miss Bridson* a perfect charmer, a large and fully-developed flower, a lovely pink or rose, and the blooms exquisitely fragrant. This quality is wanting in very many varieties, more especially the yellow section. On very many occasions I have presented fine large blooms of yellows to some of my friends, when at once they are placed in contact with the olfactory nerves with the sudden exclamation, "They are indeed most lovely, but what a pity that they have not any scent!" With these observations I fully agree, and state that as we advance in the rapid strides we are making, though some of us may not live to see and enjoy so great a boon, yellow carnations may, by the aid of the bee or man hybridist, be brought to this much desired state of perfection. At this some of the old and even modern florists may shake their wise heads, but we shall have fragrant yellows for all that.

I may observe that by raising carnations, whether by seeds or by cuttings, at any other than the old rule of thumb season very materially conduces to the producing of their lovely flowers in the same like order. This, so far as my experience leads me, gives the fullest confirmation to these views and statements, so much so that it has induced me, as you, I think, are cognisant, to recommend lovers of these flowers to propagate in season and out of season, with the assured result of having the flowers when others have none. If our labours should result in giving us exquisitely fragrant carnations of every hue during the dreary autumnal and winter months, what greater recompense could we crave or desire for having enlarged the scope of our operations?

George Fry.

Lewisham.

A New Flora of Warwickshire has been prepared by Mr. J. E. Bagnall, of Birmingham, and will shortly be placed in the hands of the printers. The geology of the county will be dealt with by Mr. A. Bernard Badger, B.A.

The Portrait of Sir Joseph D. Hooker, painted by Mr. Hubert Herkomer, R.A., has been formally presented to the Linnean Society. Lord Arthur Russell, in making the presentation on behalf of the subscribers to the portrait fund, expressed the pleasure he had in handing to the society so excellent a portrait of such a distinguished botanist. A photo-gravure of the portrait is in preparation, and a opy will be presented to each subscriber to the fund when ready.

Calls at Nurseries.

M. LOUIS VAN HOUTTE'S NURSERIES, GHENT.

The horticulturally-inclined visitor to Ghent will be somewhat bewildered and embarrassed at the number of nurseries in and around this famous and interesting old city. Whether he commence in the heart of the *ville*, with the "Compagnie Continentale d'Horticulture," of which the moving spirit is M. Linden, or with that at the extreme end of the place—at Gendbrugge—directed by M. Louis Van Houtte, he will find very many points of interest, and not a few of importance. There are nearly one hundred nursery gardens of various sizes in and around Ghent; but it may be safely stated without fear of contradiction that M. Louis Van Houtte's is the largest and the best known. Supposing, as is highly probable, that the visitor will put up at one of the hotels in or near the Place d'Armes, a tramway will take him to Ledenberg terminus, to the left of which, and past the stables, takes him in a minute or two to the far-famed establishment.

M. Van Houtte, in sympathies and in his perfect mastery of the language, is as much an Englishman as it is possible to be without actually being one by birth. Over fifty years ago his father started at Gendbrugge on a small scale, and lived not only to put the finishing touches, as it were, on this vast establishment, but also to complete his *Flore des Serres et des Jardins de L'Europe*, which, consisting as it does of 23 volumes, of 2,500 beautifully-coloured plates, nearly 2,000 woodcuts, and 4,900 articles, is one of the most important horticultural books yet issued on the Continent. Gold medals and prizes of all descriptions have been awarded to the author of this really splendid work in all parts of Europe.

To return, however, to the nursery and its work of to-day. Nothing, perhaps, could be more enjoyable than the circumstances under which the present writer spent a few hours at Eastertide in the Van Houtte grounds. The weather was singularly pleasant, and a strong sun would have rendered a run through the houses almost insupportable but for the effectual shading afforded by the system of stringing laths together. And what a wealth of floral and other beauty do these houses contain! There are over sixty of them, containing, besides the general collection of stove and greenhouse plants, the following specialities grown by thousands and exported every year in great numbers to almost every part of the globe: Palms, such as Kentias, Arecas, Chamædoreas, Chamærops, Cocos, Latanias, Phœnix, Thrinax, grown, in fact, by the million in all sizes. Next in importance come Orchids in variety, Ferns, Cycads, Amaryllis, Bromeliads, Himantophyllums, Begonias, Achimenes, Tydæas, and Gloxinias. Many of the palms are exceptionally well-grown and perfect specimens of 40 metres in height. One might wander about the largest palm-house and, with a post-prandial cigar, easily fall into the temporary illusion that he is in a tropical forest! Palms worthy of special mention are Cocos Bonnetti, an exceedingly graceful plant, and Areca Baueri. Facing the entrance of one of the palm-houses is a truly gigantic specimen of Anthurium Veitchi, which is claimed to be the finest plant in the world; several of its leaves are over four feet in length. The most interesting orchids in flower at Easter were well-grown specimens of Odontoglossum Wilckeanum and O. Harryanum, Darlingtonia Californica, and Angræcum sesquipedale. In Himantophyllums M. Louis Van Houtte is singularly rich, having, in addition to his own stock, recently purchased a very fine collection, for which he gave 20,000 francs. The collection of medicinal plants contains nearly every sort known to science, and is believed to be the second largest in the world—that at Kew being first.

Three or four of the stove-houses are full of Caladiums, rivalling each other in form of leaf and in the brilliancy of their colouring. A circular house specially constructed to meet the requirements of the Victoria Regia is now devoted to other purposes, and the plant has been transferred into a palm-house, with more profit to the proprietor if with less interest to the general curio monger. It contains some fine specimen plants of Latania borbonica, among others. In the propagating houses we notice some exceedingly rich forms of Bertolonia, notably Van Houttei, which was raised in these nurseries some years ago.

It is, of course, in the cultivation of Azaleas for market that the neighbourhood of Ghent is famous. Over 100,000 plants of all sizes of Azalea indica are grown here every year; 60,000 were exported to Great Britain, the British colonies, and to America during the course of the last season. Of Azalea mollis we noticed one batch alone, in the open, of nearly an acre in extent; these plants are taken up and potted during the autumnal months. The quantity of Camellias grown here every year is almost fabulous, whilst "India Rubber" plants (Ficus elasticus), Aspidistras, and Dracænas in about thirty varieties are also cultivated by the hundred.

The same astonishing "quantities" are met with on all sides out of doors. Indeed, the grounds themselves cover an area of about 160 acres. M. Van Houtte puts the number of bulbs in his nursery down as exceeding five millions. Particular mention should be made of the hyacinths, which were in flower at the time of our visit, and which formed a sight not easily forgotten and still less easily described. M. Van Houtte exports every year over two million bulbs of Tulips, Narcissi, and Lilies; and out of over three million crowns of Lily of the Valley at least two-thirds are exported annually. About 200,000 Spiræa japonica are grown and sold every season. This nursery contains also about 100,000 rose trees, and an equal number of fruit and ornamental trees, conifers, and ornamental and flowering shrubs, including, among the latter class, Deutzias, Hydrangeas, and Syringas, all for forcing purposes. Laurels, standard and pyramid shapes, are grown extensively here for decorative purposes, good strong plants of which are usually of six years' growth before they are employed for this purpose. They are extensively used in the Roman Catholic churches during certain periods of the year. Pœonias are likewise grown in great abundance, and appear to be as much a favourite with the Belgian cottager as with the English.

As still further illustrating the extent and importance of M. Van Houtte's place we may mention that he employs over 250 men; and that the five different catalogues which appear every year are printed in English and in French, and that 200,000 copies are posted to all parts of the world. Telegraphic wires connect the office with every corner of the garden, whilst the establishment has its own gasworks. The present writer, in conclusion, cannot help speaking in the highest and most unqualified terms of the almost severe neatness and order which he noticed everywhere in M. Van Houtte's most ably conducted establishment; neither can he refrain from expressing his gratitude for the uniform courtesy shown him by M. Van Houtte.

W. Roberts.

ORCHIDS IN FLOWER.

The houses are gay, but there appears somewhat of a halt in the procession of grand subjects; at all events, we have not at this time what we should regard as a grand display before us. "Use and wont" go some distance in the discounting of familiar beauties, but one never wearies of Cattleya Mendeli or Cymbidium Lowianum or Phaius grandifolius, which we are admiring for nearly the last time for the season, its heyday being past. The yellow Dendrobes are conspicuous as colour agents, and the fiery Ada contributes warmth when the skies are cloudy.

Orchis foliosa merits a note for its freshness of colour and accommodating character. It is in full perfection with us, although the usual time of flowering is later. We keep it cool until the end of February, and then put it in a warm pit with azaleas, and keep it near the glass to bring it forward without becoming drawn. It is important with these terrestrial plants to pot them down a full inch below the rim of the pot or pan, for they require liberal supplies of water, and to pot them up above the rim is a grave mistake. The soil should be fibrous loam, with a large addition of sand and broken freestone. We have also *Orchis longicornis* and *O. maculata superba* in flower, these having been with O. foliosa, the same treatment suiting all equally. They have rarely been better done than by Mr. Bullen, when the late Mr. Turner's collection was intact.

Odontoglossum.—The newish *O. Harryanum* has improved in character and advanced in favour. It was scarcely received with enthusiasm on account of a certain heaviness, but first impressions gave way to more agreeable estimates of its value, and we may now regard it as an important requisite of every good collection. It is now flowering with great vigour, and attracts us by its dignity and distinctness. *O. citrosmum* comes in advance of its usual time to have a hearty welcome. We have no finer odontoglot, nor one more useful whether for exhibition or the home stage. With these we have the brilliant *O. cirrhosum* and its fine form, *O. c. Klabochorum*, *O. maculatum*, *O. Pescatorei*, one of the finest of the cool series; *O. Rossi*, a little gem as well known as any.

Oncidium begins well with the golden *O. Marshallianum*, a true coolhouse orchid, and one that requires a little extra care because of its propensity to produce more flowers than it can finish without exhaustion. Plants that bloom profusely as this does are renewed in plenty in their native habitats, but when under cultivation the case is altered, for reproduction here means a fresh purchase, for the collector has to make the balance good. The pretty little *O. cucullatum* is quite acceptable for the side stage when its nodding racemes are well out, the rosy colours being acceptable now that yellow is abundant. It is at home in the coolhouse. *O. luridum*, with its olive-green flowers makes a change, and often interests a visitor more than the showy neighbours that compete against it with brighter colours. The well-known *O. ampliatum* is showy enough, and it suffices to include it in the list; but the magnificent *majus*, that is so much superior, being now in perfect condition, entraps the eye and asserts its right to exhibition treatment. A mixture of peat and sphagnum suits this fine plant, and it has but to be fairly well done to ensure the approbation of the judicious.

Cattleyas are great and are growing in greatness. The delicate *C. Trianæ* has run its race for the season, and now *C. Mendeli* takes its place, and keeps up the interest in the way of colour. The varieties of this fine cattleya are scarcely less interesting, though so much less numerous than those of *C. Mossiæ*, which is coming to its best, and will shortly be in full force. Amongst the Mendel's *Grandiflora* and *Jamesiana* are conspicuous for splendour, but are surpassed in size, majesty, and colour by *Superbissima*, in which the amethyst of the labellum and yellow of the throat are surprisingly brilliant. A special favourite of our own is *Bella*, a most delicate beauty, the sepals and petals of palest blush, the labellum richly veined with white on a ground of mauvy purple, the throat rich orange shading to white as it spreads to the frilled margin. This variety grows and flowers freely and has all the good points of a show plant. The glories of *C. Gaskelliana* are now revealed, and with them them the somewhat indefinable limits of this group C. labiata. It is a question of some importance occasionally whether a labiata of decisive character shall be assigned C. Mossiæ or C. Mendeli, and even C. Warneri will at times claim one as a close alliance. We know of no form of Gaskelliana after the type, so true to the accepted character as the almost self white *Alba*, the soft yellow in the throat giving it a tone of exquisite delicacy. Very different from all these is the strongly-coloured *C. Lawrenciana*. This is still scarce enough to have a special interest, but not so scarce but that it may be found in most of the better collections. As a companion to *C. Skinneri* it comes in well for grouping, but requires more warmth, and cannot always be grown with Skinneri, which is a cooler plant. We have succeeded by keeping both at the warmer end of the cattleya house, but many would find it safer to give Lawrenciana a place in the India house when growing. We are now rejoicing in a good bloom of *C. Skinneri alba*, which is wholly white save a stain of yellow on the lower part of the labellum.

Phaius compels attention by the splendour of the grand racemes of *P. Wallichi*, now making its last display for the season. It comes near to *P. grandifolius*, and that also is about to take a holiday to prepare for next winter's work. Plants of this noble character are of greater importance than may be inferred from descriptions of their flowers. The stately vandas, sobralias, and thunias are in the same category of tree-like orchids of commanding appearance that would be useful even were their flowers inconspicuous, but they bring in their flowers a distinct series of splendours, and the orchid house that has not its fair proportion of them must be regarded as poorly furnished.

PRIMROSE.

The rancour of the East Wind quell'd, a thrush
Joyfully talking on through glittering rain,
O see the yellow tufts along the lane,
Crowding the copse round every budded bush,
Dotting the dingle by its brooklet's gush,
And elm-path's mossy border,—who not fain
To drink their tender sweetness, cool and fresh,
The very breath of Spring, return'd again?

The Child's Flow'r, in the childhood of the year:
Our slopes and woods but yesterday were drear;
Now all the country breaks into a smile
Of Primroses, and Youth is full of cheer;
This fragrant vernal breeze in some, the while,
Waking all thoughts, unutterably dear.

William Allingham's *Flower Pieces*.

THREE-LEAVED CHOISYA.

Choisya ternata.

THIS plant is the subject of some mystifications, and we imagine that many of our readers will be glad of a short note upon it, accompanied with a figure. The interest that attaches to it arises from the beauty and fragrance of its pure white flowers and the accommodating nature of the plant, which is an evergreen shrub classed as for the stove, but quite happy in the greenhouse, and capable of withstanding an average winter in the south of England when advantaged with a wall. It is but rarely seen in gardens, and one reason, perhaps, is, that it is reckoned as tender as the ixoras, which it in some degree resembles in the form of its flowers, which, however, are larger, and exhale a delightful perfume. It does not require the warmth of the stove, and it will suggest to the reader its degree of hardiness if we say that it has lived several years on the wall that forms the boundary on the western side of the herbaceous ground at Kew, and it was from the plant there to be found that our drawing was prepared, showing exactly its character when in flower. It is of somewhat dense habit, richly leafy, and fairly well adapted for pot culture. It belongs to the order of rueworts (*Rutaceæ*), and is a native of Mexico; introduced to this country 1825.



CHOISYA TERNATA.

BONE MEAL.

UNDER the above heading in the issue of GARDENERS' MAGAZINE for April 5th, Mr. Clarke calls attention to a maggot which has wrought sad destruction among a friend's fuchsias. From his description I have no doubt that it is the same maggot which has made sad havoc of my auriculas.

It began with me last year and I lost from twelve to twenty plants. The symptoms were, the plants ceased to grow and appeared to be dying; on slightly pulling the plant it came away, being eaten through at the collar, and on shaking out the soil I found from seven to twelve maggots in each pot. They were from half to five-eighths of an inch long, of a creamy white body colour, and with a hard brown head furnished with a powerful pair of mandibles capable of cutting anything of a vegetable nature.

This year the destruction has been more extensive, some scores of auriculas have been eaten. "President Royd," and "Robert Lord," my two finest green-edged seedlings are both eaten in two at the collar, and it is most likely I shall lose both; other good seedlings have been eaten in a similar manner.

Now as to the cause. There was no bone meal in my auricula com-

post, but I had a little cow-dung and stable manure made of peat moss litter mixed therein. There is no doubt in my mind that this maggot is the larva of some fly or beetle, which in Mr. Clarke's case deposited its eggs in the bone meal, and in my case in the manure; the bone meal and manure respectively being the carrying agents which conveyed the eggs into the compost, subsequently to develope into this destructive maggot.

In my half century's experience I have never seen this maggot before last year. It is widely different from the wire worm, and indeed from anything which I have seen before.

Can Miss Ormerod throw any light on the origin of this pest?

Last year I had some of these maggots kept until they turned into the chrysalis state, and then put a bell glass over them to catch the further development; vigilance however was relaxed and nothing was discovered.

S. Barlow.

Stakehill House, Castleton, Manchester.

Cyclamens, once so abundant in the woods of Savoy, have of late years been collected in such immense numbers for sale in the markets of Aix les-Bains and Chambery that the Prefect has found it necessary to prohibit their collection to prevent their being exterminated.

BELL-FLOWERED ACANTHAD.

Goldfussia isophylla.

The plant presented as a bell-flowered acanthad is one of the many good things that are rarely seen save in botanic gardens, but should command attention for its simple beauty and usefulness as a decorative subject, for it brings a display of blue bells into the spring show in the home conservatory where often such a thing is much wanted.

Goldfussia isophylla obtained its specific name from the opposite arrangement of its leaves. There are half-a-dozen species in cultivation, and this, though not the noblest, for G. aniosphylla has larger flowers, is nevertheless the more useful, for it flowers profusely and presents a pleasing, though quiet, appearance. In affinities the Goldfussias are near to the Ruellias, and this plant is in some lists classed with the last-named genus.



BELL-FLOWERED ACANTHAD, *Goldfussia isophylla.*

Acanthads produce corollas of one piece, which is usually tubular. In this case it is distinctly bell-shaped, and the colour is a tender violet-tinted blue. The plant is a neat shrub two to three feet high, requiring the stove in winter, but proving an excellent subject for the greenhouse in spring and summer.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

HARDY PLANTS NOW BLOOMING.—Anemone ranunculoides, A. vernalis; Antholyza coccinea; Campanula glomerata; Celsia cretica; Cheiranthus Marshalli; Chlidanthus fragrans; Corydalis nobilis; Convallaria majalis; Dielytra spectabilis, Dodecatheon media, Hesperis matronalis; Iris Germanica; Ixias; Lilium Thompsonianum; Myosotis sylvatica; Muscari monstrosum; Scilla campanulata; Violas.

THE HOUSE.

WINDOW boxes, baskets for suspending in balconies, and trays for fitting in rustic and other vases must with the next fortnight or three weeks be prepared for the summer. The plants selected for filling them should be well able to withstand the effects of occasional periods of drought, for with the greatest care it is not always possible to prevent the soil becoming very dry, and remaining so for a short time. The pelargoniums are unquestionably the most useful subjects for boxes and baskets placed in sunny positions—the zonals for the main furniture, and the ivy-leaved varieties for trailing over the sides. Very charming baskets may be formed with ivy-leaved pelargoniums, provided due care is taken to have an equal proportion of light and dark flowered varieties. Zonals for window boxes should be moderately vigorous in growth and decidedly neat in habit. A rather rich compost is necessary, and there is nothing better than a mixture formed with loam three parts and well-rotted manure one part.

CONSERVATORY AND GREENHOUSE.

AZALEAS that are out of shape and leggy may now be cut back to advantage. At the same time they must be turned out of their pots and the balls reduced and repotted firmly in smaller sized pots, and at once put into a kindly moist heat until they break freely. Instead of giving water at the root frequently syringe the stems until they are growing freely, then give the roots plenty.

CAMELLIAS that have finished growing for the season to have less water and more air. They must not go absolutely dry, because that would seriously injure them, but to have only as much moisture as will keep them from flagging. It is too soon to put them out yet; so give them airy positions in the house.

EPACRIS that have flowered must now be repotted, the soil to be sandy fibry peat. The strong-growing kinds must have a large shift. Use plenty of drainage carefully packed, and place the plants in a turf pit for the summer and shade during midday. As the new growth progresses pinch it back to promote a bushy habit. Now is a good time to propagate from points of new shoots an inch and a-half long. Dibble them into pans of silver sand and cover with bell glasses.

PELARGONIUMS showing their flower buds will receive considerable assistance from frequent doses of weak liquid manure. Keep the plants as near the glass as possible, give air freely, and use the syringe not only over the leaves but on the stems and branches underneath, which is a grand preventive of fly.

FORCING AND FRUIT HOUSES.

FRUITS RIPENING under glass must have a comparatively dry air and plenty of ventilation, or they will lack colour and flavour. If a fair crop of fine fruit is preferable to a large crop of an inferior kind, let those that take the lead swell off and ripen, and remove the greater part of the remainder. This practice is of great importance in the case of strawberries, as succession berries coming on while more forward fruits are ripening retard the progress of the latter, and prevent their attaining to their full size and flavour.

ORCHARD HOUSE TREES that are well advanced and are swelling their fruit, need the help of liquid manure. Use it very weak at first, for fear of causing stone fruit to fall. After two or three doses, alternating with plain waterings, increase its strength. Stone fruits not yet beginning to swell should be kept without it for the present. Use the syringe freely, and with force, to wash off withered blossoms. Give air night and day. Wherever you see a curled leaf, search for the cause of it, and you will find a grub or fly, with either of which deal promptly.

FLOWER GARDEN AND PLEASURE GROUNDS.

BEDDING OUT of the hardier subjects may soon be commenced. Choose dull dry weather if possible, while the ground is moderately moist. Have the plants pretty dry by withholding the water the day they are to be turned out. By watching the barometer, and getting the planting done just before rain much labour in after watering will be saved.

HERBACEOUS PLANTS throwing up their flower spikes will in many cases require to be neatly staked to prevent injury from high winds and heavy rains. This is the more needful where herbaceous plants are mixed with shrubs in borders, as in such cases they always push their heads of flowers out in an oblique manner, and this prepares them to fall over when heavy rains occur.

RANUNCULUSES AND ANEMONES require plenty of water while their flower-buds are swelling. Give the beds a good soaking in the evening, using a water-pot to which a coarse rose is affixed, and do not be afraid as to quantity.

KITCHEN GARDEN AND FRAME GROUND.

CUCUMBERS in trenches planted out a week or so hence and protected with hand glasses will produce better crops than if kept in pots till they spindle away their strength. Make the trench two feet and a half wide, and one foot deep. Fill it a foot above the surface with hot dung and leaves that have been twice turned, or a mixture of leaves, straw, and grass mowings. Three days afterwards put on six inches of soil, and leave it a couple of days; then put on three or four inches more soil, and plant. They will then have a steady bottom heat, and if sheltered for a time will do well.

KIDNEY BEANS, both dwarf and runners, to be sown for main crops.

PARSLEY should be sown on rich light soil, and thinned as soon as large enough to handle. This method will ensure finer produce than leaving the plants close together, and those with richly-curled leaves can be selected as soon as they are a little advanced beyond the seed leaf.

POTATOS are now pushing with vigour. Hoeing between is an immense benefit, and a little earth may be drawn to the stems.

SPINACH is usually sown thick, and a good way to thin it is to wait till the leaves are an inch long, and then draw the plants in little bunches and send to the kitchen.

SURFACE DRESSING between growing crops with wood ashes, soot, guano, or any good artificial manure is far better than the use of liquid manure in all open ground cultivation. Indeed, in most good gardens pot plants demand all the liquid manure that can be obtained; but where there are capacious sewage tanks, and a good supply, it may be used freely to roses, strawberries, cauliflowers, rhubarb, gooseberry trees, hollyhocks, and other gross-feeding plants. It should always be understood that weak liquid manure in large quantities is to be preferred to a strong liquid in small quantities.

TURNIPS should be sown in small breadths for summer supply. Use manure abundantly, and after sowing sprinkle over the bed a little lime or soot. This usually prevents the eating off of the young plant by the fly, as it is only while in the seed-leaf that turnips are in danger.

VILLA FARM.

IN the management of the poultry yard the food supply is a matter of considerable importance, for very much depends upon the manner in which this matter is regulated whether the keeping of poultry prove profitable or not. Indeed, when the number of fowls kept is large, it is by no means difficult to incur a heavy loss, either by the injudicious selection of food or by giving it to the birds in excess to their requirements. With reference to the selection of food, it may be said that those who have but little time on their hands, or are averse to taking much trouble, will find the Indian corn or maize to be most excellent, as it will require no preparation, will maintain the birds in fine condition, and there is no risk of its being eaten by the sparrows, as they cannot swallow it when whole. But a diet consisting wholly of maize is not so good for laying hens as one somewhat mixed in character, as it is rather too heating in its effects, and usually promotes the production of more fat than is desirable. Oats and barley are both excellent, and may be given separately or in mixture with each other or with maize, and undoubtedly the most successful results are insured by varying the diet somewhat. The corn should, as a matter of course, be largely supplemented by scraps, consisting of pieces of bread, potatos, and meat from the kitchen, and a vessel should be placed in a cool place near at hand for receiving such scraps as are capable of utilization in the poultry yard. Pieces of meat chopped up fine will also be exceedingly useful for birds that are shut in small yards, and will in some degree make amends for the loss of worms and insects, which can only be obtained where there is a good run over meadow and pasture lands. Potatos well boiled and broken up and well mixed with bran or coarse pollard, preferably the latter after it has been scalded, are of much value for feeding purposes, and this is a capital way of utilizing surplus stores. No matter what the food may be, sufficient should be given to keep the birds in good condition and no more, and a little observation will enable anyone to determine this point, They should, in fact, have as much as they will eat without leaving any, for when the food lies about on the ground for any length of time after each meal it may be assumed that the supply is in excess of the requirements, and that considerable waste is going on. In a general way, fowls kept entirely within enclosed yards should have three meals a day, the first to be of soft food, consisting of kitchen scraps, potatos, and pollard in mixture, and the other two of corn. The preparation of soft food is undoubtedly attended with some degree of trouble, but as it affords a ready means for the utilization of waste, and the change is an agreeable one to the occupants of the yard, it will give an ample return for the trouble occasioned. A bountiful supply of clean water must be provided, and if practicable, the supply of green food, such as the leaves of cabbage, lettuce, cauliflowers, aud broccolis, should be liberal, and whether the quantity of green food available is large or small a portion ought to be thrown into the yard once a day.

FERNS AND FERNERIES.

By E. BOOKER,
Prize Essay, Chiswick Gardeners' Mutual Improvement Association.

THEIR CULTIVATION AND MANAGEMENT.

IN selecting the cultivation of ferns as my subject for this essay, it is not because I have anything of importance to add to what has already been written by exceptionally able and experienced authorities on this class of plants, but they are favourites with all lovers of plants, from the richest to the poorest. They may be grown in a variety of ways in the stove and greenhouse for decoration, or as specimens for exhibition, in wardian cases, in the cottage window, and last, but not least, in the open garden, both in sun and shade, the shady place where many good things will not grow, being especially well adapted for hardy ferns. These plants, provided they are given their proper situations and their several requirements are attended to, are not the most difficult plants we, as gardeners, have to cultivate. It will be impossible for me in one paper to treat the subject as I should wish, but I will endeavour to give a few practical remarks in what I consider to be important points in their cultivation.

Where ferns are wanted in large quantities the best plan is to sow the spores in pans or boxes, nearly three parts filled with crocks; the compost should consist of good fibrous peat, with crocks and charcoal broken up finely and some coarse silver sand all mixed thoroughly together. Fill the pans or boxes with the compost, pressing it firmly, then water, and allow it to thoroughly drain. On this sow the spores, and water carefully, with a fine rose. If a large quantity are sown at the same time they will be better placed under a handlight, or frame, then they can be more easily attended to in the matter of shading and watering, or else they must be covered with sheets of glass. Place them in a temperature of 50 deg. at night with an increase of temperature by day. March I consider the best month to sow, as then they will have a longer season of growth before them, although they will grow well if sown later.

In about two months or so they will begin to vegetate in the shape of little green circular bodies on the surface from which, ultimately, will spring small fronds. From this time they should be gradually brought to the light, and when large enought to handle they should be pricked off into boxes, using soil similar to that in which they were sown. Keep the soil moist, and shade from bright sunshine. After they are established they may be potted singly into thumb pots or 60's, according to their strength and the amount of roots they have. As they become established pot them on as they require it, never let them get pot bound when young. Most ferns may be kept comparatively healthy for some time by being confined in small pots, but plants so treated in their early stages are some time before they grow again freely. Another method of raising ferns, and one requiring less time and labour (where the convenience is at hand) is by standing mature plants on a strong wire trellis, under which we can have a bed of ashes; then as the spores ripen, nature will

cause them to drop among the ashes, where they will germinate readily in endless numbers. If it is desirable to increase any other variety, the fronds, when matured must be gathered and shaken on the ashes, where the spores will readily germinate as previously mentioned.

GENERAL TREATMENT IN POTS.—About the middle of February any of the varieties of adiantums, especially adiantum cuneatum, should be cut down entirely, especially if at all shabby, a process I have found not to be at all detrimental, but rather beneficial. All dead or shabby fronds of the other varieties should be cut off, and as soon as they have fairly started into growth, any that require potting should be potted as carefully as possible, so as not to injure the young fronds; and any that are too large, or that you desire to increase, should be carefully cut with a sharp knife into as many pieces as circumstances may demand. Be careful not to use too large pots for small or weak growing varieties; it is far better to give them another shift, or even two, during the growing season; but for the larger plants and strong growing varieties two sizes larger pots may be used with advantage. The pots and crocks should be thoroughly clean. If new pots are used they must be previously soaked, and allowed to dry. The compost should consist of two parts good fibrous peat (broken to pieces by the hand), one part good fibrous loam, a little leaf soil and silver sand, and some powdered charcoal. This should be sifted, and the coarse used to put over the drainage, as perfect drainage is an important matter. The charcoal will keep the soil open and sweet, which is also another important point in the cultivation of ferns. Water should be applied sparingly until the plants have commenced to root into the new soil, but when fairly established they should, while growing, never know the want of it. In fact any of the large plants which have not been repotted, especially tree ferns, will require water twice a day during the summer, for it is marvellous how quickly a fern will collapse when neglected in the matter of watering. Tree ferns are benefited by syringing the stems once or even twice a day during the summer, and occasionally overhead; but for all ferns that are of a soft nature, such as Adiantum Farlyense, A. Pacottii, A. Legrandii, and the Gymnogrammas, I would not advocate syringing overhead daily; a sufficiently moist atmosphere can be obtained by sprinkling the floors and slabs two or three times daily.

SHADING.—Ferns require to be shaded from brilliant sunshine, and it is desirable to have moveable blinds, so as to use them only when necessary. They are far preferable to a permanent shading, for although ferns like a certain amount of shade, to grow them in a densely-shaded house will do them more harm than good. They will not look so well, nor their fronds keep so well when excessively shaded, for with proper light we secure a firm texture. They are of necessity subjected to a lower temperature during winter, so as to give them that one thing needful—rest, as on the little word "rest" depends our future success. To keep ferns growing all the year round is a mistake and contrary to Nature. In speaking of rest, I do not advocate the drying off of the ferns, or placing of them in any out-of-the-way corner, but that they should have a lower temperature, and have the water given them more sparingly, as they will not require it so often during winter.

TEMPERATURE.—Most of the ferns I shall name in my selection are those from tropical countries requiring a stove temperature during winter of 60 deg. at night to 65 deg., and 70 deg. in the day, rising as the days lengthen to 70 deg. at night, and from 80 deg. to 90 deg. in the day during the summer. Again declining as the days shorten.

SELECTION.—In giving a selection of ferns I shall mention only those I have successfully grown: Of Adiantums, Farleyense, Bausei, concinnum latum, dolabriforme, trapeziforme, Williamsi, Lathomi; of Aspleniums, nidus, alatum, viviparum, Cheilanthes elegans, Davallia Fijiensis, Gleichenia dichotoma; Gymnogramma Peruviana argyrophylla, G. decomposita, G. schizophylla gloriosa; Nephrolepis Davallioides, N. d. furcans, N. Duffi, Pteris tricolor. Some of the varieties I have mentioned will grow in a greenhouse temperature, but I have found them to grow more freely in a stove temperature. Gymnogrammas will require to be placed at the warmest end of the house during winter, as they do not thrive in a low temperature, and they must also be carefully attended to in the matter of watering.

INSECTS that infest ferns are aphides, scale, and thrips. I have found for aphides and thrips, nothing better in the way of destruction than occasionally slightly fumigating with tobacco paper. If the ferns have not been grown in too high a temperature, and not too densely shaded, the fronds will be better able to stand slight fumigation without injury. Scale must be destroyed by lightly sponging with warm water in which a little fir tree oil has been mixed. I have found this safe and effectual.

THE NATURAL FERNERY.—Having given a brief outline of fern culture in pots I will pass on to what I will call the natural fernery, meaning, of course, a house that is (with one or two exceptions) planted with ferns. For if we have a house with a north or north-western aspect, which could be devoted to a fernery or indoor rockery, a more natural and interesting structure it is difficult to find. The best material to be used in building a fernery of this description is what is called tufa, or Derbyshire stone. Although more expensive than burrs or cork, it is far preferable, looking more natural, and the ferns luxuriate in it. I have found some of them to root into it so strongly as to make it a difficult task to remove them. It would be impossible for me here to give any ideas or plans of the way the rockwork should be built, but suffice it to say that it should not be made too uniform, but as irregular as possible, here projecting and there receding. The practice of employing a great number of arches, and masses of overhanging rockwork should be avoided as far as possible, as it prevents the light reaching the lower parts of the fernery. Ferns so placed as to have all the light excluded from them, instead of growing luxuriantly, and becoming objects of interest, dwindle away and die, leaving bare those parts which ought to be most amply furnished with verdure, because of being below the eye of the spectator. For a fernery of this description to become effective the foliage in the lower parts ought to be as luxuriant as that above, and this can only be done when we make arrangements for abundance of light. It will greatly add to the appearance of a fernery if we can have a shallow pond of water within the house, and also if in building the rockwork we let in one or two small pipes with holes pierced in them, so as to penetrate through the stone, greatly assisting to keep the stone cool and moist during the summer.

COMPOST.—The compost should be the same as previously mentioned, but it may with advantage be used a little coarser. Care should be exercised in the planting in making the plants firm, especially at the back. Commence by planting at the bottom, close to the pond, all ferns of a water-loving nature, such as the polypodiums, osmundas, such as Osmunda gracilis, O. cinnamomea, and O. Claytoniana, Scolopendrium vulgare, and its beautiful crested varieties. If any other plants than ferns are required for the sake of giving relief, there is nothing better than Aspidistra lurida variegata, and also that good old plant, Farfugium grande. Both these are very partial to water, consequently should be planted close to the pond. I shall not attempt to give a long list of ferns, but shall mention a few varieties that I have found to do well planted out. Nearly all the varieties of pteris, both green and variegated will do well. Of the green forms Pteris serrulata, P. serrulata cristata, P. hastata, P. umbrosa; while of the coloured varieties are Pteris argyrea, a good variety for this purpose; P. cretica albo, lineata, cristata, and cristata mayi, P. tricolor. The Davallias are also exceedingly useful, the best for this purpose are, Davallia bullata, D. Canariensis, D. Tyermanii, D. hemiptera, very dwarf and handsome. These should be elevated a little above the level of the pockets, as they will then turn over the sides, and will root into the tufa more easily and readily. In fact, all ferns having surface rhizomes should be kept above or on the surface, the rhizomes should never be buried. Nephrolepis exaltata will be found suitable for planting close to the wall, where it will soon cover the wall, and have a pleasing effect. Nephrolepis Davallioides is another good variety, if we can give it sufficient space, so as to show off its long graceful fronds. It certainly should have a place found for it, as I have seen this variety so planted with its fronds nearly five feet in length, and hanging gracefully. I might here state that I consider when ferns are planted out, their true and proper characteristics are better produced than when grown in pots. Amongst the Adiantums that may be used are cuneatum, decorum, formosum, and Capillus-veneris; the last named is very useful for planting out, as the spores will grow readily on the tufa if kept moist, looking very pretty and effective.

Unless the house is a large one I would not advise the planting of tree ferns, for unless there is room for them to develope their handsome fronds, they soon get spoiled. A few pieces of lichen may, if desirable be placed here and there on the tufa, with the object of improving the appearance.

When all are planted, water carefully with a fine rose, so as to prevent the soil from washing out of the pockets. When fairly established, they must have a liberal supply, and it will be necessary to damp the floors and syringe the walls at least twice a day during hot, bright weather. The ferns I have selected being of a somewhat harder nature than those recommended for pots, will not be injured by being occasionally syringed, as the tufa must be kept moist, so as to make it become green, for the sooner it does become green the more natural will it look.

The temperature should be kept nearer to a greenhouse standard than that of a stove. In winter a temperature of 45 deg. at night to 50 deg. or 55 deg. in the day will suffice, gradually rising as the days lengthen and the light increases to 60 deg. or 65 deg. at night, and from 75 deg. to 80 deg. in the day, during the summer. No harm will be done if the temperature rises even 10 deg. higher than I have stated, if caused by the sun, and if the temperature should rise to this degree attend well to the damping of the floors. If such a house is glazed with Hartley's patent glass so much the better, as little or no shading will then be required. If shading must of necessity be used, in this case also have removable blinds, if possible. I would not advocate the use of coloured glass, as I have found ferns do not seem to do well when placed under it.

FERNS FOR DECORATION AND CUTTING.—If ferns are wanted for house decoration during the winter months, the best plan is, early in the summer, to break up or divide any large plants that are at disposal of the varieties required, or any of the seedlings that can be spared, and grow them on in heated frames, as, after they are established, the heat may be dispensed with. Give them plenty of light, and admit air night and day on all favourable occasions. Ferns so grown will last much longer when cut, and the plants will stand the dry atmosphere of rooms, and the effects of gas, much better, giving pleasure and credit to all concerned.

BLOCKS OF CORK, BARK, AND WOOD.—Ferns planted on cork, bark, or pieces of wood, are both useful and interesting for hanging in the stove, fernery, or greenhouse. Some of the Davallias may be used for this purpose, and likewise Stenochlena scandens, but I do not think anything can surpass the Platyceriums, for placing on blocks, as they display their peculiar fronds to much greater advantage on blocks than in pots. Platycerium alcicorne is the most free-growing variety, while P. Willinckii and P. grande are, perhaps, the most beautiful and interesting. I do not advocate the planting of ferns on blocks in moss alone, but prefer to use some rough peat; on this place the ferns, keeping them secure by carefully passing some copper wire behind the sterile fronds. The ferns will soon root into the peat and grow much better than they would in moss alone. They must be soaked in water when they require it as it is impossible to water them properly with a can. My objection to the use of moss is that with the continual dipping the moss decays, and likewise the roots of the ferns.

HANGING BASKETS.—These make beautiful ornaments, and many ferns do well in them and show their beauty. They should be suspended, or their long, drooping, and graceful fronds are not seen to advantage. The baskets must be lined with moss or sphagnum, to prevent the soil from washing out. The compost should be the same as previously mentioned. If possible, when planting use those ferns that are rather pot-bound, or with plenty of root, and if planted firmly they will soon commence to grow, and at once become effective. We have numerous varieties of ferns suitable for this purpose that will grow either in stove or greenhouse. I shall in this case also select those I have found to do well: Platycerium alcicorne (greenhouse), Adiantum ciliatum (g), A. cuneatum grandiceps (g), A. assimile (g), A. Capillus-veneris (g), Davallia bullata (g), D. hemiptera (g), Pteris scaberula, impatient of heat (g), Asplenium alatum (stove), Adiantum dolabriforme (s), Davallia Tyermani (s), D. pentaphylla, Nephrolepis Davallioides (s), N. Davallioides furcans (s), N. Duffi (s), Gymnogramma schizophylla gloriosa (s), a handsome fern.

These will require careful attention in the matter of watering. Never allow them to get thoroughly dry during the growing season, for if so neglected they are often spoiled beyond recovery. The best plan is to take them down when dry and soak them in water, so as to ensure thorough saturation of both the soil and the moss, and allow them to drain before re-hanging, especially if there are any plants of a delicate character placed underneath them.

FILMY FERNS.—These ferns are perhaps amongst the most beautiful and interesting of the whole family. In consequence of their requiring a closer and moister atmosphere than can be supplied under ordinary circumstances in the stove or greenhouse, they must be grown in frames, bell glasses, or wardian cases, and as these cases are now made in so many handsome designs, one of these cases properly filled with a good variety of filmy ferns, is no disgrace to the most elegant dining or drawing room. Care must be exercised in selecting a case, to see that the bottom is perfectly lined, and

sound, and the outlet for the water perfect. On the bottom of the case place plenty of thoroughly clean broken crocks, on these place a thin layer of moss or sphagnum, to prevent the soil washing down and choking the drainage. The drainage is a very important point in the cultivation of ferns in cases. The compost should be free and open, consisting of good fibrous peat, a small quantity of loam, leaf soil, and sand, this should be sifted and the finer particles used for other purposes. Some broken charcoal, sandstone, or pumice stone, should be well mixed with the soil after it is sifted. The object of such an open compost is to secure a free passage for water through the whole body of soil, and the free admission of air to the roots of the plants. Where such a compost is used, it will be found the best roots are those which lie in the crevices between the pieces of compost. The size of the case must determine the quantity, and what size ferns it will be necessary to plant. Such as the todeas, especially Todea superba and T. pellucida, should be planted in pieces of tree stems, and raised a little above the level of the soil, so that their handsome graceful fronds may be seen to advantage. The groundwork may be made up with Hymenophyllum Tunbridgense. H. Wilsonii, H. demissum nitdium, and a few of the trichomanes such as T. radicans (Killarney fern) T. r. dilatatum, T. trichoideum, and T. reniforme; the two latter varieties should by all means have a place found for them. The rhizomes will soon spread rapidly on the surface, and may then be pegged to the fern stems, and they will grow in this position luxuriantly, covering the stems with their exceedingly handsome fronds. When all is planted, water carefully, to settle the whole of the plants. Keep them as cool as possible, and shade from bright sunshine. When fairly established they must, the same as other ferns, have water when dry, and it will greatly benefit them if occasionally syringed during the hot, dry weather, as most cases are not so completely air tight as to prevent the rapid evaporation of the moisture.

If the cultural details are carefully attended to, I am of opinion that these cases will not require replanting so often as every two years, as some persons advocate; for when replanting is done, it destroys the chance of any seedlings appearing that might have happened had it not been disturbed. What can be more interesting than watching the little seedlings develop, and to discover to what species they belong? If from necessity the cast must be replanted, then previous to disturbing the ferns, have a proper supply of clean crocks and compost as before mentioned, so that when the ferns are lifted, everything should be at hand to plant them again as quickly as possible.

OTHER FERNS SUITABLE FOR CASES.—There are several varieties of ferns exceedingly handsome, and less expensive than filmy ferns, that may be grown in cases. Those I shall mention I have found to do well, and proved to be quite interesting and beautiful. Asplenium viviparum, if planted in a piece of tree fern will make an excellent plant for the centre, with the dwarf varieties of Aspleniums to help form the groundwork. Such as A. fontanum, 6 in. in height, A. obtusilobum, are also suitable. The last is a dwarf handsome creeping fern, throwing out a number of runners, which, if pegged down, will readily root, and produce plants which continue the process. A few varieties of the Doodias are also suitable for this purpose; the best are D. caudata, 6 in., D. caudata var. confluens, 6 in., and D. lunulata, 12 in. A beautiful and useful fern for cases may be found in the Anapeltis, forming a pleasing contrast to the others mentioned. A. nitida, a free-growing creeper, rhizomes silvery white, fronds small, undivided, light green. The rhizomes of this species should be pegged to the fern stems, and will look very pretty. A. lycopodioides, 3 in., and A. squamulosa, 3 in., will grow very freely, and as they have small surface rhizomes they will soon spread and cover the whole surface.

FERNS FOR ROOMS.—Ferns are favourites with cottagers, and consequently have often to be grown in the ordinary room of a dwelling house, but through the dryness of the atmosphere they cannot possibly grow so well as when in a damper place. They are useful for table decoration, also for standing in the window, where they grow better and live longer than any flowering plant that can be obtained. Care should be taken that they are not introduced in a soft immature state of growth from a house where they have been subject to a warm moist atmosphere. Such plants will prove disappointing. They must be regularly supplied with water, the fronds also may be gently sponged or syringed with clear tepid water, to remove the dust which accumulates on them. The same may be said of these as of those grown in more favourable positions, only water when requisite, then give plenty, using water as warm as the room in which the plants are growing. If these matters are attended to they will grow and do much towards enlivening and beautifying the room. The following varieties are perhaps amongst the best for this purpose: Adiantum Capillus, veneris, this may be placed in a basket, and hung in the window; Asplenium bulbiferum, A. cicutarium, A. Australasicum, Davallia Canariensis (Hare's Foot), Lastrea aristata, L. a. variegata, Lygodium scandens, Pteris argyrea, P. serrulata, P. serrulata cristata, P. tremula, Scolopendrium vulgare, and S. vulgare crispum.

THE HARDY FERNERY.—It would not be wise to conclude this essay without touching upon the hardy fernery. But it must be briefly, as this subject would, to do it justice, command one paper alone. If there is room in any garden in which we can make or construct an outdoor rockery, in which we can plant some of the exceedingly handsome species of hardy ferns, if only a small one, I would say by all means have one, as nothing can give a greater charm to a garden of any size, especially when we consider that some of the hardy ferns will grow in places in which the majority of other plants would surely die. The first conditions as to the site are, however, protection from wind and provision for shade, these being essential to the majority of ferns. The mode of construction is entirely a matter of taste, fancy, and space. The material for construction, where expense is not a primary object, should be the same as that recommended for the indoor rockery, namely, tufa. An excellent substitute may, however, be found in burrs from the brick kiln. These may be washed over with some cement and cow-dung well mixed together with water, which will make an excellent imitation of stone. Elaborate and minute imitations of actual rock are rarely so effectively done that the illusion is perfect, and if really so, it is in part covered by the foliage when devoted to ferns. The size must determine the mode of building, and whether we shall require large masses of stone or small. In building let each block recede, instead of overhanging, because in this way the plants in the fissures receive the benefit of the rain or dew which falls, and this will be an advantage.

SOIL.—The soil for hardy ferns should, as with other plants, be properly prepared. If peat, loam, leaf soil, and sand can be obtained, a mixture should be used, or peat may be used alone, it will well repay for its cost. If neither course is possible, mix a little of these ingredients with some good garden soil, but for the small varieties of ferns I recommend using a good compost. In any case, within doors or without, a rockery for ferns should contain a good body of soil, if there is any stint there will be no prosperity.

PLANTING.—This, as well as the construction, is a matter of individual taste or fancy. If the rockery is on a large scale, and large masses of it are presented to the eye at one view, either very large individual plants or a group of each of some of the largest kinds may be necessary to secure masses of foliage in character with the massive construction. In arranging the plants generally, the evergreen and deciduous kinds should be so planted that when the foliage of the latter dies off for the winter, there may still be abundant objects of interest throughout the whole.

The seasons for planting a fernery are the spring and early summer months, before the annual growth is far advanced, and the planting should be done carefully and firmly. They must be carefully attended to in watering, especially during hot, dry weather. If they can either be syringed or watered with a hose in the evening of hot, dry days it will do them good. A little practice will soon enable anyone interested in the matter to master the details of the cultivation of these plants in the garden.

SELECTION.—In giving a selection I shall confine myself to a few varieties that I have seen do well and give satisfaction: Allosorus crispus, Adiantum pedatum (deciduous), Asplenium adiantum nigrum, A. Marinum, Athyrium filix fœmina (lady fern) and its handsome varieties—these are all deciduous; Blechnum spicant, B. s. cristatum, Ceterach officinarum, Lastrea æmula, L. grandiceps, L. filix mas (male fern)—these are strong, robust evergreen ferns, and very handsome; Osmunda regalis (deciduous) requires plenty of water when growing; Polypodium vulgare and its beautiful varieties, Polystichum aculeatum, P. angulare, P. a. cristatum, P. a. grandiceps, P. lonchitis, and Scolopendrium vulgare (of this also there are some exceedingly handsome varieties).

STOVE AND GREENHOUSE PLANTS.

THE houses are now gay with cinerarias, begonias, amaryllis, eupatoriums, azaleas, cytisus, hydrangeas, ixias, sparaxis, jonquils, and many gay miscellanies, and on mild mornings we find it good to let the breeze pass freely through, for it begins to be trying to the more hardy subjects to have a glass roof over them, and a great change in show house furniture is near at hand.

Æchmea glomerata keeps us in mind of the claims of the bromeliads, this being conspicuous for its tall showy inflorescence in bunches of crimson on the rigid stems. Not many bromeliads are flowering now, but the time is near for much display of high colour.

OXALIS are but weeds anywhere, yet how lively and useful are the gay yellow flowers of *Oxalis cernua*, the lilac of *O. bipunctata*, the copper red of *O. cuprea*, the purple of *O. glabra*, the flesh-tint of *O. incarnata*, the rosy-purple of *O. punctata*, these being in flower with us, with others that give useful clumps of colour. A way they have of finding places for themselves in nooks near brickwork and in beds intended for better things, brings them into discredit, and yet they are always pleasing, and that is the reason they are not more persistently rooted out and got rid of. In any case a few are useful, and must be taken reasonable care of.

PHLOXES do not readily fit in the routine of house furnishing, but *Phlox pilosa amœna* is a capital subject to pot up for the side stage to supply large tufts of brilliant rosy flowers. The warm pit that suits azaleas will bring this phlox into flower in April without difficulty if the plant is kept near the glass and has plenty of air. In general character it may be likened to Phlox Drummondi. *P. speciosa* and *P. florida* are also adapted for this treatment; they are excellent plants for the purpose.

Clianthus puniceus makes a fine figure on a rafter in the greenhouse at Kew. Though well-known, and occasionally seen in west coast gardens from the Land's End to the Clyde as a hardy wall plant, this fine climber is too often omitted from lists in which it should appear as one of the most useful plants of its class. In a cool plant house it is happy, provided it is in full light, but a warm house agrees with it admirably so long as it is kept free from spider, which has a keen taste for it.

Brugmansia sanguinea is so grand now with its ample leafage and great orange red flowers that for the present season it is certainly one of the very best of conservatory trees. When planted out in a bed of loamy soil it is a model of good behaviour, for it grows freely and will soon push the roof off if required, but may be cut back to any point, and will soon make itself again and hide its stumps with a liberal growth of its handsome leaves and flowers. The pruning is a very simple matter, for it flowers on the one year old shoots.

Hibbertia dentata is at once beautiful and interesting, its free growth, its bronzy leaves, its peculiar yellow flowers that sparkle against the dark foliage, combine to provide us with a first rate rafter, wall, or pillar plant, and in the roomy house where good things are valued, this should be in a conspicuous place.

Zephycanthes carinata is one of the best of this genus of half hardy amaryllids. It is of the simplest character and of exquisite beauty, the large salver shaped flowers being of a clear rosy pink of the same tone as the richest coloured Odontoglossum vexillarium. In cultivation, a cool house or pit suffices.

Cineraria cruenta is a fine plant for the present season, and is not to be classed with the florist's cinerarias that remotely represent it. The species from the Canaries forms a large diffuse bush with a huge head of flowers that in a general way may be described as smallish asters of a most pleasing appearance. But in truth it is variable, and a dozen distinct forms will occur in a batch of seedlings, some white with rosy centres, others of good form and of a pleasing soft rosy purple, and others again suggesting that there is a smouldering fire within such as the crimson cinerarias of commerce have developed to a high perfection. Such plants have more interest than appears on the surface; but these have true beauty also, and are invaluable for bold furniture. *Cineraria aurita* is a pretty thing with grey leaves and flowers white tipped with mauve.

Tropœolum azureum, that Mr. Barron used to grow so well at Chiswick is now grown well at Kew, and Mr. Garrett appears proud of his pretty lot in the greenhouse, where they show a nice lot of their light blue flowers.

Schizanthus pinnatus is well done at Kew, but for large perfect specimens we must go to Manchester and see Mr. Findlay's lot in the Botanic Gardens. This is one of the few annuals that are adapted for specimen cultivation for the show house, and to do it well entitles the doer to a special commendation.

Bossiæa linophylla is one of the serviceable New Hollanders that the present generation endeavours to ignore. Find a better thing of its kind and then you may ignore it. But you will not find a better, it is unique in growth, in accommodativeness, and in flowering; the little pea-shaped flowers of a strong orange colour with dark spots. An airy greenhouse, and a peaty

soil, with perfect drainage are all this beauty requires to pay its way and give perfect satisfaction.

Cyrtanthus obliquus is a grand amaryllid from the Cape, a special pet of Dean Herbert, who so thoroughly understood these plants. The plant produces umbels of three to seven flowers, which are reddish coloured in the tube and green in the limb; stately and beautiful. The culture of amaryllis suits it, but it must never be dried off, and it is safer in the cool stove than the greenhouse during the winter, for it it always growing. A loamy soil suits it better than peat.

Strelitzia Reginæ is not often seen in private collections, but one may travel far to find a plant to match it in stateliness and singularity. Its combination of yellow and blue reminds of the colouring of certain parrots that appear wanting in taste to dress themselves in discords, and yet their colours please, as they certainly would not please unless harmonized by other tones that soften the abruptness of the contrast. Here the colouring is pleasing; in fact, effective and satisfying though by no means delicate or refined. Probably the green leaves accomplish the harmonizing influence, for none can say that this plant is not a beauty. It belongs to the musas and needs some such management as recommended for the cyrtanthus.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE, APRIL 22.

PRESENT: Dr. M. T. Masters, in the chair; Mr. Morris, Rev. C. W. Dod, Mr. Godman, Mr. Michael, Dr. Müller, Mr. Pascoe, Dr. Scott, Mr. Wilson, and Rev. G. Henslow (hon. sec.).

HYBRID NARCISSI.—Rev. G. H. Engleheart exhibited a collection of hybrids, amongst which was one called George Engleheart, a cross between N. poeticus ornatus and Narcissus Tazetta Bazelman major. This was quite new, and received a botanical certificate. Another was between N. poeticus and a trumpet daffodil, Hudibras; this had a remarkably large and flat crown. A third, between N. poeticus ornatus and Mary Anderson, had an orange streaked cup, both parents having an orange-bordered cup; the colour had become intensified. Mr. Engleheart observed that the anthers, being situated half-way between the points of the insertion of those of the two parents was a characteristic feature of hybrids amongst Narcissi, and that no appreciable difference occurs on the hybrids raised when the parentage is reversed. He also remarked that Dean Herbert thought that N. Tazetta var. Bazelman major was barren with its pollen, as he could raise no plants from it. This was probably due to a too chilly climate. Mr. Henslow remarked that N. Tazetta is very abundant amongst the rocks in Malta, and has two forms, one with a short stout stem, and many flowers, another with a long slender stem and fewer flowers.

ARISTOLOCHIA GOLDIEANA.—Mr. Morris commented upon the singular flower of this plant, which had blossomed at Kew. There had been a race between the flower-bud and the shoot-bud. The former was small, and proceeded out of the old wood. The flower-bud finally prevailed, and the shoot was thereby checked. It is an African species, differing from the South American in having ten stamens, &c. It is figured and described in the *Botanical Magazine*, No. 5,672.

PRIMROSE, VARIETY.—Mr. Wilson exhibited a seedling from "Scott Wilson," of a deep blue-purple, with a red eye.

PLANT DISEASES.—Rev. C. Wolley Dod gave an interesting account of several diseases of plants in his garden, and commented on the difficulty of finding curative means, or of hearing of other suggestions than burning. He first alluded to a species of smut (Ustilago) on Primula farinosa, which appeared to be indigenous, as the plants were collected in Lancashire; and although it was grown with P. denticulata, the smut was confined to the former species. Æcidium ficariæ had attacked his hellebores. In this case, a drier soil was suggested as likely to prove effective in ridding the plants of the fungus. The "Lily spot," due to Polyactis cana, usually appearing late in summer, had been seen in April upon tulips, and apparently the same species on daffodils. It was suggested that a mixture of sulphate of copper and quicklime would prove effective, as in the case of vines, described below. Puccinia Schrateri had occurred on daffodils from Portugal, and also upon the common double sorts.

DISEASED VINES.—Treatment of, in France, with "Bouillie Bordelaise." Mr. Dod read the following communication: "In the Médoc there are three applications of the treatment. (1.) The first is towards the end of May, when the vine has produced shoots about 30 centimetres long. At this period the flower of the vine is not yet opened. (2.) A second application is made at the end of June or the beginning of July. (3.) A third about the first half of August. The first application requires about 2 hectolitres of Bouillie per hectare. The other two, 2½ to 3 hectolitres per hectare. With regard to the preparation of the Bouillie, the following is the method employed—For a 100 kilos. In one tub is put 50 kilos. of water and 3 kilos. of sulphate of copper; in another tub 50 kilos. of water and 2 of lime. The sulphate of copper having been dissolved and the lime well soaked the two liquids are then mixed. Cold water is used and slaked lime. Formerly small brooms made of heather or Butcher's broom were used to sprinkle the liquid on the vines. Several varieties of syringe are now used. It was at first hoped that the Bouillie would destroy both the mildew and the oidium. Up to the present time such has not been the case; and if the mildew is absolutely destroyed by this treatment, the use of sublimed sulphur has to be continued against the oidium.

SULPHATE OF IRON AS A REMEDY AGAINST THE POTATO DISEASE.—Rev. G. Henslow quoted the following passage from a report of the late Professor G. Galia, of Malta, upon the Orange disease; but bearing on the question of the destruction of vegetable parasites: "Having watered two aralias, three begonias, an orange, and several rose bushes, with a solution of sulphate of iron, in the proportion of six grains to one litre; these plants, far from sustaining any injury, seemed to gain intensity of colour to their chlorophyll, and their buds shot with greater rapidity and luxuriance. Towards the end of the past year potatos were attacked by Phytopletha infestans to such an extent as to impoverish and destroy the crop of the greater number of fields, especially in the eastern districts of the island. In a small field adjacent to others infected by the fungus, the ground was sprinkled with the solution prior to the sowing of the potatos; some young plants sprang up, and the crop was so abundant as to astonish the cultivators of the neighbouring fields, who were seized with a longing to adopt the method in question. Not a single leaf of these plants bore the fatal fungus. This was certainly due to the sulphate of iron which had destroyed the spores buried in the soil, and rendered the plants so vigorous as to impede the growth of the pernicious fungus."

FRUIT GROWING FOR MARKET.

THERE are many obstacles to the culture of fruit for market apart altogether from the questions of soil and climate. One of the most important of these is the uncertain tenure consequent upon the farmers not having leases of their farms. It is not at all likely that tenant farmers will incur the rather heavy cost of planting fruit trees upon the land occupied with the uncertainty inseparable from a yearly tenancy. It does not necessarily follow that their present landlords will give them notice to quit when they have improved their farms by the planting of fruit trees. But it may happen that soon after the trees have been planted, and before they have come into full bearing the landlord may sell the property or he may die. In either case his successor may hold very different views as to the manner in which the farm should be cropped, or he may have some objection to the tenant. In either case the tenant will have notice to quit, and on giving up possession will lose a portion, if not the whole of the expenditure, upon the fruit plantations. With this knowledge it is not surprising that tenant farmers should not engage in the production of fruit for market.

As fruit trees do not give a remunerative return for several years after they have been planted the only practicable plan appears to be that the landlords should plant the trees at their own cost. They should, of course, plant such trees as the tenants consider advisable and are adapted to the respective districts. The varieties must, moreover, be suitable for marketing or the fruit quarters will be a burden, instead of a source of profit to the tenant. In Kent, Herefordshire, Worcestershire, and Gloucestershire, the principal fruit growing counties in England where the rent of many of the farms has been reduced owing to the low price of corn, the course of procedure would be a very simple one. In most districts in these counties the rent does not give more than about 3½ per cent. interest upon the present market value of the farms. To increase the value of the farms the landlords have simply at their own cost to plant fruit trees of a suitable description and charge 5 per cent. interest upon the outlay. If the work of planting was well done and the management satisfactory the value of the farms would be materially increased both to the landlord and tenant.

To plant fruits adapted to the district is essential to success, and generally speaking it will be safe to plant apples, pears, and plums with bush fruits. In most of the districts of Herefordshire and Worcestershire the soil is especially suitable for apples and pears, resting as it does upon a marly subsoil, yet in these counties apples and pears are not grown so successfully as they might be owing to the orchards being worn out. What is really necessary is to form new orchards, and subsequently cut down the old trees and devote the land now occupied by them to some of the ordinary farm crops for several years. The new orchards should be formed on different lines to those now in existence, for the plan hitherto adopted of growing apples, pears, or plums alone is anything but a profitable one. The proper course is to grow bush fruits in conjunction with them. By filling the spaces between the rows of apple, pear, and plum trees with gooseberries, currants, and raspberries the risk of having a failure in any one year is avoided, and the labour of gathering and sending the fruit to market is extended over a much longer period than is the case when the selection is limited to one or two kinds. By the formation of new fruit plantations in the manner here suggested and charging the tenant a reasonable interest, the farms would be rendered more profitable and therefore of more value to the tenant. One result would be to increase the demand for farms, and thus secure tenants for farms that have been thrown upon the owners hands. In Warwickshire at the present time there are many farms unlet because of tenants being unable to grow wheat and other cereals at a profit.

M. GARDNER.

Coventry Road, Birmingham.

CHINESE SACRED LILY.

THE narcissus that was introduced to us as the Sacred Lily of China, the subject of admiration passing into devotion with the ladies of the Celestial land, is a finer thing than report has represented it, and in my own estimation, at this time, the most beautiful narcissus in cultivation. On this point I claim the right hereafter to modify my present view, because familiarity with a thing does in some degree (sometimes) diminish the degree of admiration it excited upon first acquaintance. This is an alliance of Narcissus tazetta, but it is likened to Gloriosum, and other named varieties. It is a tazetta with a double cup, but very different to such as Mr. Burbidge figures in plates 33 and 34 of his admirable book. The perianth pieces are not in the same plane to form a proper "guard," but each stands at an angle, and so puts the "properties" out of the way. The cup or corona consists of half a dozen petaloid pieces, forming a kind of central frill, simple, so that all the outlines are defined, with none of the bunch or tassel character common to double tazettas. The colour is snow-white, with rich citron-yellow as the base of all the pieces, and as seen from a moderate distance the yellow is not displayed, but we see flowers that are conspicuous by their intense whiteness, and a good specimen may be hyperbolically described as a little mountain of pearls.

But who has seen the plant in such a light as in this note it is presented? Not many; for not many of the very many who have grown it did the thing properly. I obtained bulbs from Messrs. Carter, and instead of growing them in water, which does not suit a bachelor's house, I planted them in the open border in January. In the past fortnight the display has been delicious. One plant I invited a few friends to see produced seven trusses averaging six to seven flowers each; a total of forty-eight flowers in all. In aid of the memory we may call it the fifty-flowered narciss; but if I had to classify and name it I should make a class for the doubles under the name *multiplex*, and this variety I should enter as *Celestial*.

S. H.

TRADE CATALOGUES.

B. S. WILLIAMS AND SON, VICTORIA AND PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.—*New and General Plant Catalogue.*

THOMAS S. WARE, HALE FARM NURSERIES, TOTTENHAM, LONDON.—*Choice Dahlias, Delphiniums, Hollyhocks, &c.*

HENRY BENNETT, SHEPPERTON, MIDDLESEX.—*New French Roses* and *New Pedigree Roses* for 1890.

LONDON COUNTY COUNCIL.

An Unpleasant Incident.

At the meeting of the London County Council, April 29, the Parks and Gardens and Open Spaces Committee reported that Mr. Gibson, the superintendent of Victoria Park, and Mr. Bullen, the park foreman, had utilized the services of park labourers for their private household work, and proposed to reprimand both officers, and to reduce the salary of the superintendent by £25 per annum. The discussion that ensued on the recommendation was characterized by vigour and acerbity. Mr. Corbyn moved to disagree, which Mr. Beck seconded, characterizing the action of the committee as injudicious and absolutely unjust. On a show of hands the amendment was lost, and a division being called for, there were for the amendment 39, against 51. Mr. Marks moved, as a further amendment, that the salary be reduced for one year only, but this was rejected.

We are greatly pained to have to report this unhappy business, because our sympathies are entirely with the parties prejudiced, and Mr. Corbyn and Mr. Beck and the other members who supported the amendment. The Parks Committee of the London County Council should have known, and probably did know, that for any number of years past the superintendents of London parks have been allowed to employ about their own concerns a handy man, selected from the general staff. And one reason it has been allowed is that it is impossible to prevent it; and what has now been done will not prevent it. A superintendent who wants a letter posted in haste will call a man and start him on the business. Probably any and every reader of this sheet, if in the position of a superintendent of a park, would do the same thing. And we will go so far as to believe that any one of the ungenerous fifty who voted against the amendment would do it, and would drop into a system of doing it, and thus come to have the permanent advantage of a man to do odd jobs in and about the house. We shall not defend the practice: it may properly be objected to; but there is a decent way of objecting, and the London County Council has taken an indecent way by seriously injuring two good servants whose fault is that they have followed a precedent of office. They have done as their predecessors have done, and as the world has a way of doing, for rights grow out of usages, and the practice now condemned has been followed so long as to have acquired something like the character of a prescriptive right. A reprimand would have sufficed to establish a new rule, and to do more than is absolutely needful in such a case is to damage the great cause of local self-government.

GARDENERS' ORPHAN FUND.

A meeting of the executive committee of the Gardeners' Orphan Fund was held at the Caledonian Hotel, Adelphi, on the 25th ult. There was a large attendance of members, and in the absence of Mr. G. Deal (chairman of the committee), Mr. C. H. Sharman presided. On the minutes of the previous meeting having been duly read and signed, it was unanimously resolved that the hon. secretary be requested to convey to Mr. G. Deal the sympathy of the committee with him in his illness, and to express a hope that he will soon regain his wonted health.

The most important business before the meeting was the consideration of the claims of candidates for election at the annual meeting to be held in July next. Eleven applications had been received, and as all these candidates were found eligible it was decided to place the whole of the names on the balloting list. Therefore, with the six unsuccessful children at the last election, there will be seventeen candidates for the ten vacancies proposed to be filled. The names and ages of the new candidates are: A. H. Budd, 8; Winifred Jones, 4; R. J. Phillips, 7; Arthur H. Rowland, 8; G. P. Shrubb, Susan E. Baker, 8; George Beveridge, 2; Evans Kinch, 10; Sidney A. Offer le Francis T. Pragnell, 4; and William H. Milne, 2. The names and ages of the unsuccessful candidates are: Frank Butcher, 7; Bessie Deedman; Mary Greive, 10; Thomas Henderson, 7; Arthur Lacey, 4; and Henry E. Skelton, 7.

It was resolved to prepare and print the balloting papers at once, and to post them to subscribers immediately they are ready. Under the rules no balloting paper can be sent to a member until he has paid his subscription, and it is therefore important that subscriptions be paid with as little delay as possible.

A letter was read from Mr. T. Turton, Maiden Erleigh, Reading, stating that the fund raised by the Reading Gardeners' Association in memory of Mr. Wildsmith had reached the sum necessary for placing a child upon the fund, and that it was desired to nominate an orphan in whom Mr. Wildsmith had before his death promised to interest himself. It was decided that the honorary secretary be requested to inform Mr. Turton that the amount collected would be gratefully accepted, and the child be in due course admitted to the benefit of the fund. Certain arrangements for the dinner were considered, and a sub-committee consisting of Mr. Barron, Mr. R. Dean, and Mr. Wynne was appointed to carry out the scheme.

Later in the evening a joint meeting of the committee of the fund and the committee of standholders was held, to complete the arrangements for the Covent Garden Fête, to be held on the evening of the 21st inst. The honorary secretary reported that the Lady Mayoress would open the fête, and that a considerable number of ladies of distinction had consented to become lady patronesses, and had also expressed their intention to be present. The band of the Horse Guards had been engaged, and all the necessary arrangements have been made to ensure the success of the fête. The market growers and standholders are taking the matter up in an enthusiastic manner, and an exhibition surpassing the magnificent display of last year is anticipated.

A Rose Day is proposed as a visible aid in the commemoration of the Queen's birthday or coronation, and one of the parties to the proposal would have Conservatives carry white roses and Liberals carry red. The proposal is very well in its way as a bit of frivolous amusement, but something may be said against, as well as for, the use of floral emblems in politics. The Queen's birthday, May 24, is too early for roses, unless the observance is to be a special display for the upper ten. The accession, June 20, is early, but a much more suitable date. But the custom being established, it can be but of temporary duration, unless in the order of Providence the change that must come at some time or other in the occupation of the throne may happen in the time of roses. And should it so happen, the usage can have no prospect of permanence, for the same risk that now attends it will be of perpetual continuance.

NEW AURICULAS AT THE NATIONAL SHOW.

New auriculas did not form a very large, nor indeed a particularly interesting feature at the exhibition recently held by the National Auricula Society, at Westminster, for they were few in number, and generally speaking wanting in distinctness and quality.

The finest of the new show varieties was *Horner's Buttercup*, a beautiful yellow self, the flowers large, stout, and of good form, the colour rich yellow, the paste pure white but rather narrow. This will be found of much value for the rich and distinct shade of colour. It well deserved the first prize awarded it as the best of the seedlings selfs, and also the first class certificate conferred upon it. In the white edged class the most promising flower was *Horner's Miranda*, a distinct variety of good quality, the flowers rather above medium size, the body colour narrow blackish marone, the edge clear and well defined, the paste smooth and the tube deep yellow. The second prize variety in the class was *Horner's Snowdrift*, an attractive flower hardly so high in finish as Miranda; the flowers are rather large, with broad rich marone body colour, clear edge and smooth well defined paste, but with a rather pale yellow tube. The first prize variety in the grey edge class was *Horner's Irreproachable*, an excellent flower of rather large size with dark marone body colour, of medium width, edge sharply defined, the paste smooth and the tube bright yellow. In the green edge class the first prize was awarded for *Horner's Dragon Fly*, a promising flower but as shown rather wanting in finish. The body colour dark, the edge bright green and the paste smooth.

The alpines staged in the seedling classes showed but little improvement upon those already in cultivation. The two best were *Henwood's Florrie Henwood*, and *Hedderley's Jenny*, which were placed first and second respectively in each class for golden centre flowers and also had first class certificates conferred upon them. The first named has large finely formed flowers, and the colour bright crimson shading to salmon rose, the centre deep golden yellow; the second has comparatively large flowers, but rather wanting in finish, the colour marone shading to crimson, and the centre bright yellow.

Replies to Queries.

Berried Aucubas.—F.: They are very plentiful this season, and in most cases the berries have come without any special aid from the hand of man. Every berry has its season, as every dog has its day. Where a few male aucubas are scattered about the plantations a crop of berries may be expected annually, but an extra large crop is an accident of a favourable season.

Names of Plants.—Gravebell: Your plant is the Star of Bethlehem, Ornithogalum umbellatum.—F. Robins: 1, Hyacinthus amethystinus; 2, Puschkinia scilloides; 3, Triteleia uniflora; 4, Scilla campanulata.—Essenden: 1, Daphne australis; 2, Berberis stenophylla; 3, Pavia neglecta; 4, Magnolia purpurea.—Philo: 1, Oncidium barbatum; 2, Oncidium lacerum.—W. F.: Your seedling is Adiantum capillus-veneris variety magnificum.

Florist.—Your lists include a number of varieties that have been superseded, and are really not now worth growing. As a poor variety gives as much trouble as one of the best, it is a waste of force to grow flowers of inferior quality. You would do well to obtain the last issue of the *Garden Oracle* and follow it in making lists for the prizes you are aiming at. It contains selections of the best up to the latest date, and should be on the desk of every florist or gardener who aims at a foremost place in the ranks of exhibitors.

Callas.—A. L.: The end of May or the beginning of June is the best time for planting out callas. Select an open, sunny position, and enrich the soil by a liberal application of old hotbed or farmyard manure. Supply liberally with water until the leaves die down, when less moisture will be required, but they must not be kept dry even when at rest. On the contrary, the soil must then be maintained in a moderately moist state. The most suitable time for lifting is the end of September. Use pots proportionate to the size of the clumps, and a substantial compost consisting of sound turfy loam and partly decayed manure.

Bleeding Heart.—Novice asks how he is to treat "two bleeding heart seedlings in one five-inch pot." We do not know what is meant by bleeding heart. The common love-lies-bleeding is sometimes so called, and Dr. Prior says the wallflower is the bleeding heart. But the dark wallflower was anciently called "heart's-ease," a name now applied to the pansy only. If Novice will send a leaf of the plant, or will give us its proper Latin name, we may be enabled to advise him, but bleeding heart is a name too vague for business purposes. If, however, he has two wallflower plants in a five-inch pot we advise him to plant them out on a sunny border, and in future to call them by a name more generally understood.

Amaryllis.—R. R.: It is a mistake to treat these as stove plants. They are the better for the help of a moderate warmth in spring, both to aid the rising flowers, and to promote an early growth of the seedlings that have not flowered. But greenhouse temperature may be considered sufficient, and it is a point of the first importance to give them a complete rest in winter. For this they should not be turned out of the pots, but remain in them undisturbed, but allowed to get dry upon a sunny shelf. Every year they should be taken out and repotted to make their new growth in fresh soil. We have found pure turfy loam of a silky texture sufficient for them, but mixtures containing peat and old hotbed manure are in favour with many cultivators.

Obituary.

Recently at his residence, Manningham Thorpe, Bradford, Mr. George Firth, a well-known and successful amateur horticulturist.

Recently at his residence, The Pines, Passaic, New Jersey, Dr. Thurber, a distinguished botanist, and for many years editor of the *American Agriculturist*, in his sixty-ninth year.

Recently at Hastings, Mr. James Alexander, of Red Braes, and partner in the firm of Messrs. Dickson and Co., Edinburgh, in his forty-fifth year.

On the 27th ult., at Suffolk House, Sutton, Mr. William Blades, of Abchurch Lane, aged 66 years. Mr. Blades made a scientific study of his business as a printer, and by the knowledge and taste he brought to bear upon it was enabled to render to literature and scholarship many valuable aids. He wrote a "Life of Caxton," edited many reprints of ancient books, contributed in a most important manner to Shakesperean studies, and contributed freely to *Notes and Queries* in aid of literary research. His best known work is his treatise on "The Enemies of Books," of which several editions have been published.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths before Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets Morn.
1890			H. M.	M. S.	H. M.	H. M.	H. M.
11	S	**Rogation Sunday.** ○ Last Quarter.	4 17	3 49	7 36	1 45	10 19
12	M	Sir C. Barry died, 1860.	4 15	3 50	7 38	2 17	11 40
13	Tu	Old May Day.	4 14	3 51	7 39	2 41	After.
14	W		4 12	3 52	7 41	3 0	2 22
15	Th	*Ascension. Holy Thursday.*	4 11	3 51	7 42	3 18	3 39
16	F	Dr. D. Solander died, 1782.	4 10	3 51	7 44	3 34	4 55
17	S	Prince Talleyrand died, 1838.	4 8	3 49	7 45	3 53	6 11

High Water at London Bridge. Morn.	After.	Liverpool Dock. Morn.	After.	M. tmp. avrg. of 40 yrs. Chiswk.
H. M.	H. M.	H. M.	H. M.	DEG.
6 25	6 56	3 20	3 50	53·4
7 30	8 9	4 21	4 55	53·6
8 52	9 35	5 34	6 17	53·8
10 14	10 49	7 0	7 39	54·0
11 22	11 51	8 14	8 47	54·3
—	0 17	9 16	9 42	54·6
0 40	1 3	10 5	10 28	54·8

Orchids in Flower.		Day of Yr.
		1890
Cattleya Mendeli	South America.	131
Cattleya Skinneri	Mexico.	132
Cymbidium Lowianum	Burmah.	133
Dendrobium densiflorum	East Indies.	134
Masdevallia Harryana	Colombia.	135
Miltonia vexillaria	Colombia.	136
Trichopilia suavis	Costa Rica.	137

ROYAL BOTANIC SOCIETY. GARDENS, REGENT'S PARK.
FIRST SUMMER EXHIBITION of PLANTS and FLOWERS will take place on WEDNESDAY, MAY 14.
Schedules of Prizes, &c., to be obtained at the Gardens.

ROYAL HORTICULTURAL SOCIETY.
GREAT FLOWER SHOW,
In the GARDENS of THE INNER TEMPLE,
On MAY 28th and 29th, 1890.
Schedules and full particulars to be obtained on application to the Secretary, at the Offices of the Society, 117, Victoria Street, S.W. Applications for space to exhibit to be made to Mr. A. F. BARRON, R.H.S. Gardens, Chiswick, not later than Saturday, May 24th.

ROYAL AQUARIUM, WESTMINSTER.
GRAND EARLY SUMMER EXHIBITION,
WEDNESDAY AND THURSDAY, MAY 21 and 22.
Valuable Cash Prizes.
Schedules and all particulars of WILLIAM HOLMES, Frampton Park Nurseries, Hackney.

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.
The GRAND NATIONAL HORTICULTURAL EXHIBITION of 1890 will open on FRIDAY, the 23rd inst., at Two p.m. For Schedules, &c., apply to the undersigned.
BRUCE FINDLAY, Botanic Gardens, Manchester.

BATH SPRING SHOW, MAY 21.
Amongst the open classes are:—

	1st.	2nd.	3rd.
Nine Greenhouse Azaleas	£6 10s.	£4 10s.	£3
Ten Stove or Greenhouse, and six Ornamental Plants	£10	£5	£3
Nine Stove or Greenhouse Plants	£6	£4	£2
Bank of Pot Roses arranged for effect on space not less than 12 ft. by 6 ft.	£4	£2	£1
Group of Orchids arranged for effect on space 12 ft. by 6 ft., Ferns and Foliage Plants allowed	£5	£3	£2
Six Orchids	£3	£2	£1
Group of Plants arranged for effect on space not less than 150 square feet	£8	£5	£3
Group of Plants arranged for effect on space not less than 75 square feet	£4	£2	£1

Entries close May 16.
Office—2, Northumberland Buildings, Bath. Secretaries—B. R. F. PEARSON and W. JEFFERY.

KEW GARDENS, NELSON, LANCASHIRE.—GREAT FLORAL COMPETITION (open to all England), MONDAY and TUESDAY, MAY 26 and 27, 1890, nearly £40 in PRIZES for the best set of Six Distinct Stove or Greenhouse PLANTS (not less than four in bloom). First prize, £20; second prize, £10; third prize, £5; fourth prize, £2 10s.; entrance fee, 6s. All Exhibits to be in the Marquee at Eleven a.m. Monday. Prizes guaranteed by Proprietor, THOMAS HARGREAVES, Esq., to whom all entries must be sent on or before Tuesday, May 20. Competent Judges engaged.

RIPLEY, NEAR DERBY.—ROSE SHOW.
Held SATURDAY, AUGUST 2ND, 1890.
36 Roses, Cut Blooms, Distinct. Open to All England. 1st prize, £5; 2nd, £3; 3rd, £2; 4th, £1. 24 Roses, Cut Blooms, Distinct. Open to All England (Amateurs). 1st prize, £3; 2nd, £2; 3rd, £1; 4th, 10s.
For further particulars and schedules apply to
S. BAILEY, Secretary.

THE WINCHESTER HORTICULTURAL SOCIETY will hold their SUMMER SHOW of ROSES, PLANTS, FRUIT, and FLOWERS (in connexion with the Royal Counties Agricultural Society's Show) at Winchester, on JULY 8, 9, 10, and 11 (roses confined to first two days), when valuable prizes will be offered. Entries close June 25. Schedules to be obtained from the HON. SECRETARY, Winchester.

Exhibitions and Meetings for the Ensuing Week.

WEDNESDAY, MAY 14.—ROYAL BOTANIC SOCIETY.—First Summer Show.
WEDNESDAY, MAY 14.—EASTBOURNE HORTICULTURAL SOCIETY.—Annual Exhibition.
WEDNESDAY, MAY 14.—OXFORDSHIRE HORTICULTURAL SOCIETY.—Spring Shows.
FRIDAY, MAY 16.—ROYAL BOTANIC SOCIETY.—Lecture.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.
ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, MAY 10, 1890.

THE MANAGEMENT OF EPPING FOREST is the subject at the present time of a lively correspondence in the newspapers, and editorial decisions appear to be in a direction adverse to the present management. The editors object so savagely to everything that is done that we take it they are of opinion that the forest should be henceforth left to take care of itself, which perhaps they would regard as the equivalent of leaving it to the care of Dame Nature. This kind of reckless fault finding has, from the day the forest was first taken under the care of the Corporation of London, been a kind of "vogue" with certain papers, and every editor appears to have "taken unto him seven other spirits more wicked than himself" to keep him supplied with notes of observation, objections, questions, and exclamations, the tendency of all these voices being to persuade the public that the forest is being literally carted away, and very soon the geographical site will alone be left. It is an insane crusade, and if persisted in will bring disgrace on all concerned. They may be allowed indeed to make mistakes, for all men have freedom so far and make more or less use of it. But in a matter that demands for right judgment a certain amount of technical knowledge and actual experience, it is dangerous for men who make it evident they are deficient of both to set themselves up as arbiters between men possessing every needful qualification, and the great public that has no direct method of arriving at the truth, but must simply wait until time brings visible evidences. Time has brought visible evidences in respect of complaints that were rife when the improvement of the forest was commenced, and the evidences of substantial benefit are such that they should suffice to silence and rebuke the now prevailing clamours.

The dreadful business now complained of is that a steam sawing mill has been set up at Theydon Bois for cutting up the trees that are being felled in that beautiful woodland. The denunciations of the papers need to be read with caution, for they convey to careless readers the idea that the trees are being cut down by steam in order to destroy the forest root and branch. We will not say that there is any intention to convey such an impression, because the writers are so evidently incompetent to offer any useful observation whatever that we doubt if they have any serious intentions except to gratify the vanity of appearing wise when, in fact, their endeavour only amounts to an exhibition of foolishness. We have visited the spot and seen the steam mill at work, and have taken careful note of the manner in which it is fed with trees on which to operate. The woodlands here consist largely of beech of mixed character, some being ugly old pollards, others young trees of fair promise that are mostly so crowded that fair growth is checked by the limitation of light and air, and the production of really handsome trees is impossible. The authorities are well advised to have the woodland judiciously thinned, for in a forest of such extent as this preserved for public enjoyment solely, some examples of vegetable beauty should be secured if possible, and beech trees standing eight to ten feet apart can only form spindling poles, neither useful nor ornamental, and in the process a certain number must be inevitably killed out by overcrowding. The process of thinning is carried out with great care, and one of the results is, that "sticks" averaging six to ten inches diameter are brought to the steam mill to be cut up to suit whatever purpose they are designed for, their removal in logs and lengths being more convenient than with lop and top and sticks complete.

It should be understood that beech is not considered timber, and that it is of small value in the market. It is soft and perishable, though much used for small work, more especially in the manufacture of domestic utensils. It is for no money-making purpose, therefore, that the thinning is undertaken, but wholly and solely to give the most promising young trees a chance of rising into what may be termed æsthetic profit, the beauty of thriving trees being much more desirable than the ugliness of starved and stifled trees that have had no such care as those at Theydon Bois have at the present time. When the thinning at Ambresbury Banks was entered upon in the early days of the present management there was an outcry of the same kind as we now hear, and then, as now, we protested against it as

unreasonable and injurious. But all that part of the forest is now immensely benefited by the bold operations of the superintendent. The trees that were hampered have taken a new lease of life, and have shown by their renewed vigour and augmented beauty that they needed the air and light that were secured for them, and now repay with interest the boon conferred. It has even been objected that the clearing out of rubbish heaps that were the frequent cause of forest fires was a deed of darkness, but the fires have diminished in number; in fact, they are now of rare occurrence, whereas formerly they were commonplace events, while the people who visit the place for enjoyment of the fresh air and beauty of the scene are enabled to get about with ease and comfort, a London crowd being happier in grassy glades where free exercise is possible than amid thorny tangles and bogs, and occasionally confronted with impassable barriers. We want as much of untouched Nature as we can have in all this forest, and it is the fundamental rule of the management to do the least possible. But the least possible, tending directly to the healthy growth, which is the sole source of true beauty, appears to be too much for lookers on who fondly dream that five trees where is space for only one will ensure to them five times the delight of one in perfect health and vigour. The people who cultivate these views are also the people who overcrowd their gardens, and but rarely see a well-grown flower because they count their joys by mere numbers without regard to the qualities of any.

In the management of so various a tract of forest land as this, with towns and villages pressing in on all sides, and private properties intruding into the very midst of the domain much more than the talent of an experienced forester is required. The directing mind must allow room for sentiment, which, when dissociated from knowledge, will always favour what it regards as "Nature" against what it regards as "art," though unable to define where they meet, and at what distance at any given point they are apart. Let us have wild Nature with no interference by the hand of man, they say, and the words sound so sweet that a thousand voices acting on impulse without the guidance of knowledge, answer, "Yes, yes." But where in the British islands shall we find an example of Nature uninfluenced by the hand of man? Forests are for the most part of man's making; he plants the trees; sometimes he drains the land, constructs roads, and judiciously thins the young trees for the sufficient reason that he prefers healthy growth to debility, disease, and decrepitude. We will suppose the Corporation of London to abandon this fine tract of forest, saying, "Nature will take care of it." Now, to put the case reasonably, Nature would take care of it, for she produces a creature that we call Man, and he would immediately cut firewood as he wanted it, dig up ferns to sell in the streets, remove grass turf from above and gravel and loam from below the level, and very quickly convert this bit of country into a hideous desert. But the Corporation has made sacrifices to obtain control of this forest in the interest of the public solely, and with no view to make the thing pay, for of course in the sordid view it does not pay and never will. And the thousands who are benefited are grateful for the boon, and will be generous in their criticisms. But for all that the seeds of discontent that certain newspaper writers are sowing, are calculated to do harm to a good cause, and we feel bound to say that those who have raised an alarm about the saw mill at Theydon Bois have not thereby proved themselves the friends of the people.

STIRLING HORTICULTURAL AND HONEY SHOW, September 4 and 5.

MR. W. REEVES has been engaged as head gardener at Hatchford Park, Cobham, Surrey, the residence of W. M. Chennery, Esq.

REV. W. WILKS has resigned the secretaryship of the Royal Horticultural Society.

MR. GEORGE MAYCOCK has been engaged as head gardener to E. J. Walker, Esq., Leadworks House, Chester.

CANTERBURY CHRYSANTHEMUM SHOW, Corn Exchange, November 12 and 13.

SOCIETY OF ARTS CONVERSAZIONE is fixed to take place at the Natural History Museum, Cromwell Road, South Kensington (by permission of the trustees of the British Museum), on Friday, June 27.

GROWING BY EXPRESS.—Messrs. Carter and Co. sowed seeds of cactus dahlias April 17, and on the 20th there was so good a plant as to suggest that every seed had germinated. They were pricked off April 28, and are at this date 2½ in. high.

BERLIN INTERNATIONAL EXHIBITION closed on Monday last, with, as appears, satisfaction to all the parties. The only English contribution was a collection of orchids from Messrs. Sander and Co., of St. Albans, who literally "poured them in," as though they had tapped all the streams of production in the world. It is no wonder that such a contribution, in which hundreds of a sort were seen, should secure to the exhibitors some special honours, and it must be recorded that only two honorary gold medals were offered, and Messrs. Sander carried away both.

VEGETATION HAS MADE FAIR PROGRESS in the past week, and the country wears a cheerful and quite seasonable appearance. A beneficial amount of rain has fallen, but there is yet due to us some arrears in that way, and we seem to want a heavy downpour for a few days to clean the fruit trees and put the grass in order for a hay crop. Not often of late have we had reason to complain of undue warmth, and at the moment of penning this note the temperature is below the average, with much cloud and uncomfortable humidity. There appears to be no promise of settled fine weather for the present.

ROYAL NATIONAL TULIP SOCIETY. The meeting of growers and exhibitors of the tulip, which took place at Manchester on the 3rd inst., decided that the annual exhibition should be held in the Botanical gardens, Manchester, on Wednesday, May 28th, being the last day of the great Whitsun Show. So far the general expectation points to a fairly early bloom; but much depends upon the weather during the next two weeks. The Rev. F. D. Horner, whose bloom is generally early, states that with him it is this season earlier than usual, and on the 2nd inst. he had a dozen or two blooms both in the tulip house and out of doors. This being the case it is scarcely possible for Mr. Horner to keep his flowers until the fourth week in May, but beyond doubt he will do it if he can.

ROYAL GARDENS, KEW, are rich in attractions at the present time, the green turf, and the abundant new leafage, being well adapted to refresh the eyes of Londoners, while for gardeners and botanists there are many special attractions. In the garden of Hardy Azaleas which lies to the right of the Sion Avenue, on the way down from the Palm house, the plants are now displaying abundant colour, Magnolia Soulangeana, has just finished its display for the season, and M. purpurea is in full perfection. In the Queen's reserve, which lies northward in the same direction, there are some twenty acres of Blue Bells, making solid sheets of colour, of the most delightful freshness Some interesting Rhododendrons are flowering in and about the plant houses, and the Water-lily house is acquiring its proper tone of summer beauty.

CLIBRAN'S SHADING is a distinct advance in the art of moderating the light in plant houses during the summer. There is more or less of difficulty in the business and a perfect system remains to be discovered. Blinds answer admirably provided they are not too dense in fabric and are lowered when the amount of light is in excess of requirements and raised on the instant of its reduction by cloud or other circumstances. But one difficulty arises in the doing of it and so we all gladly hail a shading that will operate without needing constant attention. Paints and washes are often objectionable as affecting the woodwork injuriously, excluding the light too severely, or becoming ineffectual immediately after a slight fall of rain. We have been trying Clibran's shading, which is mixed with water and applied with a brush, and it appears to be admirably adapted to ensure the ends desired with a reduction of labour to a minimum. To apply it is the simplest business imaginable, and to remove it a wet cloth or brush is enough. We advise the adoption of this material until a better is made known and we suspect it will be long ere it is superseded.

INSECT ENEMIES OF FRUIT TREES have had some special attention from a committee appointed for inquiry and experiment which lately held a meeting at Toddington, a report of proceedings appears in the *Evesham Standard* of May 3. The result of many observations as arrived at by means of a discussion under the presidency of Captain Corbett, agrees nearly with what is said in our note on "Fruit Prospects" published April 26, page 235. The committee decided to recommend for the reduction of caterpillar and aphis, the use of London purple applied by spraying, the strength to be, for apples, 1 ounce to 20 gallons of water; for plums and pears, 1 ounce to 8 or 10 gallons of water. With a view to promote a scientific use of London purple, and prevent its hasty adoption by ignorant persons, Messrs. Hemingway, of 60, Mark Lane, London, E.C., offer "a quantity of it gratuitously during the present year, to any approved fruit grower who will apply for the same." Messrs. Hemingway are properly anxious that the drug should be brought into use in the first instance in this country without the aid of the unintelligent labourer, whose blundering may do more harm than good, and thus possibly bring discredit on a remedy that is of the highest value when prudently applied.

A STRIKE OF THE GARDENERS employed in the market gardens of West Middlesex was in progress at the time we penned our note on the peaceable progress of labour agitations on May Day. It is a serious matter for the masters to be deserted at such a busy time as this, but it may prove a more serious matter for the men unless the difficulties are quickly adjusted. They many indeed secure a rise of wages, for that is what they want, but even that may be of less advantage in the end than may appear to the strikers at this time. There is much to be said on both sides if the case is argued out, but thus far the employers appear to be not greatly concerned about the course of events, possibly because they see their way through the business more clearly than the men do. That labour should have its full fair share of the general total of the products of industry must be granted without reserve, and it can probably take care of itself much better than any Act of Parliament or organization of benevolence, however pretentious or prudently projected. But labour can never have for a permanence, and not for long as a temporary shift, anything more than its full fair share and the amount of that share will be regulated by the markets, for artificial prices can never be maintained except to the detriment of the very persons they are intended to benefit. We shall hope to be enabled next week to report that the strife is healed and that work is going on as usual. The present demand of the market gardeners' men is for uniform pay at the rate of 4½d. per hour.

The Lion of the Season arrived on Saturday week, true to the programme, and although he roared most gently, the sound is heard and will be heard far and wide, for Stanley has become a name to conjure by. It seems as if the weather had been influenced by his coming, for a new warmth was felt on Saturday, and by Monday the thermometer improved by some half-dozen degrees, and we felt that a touch of African sunshine had been brought to improve our May Day. And while Stanley is as welcome as May Day, and the word of the hour with Englishmen is a word of honest boasting that he is one of themselves, admiration will presently take the more serious form of considering the best mode of utilizing his achievements in the interests of humanity at large. What he has done for Emin may for the moment appear to be all superfluous, and a kind of costly folly; but the assertion of the supremacy of European civilization in the Dark Continent is strengthened and enlarged, and the ages will be the richer for it.

Oetzmann's Patent Flower Boxes merit the attention of all who decorate their windows with flowers, for there has been something wanted to supersede the window boxes in common use, which are often in bad taste and equally often vexatious, because they will fit none but the particular windows they are constructed for. Messrs. Oetzmann have provided a series of portable and changeable boxes of beautiful design and material, which may be made to fit any place for which they are suitable, and may be conveniently packed away whenever it is desirable to cease planting them. In many instances these decorations are not wanted in winter, as it may be that they interfere somewhat with the light, of which there is never too much in our apartments, or it may be inconvenient to keep them properly furnished. Such being the case, the Oetzmann boxes may be taken to pieces and stored out



Oetzmann's Flower Boxes of Ornamental Pottery Joined with Copper Rods.

of sight for future use, or they may be adapted as conservatory or dwelling room decorations, for which, indeed, they are peculiarly adapted by reason of their artistic superiority. The figures will show that these boxes may be converted into ornamental pots, and as they consist of porcelain only, without any metal work or other material, corrosion is impossible, and it is not even necessary to measure the windows for which they are required, as they can be extended and contracted at pleasure. It is agreeable to add that the prices are so moderate that there can be no objection to them raised on the score of costliness.

Carter and Co.'s Cross-bred Wheats that we have occasionally reported on as we have seen them on the trial farm of the firm at St. Osyth, were presented to public notice at the Paris Exhibition last year, and were regarded with so much favour that the French Government conferred on the managing partner of the firm the Ordre du Mérite Agricole. It is intended by Messrs. Carter and Co. to give the public the advantage of their labours in establishing this series of cross-bred wheats by placing them in the market, the six years' successive trial on the seed farms having proved their superiority in many important particulars over varieties of wheats known to cultivation.

Mr. Stanley's Reception in the Albert Hall, on behalf of the Royal Geographical Society, on Monday last, may be regarded as an event of highest public importance, and as marking an epoch in the history of geographical discovery. With Sir M. E. Grant-Duff as president, the Prince of Wales as mover, and the Duke of Edinburgh as seconder of the vote of thanks, and an audience of 8,000 persons, including the Princess of Wales, the Duke and Duchess of Teck, and the leading lights of the aristocracy of birth, of science, art and literature, the "learned lecturer" must have felt that his achievements were crowned with honour. He told them that his recent journey covered 6,000 miles in length, and occupied 987 days, 500 of which were passed in the great Central African forest. In summing up the advantages resulting from the expedition, he playfully remarked that "the world is richer by the knowledge that there are 10,000,000,000 more trees in it than we knew of before," and he added in all seriousness that the British possessions extended to the eastern limits of the Congo Free State, having acquired many a thousand square miles of territory, for the assistance by force of arms and other considerations, against their enemies, the Wara Saru.

British Fruit Growers' Association.—A meeting of the executive committee of the Association was held at the Horticultural Club, Victoria Street, on the 1st inst, when the arrangements for the conference on strawberries and bush fruits, at the Royal Aquarium, on June 27 were completed, and other important matters discussed. The programme of the Strawberry Conference will include the following papers: "The Origin of the Cultivated Strawberry," by Mr. Shirley Hibberd; "Market Culture of Strawberries and Raspberries," by Mr. George Bunyard; and "Bush Fruits," by Mr. John Wright.

The Proposed Unification of Glasgow and the Burghs is again rejected by Parliament and it is understood that for many years to come Glasgow will not seek to extend its municipal boundaries. On the 2nd of May the Committee of the House of Lords resumed and concluded the consideration of the Bill and in the result Lord Romilly announced the decision to be "that it is not desirable to proceed further with the Bill." Glasgow is discomfited in being burdened with expenses in aid of districts outside its direct operations that contribute nothing to the municipal exchequer. Our chief concern in respect of this matter is that it keeps the Botanic Garden under lock and key, for being beyond the civic boundaries, the city cannot incur the expense of maintaining it efficiently for the public benefit. Should aught be done it must be by private endeavour, and a wealthy city might, out of its citizenship, provide ways and means to render the botanic garden a school of botany and an aid to public recreation and enlightenment.

The cold weather at the beginning of March, 1890, that injured many plants, and went near to making an end of the wallflowers, is reported on by Mr. C. Harding in a contribution to the Meteorological Society:—At the commencement of the month a rather heavy fall of snow was experienced in many parts of England, and cold weather set in over the midland, eastern, and southern districts, the temperature on the 3rd and 4th falling to a lower point than at any time in the winter. The lowest authentic thermometer readings, in approved screens, were 5 deg. at Beddington, 6 deg. at Kenley in Surrey and Hillington in Norfolk, 7 deg. at Chelmsford and Beckenham, 8 deg. at Addiscombe, 9 deg. at Reigate and Brockham, and 10 deg. in many parts of Kent and Surrey. At Greenwich Observatory the thermometer registered 13 deg., which has only once been equalled in March during the last one hundred years, the same reading having occurred on March 14th, 1845. During the last half century the temperature in March has only previously fallen below 20 deg. in three years, whilst during the whole winter so low a temperature has only occurred in eight years.

Succi's Fast was a slow affair, and of questionable utility. Had the man died, would he have taken the whole responsibility to the grave with him, or would those who made money by the unseemly exhibition have been held to account as accessory to wrong doing? So far as we understand the case, the risk was all his own, for but little has been said about the legal questions that may arise when life is intentionally endangered. The only addition to our knowledge resulting from this absurd business is in the power of mere water to sustain life, which of necessity results from the aid it renders the frame in the conversion of tissues into heat-producing material. In other words, by taking water Succi was enabled to live on himself, and thereby illustrate in a very serious way what we were told "when we were boys" about bears living through the winter by sucking their paws. The reports on the medical aspects of the case are interesting, especially as they throw light upon the influence of the mind on the body, for Succi appeared failing on the 29th and 30th days, as he had previously fasted for that length of time, and was now about to enter on the enlarged experiment of another ten days' abstinence.

The Household.

FISH WITH TOMATO SAUCE.

This is a novel dish, and one that suits all palates. Boiled fish is commonly a poor article, for its best qualities are boiled out of it, and were it not for the sauces to make amends, it would be uneatable. Fish may be cooked in the sauce that is to accompany it, and there can be no better example of this method than the one I now propose. A white sauce with capers answers well, but tomato sauce is unsurpassable. Make a good tomato sauce; or what is nearly the same thing, a good tomato soup a little thicker and stronger than usual. When it is ready and boiling hot, put in a sufficient number of fillets of sole, turbot, brill, or plaice. The last-named fish is accounted a poor article, but it is delicious when cooked in fillets in tomato sauce. There will be needed a little extra salt, because of the fish, but in a general way there is very little salt required with tomatos. The fillets will require to boil or simmer for from five to fifteen minutes, according to thickness, but require much less time than is usually allowed in boiling fish. All the gelatine and fine flavour of the fish mingle with the sauce, and the result is a most elegant and harmonious combination. Serve in a tureen as hot as possible, and immediately it is done. X. Y. Z.

AUCTION SALES FOR THE ENSUING WEEK.

Wednesday, May 14.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Ferns, Greenhouse Plants, Roses in Pots, and Lilies.

Wednesday, May 14, and Thursday, May 15.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Orchids.

Friday, May 16.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

Calls at Nurseries.

MR. WILLIAM BULL'S EXHIBITION OF ORCHIDS.

IT has been our duty to refer in a highly eulogistic manner to the exhibitions of orchids previously held in Mr. Bull's establishment at Chelsea, but in the magnificent display produced this season Mr. Bull has so far surpassed himself that it would be unjust to speak of it otherwise than in the warmest terms of praise. All the great features for which these exhibitions have so long been distinguished are represented, and this year some that are quite new have been developed, with the result that so high a degree of perfection has been reached that anyone not fully conversant with Mr. Bull's taste and resources may well be excused for speculating as to future possibilities. As on former occasions, the large span-roof structure adjoining the winter garden is devoted to the purposes of the exhibition, and very beautiful are the several distinct effects it affords. On passing its portals attention is at once arrested by a bank of finely-flowered specimens, in which odontoglossums and masdevallias predominate, and to the right and left are long vistas, in which cattleyas, oncidiums, dendrobiums, cypripediums, odontoglossums, and lælias intermingle in delightful profusion, with just sufficient greenery to relieve the varied tints of their flowers.

One of the most distinctive of the several features is formed by Cattleya Mendeli, of which a large number of exceptionally fine forms are now flowering. Amongst other varieties of this cattleya, of which note was made, was C. Mendeli imperialis, a handsome form with large flowers, distinguished by the brilliant colouring of the labellum; C. Mendeli princeps, an effective variety, the flowers above the average in size, the sepals and petals delicate pink, and the labellum bright amethyst; C. Mendeli triumphans, an exquisitely beautiful variety, the sepals and petals pure white, and the labellum rich amethyst purple; C. Mendeli gigantea, as indicated by its varietal designation, has flowers remarkable for their large size, and the colouring is extremely attractive; C. Mendeli excellens has flowers rather above the average in size, with sepals and petals of great breadth and a warm pink hue, and a labellum marked with brilliant amethyst; and C. Mendeli insignis, an attractive form, remarkable for its rich purple labellum. Several good varieties of C. Schroderæ were in perfection, especially noteworthy being C. Schroderæ delicata, a charming variety, bearing large flowers of a pale pink hue; and C. Schroderæ lutea picta, an interesting form, marked on the labellum with three small orange-coloured blotches instead of with one large blotch, as in the type C. Lawrenceana, is well represented, and its high coloured flowers are singularly effective in contrast with the numerous light shades with which they are associated. The varieties of Lælia purpurata are not less important than are those of Mendel's cattleya, and those which should have first attention are L. purpurata rubicunda, a very distinct form, the flowers of the largest size, the labellum rich marone purple, with golden throat pencilled with crimson; L. purpurata Princess, a superb variety, the flowers large, the sepals and petals white, the labellum white, lightly painted lilac rose; L. purpurata rubella, a distinct form, the petals and sepals bright rose, and the labellum marone purple, the margin of the sepals, petals, and labellum distinctly scalloped; and L. purpurata erubescens, a handsome form, remarkable for the deep colouring of the labellum. L. elegans and its superb variety L. elegans Mastersiana are both well represented, and contribute their full share to the attractions of the exhibition.

Odontoglossums are in strong force, and as they include numerous extremely beautiful varieties they are at once interesting and attractive. There is already a fine display of Odontoglossum vexillarium, which may be expected to do good service until the close of the exhibition in July, so large is the reserve. To enumerate all the varieties of this species now in bloom would occupy much space, and it must suffice to direct special attention to O. vexillarium rubrum pictum, a high coloured form, of which the sepals and petals have a well defined pure white margin; O. vexillarium splendens, a fine variety with flowers large in size and bright in colour; and O. vexillarium albescens, an exquisitely beautiful form, the flowers large and pure white except the sepals and petals, which are lightly tinted with pink. O. citrosmum is represented by several hundred finely flowered examples, which evince considerable diversity in colour. The finest of the many good forms are, perhaps, O. citrosmum unicolor, which has very large flowers, uniformly coloured rose pink; O. citrosmum rubrum, distinguished by the depth of colouring of the labellum; and O. citrosmum album, of which the flowers are pure white. Other odontoglossums that are conspicuous in the collection comprise O. polyxanthum, a very handsome species, the flowers large and of a rich lemon yellow colour, freely blotched with chestnut red; O. notabile, a new and handsome species, producing long racemes of large primrose yellow flowers, blotched with chestnut; O. triumphans chrysolorum, a very brightly coloured form of this well-known species; O. ornatum and O. delectabile, two supposed natural hybrids of great beauty; O. Halli, O. Halli lucoglossum, and O. Alexandræ, of which there are numerous beautiful varieties. Oncidiums include a goodly number of the finest kinds flowering at this season of the year. Especially attractive are Oncidium concolor, which, as is well-known, has elegant racemes of lemon yellow flowers,; O. sculptum, one of the most distinct of the oncids, the flowers of medium size, lurid brown, with narrow yellow margin; O. Marshallianum, with its large panicles of golden flowers; and O. sarcodes, a distinct species, remarkable alike for its elegant habit and rich colouring.

Lady's slippers of necessity abound, and arranged in large masses, each consisting of a distinct kind, they produce a striking effect. Amongst others are Cypripedium caudatum, C. Lawrenceanum, C. bellatulum, C. selligerum majus, C. barbatum, in variety, and C. Mastersianum. Dendrobiums are plentiful, and mention must be made of Dendrobium Farmeri, D. Dalhousieanum, D. thyrsiflorum, D. Devonianum, D. suavissimum, and D. Cambridgeanum, so liberally do they contribute to the attractions of the exhibition.

Two cymbidiums of special excellence are now flowering. One of these is C. Lowianum, represented by several large, finely-formed specimens; and the other is the chaste C. eburneum. Angræcum modestum, a charming little species, bearing long, pendulous racemes of pure white flowers, is represented by some dozens of well-flowered examples; and suspended from the roof it presents a pleasing contrast to the brilliantly coloured Sophronites grandiflora. A. Leonis is also flowering freely, as indeed are Lycaste Skinneri, Vanda suavis, Angulosa Clowesi, and a host of other good things, equally well known.

KEW BULLETIN for May contains reports on Lagos Rubber; Mealy Bug at Alexandria; Mauritius Hemp Machines; Siberian Perennial Flax (*Linumperenne*), and Liberian Coffee.

SPRING FLOWERS IN THE LONDON PARKS.

THOSE whose duties compel them to reside in the country and who only make a journey to London on special occasions, and who have a love for new ideas in the arrangement of flower beds for spring flowering may spend a short time in the London parks, more particularly Hyde Park, with pleasure and profit also. Being a countryman, I was anxious to see for myself what are the best kinds of tulips and other spring flowers for massing in beds, and venture to write a note on them as I found them during the third week in April, thinking perhaps a hint may be of some use to my brethren in the country who have not had this season the same opportunity as I had for inspection themselves. It struck me that the tulip blooms were rather earlier this season than common, and I am sure that a grand display is provided for the numerous visitors who daily parade the beautiful park.

Entering at the second entrance from Hyde Park Corner, the first bed which attracts attention is one filled with the orange red yellow-tipped double variety Imperator rubrorum. This like all the others is planted with one sort entirely, the bulbs standing from six to eight inches apart all ways, and being neatly surfaced over with cocoa-nut-fibre refuse they present a neat appearance as well as being protected from the ravages of slugs. Most of the beds are of large size, near twenty feet long and about eight feet wide; it may easily be imagined therefore that a fine display is produced by the various colours.

Keizerskroon.—One of the showiest of single varieties and a "good doer" is especially attractive here, and indeed in all the public parks and places. The colour is crimson scarlet, margined with clear yellow.

Globe de Rigaut, is peculiar in its markings, yet withal it is a striking kind and one much admired; the blooms are large, purplish slate and white in colour.

Crimson King.—Although small flowers are produced only, the colour, scarlet crimson, the outer part shaded with gold, is especially striking.

Joost van Vondel, is one of the most effective colours produced among single tulips, being rosy crimson with white pencillings and a cream shading.

Dussant.—Dark red, with an orange shade, good.

Moliere.—A kind of a slaty blue, effective.

Queen of the Violets.—A very pretty rosy lilac and white coloured sort.

Chrysolora, is the best of the yellow kinds, being dwarf in habit, yet producing large blooms, of a bright golden yellow. As growing here in a circular bed twelve feet in diameter a gorgeous effect is produced.

Comte de Mirabeau.—Small white flowers, of good substance, and especially suited for beds.

Yellow Prince.—Although the blooms produced are small, a good effect is secured with the colour its name implies.

Gloria Solis, although very attractive in its colour—dull crimson and gold, owing to the weight of its flower-heads, and the apparent weakness of the stems, the blooms do not show themselves to the best advantage, especially during wet weather.

La Candeur.—A fine white variety, very stiff in both flower stems and foliage, yet the lateness of its blossoming period somewhat mars its other good qualities, where all kinds are required to flower simultaneously.

The above are the best kinds of tulips at the time of my visit.

The hyacinths, of which there must have been a fine display, as recorded in the magazines some time since, were past their best, yet enough remained for me to judge of their quality and effect. For future use I jotted some of the most striking varieties down; the spikes were wonderfully even in growth, the foliage good, showing that care in preparing the beds and the planting the bulbs had been judiciously performed. As in the case of the tulips, a surfacing of cocoa-nut fibre was employed.

Continuing the path toward the Marble Arch, after passing the last entrance out of Park Lane there are some striking beds of narcissus and other things. The first to claim attention is one about fifteen feet long and five feet wide, filled with the celebrated *Bicolor Horsfieldi*, which is often spoken of as the "King of the Daffodils." The bulbs are planted about six or eight inches apart, a capital effect being the result of this massing of the stiff foliage, glaucous in colour, and thickly studded with its golden trumpet flowers.

A circle bed seven feet in diameter, adjoining the narcissus bed, produced a capital effect, planted with *Muscari botryoides* (grape hyacinth) in a close mass. It is not often that this old-fashioned flower is seen in such profusion.

Narcissus campernelle. This jonquil makes a good show in a mass by itself, growing about fifteen inches high.

Narcissus Stella, Obvallaris, and *Nobilis* all provide matter for interest as bedding subjects, when used in masses of one sort alone. The second named is especially showy.

Parrot tulips, although later than any other sort, except the gesneriana group, will make an interesting display later on. Several showy beds of primroses, particularly the light-coloured kinds, were noticeable, as also were the beds of seedling auriculas. If these latter can be induced to flower freely, they will quickly become popular spring flowering subjects for outdoor decoration. But what surprised me most was the poor appearance of the wall-flowers, only an apology, in fact. Whether it is the smoke and fog of London which checks the plants in their growth or not, I cannot say; but the fact remains that they are extremely poor in quality and shabby in appearance, much different to what I am accustomed to see here in the country, where the air is pure and free from smoke and fog.

Primula denticulata in a mass makes an interesting bed, and gives variety to the scene.

In Regent's Park the beds devoted to tulips are larger than those in the park previously named, and in the result provide a rich and striking effect. Especially good are *Keizerskroon, Proserpine*, dark rose; *Artus*, and *Yellow Tournesol*, the latter a double variety. This and the scarlet previously named are mixed with light-coloured primroses, the latter as a carpet for the tulips producing a good effect. In this park primroses, both dark and light-coloured, are made the most of, being planted in bold masses with a view to distinction in the colouring, lights and darks being kept separate. The result is better harmony than when the regular mixing of the colours is adopted.

A YORKSHIREMAN.

INDIAN ORCHIDS occupy such an important position in collections that it will be of interest to many orchidists to know that part XVI of Sir Joseph Hooker's "Flora of British India" is devoted to Orchidæ. The principal genera dealt with are Bolbophyllum, Calanthe, Cirrhopetalum, Cœlogyne, Dendrobium, and Eria; and of the dendrobes upwards of one-hundred and fifty species are described.

DUKE OF BUCCLEUCH AND OTHER GRAPES.

This grape is better grown at Dunster Castle than we usually find it. For that reason I was glad to button-hole Mr. Webber, the gardener at this place, a few days ago and learn from him something of the way in which he treats this variety and his opinion as to its merits. With regard to the quality I did not hear a very good character of it. In this respect its great fault is that it will not keep after it is ripe without getting spotted, which seriously tells against its otherwise handsome appearance when the bunches are well developed. I am well acquainted with this fault in its character, as it was for that reason I discarded it a few years after it was first introduced, as it was disappointing to see how quickly the berries got spotted after the fruit was ripe. No doubt this spotting of the berries might be to some extent prevented if the sort was grown in a house by itself and treated to a gentle warmth in the hot-water pipes accompanied with plenty of air at all times. But as this kind of treatment would not suit mixed houses of grapes there appears to be no other preventive. Any way, I am quite satisfied that if anyone could overcome this defect in its character Mr. Webber would do it, as he is both an observant and painstaking cultivator, as the way in which he has renovated all the vines at this place bears ample evidence.

With regard to the treatment this grape has received in the case under notice, it has not differed much from what has been bestowed upon it in other places. Being grown with other vines in the same house it has been impossible to make any departure in that way. The only difference is in the system of pruning adopted. To appreciate the value of this part of the management, I must remind the reader that in the majority of cases where this grape has been discarded, it was because of its unfruitful character. There has not been any want of vigour in the plants—as a matter of fact they have grown too much, made plenty of wood and luxuriant leaves with but few bunches of fruit. This was its character at Dunster when it was first taken in hand by the present gardener. To obviate this the vine is now pruned so as to leave five or six buds on the spur instead of cutting it close back to the old wood and leaving only one prominent eye or bud. The result of this plan of pruning is that a greater number of bunches of grapes of larger size than hitherto are secured. When pruned hard back the number of bunches on a long rod did not often exceed three or four. At the present time there is a very respectable show of fruit, the bunches promising to be both large and handsome. At the same time the vine is not so productive as it might be, although far better in that respect than is generally the case. After all, this sort is not behaving any worse than others sent out by the same raiser. None of them, including Golden Champion and the Duke of Buccleuch, have behaved any better except in isolated cases where they could have the sort of treatment they required.

The Golden Champion was the first of this class of white grapes. I never saw it in a thoroughly satisfactory condition but once, and that was under the charge of Mr. Shore at Westbury-on-Trym, now gardener at Berkeley Castle. In this instance a single vine was covering a good portion of the roof of a house, which will show that it was grown under the extension principle. Its condition as I then saw it made it manifestly clear that the sort is ill-adapted to the short spur system of pruning. I have thought since and I shall continue to do so until the fact is demonstrated to the contrary, that the varieties of grapes I have mentioned and also Buckland Sweetwater, are altogether unsuited for planting in small vineries. They are too strong in constitution to bear restriction, and only productive when they are allowed to make a rod or rods from thirty to forty feet in length.

I have little doubt that Buckland Sweetwater was one of the parents of the three sorts I have mentioned in this note. At any rate, except in the form of the bunch, they all partake of the same vigorous growth and resent alike being spurred close back at the winter pruning. I have grown them all and seen enough of their behaviour to convince me that in many cases the three first mentioned kinds were condemned without a fair trial. As I have already said they are not fruitful when grown in small vineries, and as this has been the condition under which they have been invariably grown they have not had a fair chance of showing their true character. Perhaps the words "small vineries" hardly convey my meaning; the fact that I wish to convey is, that none of the sorts I have mentioned are fruitful when the rod is anything under twenty feet in length. While saying this much in their favour, it must be understood that I am not advising anyone to plant them unless the conditions are such that I have indicated as being necessary for their successful cultivation.

The Duchess of Buccleuch is, however, a noble grape when well done; the bunches are fairly handsome, while the berries are large with a distinct and striking appearance. In the few instances that I have seen the Duchess when exhibited in competition with other white sorts, not of muscat flavour, it has always taken leading honours. Perhaps after all its merits will be best described as an exhibitor's grape rather than for general usefulness.

There is another white grape belonging to this class that has not as yet found much favour with planters. I allude to Mrs. Pearson. It is, I admit, somewhat shy in bearing, but it is a first-rate keeper and should make a capital companion to Lady Downe's and Mrs. Pince's Muscat, as it does well under the same treatment; well ripened examples keeping well in the grape room until the middle of April.

I must revert to Buckland Sweetwater as it is a grape that is not so difficult to manage as some cultivators imagine. If there is a good length of rod and plenty of room for the lateral growth to extend, I never experienced any difficulty in securing a good show of bunches. The berries are not perhaps very even in size always, but they are large when well grown and the flavour very sweet and refreshing. A remarkable feature in the behaviour of this grape when grown by the side of the Black Hamburgh is that it flowers later, yet it is ripe quite a fortnight in advance of the Hamburghs. Should anyone find as an average experience the berries of uneven size in the bunches, I advise in the future management drawing the hand down each bunch while they are in flower. If left to themselves the capsules do not readily leave the stem, when the pollen is not equally distributed. But a gentle force in the way I have suggested will cause a more even distribution of the pollen and greater regularity in the size of the berries secured.

In point of flavour Buckland Sweetwater is far in advance of Foster's Seedling. For very early forcing the latter is no doubt the most reliable sort, but for a cool vinery the other is equally as trustworthy if not pruned back to very short spurs. J. C. Clarke.

HOW I BECAME A GROWER FOR MARKET.

The First Part.

The cardinal object I have in view in presenting the following account of how I transferred my energies from the work of a private gardener to that of a grower for market, is that it may possibly be of some advantage and benefit to my fellow-gardeners. I fear the name is legion, of those who not unfrequently find it difficult, if not impossible, to obtain situations suited to their early training and respectability, or where anything like good wages are to be had, or indeed to obtain situations of any kind as private gardeners, when their abilities might, to a great extent at least, be turned in another direction with, I think, much more profit and dignity to themselves.

It is a fact, greatly to be deplored, that so many well-trained and highly intelligent gardeners are to be found engaged in work all over the country so uncongenial to their tastes, and degrading to their sense of independence as true members of society. Men who for years have been obliged to drawl out their lives of drudgery in small places, frequently in the very heart of our largest cities where soot and dirt are the prevailing commodities to be dealt with, and where the trees, flowers, and shrubs are but sad and heart-sickening remembrancers of their counterparts in the purer air of the country. Or perhaps, worse still, who have to spend their existence in the debasing occupation of jobbing gardening, from the ever declining moral scale of which it is almost an impossibility for them to extract themselves.

By the accident of birth I am a Scotchman, and during a somewhat long life—much of it spent in England—I cannot say that I have ever found cause to regret the fact of having first seen the light, and had my early training in the art of gardening, north of "Tweed's Silver Stream." And although I have had but few opportunities of revisiting the "land of my sires" since I gained the age of thirty-five, I yet retain a deep inward feeling of love for her mountain scenery, her streams, her "shaggy woods," her music, and her poetry, the thoughts of which have soothed many a sorrowful hour.

My gardening education was begun at a very early age under the tuition of my own father, who, most truly, combined the role towards me of "guide, philosopher, and friend." His love for the sublime and the beautiful in nature was great, which I, being his constant companion, was not slow to discern, and which I caught from him, to some extent, during many a plant and fishing foray by mountain, wood, and stream. This happy time, alas! was suddenly and painfully terminated by death; and then, as suddenly and painfully, came the stern realities of life to me.

After serving the usual terms of journeyman and foreman in some of the best places in the West of Scotland, I applied for, and obtained a situation as head gardener to a widowed lady in the county of Midlothian. The seat was a beautiful one, within easy reach of Edinburgh, the garden a large one, with everything in perfect order, the lady kind and considerate, plenty of help, and the wages good.

Before entering upon the duties of my situation my employer stipulated that I should get married. This little matter, it is needless to say, was soon arranged. Young Scotch gardeners are usually well prepared against such eventualities, so that the preliminary arrangements met with no delay, and on a lovely morning in the month of June, I took up my appointment, accompanied by my better half.

The situation, as I have stated above, proved to be a most comfortable one, and here we remained for a number of years, five bairns having made their appearance during the time. My wife, happily endowed with a strong love for Nature, proved the very beau ideal of a gardener's home companion. Thus time glided away. Improvements were made in the garden, our good lady giving many proofs of her appreciation of my services; when suddenly death struck another fell blow at my happiness. My employer quite unexpectedly died, and within two short weeks of her demise I received one month's notice to leave, the next heir to the property having intimated his intention of bringing his own gardener with him. The feelings of the whole family at the idea of having to quit the lovely place within so short a period may be better understood than described. Still, we had to go, and there was no help for it, so at the expiration of the notice of dismissal we took lodgings in the adjoining village. The rooms were small and somewhat comfortless, yet we were in the country, and that was something. I did not care to go to the capital, for two reasons: first, I feared for the health of my wife and children, should they be suddenly transferred from the country, where they had lived all their lives, to, perhaps, a narrow and crowded street of Edinburgh; and, second, because my pride, or whatever it may be called, would not permit me to seek for employment in any of the nurseries on a wage of from 10s. to 15s. per week, where I was pretty well known to most of the managers as a customer. I therefore elected to remain in the village, taking advantage of any jobs I could get, and waiting, Micawber-like, till something would "turn up."

Unlike, perhaps, the major portion of my countrymen, I had not

been quite so frugal as I might have been during my stay in my first place as head gardener, so that on leaving I had not so heavy a purse as I might have wished. I had, therefore, to be economical in all ways. Of course, I took the usual means, endeavouring to obtain another permanent place, and had many negotiations with parties, every one of which fell through owing to the unpardonable sin of my having children to the outrageous number of five! It was in vain for me to explain that they were quiet children, and that I should take care they would not be a nuisance to my employer. No one would have anything to do with me with five bairns as an adjunct to my other qualifications, so that the consequences were that after eighteen months' residence in the village, doing what work I could get and striving my best to obtain permanent employ, I found myself at the end of that time with very little work in hand, without money, and without a situation.

Just at that time a traveller from a large London nursery appeared on the scene. I had had frequent business transactions with him, and as I was thoroughly sick of the kind of work I was at I made bold to ask him if he could do anything for me? He promised that on his return to London he would consult his principals and let me know.

In due course I received a letter stating that they were willing to receive me into the nursery if I chose to come up, giving me employment as a jobber at a wage of about £1 per week until such time as I succeeded in obtaining another situation, promising at the same time that they would do all they could to get me one. After consulting my wife I wrote to the effect that I would accept their offer, also thanking them for their kindness. The effect produced on my wife by the thoughts of turning her back on "Bonny Scotland," perhaps for ever, was very visible and painful, but as she was willing to forego everything for the sake of her husband, we packed up our belongings, borrowed a few pounds from a relation in the North, left Edinburgh one evening by the night mail, the next morning finding us in the King's Cross Station, London. Beanstalk.

Notes of Observation.

RIBES SANGUINEUM.

This flowering currant has done remarkably well this season, and although looked upon as too common a subject to occupy a prominent position in many gardens, it is nevertheless a charming plant when used as it should be to gain the best effect. It may with advantage be planted in a block of several together in the shrubbery, backed up and next to evergreen shrubs of some kind, and not allowed to ramble away in a wild manner as though no one cared for it. In the manner described it produces a capital effect when loaded with its drooping brightly coloured blossoms in the months of March and April.

Dotted about singly here and there in the shubberies, its effect is spoilt. A good mass of it together is the correct way of dealing with this ribes. A single specimen on the grass, allowed to grow with freedom so as to form a natural bush, is a fine object where such a position is available. Any pruning necessary should be done directly the flowers are past. This should not be done in a formal manner, such as clipping off all the points of the branches to give the whole a neat appearance. But the weaker branches should be removed entirely, so as to make room for the stronger ones, which if well furnished with young growth will have opportunities to mature when not smothered in with useless smaller branches, which prevents the necessary amount of light and air penetrating to the centre of the bushes. Full exposure is requisite to ensure blossoms for the following season, as in the case of all plants which produce their flowers upon the previous year's shoots. In such instances as this maturation of the wood plays an important part in the success or failure of the following season's crop of flowers. I have seen this ribes effectually used as a hedge plant, allowing it to grow six feet high; after that stage, keeping it within bounds by annually clipping the shoots, a not only novel but a pleasing effect was produced, and a capital fence in the bargain.

The carmine-tinted variety is a fine thing. It is catalogued as *atro-rubrum*, and differs only in colour from the type. The white variety *album* also has high floral merit, and will be useful with the others where variety is wanted. E. M.

CLEANING BEDS OF BULBOUS FLOWERS.

I have noticed lately that in public parks and some gardens, instead of cutting off the flower-spikes of hyacinths and daffodils and such like when the bloom is over, a man goes in and draws each stem through his hand, which removes all the dead flowers and leaves the green flower-stem unhurt. This, I suppose, is taking a leaf out of your book in favour of the leaf that Nature provides to enable the plant to produce flowers. The green stems of the bulbous flowers no doubt perform the office of leaves in elaborating sap and helping the roots to store up stamina. At all events, if the stems are not so useful in that way, cutting them off must distress the plant by loss of sap by bleeding, and so no doubt the new practice is sound. But this is a note of observation, and records what I have seen. Index.

DORONICUM AUSTRIACUM.

This early-flowering "leopard's bane" is a plant worthy of extended cultivation in the herbaceous borders, when we consider how easily it is to establish, and the freedom in which it flowers during the month of April before the larger species makes a show. D. austriacum grows not more than one foot high, its old gold-coloured blossoms are much valued in a cut state, arranged with their own foliage—as they provide a colour not common at this season of the year. In the rockery and border it is immensely showy. Like other varieties of the family it is easily increased by division of the roots. E. M.

ELLAM'S CABBAGE.

This is the very best cabbage to grow for early spring use; less space is occupied with plants of this variety than any other I know, and yet more cabbage can be cut from the same space, because scarcely one ever runs to seed, which cannot be said of some sorts sown at the same time—say at the end of June or early in July. The rows may be planted fifteen inches apart and the plants put out one foot wide, which succeed best when drills are drawn about two inches deep preparatory to planting. Some soil should be drawn up around the stems in the autumn when the plants are large enough to prevent their being blown about by high winds which loosen the roots and cause a check to the growth, which should be continuous and subject only to temperature. Ours treated in this manner were ready to cut the first week in April and were as tender as could be wished, such neat little hearts had they formed. This variety has an especial happy way of "turning in" quickly. All who have not grown this cabbage should make a point of securing seed to sow in about six weeks time from this, and a sowing at this time will be useful. E. M.

SCARLET WINDFLOWERS.

Although the daffodils in the Long Ditton nurseries of Messrs. Barr and Son are more than sufficient to occupy the whole of the time of the visitor, it is practically impossible to leave without first devoting some attention to Anemone fulgens and its varieties which, as for some time past, are flowering profusely. Immediately on entering the gates the large breadths arrest attention, and not until the eye has feasted upon the brilliant display produced by the myriads of flowers is it an easy matter to proceed to a critical inspection of the five hundred odd varieties represented in the nurseries. Some five-and-twenty beds, each large enough to accommodate several thousand plants, are devoted to the scarlet windflowers, and the large sheets of brilliantly-coloured flowers remind one of the great masses of Tom Thumb pelargoniums which were so conspicuous in the flower garden a quarter of a century ago. These plants, now so effective, have been flowering more or less freely since early in January, and whilst furnishing an abundant supply of cut flowers, have produced a rich effect and proved to demonstration the value of the windflowers for contributing to the attractions of the flower garden early in the year. In passing along the spaces between the beds it soon becomes evident that although the beds are filled chiefly with the typical form, the several varieties are well represented. The most distinct of the varieties is A. fulgens multipetala, a semi-double form bearing flowers similar in size to those of the type, but with a large number of narrow petals. These give the flowers a very elegant appearance, and render them even more valuable in a cut state. The broad petalled, or Greek form known as A. fulgens græca grandiflora, is especially effective, for the flowers are larger and of finer form than those of the type, and the colouring is more intense. Of the specific, or Pyrenean type, there is a very attractive variety, distinguished by the flowers having a pure white zone surrounding the disc. This is known as A. fulgens oculata, and is desirable both for its distinctness and effectiveness. Still more striking is A. fulgens græca annulata which, as in the case of the variety immediately preceding it, bears flowers having a pure white ring round the disc. The chief point of difference between the two is the larger size of the flowers of the last-named. It is possible by planting at intervals during the year to have a succession of flowers from Christmas until the autumn following, but the flowers produced early in the year are the most highly appreciated, and for the general body of cultivators planting in August will be preferable. G.

IVY HEDGES.

It may not be generally known that the common English ivy makes one of the prettiest of hedges, especially during the winter months, when a full crop of its dark-coloured berries is produced. These succeed the flowers when the plants have arrived at the age when flowering of this ivy is an annual occurrence. In some counties this ivy covers the bottom of every hedge which is not cleaned every year. Where the hedges are formed with mixed plants such as quicks, hazel, elder, &c., they often get bare at the bottom, when by allowing the ivy to grow up the stems of the hedge, as it does when the hedge naturally gets thinner at the base, giving the ivy more light. In a short time the ivy will reach the top of the hedge, and will after the tops are removed by the yearly cutting of the hedge produce many side branches, which will grow vigorously, owing to the concentration of the energy of the plants into the side branches by the yearly removal of the leading shoots. From these flower shoots will grow, and with the mass of green leaves will not only make a novel evergreen hedge, but be a strong one also, supported by the main stems of the hedge itself, which will in time die, perhaps by the increase of the ivy, but in that case the ivy will be strong enough to make a fence in itself. M.

AUBRIETIA HENDERSONII.

At the present time the most striking plant in flower on the rockery is this aubrietia. In patches from one foot to two feet square the intensely dark purple-coloured flowers make a distinct mark in this part of the garden. To cultivate aubrietias well it is a good plan when the flowers are past to cut off the greater part of the previous year's growth down to within, say, two inches of the surface. New growth will commence to throw up at once, will be neat in appearance, and will flower freely and early the next season. When the growth is not interfered with for some years it becomes untidy in appearance. Neither is so much bloom produced as the growth becomes weakened. When once a good strain of any kind of aubrietia is secured it is the more safe plan of retaining it as such by dividing the roots to increase or maintain the stock, as seedlings cannot be depended upon to come true to character. E. M.

CLIANTHUS PUNICEUS.

Notwithstanding the fact that Clianthus puniceus has not received anything like so much attention as the more brilliantly coloured C. Dampieri, I would venture to suggest that it is more beautiful, and certainly more useful than that species. In the first place, it can be successfully grown without imposing a severe tax upon the skill and the attention of the cultivator, and in the second it is more beautiful than Dampier's Glory Pea. Individually, the flower trusses of the last named are unquestionably the most attractive, the blooms being larger and the colours brighter. In habit and freedom of flowering C. puniceus has a decided advantage, for it is one of the most elegant of greenhouse climbers, and, under ordinary culture, blooms most profusely. We have at the present time a large specimen trained over a portion of the roof of the conservatory under my charge, and for some time past it has presented an extremely beautiful appearance. At the present time it is literally loaded with large clusters of the rich crimson flowers, which have a charming appearance, depending from the roof in association with the bright green pinnate foliage. Some years since I achieved a fair measure of success in the cultivation of C. Dampieri, but the results were not in proportion to the time and trouble involved, and I eventually discarded it. With C. puniceus there has not been any trouble. It was planted in a border consisting of fibrous peat and loam in equal proportions, with a moderate addition of sharp silver sand, and it would appear that this mixture has been in every way suitable. I have been informed, on good authority, that C. puniceus is now being used rather largely on the Continent as a stock for the more weakly growing C. Dampieri, and with good results. It is said that by working the last-named upon a vigorous stock its constitution is so far improving that it can be successfully grown under much the same conditions as those under which the species employed as a stock thrives. I shall in due course put this information to a practical test, and in the meantime would strongly advise the more general culture of C. puniceus. G. S.

DECIDUOUS MAGNOLIAS.

At this time of the year there is no more attractive or useful flowering deciduous subject than these magnolias. Whether it be as single lawn plants or as shrubbery ornaments they are equally meritorious. Unlike many other flowering trees, they will flower abundantly every year without extending beyond their position for a number of years. The fault of some subjects of this class is that to keep them within bounds as shrubbery occupants they need occasional pruning to fit them for the position they occupy for some years, and one result of pruning is that we have but little bloom the next year. But in the case of magnolias many years may elapse before a knife need be employed on them except to preserve their shape. When employed as lawn trees it is in some cases desirable to prune the branches a little, simply to preserve their form, but the less of this the better. Deciduous kinds of magnolias flower early in the year, therefore are all the more valuable, as they come in when not many trees and shrubs are in bloom. Nothing is more appreciated than a well grown tree of either variety covered with blossoms, standing in a sheltered spot on the lawn during the month of April.

The first to unfold its flowers is *Conspicua*, pure white and highly perfumed. This species is generally the most free of any in producing blooms. At the present time there is a splendid specimen of it in the grounds at Gunnersbury house, Acton, W., about thirty feet high and nearly as much through, literally smothered with blossom. The next to flower is *Purpurea*. The flowers of this are rather longer than the former in the petals, the centre on the outside of each petal is heavily striped with pale purple, which adds to its attractiveness; the inside of the flower is white. *Soulangeana* is again a few days later in coming into flower. The colour is very similar to purpurea, but the shape of the flower is different, being shorter in the petals, which are round at the point forming a more perfect flower as far as the shape is concerned perhaps. There is but little distinction between the latter two varieties except in form. *Obovata* and *Obovata discolor* much resemble them both in colour, it being a trifle confusing to discriminate between the four reputed sorts. In any case they are all worthy of attention as shrubbery or lawn plants. It is not necessary nor is it wise to treat them to too rich a soil, having as it would a tendency to encourage gross growth and flower buds so soft that they would be much more likely to receive injury from frosts at a time when the flowers are just opening. Any ordinary garden soil will grow these magnolias.

E. M.

STRIKING DAHLIA CUTTINGS.

It is not always that a good strike of dahlia cuttings can be insured. I have seen many lots of stout good cuttings inserted which looked exactly like striking after sufficient time had elapsed for roots to be formed and yet which damped off most mysteriously. If the cuttings are produced from the old roots in a high temperature and a long way from the glass they cannot possibly be otherwise than soft and sappy and in the worst possible state for striking. Where conveniences to ensure a good strike do not exist, many gardeners are put to sore straits to raise the necessary stock of plants. It is a mistake to start the roots too soon and in too high a temperature. No more heat should be given them than is obtainable in a cool house, the roots being placed on a bed of decayed leaves on the side stages of such a house and as near to the light as possible to encourage a firm growth. Some fine leaf soil may be used for covering the roots also; this, if kept moist, will soon encourage new root action which will quickly be followed by young growth. When three inches high the shoots or suckers should be cut off as near as possible to the base from whence they sprang. Trim off the bottom leaves if any are developing and cut the stem of the cuttings square across just below a joint. Insert them singly in thumb pots in sandy soil; place the pots under handlights or in a propagating frame in a cool house for a couple of weeks until callusing is effected. Then the pots should be stood in a higher temperature, still using the handlights to exclude air, when roots will quickly be formed and the plants ready for transferring to larger pots and again to a lower temperature where the growth will be more steady and consequently hardier and more likely to produce better results. While the cuttings are in the cool house under the handlights, care should be taken that too much moisture is not applied to the soil or in the atmosphere or the cuttings will be liable to damp. This should be obviated by removing the glass every morning for an hour or so until the leaves are thoroughly dry when the handlights can again be replaced. E. M.

STRIKING MESEMBRYANTHEMUM CORDIFOLIUM.

The variegated form of this interesting plant is largely employed in bedding and to propagate it is a matter of importance. Those persons who experience any difficulty in obtaining a good strike of this popular bedding plant—and there are some who find a difficulty in treating this plant in the best possible manner,—should adopt the method I practice. It consists in dibbling the cuttings into sandy soil at this time of the year in boxes, standing them on a shelf close to the glass in a vinery at work where all the sun available will be secured. The cuttings should be watered as occasion arises, but not shaded at all from the sun. In this manner every cutting may be made to grow. Sometimes when bottom heat is used the cuttings damp seriously and often cause much annoyance if too much moisture is allowed to condense upon the leaves, rendering them soft and less easy to root. As this is one of the most popular subjects we have in use for carpet bedding special means should be taken to ensure a good strike of cuttings. E. M.

PRICKING OUT HALF HARDY ANNUALS.

Many of these subjects I fear do not succeed as they ought through neglect in pricking them out of the seed pans early enough, allowing them not only to be drawn up weakly by overcrowding in the pans or boxes in which they were sown until they almost need support when put out afterwards. This not only weakens the plants for future growth but gives them a severe check out of which they hardly ever recover. Half hardy annuals such as asters, stocks, zinnias, phlox Drummondii, salpiglossis, &c., should have means afforded them that they will grow away without a check until they have flowered and are pulled up. It is only in this manner that the best results can be obtained from these subjects which are so useful for supplying flowers for the beauty of the beds, herbaceous and other borders during the summer, not forgetting their great use as providers of cut flowers of so great a variety. In most places at this season of the year cold frames are not over plentiful, it is often through a lack of these that the plants I have named are sometimes spoiled in their infant stages. Our plan is to make up temporary frames with turf freshly cut, over which we place pit or frame lights such as can be spared from potatos, carrots, or any other subject which does not need them during the day. At night a covering is provided with straw hurdles or mats, in the place of the lights removed. The height of the turf frames need not be more than fifteen inches at the back and nine at the front, just enough to throw off the water from the glass. On the bottom of the frame, which is generally made on a firm foundation of ashes, we lay a two-inch thickness of partly decayed horse manure, that from a spent mushroom bed or partly decayed leaves will answer as well, over this a two-inch thickness of refuse soil from the potting bench, the crocks and other matter removed by passing the soil through a sieve of half an inch mesh. The object of the layer of manure at the bottom is for the roots to run into and at planting time capital balls of earth and roots are secured, which, if lifted carefully with a trowel and planted in showery weather no check is felt at all; the plants go on growing and never know they have been removed.

Directly the seedlings are large enough to handle they are transplanted to the frame about two inches apart, gently watered and carefully shaded from bright sun until new roots are formed, when air is freely admitted to them to induce a robust growth. As they advance towards a suitable size for planting the lights are taken off altogether in the daytime, and replaced again at night. E. M.

WALLFLOWER BELVOIR CASTLE.

If it were necessary to require more proof that this is the finest of all single yellow wallflowers; another season's flowering will substantiate what is here said. The present has not been the most favourable season experienced for the growth of wallflowers, many plants having severely felt the sharp frosts experienced during the first week in March, but according to my experience this variety has stood the test remarkably well, for the plants are now flowering bravely. The main of them carry from ten to fifteen branches, each one feathered with numerous smaller blossom spikes, the height averaging from one foot to fifteen inches; the colour and perfume exceptionally interesting. E. M.

TWO-FLOWERED DAFFODIL.

The old *Narcissus biflorens* is a good variety for the herbaceous border for producing bloom when many other sorts are past their best. Especially sweet is the perfume emitted from the flowers. A large stock of bulbs can soon be secured as they increase rapidly by the formation of new bulbs which soon grow into flowering size.

E. M.

Horticultural Club.—The usual meeting and dinner are arranged for Tuesday next, at Hotel Windsor. Dinner at six, after which Mr. Shirley Hibberd will discourse on "Common Sense and Common Nonsense in the naming of Plants."

MR. STANLEY'S AFRICAN EXPLORATIONS.

WITH this note we place before our readers a map that will probably prove useful in connection with reports, newspaper articles, and books now current or forthcoming, relating to the more recent geographical explorations of Mr. H. M. Stanley. It will not be expected of us, at a time when horticulture makes extra claims on our attention and space, that we should treat at any great length on the ever interesting and at the present time exciting subject of the great traveller's achievements. But the relations of this subject to horticulture and natural history are too obvious to need more than the barest mention, and ensure on the part of our readers recognition of the present map as a valuable aid to the general study of African geography as well as of the topics that now occupy a foremost place in the public mind.

The usefulness of the map may be greatly augmented by an operation that will be found entertaining and profitable. The course of Stanley between the Congo and the Zanzibar coast is marked in a thick dotted line from Yambuya on the 25th parallel of longitude to Bagamayo on the 40th. This line should be coloured, and will then give a new and enlarged life to the map itself and the story it tells. A coloured pencil will suffice for this, or a quill pen dipped in red or blue ink will make a neater job of it.

Stanley's labours date from the later days of the year 1867, when he engaged on behalf of Mr. Gordon Bennett of the *New York Herald* to accompany the English army to Magdala. The ability and fine business capacity displayed by him in this undertaking led to his being selected by the same honourable employer to make a search for Livingtone, a task he entered upon in 1869, attending on his way the opening of the Suez Canal. He arrived in Zanzibar January 6, 1871. On November 10, of the same year, he found the lost traveller. He then made a cruise of the Northern Tanganyika, and returned with Livingstone to Tabora on the parallel of 5 S. lat. and 33 E. lon. On October 21, 1872, he was presented with the gold medal of the Royal Geographical Society, in acknowledgment of this peculiar service to African exploration.

In 1873-4, he was occupied in connection with the campaign against Ashanti, but in 1874 to 1878 he made his great journey, at the joint expense of the proprietors of the *New York Herald* and London *Daily Telegraph*. In this magnificent enterprise he made a complete survey of the great Lakes Victoria Nyanza and Tanganyika, and traced the course of the Congo, fighting his way through hordes of cannibals, encountering want, disease, the desertion of his men, and ten thousand dangers and risks, and reaching Europe again hale and in full possession of health, and his brilliant mental faculties. The founding of the Congo State was the result of this journey, and this event brought the King of the Belgians into the very heart of African geography as a patron and director of explorations. On August 14, 1879, Stanley was off the mouth of the Congo with his Zanzibaris. On May 26, 1882, he discovered Lake Leopold, and again he returned to Europe to tell of his having launched the first steamer on the Congo, and prepared the way to civilization there. Before the year was out he was again on the scene, and in May of the following year he proceeded to the Upper Congo, and having explored much of the country of which Stanley Falls is the centre, he was enabled to attend the Berlin Conference in 1885, when by a "General Act" of February 2, an independent Congo State was created, with King Leopold of Belgium for its head.

His rescue of Emin is fully as glorious as any of his previous achievements, whatever our opinions may be of the object for which the journey was undertaken or of the results as regards the future of Africa. Stanley performed what he promised, and in doing it reached as near to the supernatural and the impossible as any man of courage and persistency of whom any record exists. He left London January 21, 1887, and soon after organized forces in Zanzibar. He took the strange route of the east coast to reach the Equatorial Province, and events proved his prescience and caution as far surpassing that of the best advisers on African travel. At Yambuya, where the dotted line begins on 25th parallel of east longitude, he established a fort, which he entrusted to the keeping of Major Barttelot. Stanley started June 10, 1887, for the southern end of Lake Albert Nyanza, piercing trackless forests, harassed by slave hunters, and encountering hardships and dangers innumerable. He reached the lake December 14. It was not until April 28 of the following year that he met with Emin. All appeared well and he hastened back to Yambuya to bring up stores, but alas! he found the camp little else than a ruin. Barttelot had been murdered and the people were scattered. But so far from being crushed by these events, he once more organized his forces and again reached the Albert Nyanza to find more trouble, for Emin's officers had revolted and made a prisoner of their leader. He was enabled to bring Emin away, and on December 4, 1889, the party arrived at Bagamayo, 39 east longitude (foot of map, right hand).

The task he undertook was accomplished, and he has returned home to tell the tale and once more to be feted and idolized. But he brings not Emin with him, and thereby hangs a tale we need not tell, for it has been "told in Gath" and is known to all the world, at least in outline.



In his address at the meeting of the Royal Geographical Society on Monday last Mr. Stanley gave the best of his many descriptions of his recent journey, and the interest was in no way diminished by his severe condensation. The great forest of equatorial Africa was the subject of a description that thrilled by its strange revelations of things altogether unknown until Stanley pierced it, and yet were in some part described by Herodotus, who evidently had a clue to the truth, as we long ago discovered in the identification of the highlands of Ethiopia with the Mountains of the Moon. Describing the forest, Stanley says: "Its greatest length is from near Kabambarré, in South Manyuema, to Bagbomo, on the Welle-Makua, in West Niam-Niam, 621 English miles: its average breadth is 517 miles, which makes a compact square area of 321,057 square miles. A serpentine line through the centre of this would represent our course. This enormous tract is crammed with trees varying from 20 ft. to 200 ft. high, so close that the branches interlace one another, and form an umbrageous canopy. It is absolutely impenetrable to sunshine. While the sun scorches and dazzles without, a little dust of white light flickering here and there only reveals the fact. Generally it was a mystical twilight, but on misty or rainy days the page of a book became unreadable. At night one fancied that the darkness was palpable and solid. The moon and stars were of no avail to us. As there are about 150 days of rain throughout the year, and almost every rainfall except a drizzle is preceded by squalls, storms, tempests, or tornados, with the most startling thunder crashes and the most vivid flashes of lightning, you may imagine that the houseless traveller in such a region must endure much discomfort."

ODONTOGLOSSUM HUMEANUM.

This pretty odontoglot is as yet by no means so common as to be met with in every orchid collection, although now and then one finds its name attached to some variety or another of the well-known Odontoglossum Rossii. With this latter species, when imported in quantity, O. Humeanum occasionally appears, thus apparently justifying the general opinion that it is a natural hybrid between O. Rossii and another species—probably O. cordatum or O. maculatum, but more probably the latter, judging from the structure of the flowers and the habit of the plant.

Three or four large flowers is about the usual number borne on the arching or drooping scape. The sepals are of a deep brown colour with pale yellow transverse markings, and the broader whitish petals are decorated at the base with a few large sepia-brown blotches, while



ODONTOGLOSSUM HUMEANUM (Sepals brown with yellow markings, petals white with blotches of sepia brown).

the lip with its white or faintly rose coloured blade forms a striking contrast to the bright yellow callus, the inner sides of which are striped with dark red.

As years roll on, no doubt O. Humeanum may become more abundant both by importation and propagation, and there is small chance of its losing favour with orchidologists, as it not only produces its flowers freely but retains them in a fresh and vigorous condition for a great length of time.

To finish it may be mentioned that this odontoglot first made its appearance in cultivation about fourteen years ago in the collection of the late Mr. Burnley Hume, to whom it was dedicated by Reichenbach, and whose name it will hand down for many years to an orchid-loving posterity.

Isleworth, April 24, 1890. J. Weathers.

KIDNEY BEANS.

The usefulness of the kidney beans in supplying the table during the summer months is fully recognized Occupying comparatively little space, they are equally suitable for the large and small gardens, and the simplicity of the cultural details renders them of special value to amateurs. One of the strongest points in their favour is their capability for withstanding the effects of drought, in the latter respect having but few equals amongst vegetables in use during the summer months. They indeed suffer so little from an excess of heat or a deficiency of moisture that they can be depended upon to produce a liberal supply in seasons so hot and dry that peas yield but a small return after St. Swithin's Day. This characteristic naturally enhances their value in gardens where the soil is naturally hot and dry as, for example, on the chalk and gravel.

In proceeding to refer to the cultural details it must be distinctly stated that although the dwarf kidney beans will give good results on thin and poor soils, it does not necessarily follow that they should be grown without manure. So far from this being the case they should, where practicable, have the advantage of soil that has been deeply stirred and liberally enriched with manure. If the quarter has been trenched to a depth of two feet so much the better, but it should in every case be stirred with fork or spade to a depth of not less than twelve inches. They are not very particular as to the fertilizer used, but according to my experience they produce the best crops when the soil has been liberally enriched with manure from the stable. The first sowing should be made about the middle of May on a sunny border, and the best variety for that sowing is Sir Joseph Paxton and Ne Plus Ultra. The first-named is not so heavy a cropper as some of the kinds, but it comes into bearing very early and produces nearly the whole of its crop simultaneously. Ne Plus Ultra is rather later, more productive, and it continues in bearing for a considerable period. In small gardens where but little space can be devoted to these vegetables, preference should be given to the last-named. To maintain a continuous supply until the autumn it is found necessary to sow at intervals of two or three weeks up to nearly the end of July. These sowings are made in the open quarters, and the two varieties that have the preference are Canadian Wonder and Negro Long-podded. These are unquestionably the best dwarf beans we have for the main crop, being immensely productive and of high quality. In gardens where runner beans are largely grown it will not be necessary to sow at such frequent intervals as in our case. We have to maintain a continuous supply of both dwarfs and runners, as both have to be placed upon the table at regular intervals throughout the season.

With reference to the spaces that should be allowed both between the plants and the rows it may be useful to state that overcrowding must be avoided. We sow the two early varieties three inches apart in rows having two feet spaces between them. The two main crop kinds are sown four and a-half inches apart in rows with thirty-inch spaces between them. When the young plants have produced their first pair of rough leaves and are commencing to grow vigorously every alternate plant is drawn out. It is not safe to sow so far apart as to render thinning unnecessary because of the partiality slugs have for them during the earliest stages of growth. By this practice it matters not if a few plants near each other are destroyed, for they can be readily replaced from other parts of the row. It is important to keep a sharp look-out for slugs when the beans are pushing through the soil. Dustings of lime and soot will be useful in warding off their attacks, but they must not have too much dependence placed upon them. The rows should be carefully searched early in the morning and again in the evening, and every slug within sight be dropped into a vessel containing salt or quicklime. The task of preserving the beans from the attacks of these pests is materially reduced by making the surface soil quite fine immediately over the rows, and to a distance of six inches on either side.

To obtain the best possible results it is essential to commence gathering as soon as the pods are of a suitable size, and to continue gathering as the pods become large enough whether required for the table or not. When allowed to remain, as frequently happens until they are too old for cooking, not only are they rendered worthless but the growth is checked, with the result that the plants are much less productive than would otherwise be the case. Old Spadesman.

Fertilization of Flowers has received so much attention of late years, that in a list prepared by Professor McLeod, of the books and memoirs relating to the subject that have been published since 1883, there are no less than six hundred and thirty-eight entries. Professor McLeod's catalogue appears in the last volume of "Botanisch Jaarbock" recently published under the auspices of the Dodonea Society of Ghent.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Greenhouse Plants now in bloom include Acrophyllum venosum; Aphelexis macrantha purpurea, A. macrantha rosea; Azalea indica; Chorozema Chandleri; Epacris Eclipse; Erica Cavendishi, E. ventricosa coccinea; E. ventricosa superba; Leschenaultia formosa; Pelargoniums in variety, Pimelia spectabilis; Polygala oppositifolia; Statice profusa.

THE HOUSE.

Palms and other ornamental plants grown indoors require to be repotted or top dressed annually according to their necessities. For the majority a mixture of loam and peat in equal parts and a liberal proportion of silver sand will be the most suitable. The pots used should be perfectly clean and be efficiently drained. For top dressing use fibrous loam to which a fourth part of some good artificial fertilizer has been added. If the fibrous loam is difficult to obtain cover the surface of the soil to the depth of nearly a quarter of an inch with the fertilizer, and prick it in with a piece of pointed stick. The foliage must be kept clean by sponging or by syringing, the plants to be taken out of doors for the latter purpose.

STOVE AND ORCHID HOUSE.

Orchid House.—In the Indian and Mexican houses abundant moisture and a liberal temperature may be allowed. By far the greater number of the most valued species derive their chief sustenance from the atmosphere; hence frequent sprinkling of the paths and stages should be practised. Where there are large plants needing abundance of atmospheric moisture, the walls and tables near them should be drenched frequently, and the tanks should be kept full. This treatment will be most needed by Saccolabiums, Vandas, Phalænopsis, Dendrobiums, and Aerides, which makes little progress unless liberally treated. Manage, however, to have the houses dry once a day by means of ventilation, so as by shutting up and watering to imitate the natural deposition of dew of the jungles, from which the plants come. Those on blocks must be dipped twice a day. Plants recently potted must be kept alive chiefly by means of atmospheric moisture until established. Specimens in flower to be kept cool and in a dry atmosphere.

Stove.—This is the best time to propagate Begonias, Euphorbias, Justicias, Poinsettias, and other quick-growing soft-wooded plants for display during winter. Specimen plants to be assisted with liquid manure, and shoots to be stopped of all shrubby and branching kinds. Justicias especially should be freely growing now, to get the wood well ripened for a good bloom at the end of the year. Stove climbers now want plenty of room and liberal culture; the syringe will do wonders to keep down vermin. Average temperature, 65 deg. to 70 deg. at night, and 75 deg. to 85 deg. by day.

FORCING AND FRUIT HOUSES.

Melons will be enjoying plenty of sun-heat now, and if the beds still give a tolerably good heat it may not be necessary to line them again; but if it is some time since the beds were lined, and the fermentation is nearly at an end, put on a fresh lining. Use the syringe moderately to keep a healthy foliage.

Peaches under glass are now well furnished with wood for next season, and the cultivator will have to select now the shoots that are to bear next year's crop, instead of waiting till the winter pruning. Tie in betimes, and thin away all superfluous growths, for if the trees are crowded none of the wood will ripen properly.

Pines established to have very little shade, and plenty of air as weather permits. Shift succession plants as required, and give very little water at the root until they have begun to take hold of the new soil. Put them on a good bottom heat, and shade from eleven to three.

Vines.—In the early houses there will be good ripe bunches now of several sorts, and as it is desirable to keep them as long as possible, so as to cut them fresh and fresh, give abundance of air and very little water. In houses where vines are coming into bloom use the syringe with caution, and assist with the hand all shy setters. Vines are thirsty now, and all inside borders must be abundantly watered.

FLOWER GARDEN AND PLEASURE GROUNDS.

Asters must be pricked out where they are to flower or be potted singly in light rich compost. The frame is the best place for potted asters; those bedded out will want the protection of mats should the weather become cold again.

Balsams should be treated as advised for asters. Some of the early-sown plants will be showing bloom now. If it is desired to grow them larger before flowering nip the flower buds off and shift the plants to the next size pots. But the best balsams are grown without stopping and without disbudding.

Hardy Herbaceous Plants going out of bloom may be propagated from cuttings or seeds. Double Wallflowers, Alyssum, Iberis, spring Phloxes, &c., should be grown in quantity.

Pæonies need the support of sticks to prevent the blowing over of their heavy flowers. A heavy soaking with liquid manure will do very much towards improving the bloom.

Phloxes which have formed strong stools in the border will need thinning to reduce the number of shoots to a few manageable leaders which are be staked neatly and separately. Phloxes are now being grown in pots, but are scarcely the best of subjects for that method, though it is convenient for showing, and enables the exhibitor to put up complete plants, which are always preferable to cut blooms when it is possible to show them.

KITCHEN GARDEN AND FRAME GROUND.

Broad Beans for a late supply may be sown. Early crops will need the earth to be stirred between the rows, to keep down weeds and promote the vigour of the plants.

Beet to be thinned; generally speaking, a foot apart is the proper distance, but some of the large-growing kinds must have fifteen inches. Sow again for a late crop.

Broccolis advancing in the rough leaf to be pricked out on light rich borders. Occasionally dust the plants in the seed bed with lime to preserve from slugs.

Capsicums and Tomatos may be planted out on warm borders and on walls, provided protection from frost can be afforded them there.

Celery to be pricked out in frames and on light warm borders. Trenches may be dug out for the earlier crop.

Endive.—Sow the first batch.

Kidney Beans to be sown for succession, the rows two feet apart, the seed six inches apart in the rows. Kidney beans are generally sown as thick as spinach, and the crop is less than may be had by using a tenth part of the seed.

Lettuce to be sown for succession. Plant out on well manured ground from seed pans and boxes. In places where summer lettuces commonly bolt, it is necessary to manure liberally, and to sow where they are to stand, as the check occasioned by transplanting greatly favours the bolting.

Vegetable Marrows may be planted out provided the beds are in a nice warm condition and the plants are strong. After planting put hand-glasses over, or put baskets or large pots over at night for a time in case of frost. But if the beds are not in a state of steady fermentation, or if the plants are not strong, defer planting for a fortnight or so. But in any case get the beds ready, if not done already.

VILLA FARM.

Tares are so useful for affording supplies of green fodder for horses and cattle generally in the early part of the summer, when the pastures are shut up for hay, that a moderate breadth should invariably be sown on farms of limited extent. More especially should they form a part of the system of cropping on farms of which the pasture land is small in proportion to the number of cattle it has to carry, for when cultivated with an ordinary degree of success the bulk obtainable from a given area is very large, and the produce is much relished by horses, cattle, and sheep all of which will usually eat more than is good for them when they have access to an unlimited supply. The cultivation of tares is, as compared with most other farm crops, a very simple matter, for they are not particular as to soil, and provided they have the assistance of a liberal dressing of manure they can be depended upon to produce a good bulk of green food. Although they will do well on soils of most descriptions, it appears desirable to state that a rather heavy loam is preferable to one that is light and sandy. Where possible two crops should be sown, one in September, to stand over the winter and furnish the earliest supplies in the season following, and the other in March, to form a succession. In both cases the soil should be liberally enriched with manure, that from the farm yard or stables being the best, and twenty loads per acre if in a fresh state and fifteen if partly rotted down would constitute a liberal dressing. If this manure is not available, guano at the rate of five cwt. per acre should be employed. The farm yard manure should, as a matter of course, be ploughed in, but the guano ought to be applied as a top dressing when the surface soil is being broken down prepatory to the tares being drilled. For both winter and spring crops, the drills should be twelve inches apart and the tares drilled at the rate of two bushels per acre. In certain cases a supplementary sowing may be made at the end of April to furnish late supplies, but it is only on cool soils that much success can be achieved with crops started so late. Immediately the plant is well above the surface, the horse hoe must be set going. After this the tares will be well able to take care of themselves, for the growth is generally so dense that there is little fear of weeds making much headway, certainly not sufficient to injure the crop or bring many seeds to maturity. The crop may be eaten on the ground, but with the exception of that intended for sheep and lambs it is much better for the animals and decidedly more economical to give it them in a cut state. When sheep are folded on tares as much space only as they will thoroughly clear in the day should be afforded them, because when they have too wide an area to run over they trample down and render more or less worthless nearly as much as they consume.

GARDENERS' MUTUAL IMPROVEMENT ASSOCIATIONS.

Prize Essay, by J. Barry, Chiswick Gardeners' Mutual Improvement Association.

There can be no doubt that the existence of Gardeners' Improvement Associations has a beneficial and educational influence upon those drawn within their sphere of operations, and this influence for good will be proportionate to the manner in which they are conducted. The craft is clannish to a degree, and despite the unavoidable isolation, we have always been Socialistic, and these societies will make us more so, by giving us opportunities of knowing each other better and of uniting our forces for the general welfare of our body. Moreover the meetings of these associations are calculated to induce young men to employ their spare time profitably. This is an important step, as it will lead them on to the high road of thoughtfulness, which lead to self respect, and the resolve to be somebodies. Such associations too inspire young men with the desirable ambition of being able to express their thoughts intelligibly, and if this was the only result achieved by attendance at such meetings, it would be of the greatest service to them in after life, when filling positions of trust. In many private places the gardener must possess conversational powers, and be able to converse freely about his calling with those whom he is serving. A good address in a man is a valuable accomplishment. It wants, however, to be properly balanced, so as not to degenerate into mere talkativeness. "Work not words" is a good old maxim.

Reverting to our subject, such associations are, if properly conducted, a great power for good. They create, as already observed, a social intercourse between members of the craft, and are the means of disseminating the knowledge of the elder among the younger members, and, what is more, the discussions that ensue have a tendency to destroy false or wrong notions, and often create new ideas that only remain to be put into practice to prove the fallacy of earlier notions on the same subject. One direct aim of such associations is to diffuse knowledge. It is the positive duty of all to acquire knowledge by observation, by reflection, by reading, and by listening to the informed; for the greater the general stock of knowledge of each individual, the more is his own well-being promoted and the more is society benefited. Knowledge is not limited in its quantity, its portals are ever thrown open wide to all who may choose to enter, and is not, fortunately, in the age in which we live, confined to particular classes. The first step in the successful acquisition of any branch of knowledge is to learn to exercise the powers of observation. It is, for example, by constantly observing the peculiarities in plant life—that truly wonderful and beautiful field of exploration—that the readiest perception is acquired of their structure and habits and qualities which a less practised observer would entirely overlook.

It has been urged as an objection to gardeners' associations that they encourage high flown and scientific ideas; and yet, undoubtedly, the gardener who can combine a true knowledge of science with his daily practice is bound to become a successful cultivator. I recollect that at a certain association, a paper was announced to be read on "Vegetable Physiology." One of the "old school" of gardeners remarked to me, "I am successful without knowing anything of physiology! Many good gardeners do not clearly understand the word." This may be, but they would be all the better gardeners by a correct understanding of it. Every gardener in this age who aspires to being a somebody in his profession should have some knowledge of vegetable physiology. He ought at least to be so far acquainted with its true principles as to be able to conduct his operations with some degree of certainty.

Officers.

Under this general heading I will venture to throw out some hints as to the selection of the members of the executive of these associations. Relative to the composition of the managing body or executive committee, it is most important to success that a good chairman be secured. He should be a man of tact, winning manners, business aptitude, strict impartiality, broad-minded views, used to presiding at such meetings, and well versed in horticultural matters. Do not think I am creating an ideal man. Men possessing the characteristics I have mentioned may be found for the looking, and when applied to will be found willing to place their services in the hands of those requiring them. The chairman's authority should always be upheld by the members generally. A good man will never exceed it. The secretary should be a real worker, zealous for the welfare of the association, striving to work up his district by inducing all the gardeners living in it to become members, so that the place of meeting should be one from which horticultural "light" should be ever radiating. It is a good course of procedure to change the secretary annually, if possible. There is nothing like a pretty constant infusion of new blood in such matters. Keep a man in office too long and he is apt to lose an interest in the work, and perhaps become proud and independent. This yearly change would give all a chance of making themselves useful in carrying on the work of the association, and taking greater interest in its welfare. The committee, which should not be a large one, ought to consist of good men, each and all heartily anxious for the thorough success of the association. Let all be workers, and make a point of attending every committee meeting. It is very advisable to have changes on the committee from time to time, in order that al the members of the society should have placed at their disposal a voice in the management of its business.

Papers.

It is the custom of some societies to rely a good deal upon what may be called "outside aid." It may be well to have a particularly strong outside light to shine occasionally, but outsiders should not be wholly depended upon, or, indeed, to any considerable extent. It is much better that the members should contribute the greater portion of the papers read at the meetings. I have been inquiring about a neighbouring association—that at Kew—as to their course of procedure in these matters, and I am told that they have no outside aid whatever. Perhaps the rule would not be very easy of application, but I should like to see one put in motion requiring every member to contribute a paper during the course of the session. The members, by contributing the papers, would be more in touch with each other, and the discussions be better, as the members have naturally some reluctance in criticising a paper read by a comparative stranger. Young men are somewhat reluctant to contribute papers, and yet they have nothing to fear or lose by a little bold action—indeed, very much to gain by such a course. The preparation of papers induces thought, and consequently attention, which must be of service to those so employed. If young men employed in gardens were to provide themselves with a note-book, and jot down therein short notes of the things that arrest their attention in the course of their daily vocations, much good would inevitably result. How valuable such records might prove in after life. And from these notes often short papers might be prepared, and the difficulties the writers have met with could be touched upon. In most cases the problems would satisfactorily solve themselves when brought under the notice of their fellow members.

Discussions.

Nervousness here, too, is often shown by members, and yet discussions are the very life of these meetings. They are not only the means of disseminating knowledge, but by joining in them members acquire that important qualification in these days, the power of expressing their ideas in an intelligible form. With a view to encourage general discussion, it is a commendable custom to give the secretary good notice of any paper intended to be read, so that he may announce it for the information of members, that they may be prepared to discuss it when the proper time arrives. I would strongly advise the younger members in such cases to look up books bearing upon the subject to be dwelt upon, and mark carefully therein any references to the matter about to be debated, and then read these at the meetings. This is a perfectly legitimate manner of proceeding. The younger members are not expected to treat the matter from a practical and experienced point of view, and the course here recommended for adoption will give them courage, and serve as a training for the more important and influential part they may be naturally expected to play, as their connection with the Association extends. A word of advice here. I would earnestly impress upon those who promise papers, to read them, or get some one else to do so for them on the date fixed. It is not very cheering for a secretary to receive, a day before the meeting, a note, intimating that the paper arranged cannot be read. I have known one or two cases in which such notice was not even given. Nothing is more disappointing—I had almost written exasperating—than for the members to find the reader, for whom they have prepared matter for discussion, not to put in an appearance, and much injury is done to the association. It is a good rule to allow each member who speaks in reply ten minutes. This generally gives a chance for all who wish to do so to join in the discussion, and then, if time permits, a few members will be able to speak a second time.

Exhibition of Plants, &c., at Meetings.

It is the custom in some societies for the members to exhibit plants, cut flowers, &c., at the meetings, and for marks or certificates of merit to be awarded to the best exhibits. An interest is thereby aroused in such meetings that must be an advantage to those assembled. It is a capital plan, as tending to develop good cultivation and a spirit of healthy rivalry. The idea of illustrating the paper sometimes by the fruit or plant on which it treats is a most commendable one. For instance, suppose a short paper is read on Madresfield Court grape, and fine examples be exhibited, being free from blemish. The reader would doubtless be called upon for an explanation of the system of culture which produced this much-to-be-desired result. This would prove of great value to growers of this variety there present, who had not been so fortunate as the lecturer in preventing cracking. Instances of this character might be multiplied, but one instance is quite sufficient to convey the object I have in view in drawing attention to this most important matter.

Library.

This is a useful addition to any society. Its great advantages are so self-evident that no words of mine are needed to point them out. Money

spent in good books is never wasted. I refer for one moment, by way of encouragement to others similarly engaged, to the prosperous Gardeners' Society at Birmingham. In the first year of its establishment, some three or four years ago, the sum of £60 7s. 6d. was received for the library; 100 volumes of books were then purchased, and 20 books and 32 bound volumes of magazines and other periodicals presented, making a total of 152 books. By the courtesy of Mr. Hughes, the ever-busy and efficient secretary, I have seen a list of the books in the library, and a very satisfactory one it is. Mr. Hughes has also informed me that two most excellent works have recently been added to their library, viz., *Sowerby's English Botany* and the *Herefordshire Pomona*.

Attendances.

Where other engagements permit, these should be made as frequent as possible by the members to the extent of a little personal sacrifice at times. It is only by constant attendance and attention at these meetings that the good derivable from them can be maintained and shared in to its fullest degree, and yet another most important point highly worthy of earnest consideration by those concerned. There is nothing more distressing and discouraging to a reader than to find a poor attendance. He has gone, doubtless, to a lot of trouble; made researches costing him valuable time and care, given expression to (may be) new ideas, indeed, has done everything, so far as he is individually concerned, to make his subject a successful one, and has as his reward a miserable attendance. It is very distracting, too, for members to come late after the reading of the paper has commenced, or to leave, as they do sometimes, before the task is finished. Members should make a point of being at the meetings when business begins, and always, if they can possibly do so, stop until the close of the discussion, which forms one of the most valuable and instructive features of the evening. Always give readers a good attendance and thorough attention. It is an appreciation which they esteem, a recompense for voluntary labour rendered for the general good, and an act on the part of the hearers which calls for no great sacrifice in any way. As good examples are always well worthy of record, it may be mentioned that the members of the Birmingham Society make an average attendance of 100 per meeting.

Excursions, &c.

Last year the members of the Birmingham Society made a trip to the famed gardens at Heckfield, and it would be a good thing if a plan of making excursions were more generally adopted. New modes of gardening practice would, doubtless, be noticed on such visits, which could not fail to benefit those taking part. Having an affinity with the excursion plan is the capital custom followed in some societies of the members at the conclusion of the session dining together, thus constituting a happy break to the more serious business in which the members had, up to that time, been engaged.

Mutual Assistance.

A "notion" occurs to me here that I should like to see carried out. It is this: That in all meeting places of these associations there should be a "benevolent box," into which the members might voluntarily—not compulsorily—drop a mite now and then, these donations to be devoted to alleviating distress caused by a member's illness or loss of employment.

Prizes for Essays.

In some associations prizes are offered for essays on horticultural subjects—a capital idea, as fostering thought and creating a taste for literary work; although not absolutely essential, yet an acquirement of the latter qualification by gardeners would tend to much good. The members of the Chiswick Association are fortunate in receiving much assistance in this direction, year by year, through the generosity and thoughtfulness of Mrs. S. A. Lee. That these competitions have done, are doing, and will do yet, much good, I am persuaded. One, however, would like to see the matter taken up more widely, and with greater spirit by the members generally.

Correspondence.

ASPARAGUS.

The question that is in my mind before all others is, Why is not the paper "F.R.H.S." refers to given us in full in the magazine? I must pay five shillings, I find, to obtain the part of the "Proceedings" containing it, when perhaps it would not occupy more than two columns of the G. M, in which case it would cost me about a farthing or less. In the district I have come to, from all I can hear and see no one can grow asparagus, and when it is required of good quality, it comes down from London and of course is always stale when used. What is grown here is poor, wiry stuff, only fit for soup. Having seen it well grown, and taken my part as a young man in the business, I should like to make an impression in this district by providing my employers with respectable grass, and perhaps putting a few bundles on the table at our gardeners' meeting.

There is much that I want to know about it. Why is it wiry in one garden and fat in another? I thought extravagant manuring made the difference, until I had to do my share of the wheeling in a garden where asparagus of fine quality is grown, and there the amount of manure used is quite moderate, the soil being a deep sandy loam, in which everything grows well; even cauliflowers require but little manure. When I read of summer growth running to from seven to eight feet, and asparagus for table being cut in September and October, I seem to be in an undiscovered country or in the land of dreams. Top growth of four and five feet I have always thought good; but when we are nearing eight feet, I suppose the spring shoots for the table are such as I have seen in Covent Garden Market sold at fancy prices, the heads as thick as two fingers on any man's hand. This foreign asparagus is very fine and thought a good deal of, but no one in this country can grow it. If Mr. Hibberd would tell us how to rival the French cultivators, we should have a new chance for doing something; but gardeners who are shut up in slow country places have no chance of learning these things for themselves. I have made two beds and put the seeds in rows two feet apart, and the seeds about one foot apart in the rows. In making up the beds I did not dig the subsoil, for that is all like ironstone; but I put a thick bed of fat stable dung at the bottom of the bed, and put the soil over it, so that there would be something for the plant to root into as it progresses. Please tell me if I have done right. The two beds that I found here are very much crowded, and the grass rises thin, but my employers appear satisfied with it, and purchase when they want it extra good. I should like to do something better than I see here and round about, and I hope the article that has been referred to will be given us in the magazine, for the Society's publications are so expensive.

A Young Gardener.

Law.

RIGHTS AND WRONGS OF PRIVATE ROADS.

Two cases have occurred in recent law proceedings that offer instructive comments on the position of occupants of houses or gardens that are approached by private roads of which they are themselves part owners or have no right of ownership whatever, but claim thereon a right of way. Having tasted some of the joys and sorrows of a private road we conjecture that a brief statement of the chief points of these two cases will prove of interest to many readers. Both cases occurred in the Queen's Bench Division.

Daw and Son v. The London County Council raised a question as between the building-owners and the London County Council, upon the statutory enactments in the Metropolis Local Government Acts, which prohibit new streets from being closed at either end or otherwise. This is contrary to the common law which allows owners to make a partial dedication of new streets or ways, and hence on many great house estates in the metropolis there are bars put up to be closed now and then in order to prevent unlimited public rights of passage from being created. Hence the first of the Acts in question (18 and 19 Vict., c. 135) contained a clause exempting existing bars, but the latter Act (25 and 25 Vict., c. 98) provided that no existing road, passage, or way should be hereafter laid out unless 40 feet in width, and unless open at both ends, and that any road, passage, or way hereafter laid out should be deemed to be a "new street," and subject to the bye-laws made on the subject, and one of the bye-laws is that "every new street shall (unless the Board otherwise consent in writing) have at the least two entrances of the full width of the street, and shall be open from the ground upwards." The question was now raised whether under these enactments the builders of a new street, or place with houses on both sides, can make it private by putting up gates at both ends so as to prevent unrestricted traffic, and restrict the use of the way or passage of the street to the residents. The question had arisen in the present case under these circumstances. The appellants are a firm of builders, of Palace Gate, Kensington, and are the owners of an estate called the Shaftesbury Road estate, on the Bayswater Road. For more than eighty years previously the estate consisted of a private house and grounds. And they proposed to open a passage through from the Bayswater Road to the Moscow Road, with houses on each side, called Torwood Gardens, but with gates at each end. In order that access might be obtained to the street gateways were made in the old wall at the Moscow Road end, and gates were placed in the gateways, which remained up to May 23, and have so remained ever since, and have been locked for a time every night.

Mr. Forbes, Q.C., appeared for the appellants, who claimed the right to close the road to Torwood Gardens and had been convicted under the above cited act. Mr. Avory represented the London County Council.

Lord Coleridge, in giving judgment, said two points had been argued—whether this passage was a new street within the bye-law and the enactment and whether there had been a continuing offence within the Act, though perhaps only the latter question was really raised. As to the first point, however—whether this was a new street within the enactment—he thought it was. The enactment had been the subject of judicial decision in "The Metropolitan Board v. Stead" (8 Q.B.D.), where it was held that "or" ought to be read "and." He knew the place in question at Bayswater, and the owners thought they would build houses upon it, with access from the roads at each end. They desired to have the advantage of communication with those roads, and yet to keep it as private. But if it was used so as to make it part of the great system of roads and highways all round it must be subject to the rules and laws which bound all other owners of property so laid out, in consideration of various advantages obtained at the public expense—drainage, sewerage, &c. If the owners thus acquired the advantages of the place being part of the metropolis, they must pay the price, one part of which was that the new street must be made 40 feet wide and that it must be made a thoroughfare and open to the public at both ends; the Board, however, having the power under special circumstances of granting exemption from these obligations. The owners here, however, desired to have the advantages without the accompanying burdens. They obtained, indeed, the assent of the Board to the making of the street on the condition of their fulfilling those obligations, and then they had not fulfilled them. That would not do; and even without authority he should have held that the effect of the enactment was that no passage-way should be made into a carriage road unless open at both ends. But it appeared that the passage was left less than 40 feet wide and with gates at both ends. That was done without the consent of the Board or Council, and it could not legally be done. Then there had been surely a "continuing offence" within the Act, as the gates were kept up. The magistrate, therefore, was right on both points, and the conviction was right and must be upheld.

Mr. Justice Mathew concurred.

Appeal accordingly dismissed.

Wilkes v. Greenway was tried at the last Birmingham Assizes before Mr. Justice Vaughan Williams without a jury. As it involved a novel point of law judgment was reserved.

It was admitted that the defendant had acquired by prescription a title to two gardens, of which the plaintiff has been the owner until so disseized. The plaintiff still owned the land bounding these gardens on the north and east, and also a private road which was the only approach to the gardens and had always been used by the defendant. The plaintiff now sought to prevent this user, contending that, though the defendant had acquired an indefeasible title to the land he had not acquired a right of way over the road, since an easement could not be acquired in twelve years. The plaintiff therefore brought the action, and claimed an injunction restraining the defendant from further trespassing on his road.

Mr. F. A. Bosanquet, Q.C., and Mr. Kettle appeared for the plaintiff; Mr. Jelf, Q.C., and Mr. Hickey for the defendant.

Mr. Justice Vaughan Williams, in delivering judgment to-day, said,—This is a case as to which I have been unable to find any authority which deals with the point. In my opinion the defendant is entitled to judgment, and the plaintiff is not entitled to an injunction. The real question is, the defendant having acquired a title to the gardens in question, has he a right of way over the plaintiff's private road or otherwise, that being the only means of approach? Now, the defendant had not acquired any right of way under the Prescription Acts or by express grant. If, therefore, he has acquired a right it must be by some implication or presumption of law. It seems clear that the effect of the Statute of Limitations is merely to extinguish the right and remedy of the original or disseized owner, and not to transfer his title to the disseisor, whose title is founded in possession and nothing more. But

certain presumptions follow on possession—for example, seizin in fee is presumed from possession unless and until someone with a better unextinguished title intervenes. In my opinion, this presumption extends to everything which is necessary to the enjoyment of that possession and without which it could not exist. In theory of law every man's title has a legal origin—the law does not recognize wrongful titles as such, and, in my opinion, the law must presume that all such rights exist without which the right recognized by the law could not exist. It would be wholly inconsistent with public policy and public interest that while the title of the disseized owner is extinguished, yet no one should be in a position to enjoy the property. It is on this principle that the doctrine of way of necessity was invented—a way of necessity is, of course, an undefined way; but I see no reason why, where a defined way is absolutely necessary to the enjoyment of the property, the law should not presume that somehow or other by legal means, by grant or otherwise, that right of approach must have been created without which that possession could not have been taken and that seizin enjoyed which the law recognizes.

Judgment accordingly, with costs.

EARLY TULIPS IN THE ROYAL GARDENS, KEW.

HAVING in good time advised our readers of the beautiful display in these gardens and in other of the large places in the neighbourhood of London, a few notes on the varieties employed may be useful, and may serve the practical purpose of aiding in the selection of varieties for the outdoor spring flower show. So many matters press for attention now that we must beg permission to report in the fewest words possible.

The main walk from the Wood museum to the Palm house is adorned with oblong beds of hyacinths and tulips, and daffodils. The first of these have had their day, and the last are nearly over. The tulips are nearly at an end, as regards colour, and as soon as they have finished their leaf growth, they will be removed to make room for summer bedders. The tulip bed opposite to the museum is planted with a mixture of *Tulipa elegans*, a variety of garden origin: it is single, has long petals, the colour rich deep scarlet. With it plant for plant is Ornithogalum nutans, forming a curious combination of a pleasing but quiet kind. The edge is Euonymus radicans. On the way down we next meet corresponding beds of *Joost Van Vondel*, cerise red with white flame for central block of seven or eight rows, and two rows for margin of *Pax Alba*, a dwarf neat white. The edge is crocuses. The next pair of beds consists of central solid blocks of *Thomas Moore*, rich Nankin orange, and two rows of *Queen Victoria*, white and crimson, the edge crocuses. The next pair consists of central blocks of *Keizerskroon*, crimson with yellow margin, one of the most showy of all the early tulips, with two outer rows of Pax Alba. These were past their best on April 30th, when all others were still fresh and good. A grand pair of beds contained for centre *Potter*, rich purple violet, or say deep pucy purple, and two rows of *Chrysolora*, brilliant yellow; a very effective combination.

The circular jardinet at the termination of the walk presents a grand appearance with a broad ring of mixed tulips, rising out of a ground work of white pansies, forget-me-not, polyanthuses, with a margin on both inner and outer lines of Phlox amæna, a sweet little shrubby plant with a profusion of rosy purple flowers.

In the parterre that faces the palm house on the walk next the head of the fountain lake early tulips make a brilliant display. The key colour to the arrangement is the cinnamon or Nankin brown of *Thomas Moore*, which is planted solid in all the principal central beds. The corner beds are in some cases white and yellow; in other cases, white, yellow, and red; the last-named arrangement being the most effective. Two delicious circular beds are filled with the white *L'Immaculée*, with broad margin of *La Precieuse*, a delicate rose colour. Other varieties employed here are *Paulus Potter*, *Proserpine*, rose-shaded crimson, *Pax Alba*, and *Duchess de Parma*, fiery red with yellow band.

On the side walk that leads from the principal entrance past the Corsican pine towards the herbaceous ground is a brilliant bed of crescent form consisting of centre block of about seven rows of *Canary Bird*, large clear yellow; two rows of *L'Immaculée*, pure white; and three rows for margin of *Vermilion Brilliant*, dazzling vermilion scarlet.

Tulipa Greigei may be found in a peculiarly fine state in a small bed on the right of the side walk, a few yards beyond the stove pine. It is distinct from all else in the tulip way and a quite grand garden flower. As here displayed the flower forms a large irregular bowl with folded petals, smooth and ample, the colour brilliant orange-red, the bottom spotted black with yellow margin to each block of colour. This same tulip in variety will be found in the rockery and elsewhere. On the long border allotted to bulbs, next the wall of the herbaceous ground, a few interesting species may be found, as—

T. retroflexa, the divisions of perianth narrowish and all turned over in the way of the sepals of a fuchsia, a pleasing flower, bright yellow.

T. elegans, referred to as in bed on the main walk, is here nearly the same; a good species, well adapted to supply cut flowers, the colour crimson-scarlet.

T. acuminata, the petals (we use the term for convenience) long and drawn out to a kind of horn. This is sometimes a yellow self, sometimes the narrow awl-like portion is of a light red colour.

T. Kolpakowskyana is a brilliant species from Turkestan in the way of *T. Gesneriana*, but earlier. It varies much in colour but is usually red with dark eye. In the course of time this will probably develop a variety of colours. The best at present are the red and the yellow.

THE LEAF-BLIGHT OF QUINCE AND PEAR (*Entosporium maculatum*, Lev.) has of late years been increasing in the American orchards and nurseries, causing leaves to fall and the fruit to crack. Professor Dudley, of Cornell University, reports that the disease can be controlled in all its stages by the copper solutions, so that the nurseryman or fruit grower who sprays the leaves of his trees once in two or three weeks during the growing season will probably suffer no loss from this cause.

THE ROYAL GEOGRAPHICAL SOCIETY'S STANLEY MEDAL.—The artist is Miss Elinor Hallé, daughter of Sir Charles Hallé. The head of Mr. Stanley is modelled from Professor Herkomer's portrait, and the numerous photographs taken before his departure. The design on the obverse shows a female figure, the Africa of classical tradition, wearing a helmet in the design of an elephant's head, and pouring from urns the two great rivers Mr. Stanley has done so much to throw light on. A lake, a great mountain, and a tropical forest form an appropriate background. For Mr. Stanley's coloured followers a silver star has been designed, which will bear in the centre the monogram of the Royal Geographical Society and the words, "Emin Relief Expedition, 1887-9."

PICTURES AT THE ROYAL ACADEMY.

WITH a multiplicity of events that demand some record, and in recognition of the prior claims of horticulture on the space at our command, we must be briefer than hitherto in our notices of pictures that now appear before the public for the first time.

The Academy show is rich in good work, and of more than average extent as regards the number of contributions. In the course of a two hours' inspection under a most favourable light in early hours we accumulated notes enough to fill out a sheet, and therefore in this place we can make but little use of them. The pictures in oil at Burlington House number 1,172, the total of contributions being 2,119. Our readers who take interest in pictures will agree with us that here, as at the New Gallery and the Grosvenor, English landscape is grandly represented. A few compositions in which sentiment has first place, but which draw inspiration direct from outdoor nature, may be classed with the landscapes, such as Sir J. E. Millais' "The Moon is Up" (25); a soft light reveals a broken plain, on which appear scattered trees in tones of grey and brown, deepening to the dusky green of pines beyond, while near us the red deer move at their ease, suggesting that the solitude is perfect and the creatures feel secure. It is the quietest landscape probably that Sir John has painted, for in its way it is pitched in a lower key than "Chill October" or "Over the Hills." M. Fantin presents hollyhocks in No. 35 as they should be painted, for this artist understands the qualities of flowers, and is not given to put weeds in the place of fine examples. A delightful picture is Mr. H. W. B. Davis's (68), the cows in the foreground are superbly drawn. An equally fine bit of work is the "The Ford on the Wye" (780) from the same. But the most attractive picture in the first gallery is Mr. W. L. Wyllie's "Davy Jones's Locker" (81), which merits the careful study of naturalists, and will secure the warmest admiration of lovers of pictures generally. It is the result of an elaborate study of the bottom of the sea by the aid of a diving bell, and if the light is as good there as the picture suggests the diving bell should be more freely employed for scientific purposes than it has been hitherto.

In Gallery No. 2 we see what comes of teaching lions to leap on horses backs, for in Mr. J. T. Nettleship's "Abyss" (110) the king of beasts has leaped on the back of an antelope, and both go into an abyss together as if engaged in an expedition to look for Quintus Curtius. But Mr. Leader leads us from this first scene of a tragedy by his "Sandy Margin of the Sea" (131), a pile of sand dunes known to many; it is less happy than the average of this able artist's work, for in composition he excels. In low tone with much poetic feeling, but with little of the regard for technique that is expected in a picture of such pretensions as "May Morn" (109), Mr. E. A. Abbey shows that he can aim higher than book illustration, and has at least a prospect of acquiring a place in high art. "Our Village" (143), by Hubert Herkomer, is a delightful pastoral; a bit of English rural life that will be enjoyed as one of his best works. "Karnac" (177), by Mr. J. Farquharson, is impressively solemn in its Titanic architecture; a record of archæological value.

Gallery No. 3 contains a grand picture by Mr. Peter Graham, "Departing Day" (190), the ruddy sunlight reflected from a bluff of rock above a green valley that is steeped in gloom, while a sheet of white mist adds a ghostly grandeur and serves to harmonize the strong tones of colour. The place of honour in this great room is occupied with Mr. Frank Dicksee's "Redemption of Tannhauser," that will prove to be one of the pictures of the season. In dramatic feeling, variety of incident, and striking combination of the realistic and the romantic, this is undoubtedly one of Mr. Dicksee's finest works. And what a gem is Briton Riviere's "Rus in Urbe" (224), a country lad, tired with his journey to the town, half dozing, while he holds his colley dog with his arm around its neck, and the dog is roused to nervous excitement by something that attracts his attention and would bound away if not so held. The work is sharp and sparkling, and errs that way, if any way, but a more enjoyable work this brilliant successor to Landseer has probably never turned out. A fine lesson in portraiture is brought to all whom it concerns in Mr. Orchardson's "Portraits" (235), a sweet little picture in which all the best points in this artist's work are brought together, excluding that sometimes objectionable hungry canvas that reflects a kind of coldness on his stories of love and valour. The "Dutch Pedlar" (309) of Mr. J. C. Hook is a sort of invasion of the rights of the Dutch and Belgian painters. It is well. An Englishman who can do such work may challenge or invade without fear of the result.

No. 4 Gallery contains a noble picture of "The Thames at Greenwich" (390) by Mr. Vicat Cole, and a sort of surprise by Mr. G. F. Watts, "A Patient Life" (437), in which we see an old grey horse turned out to finish his days in his own way, and he stands amidst the summer herbage as only an old horse can stand, as though seeing nothing, thinking nothing, and as immoveable as a plaster cast. How different is this bit of rude nature to the flights of poetry in which Mr. Watts is wont to indulge! And yet, how worthy of him and his mastery of art.

No. 5 gallery contains a delicious Leader "Where Sea and River Meet" (458). Students of flower painting may be advised to study the foreground of this work, for here we have definition without hard literalness. We do not often see a wild tangle of gay flowers painted with such care of detail, and yet with such happy blending with the general scene as in this instance. Mr. Brett's "Echoes of a Storm" (472) is as wonderful in colour as it is happy in the combination of sand, sea, and rock: such genuine English work is precious beyond rubies. Mr. Henry Moore is great in his scene from Yarmouth, Isle of Wight (501); it is impossible to tire of such works as this.

In Gallery No. 6 we are taken captive with another work by Mr. H. Moore. "Storm Brewing" (544) is one of the best pictures of open sea, and may be compared with his "Summer Time" (257) in the third gallery. The house will be rich that contains two such works. The cold grey blue of the storm brewing will be found to be made up of as many colours as are known in art combining shadows and reflections innumerable from every surface of the troubled waters, but the whole result is an angry harmony apparently produced by the simplest of materials. "The Death of Cleopatra," by Hon. John Collier (551) is a highly elaborated rendering of the Shakespeare version of the story, and as an ambitious work in the highest realms of art will be subjected to searching criticism. Mr. A. T. Nowell's "Lucerne" (554) attracts by its rosy clouds and their reflections, but is disadvantaged in being made to pair with Mr. Moore's angry waters.

The sculpture is a conspicuous feature of this year's exhibition, and the model of the statue of General Gordon, by Mr. Onslow Ford, is conspicuous for merit as well as magnitude. It is to occupy the space in front of the barracks at Brompton, Chatham, and will be cast in bronze.

Replies to Queries.

J. B.—Dissolved bones and superphosphate are not the same thing certainly, but for your purpose they are practically not different. If you can obtain superphosphate be content with it and forget the other.

Tree Onion.—Old Reader: This useful onion appears to have gone out of cultivation, for we now but rarely meet with it. As regards usefulness it is not worth special attention, although for pickling it is one of the best. As a curiosity it is decidedly interesting, and when we grew it years ago we found it particularly attractive to visitors.

Philip.—Your apple is the renowned Dumelow's Seedling, more generally known as Wellington. It is in perfection now, and far better than any of the newly imported Tasmanian apples. The only reason we can discover for the comparative scarcity of this fine fruit, is that when its season arrives, many people are satisfied with rhubarb! Truly there is no accounting for taste.

W. C.—When plants are sprayed with paraffin, other plants standing beneath them on which drip from above might occur should be removed. The object of frequently stirring the mixture is to prevent any more than infinitesimal deposit of paraffin on the leaves, for any sensible amount to form a film on the leaf would be injurious. Consequently plants in the drip would be liable to obtain more than a harmless dose.

Orchids.—B. A. A.: The orchid of which you send a specimen is not a dendrobium, but Cælogyne cristata. The plant from which the pseudo-bulbs were taken is evidently in a healthy condition, and it is not necessary to remove the pseudo bulbs that have lost their leaves. The other plant cannot be named without flowers, and we shall, therefore, be glad if you will send a specimen when in bloom.

Fuchsias.—R. Bradley: You are keeping your plants too dry with too much light and air. Give them more moisture and shut up earlier, giving a sprinkle at the same time. Sunshine is good for fuchsias, but they do not need the fierce glare of a bright summer dry, for at such times a little shade is beneficial. You appear to be treating yours in a way that would suit aloes and cactuses, but that will not do for fuchsias.

Fruit Imports.—B. W.: For accurate information on the importation of fruit to the United Kingdom you must consult the Board of Trade returns for the several years. With reference to the imports of apples the quantities received in 1888 amounted to 3,821,946 bushels, of the declared value of £1,037,084; and in 1889, 3,617,997 bushels, of the declared value of £976,118.

Names of Plants.—R. N. V.: 1, Picea pinsapo; 2, Common spruce; Abies alba; 3, variegated-leaved Lilium candidum; 4, Phalaris arundinacea; 5, Arbutus unedo; 6, shrivelled out of form, but probably Spiræa confusa.—Hardcastle: 1, Asperula odorata; 2, Aquilegia brachyceras; 3, Arabis alpina; 4, Ononis rotundifolia.—Havard: Yours is the true Spiræa Thunbergiana, one of the best plants of its useful class.—P. P. H. D.: 1, Dryas octopetala; 2, Fragaria lucida; 3, Epigæa repens; 4, Oxalis bipunctata; 5, Hesperis fragrans; 6, Fritillaria lanceolata.

Mossy Lawn.—Eva: The moss is pleasing when green, but quite otherwise when brown, and really is not so good a substitute for grass as you appear to imagine it. The moss is a fault, and should be got rid of. Often it is caused by damp alone, but usually a combination of damp and starvation causes moss to take the place of grass. To improve a damp or boggy lawn, drainage is the first requisite, and that being accomplished the lawn should be dressed with a mixture of sulperphosphate of lime and kainit, spead evenly and thinly. This will in most cases effect a complete cure, for the moss will die and the grass will spread, and a beautiful lawn will be the result.

Unhealthy Grape Vines.—Young Gardener: The grape vines are in a decidedly unsatisfactory state, and must have the most careful attention. The large leaves received are badly infested with red spider, and indicate a dry atmosphere and insufficient ventilation. The leaves of Gros Colmar, the berries of the grapes, and the fronds of the adiantum have all been injured by the sun, in consequence evidently of your failing to admit sufficient air during a period of bright weather. To check the red spider, maintain a moderately moist atmosphere by sprinkling the paths and walls in the morning and afternoon. Syringing vines after the berries have attained the size of those sent is not as a rule advisable, but in your case an occasional syringing during the next fortnight or three weeks will be justifiable. The vines should be syringed when the house is closed in the afternoon, and care must be taken to avoid dashing the water against the bunches.

Books.—Young Gardener: Mr. Nicholson's "Dictionary of Gardening" is of the greatest value for reference, and in many cases it is a question of the price; those who cannot afford it finding Johnson's "Gardeners' Dictionary" useful in its place. The complaint that Nicholson's book is "too botanical" may mean that it appears to contain much information that few people want. The complaint is not without foundation, but it is not a very serious fault in a book that it contains too much information, for the more common fault is that books of reference contain too little. It is full and accurate, and will be good for many years to come.—F. Parsons: Sweet's "British Flower Garden," in seven volumes with coloured figures, is greatly valued by cultivators of hardy plants. There are two series of two volumes each of "Native Flowers and Ferns of the United States."—F. Croxford: The latest edition of the "Imperial Dictionary," founded on that of Dr. Ogilvy, is published by Blackie and Son, price five pounds. It is the best English dictionary for ready use we are acquainted with. It is the book to which the first appeal should be made.

Injured Grapes.—Amateur Gardener: It is a case of what is technically known as scalding, and the majority of the injured berries will probably have to be cut out in the course of the season. Grape growers differ somewhat in opinion as to the cause of "scalding," but there can be little doubt that in most cases failure to admit sufficient air, more particularly early in the day, is at the bottom of the mischief. Where the precaution is taken to ventilate freely, and to admit air early in the day, "scalding" is of rare occurrence. It is a good rule in ventilating the vinery during April and May to admit a little air at the apex of the house early enough in the day to dry up the moisture that may have condensed on the berries before the sun can shine fully upon the house. To check the red spider, increase the ventilation and maintain a more liberal degree of atmospheric humidity in the house. Syringing the vine when the house is closed in the afternoon will be of material assistance in checking the ravages of the pest, but when the vines are syringed at this stage, there is a risk of the berries being spoilt in appearance.

Vine Borders.—Novice: It will not only be perfectly safe to top dress the vine border with superphosphate of lime, but the application will be highly beneficial to the vines. The border should at the same time receive a dressing of kainit in the proportion of one part to every two parts of the superphosphate.

Seeds of Daffodils.—Ovidius N.: Your experience is no different to that of others. The daffodils are fitful in seeding, and many who grow collections have never seen a pod of seed. In the year 1888 the trumpets produced seed freely, and there should follow, in due time (and in a very short time) many new candidates for public favour amongst the resultant seedlings. We shall expect to see many brought forward in 1891. Should this prove a year for seeds you must secure the pods before they are fully ripe, and therefore should be constantly on the watch. If allowed to become fully ripe on the ground the seed vessel bursts and the seeds are scattered. But if cut before fully matured, they will not ripen properly. Therefore discretion is needed as to the moment to be chosen for removing them, but that part of the business may be learned in one lesson of actual observation. Cut them with a full length of stem attached and lay them on a sheet of paper, or in an open box in the full sun to ripen, and when they shell out naturally sow in a bed of sandy loam in a north aspect. Keep always moist and remove weeds instantly on their appearing and exercise patience. Let the seedlings grow one year in the seed bed, then plant out on a warm shady border and leave them alone.

Cucumber Disease.—In looking through last year's volume of the GARDENERS' MAGAZINE I was much interested in reading Mr. Wright's remarks at page 628 on the "Food of Vegetables." Amongst other matters the writer states that Mr. Crocker, of Ham Green, cured the cucumber disease by using green vitriol. I should be very glad to learn how the vitriol should be used to effect a cure. I have been sorely perplexed by that horrible disease, for in attempting to check it I have done all that was likely to prove effectual, but without avail. I have had my cucumber house pulled down, and put up again, but the disease made its appearance in the next crop. I have not seen the disease in other gardens in this neighbourhood. I would mention that the cucumbers have at first small black spots which turn to a rusty appearance with a shiny exudation, and the fruits become hard. It would be a great advantage to myself, and probably to other of your readers to know how to use the green vitriol as a remedy for the cucumber disease. Perhaps Mr. Crocker will throw a little more light on the subject. SAMUEL FORD.

Wadley Park Gardens, Faringdon.

Are Wallflowers Perennials?—W. Simcox: The question may be answered yea or nay, for the wallflower is a biennial or a perennial, as circumstances may determine. When located on a dry soil in the full sun, the single varieties will live many years provided they are not allowed to bear seeds. Even when seeding is allowed, some portion of the plants will survive and last a few years provided the position they occupy is dry and sunny. But when allowed to seed freely the life of the plant is precarious, and it cannot be counted on to prove a perennial. As for the doubles, we know of fine specimens seven and more years old that are in perfect health. But it should be said that the best wallflowers—both plants and flowers—are obtained by systematic renewal, and, therefore, there is no special gain in proving them to be perennial. If you propose to establish some of your fine specimens as perennials, they ought to be isolated so as to grow equally all round, and should be severely kept from seeding, a task by no means easy, and, in our opinion, not worth attempting even for such a result as grand old specimen wallflowers. But you will use your own discretion, and we will gladly assist so far as may be possible.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

THE Executive Committee of the above Association held a meeting in the Horticultural Club room, Hotel Windsor, on May 1, T. Francis Rivers, Esq., in the chair. A number of members having been elected, the hon. secretary announced that Mr. Shirley Hibberd had consented to give a paper on the Origin of the Cultivated Strawberry at the June meeting. The proposed report on the Present Condition and Prospects of Fruit Culture was discussed at some length, and letters were read approving of the scheme. The Duke of Bedford sent a cheque for £25, and Earl Fortescue wrote as follows:—"I heartily wish you success in your work. I have long been of opinion that fruit culture may be largely extended in Great Britain and Ireland with advantage to the owners and occupiers of land and to the general public. Your Association has been rendering a real public service, both by directing public attention to fruit culture for profit in this country, and by helping to dispel the erroneous idea too freely circulated respecting the enormous returns obtainable from a small capital employed in fruit cultivation. Your report truly observes that much harm has been done by ill-informed advisers, for fruit-growing cannot be made to pay a fair profit without practical knowledge of the work, starting with a carefully considered scheme, and sound judgment in carrying it out." A sub-committee was appointed to prepare a scheme to deal with the matter.

Mr. L. Castle submitted a note upon Paris green as an insecticide for special application to fruit trees, and described some experiments. The strongest mixture of this poisonous substance appeared to have no direct effect upon caterpillars, and it is only when it is lodged on the surface of the leaf and consumed by them that it becomes destructive. It had little or no effect upon the leaves as tried, and except when the mixture is not properly stirred there seems little danger in this respect. Experiments were also tried upon plants in pots to ascertain if any ill effect was produced by the Paris green passing through the soil to the roots; but the plants were quite uninjured, and being insoluble it is not taken up by the roots. It was mentioned that Miss Ormerod had kindly sent much information upon the matter, including her recent report upon Injurious insects. A large fruit grower also wrote as follows: "We have a plentiful crop of caterpillars; we are, however, vigorously attacking them with Paris green, London purple and quassia. We can hardly determine yet which will answer best, but the quassia appears to be quickest in its action, as it kills by contact, but with the other two you have to wait until they have consumed the poison."

TRADE CATALOGUES.

W. AND J. BIRKENHEAD, SALE, MANCHESTER.—*Ferns and Selaginellas.*

A. M. C. JONGKINDT CONINCK, DEDEMVAART, NEAR ZWOLLE, NETHERLANDS.—Wholesale trade list of *Coniferæ, Rhododendrons, Fruit Trees, &c.*

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Obituary.

DEATH has been busy at laying low some of the older florists. Only recently JAMES CHEETHAM died at Rochdale at an advanced age. It was he who gave to old Robin Lancashire's magnificent Grey Edge Auricula Hero the name of "Cheetham's Lancashire Hero." All that had gone before in the way of Grey Edges were outshone by this new floral star of the first magnitude raised by old Robin, and exhibited by him for the first time at Rochdale in 1846. In one of his delightful lectures on the Auricula the Rev. F. D. Horner has related an interesting incident in connection with this variety. When first shown it was in an auricula competition, placed second to a flower inferior to it in character, Grimes' Privateer. Lancashire had then eight or ten plants of this seedling, and in his great grief at its being accorded a secondary position, hastily sold all for a trifling amount. He offered a great deal more to get them back, but could not have them. From the first purchaser the stock passed to Mr. James Cheetham, by whom it was eventually sent out. But it is truly Lancashire's Hero, and no name but that of Robin Lancashire should be associated with this flower. It has now been grown and exhibited for something like forty-four years, and with Headly's George Lightbody still stands at the head of the grey class. Some plants of it were shown at the recent exhibition at the Royal Aquarium in their green dress. Like many other light-mealed Grey Edges, it has the power of blooming in a green edged form, and that generally occurs either on a truss from a young plant, or one formed very early on an old one. In its best character it is thought by some to beat even George Lightbody. In the latter part of his life James Cheetham lived at Rochdale, and grew tulips to the very last. It is said he had the management of Mr. C. M. Royd's auriculas for some years.

MR. ALDERMAN DANIEL WOOLLEY, of Stockport, died on the evening of Saturday, May 3rd, from pneumonia, after a few days' illness. It is a singular coincidence that he should have died on the very day the tulip growers met to settle the date and arrangements of the annual show of the Royal National Tulip Society at Manchester, which is to take place on Wednesday, May 28. He generally made a point of being present at this meeting, and on inquiries being made, the floral brethren were informed he was dying. He expired at eight o'clock on Saturday evening. He traded in drugs and seeds at Stockport, having been in business many years. He was an ardent florist, growing a good collection of tulips, and when the season suited his flowers, generally taking some leading prizes. He was an alderman of the borough of Stockport, and took a warm interest in local affairs.

ON the 4th inst., Mr. JAMES FLOOD, formerly employed in the Regent's Park Botanic Gardens, and latterly an attendant at flower shows in the interests of a horticultural paper. His age was 53 years.

RECENTLY there died at Slough a florist, who in his day made a great reputation as a cultivator of pelargoniums, chrysanthemums, fuchsias, and verbenas. JOSEPH ROBINSON, formerly of Pimlico, was born near Chelmsford on February 12, 1811, and died a short time since mainly of natural decay. Of his early career but little, unfortunately, is known, but it was while gardener to J. Simpson, Esq., Thames Bank, Pimlico, that he achieved so high a reputation as a cultivator and exhibitor of florists' flowers. From 1840 on to 1856 he took many first prizes, medals, &c., at the great exhibitions of the Royal Horticultural and Royal Botanic Societies and elsewhere with fuchsias, pelargoniums, &c. He raised a number of seedling florists' flowers, one of the best remembered is Robinson's Scarlet Defiance Verbena, a bright-coloured, strong-growing variety, which made a great reputation as a bedder, and doubtless is to be found in cultivation to this date. The late Mr. Charles Turner purchased the stock from Mr. Robinson at a cost of £20, and sent it out. He was one of the promoters, a member of the committee, and a censor at the meetings of the National Floricultural Society. About 1858 he left Pimlico and went to reside at Slough, and laid out several places for Mr. Turner. For some years he had lived quite retired.

ROSE SHOW FIXTURES, 1890.

June 19.—Ryde.
,, 24.—Drill Hall, Westminster (N.R.S.).
,, 25.—Richmond (Surrey).
,, 27.—Royal Aquarium.
,, 28.—Eltham, Reigate.
July 1.—Canterbury, Hereford, Sutton.
,, 2.—Brockham, Croydon, Dursley, Hitchin.
,, 3.—Bath, Farningham, Norwich.
,, 5.—Crystal Palace (N.R.S.).
,, 8.—Gloucester, Ipswich, *Winchester.
,, 9.—*Brighton, Diss, Ealing, Tunbridge Wells.
,, 10.—Birkenhead, Worksop.
,, 12.—New Brighton.
,, 17.—Birmingham (N.R S.), Helensburgh.
,, 22.—Tibshelf.

Rosebank, Berkhampstead, Herts. EDWARD MAWLEY.

* In the case of Brighton and Winchester, where the shows extend over more than one day, the date of the first day's show only is given.

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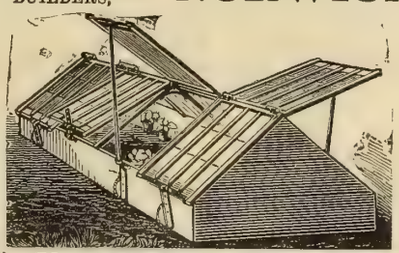
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3 ,, ,,	12 feet by	6 feet	CARRIAGE	5	17	6
4 ,, ,,	16 feet by	6 feet		7	7	6
5 ,, ,,	20 feet by	6 feet	PAID.	8	17	6
6 ,, ,,	24 feet by	6 feet		10	7	6

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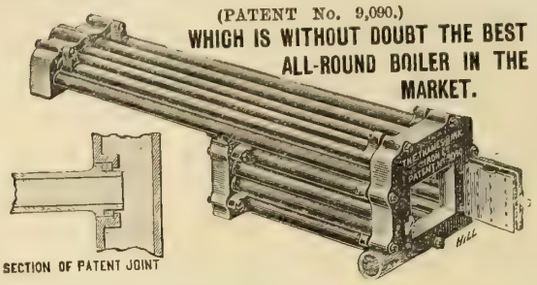
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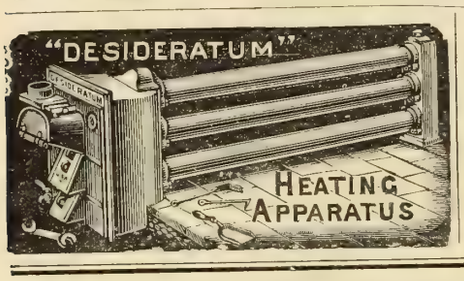
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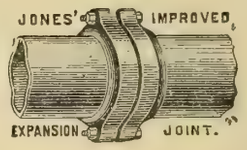


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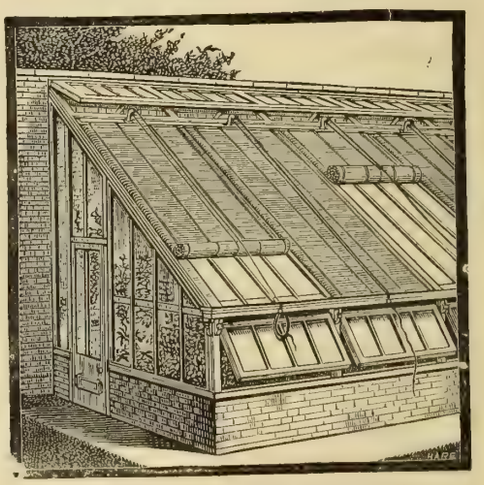
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		[Moon.	H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
S	**Sunday after Ascension.**	● New	4 6	3 47	7 47	4 13	7 26	1 24	1 45	10 49	11 10	55·1	Cattleya quadricolor ..... Mexico.	138
M	*Dunstan, Archbishop.*		4 5	3 45	7 48	4 38	8 38	2 4	2 22	11 29	11 47	55·4	Cattleya Edethiana ..... Brazil.	139
Tu	Columbus died, 1506.		4 4	3 42	7 49	5 8	9 45	2 41	2 59	—	0 6	55·7	Cattleya intermedia violacea Brazil.	140
W	Maria Edgeworth died, 1849.		4 3	3 38	7 50	5 43	10 45	3 18	3 35	0 24	0 43	55·9	Cattleya lobata ..... Brazil.	141
Th	Length of day, 15h. 53m.	[Term ends.	4 2	3 34	7 52	6 28	11 34	3 54	4 12	1 0	1 19	56·1	Cyp. barbatum nigrum ..... Mount Ophir.	142
F	Easter Law Sittings end.	Oxford Easter	4 0	3 29	7 53	7 23	Morn.	4 30	4 47	1 37	1 55	56·3	Dendrobium Devonianum ... India.	143
S	Birth of Queen Victoria.	Oxford Trinity [Term begins.	3 59	3 24	7 55	8 23	0 14	5 4	5 24	2 12	2 29	56·4	Dendrobium Falconeri ..... India.	144

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Carriage Entrance in Tavistock Street.
Offices: Royal Horticultural Society's Gardens, Chiswick.
A. F. BARRON, Honorary Secretary.

NORTHAMPTONSHIRE HORTICULTURAL SOCIETY'S GREAT SUMMER SHOW, DELAPRE PARK, NORTHAMPTON, AUGUST 4th and 5th, 1890. £250 in Prizes. For best 12 Plants, £15, £10, £5, £2 10s. Central group for Conservatory decoration, £9, £6, £2 10s. Collection of Fruit, £5, £3, £1 10s. 24 Roses, £2, £1 10s., £1. Entries close July 25th. Schedules and full particulars from
W. B. TROUP, Secretary.
Northampton.

Exhibitions and Meetings for the Ensuing Week.

WEDNESDAY, MAY 21.—GARDENERS' ORPHAN FUND.—Floral Fête in Covent Garden Market, 8 p.m.
WEDNESDAY, MAY 21, and THURSDAY, MAY 22.—ROYAL AQUARIUM.—Summer Exhibition.
FRIDAY, MAY 23, TO WEDNESDAY, May 28.—MANCHESTER ROYAL BOTANICAL SOCIETY.—Great Whitsun Exhibition.
FRIDAY, MAY 23.—ROYAL BOTANIC SOCIETY.—Lecture.
SATURDAY, MAY 24.—LINNEAN SOCIETY.—Anniversary Meeting.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and NEWS are inserted on the Leader Page at 1s. per line.
ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, MAY 17, 1890.

ASPARAGUS CULTURE has been the subject of correspondence with certain of our readers, and there appears to be an expectation that Mr. Hibberd's paper contributed to the Vegetable Conference of 1889, will be republished in these pages. It will be seen on reference to the G. M. of September 28, 1889, that the substance of the paper was in that issue placed before our readers. The full text of the paper appears in the R. H. S. *Journal*, for March, 1890, with other contributions to the conference, and to that we must refer readers who desire to possess it.

It will be seen from the summary cited above that the points urged by Mr. Hibberd in favour of an improved system of asparagus cultivation, are to provide for it a calcareous soil on a well drained foundation, to allow a space of fully three feet every way from plant to plant, to provide a light shelter for the rising heads in spring, and to abstain entirely from the cutting of "sprue," in other words he proposes to abolish as injurious the long established rule of cutting all that comes until cutting is wholly discontinued. His contention is that the complete suppression of growth that results from cutting all that comes weakens the plant, reduces the size and number of the heads, and shortens its life. But on the other hand, where the growth is allowed to rise naturally, the same or a greater quantity of fine heads may be cut, and the plant will improve for many years, by accumulation of vigour, and be so longlived that the making of new beds will be but seldom required, as compared with the present rate of their wearing out.

There are, of necessity, many details arising out of these leading propositions. Asparagus growing has been made a costly business by the employment of strong manures in a wasteful manner, for the plant is satisfied with quite moderate supplies of food, provided they are of the right sort. Hitherto the great importance of lime has not obtained recognition, but this being secured to the plant, its requirements in other respects are quite moderate. The author of the paper remarks that "lime and silica are primary requirements, and the alkalies and nitrates supplied in ordinary manures are certainly required in liberal proportions, but are very often provided in excess, for the lime being deficient, it is impossible for the plant to appropriate all the possible food within its reach."

A common cause of degeneracy in the product of an asparagus bed is mentioned, but is, perhaps, not pressed with the force that makes an impression. Now that the plant is in evidence, our readers can the better estimate the importance of the question of the production of seed. Mr. Hibberd declares, in fact, that unless seed is really wanted, it should never be allowed to ripen on the plant, for not only does it consume much of the substance of the plant that is more profitable in the root, but it operates in another way injuriously. Before the ripe seed is secured, there is usually much of it scattered. The consequence is an insidious growth of young plants that the cultivator may not notice, or if noticing, may be too careless to destroy as enemies. But when these seedlings are allowed to rise, the bed becomes unduly crowded, the plants have to fight for subsistence, and the result is seen in the wiry growth and the steady reduction of the quantity of heads of fair size. The growth of what is known as "giant" asparagus, is in our opinion so objectionable, that we have never encouraged it. We occasionally see on the tables of a costly dinner asparagus equalling in breadth two fingers of a man's hand, and all we can say of it is that it is vulgar, offensive, and uneatable, for what can you eat but the mere point, and even that is flavourless. One stick of asparagus of the thickness of one finger of a man's hand with a fair proportion of purple or green top is worth any amount of the gigantic nastiness, the only use of which is to put money in the pockets of the traders at the joint expense of the producers and consumers, for the first obtain but a small return for much labour, and the second have literally only a show of inedible batons or rolling pins for their money.

A correspondent insists that there must be many varieties of asparagus, while Mr. Hibberd insists that there is but one. The practical test settles the matter. Any and every sort becomes the same when it has had time to adapt itself to the situation. But we have "growths" certainly, as of every plant that is cultivated under a great variety of circumstances, for peculiar conditions will modify characters, and distinct forms do certainly appear, these being intensified in distinctness by special cultivation. Now, were these distinct forms to be propagated by division of the roots, they would acquire some degree of permanency, but being multiplied from seed they lose their integrity in the very next generation. For, be it observed, the asparagus is a monœcious plant; the males and females are separated, and this being so, the normal type prevails, for the free distribution of the pollen ensures this result, and none other is possible. Seed saved with care from a selected form of local origin will, of course, prove its inheritance of the local peculiarities, and

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in the first generation some of those distinguishing characters may appear. The propagation henceforth must be by division, or the original source must be again resorted to for seed. In this way only is it possible to secure any distinctive character apart from the type, and even then much more will depend on cultivation than on inherited qualities for any special excellence expected or acquired. A monœcious plant is well fortified against seminal variations.

KILLING IS NOT MURDER when the subjects of the operation are caterpillars. In our last issue we stated in brief the general results of inquiries and experiments on the interesting fruit farms at Toddington. In the present issue we give the report, kindly supplied to us by the courtesy of the *Evesham Standard*, from which it will be seen that some valuable work has been done towards improving the conditions of commercial fruit culture. The details are, however, in common with records of killing generally, not purely pleasant reading. We must not be suspected of any cherished sympathy for caterpillars, even although the meditated, and in some part accomplished, slaughter revives remembrance of our butterfly collecting days when we often nursed caterpillars with more pious care than perhaps we should have bestowed on an equal number of human babies. No: we like to live and let live, and the meanest thing that lives is entitled to some respectful consideration, subordinate of course to that supreme law of self-preservation, which (in this case) compels us to put our own interests in advance of that of caterpillars. Our concern now is not as to the end, but the *means*. Paris Green and London Purple are poisonous substances that require careful handling, and, not to mince the matter, it would be an unspeakable comfort if we could find something that would kill the vermin without injury to the trees, and at the same time need not be labelled and watched and feared as poison. The preparations in favour are mostly compounds of arsenic and copper, and being applied in the form of spray, an infinitesimal quantity rightly applied as regards season and other circumstances produces very decided effects. Of Cresyline there is less generally known than of the other agents of destruction. It may perhaps be described as an alcoholic extract of coal-tar; but if that description is insufficient, it will at least suggest that it is a less deadly substance than the arsenical compounds. It is well known that grease is peculiarly injurious to insect life, and kills by mere contact; but, unfortunately, it is scarcely less injurious to vegetable life, and hence when any of the more limpid oils are applied in the form of spray they must be largely mixed with water, and the mixture should be continually agitated to prevent partial separation. When grease is employed to check the progress of winter moth it must be spread on paper, and this must be attached to the tree in the way of a girdle, for to apply the grease to the bark would be to kill the bark to the exact extent of surface operated on. The trial of alum affords a gleam of hope that it may be found suitable to supersede the more poisonous preparations; but while this kills the caterpillar by contact and does little or no harm to the tree, it unfortunately does not poison the enemy's food, and that is one of the means needful towards his destruction, for no matter how searching the spraying may be, arsenical poisons do not kill by contact. There is ample room for invention to solve the problem presented, but we do not doubt it will be solved, and that science will aid us in a killing operation that will not injure the vegetable property or overmuch burden the delicate conscience.

MR. JOHN ELLICOTT has been engaged as head gardener at Summerville, Limerick, the seat of J. F. G. Bannatyne, Esq.

THE PRINCE OF WALES will open the Exhibition of the Royal Horticultural Society in the Temple Gardens, Wednesday, May 28.

MR. W. KIRKLAND has been engaged as head gardener to Mrs. Keates, Rownham House, Southampton.

MR. W. D. KIDD has been engaged as head gardener to Dr. Kesteven, Boxhurst, Boxhill, Dorking.

THAME HORTICULTURAL SOCIETY.—Summer show, September 3; first chrysanthemum show, November 19.

ABINGDON HORTICULTURAL SOCIETY. — Annual exhibition, August 21.

YARNTON, CASSINGTON, AND BEGBROKE FLORAL AND INDUSTRIAL ASSOCIATION.—Annual competition, August 26.

LEICESTER AND MIDLAND CHRYSANTHEMUM SHOW, November 15 and 16.

CO-OPERATIVE FLOWER SHOW, CRYSTAL PALACE, August 16. The schedule of the fifth co-operative show may be obtained from the offices, 3, Agar Street, Strand, W.C.

ROYAL HORTICULTURAL SOCIETY.—The schedule of the exhibition to be held in the gardens of the Inner Temple on Wednesday and Thursday next will take the form of a twenty-page pamphlet. It will contain a short history of the society, programme of the music to be performed each day by the band of the Royal Horse Guards (Blue), and a list of exhibitors and of their exhibits. As no names received after Saturday, May 24, can possibly be inserted, it is necessary that intending exhibitors should send in their entries at once.

ORCHID NOMENCLATURE COMMITTEE has published a report c taining proposals and recommendations. This report shall have serious attention in due time, It will be eagerly read by pers interested, and there will probably be much division of opinion on merits of the recommendations.

CARTER'S ELEPHANT SWEDE turnip has found special favour the Government Experimental Farm in connection with the Canad Department of Agriculture, and it is officially reported on as yield a heavier crop than other of the best swedes by nearly three tons acre.

SUNDAY NEXT, May 18, will be Chestnut Sunday for Londone the bloom being in full strength now, and the green spots that prese attractive groves of chestnuts being abundantly adorned with ma other flowers and an abounding wealth of greenery. The blue be (*Scilla nutans*) are in perfection now in the home counties.

ROYAL BOTANIC SOCIETY has arranged a Floral Parade and Fe of Flowers for June 26. As on the occasion of the Jubilee Fête l year prizes are offered for carriages, horses, and donkeys dressed wi flowers, and a class for dressed tricycles is added. Provisions are al made in the schedule for groups of various plants and amongst t classes is one for plants that are "specially scented."

AURICULAS IN THE ROYAL NURSERIES, SLOUGH, have made a fi show, and there are at this time a number of interesting seedlings flower. The improvement of the alpines, so admirably taken up l the late Mr. Charles Turner, is continued here in the same spirit, an the latest acquisitions show a great advance on the best of the est blished varieties.

HOLLIES ARE MAKING A POOR SHOW for the flowering seaso which is now near at hand. A few of the early flowering kinds, esp cially the fragrant Laurifolia, is now full out with us, but the genera flowering will not begin for some eight or ten days in the hom counties. There is so little bloom visible, that it appears to be pretty saf to predict that holly berries will be scarce when the next Christma arrives.

EPIGÆA AND PYXIDANTHERA have of late found so much favou with visitors to Lakewood, New Jersey, that although abundant i the district there is a considerable risk of their being exterminated According to a correspondent of the *New York Tribune* the visitors t the hotels at Lakewood collect these plants in such large numbers fo sending to their friends that about two hundred packages were dis patched from the station daily during the greater part of March and April.

CENTENARY FESTIVAL OF NATIONAL CHRYSANTHEMUM SOCIETY is exciting much interest amongst the affiliated societies at the antipodes. The Victoria Horticultural Society has appointed as its delegate a member of the Melbourne University who is already on his way to this country. The Northern Horticultural Society of Tasmania has made a liberal contribution to the prize fund and will be represented at the festival by a lady who is coming to England specially on its behalf, and has kindly consented to read a paper at the conference on chrysanthemum culture in Tasmania.

THE PAPER ON THE NAMES OF PLANTS read by Mr. Shirley Hibberd at the meeting of the Horticultural Club on Tuesday last was followed by a lively discussion. The opinions were singularly diverse as regards details, but all the speakers agreed that the naming of plants had fallen into a very bad case, and botanical terminology was on the way to become ridiculous. Mr. Hibberd objects to all personal and geographical names as applied to typical genera and species, but would allow them to be freely used for representing garden varieties. Above all things, he would maintain in full integrity the binomial system established by Linnæus, and with but few and trifling exceptions, would adhere to the canons of the great botanist as affording a sure defence of common sense against the common nonsense that now prevails.

RATING OF ORCHARDS is dealt with in a short Bill recently introduced by Mr. Hobhouse, M.P. The occupier of "any land under arable meadow, or pasture ground only, or as woodlands, market gardens, or nursery grounds" is, under the Public Health Act, directed to be assessed to the general district rate in an urban district, or to a separate rate in a rural district, in the proportion of a fourth part only of the net annual value or rateable value of the land. Doubts have arisen as to whether orchards are included in the privileged lands, and in consequence they are sometimes assessed at one-fourth and at others at their full assessed value. To remove these doubts, and to relieve orchards from liability to be assessed for sanitary purposes at a higher rate than other cultivated lands, it is proposed by Mr. Hobhouse's Bill to insert the word "orchards" in the exempting clause.

FLORAL FETE IN THE FLOWER MARKET, COVENT GARDEN, in aid of the Gardeners' Orphan Fund, on Wednesday next, has been amply prepared for by the energetic executive of this excellent charity. The growers, the salesmen, and their several representatives have so generously taken up the work of aiding the fund by providing London with a new pleasure that we do not doubt the forthcoming fête will prove as beneficial as those of the past two years and even exceed them in the total of results. The contributors who will give of their time and talent to stage their flowers earlier and with greater care than usual are minded to improve on the foundations established, and this means a promise of a grander display than hitherto. Such a floral feast was never seen by the general public until this was inaugurated, and as a spectacle of a particularly choice character it ought to rank high amongst the glories of the London season. Those who wish for tickets must be in time, for the number is limited. They may be obtained at the rate of five shillings each from Mr. Assbee, at the Market Office, Covent Garden; and Mr. A. F. Barron, R.H.S. Gardens, Chiswick.

The Weather has been upon its best behaviour, and has given general satisfaction. The want of rain had become so serious in many districts of the midland and eastern counties that outdoor work was stopped, owing to the flinty nature of the soil. Now all is changed; a great rain has fallen, a hay crop is assured, so far as can at this time be predicated, and the temperature, though occasionally low for the season, has, upon the whole, been satisfactory. We are expecting mixed weather, and a further supply of rain will be beneficial. At all events, we see no promise of settled conditions; but the changes that appear in the prospect will probably prove in a general way agreeable and salutary.

A New Metallic Garden Engine.—The life of a garden engine is always a consideration except to those who are always hunting after something cheap. However, there are plenty of buyers of good and strong garden engines provided they can depend upon the guarantee of the maker. The new metallic garden engine is one of Messrs. Merryweather and Son's latest productions. The pumping machinery is entirely of brass and gun metal, the valves of the engine being somewhat on the lines of their celebrated fire engines used in the London and country brigades. The pump is fitted in a strong galvanized iron cistern, fitted with wrought iron axle and stout wheels. There is nothing to decay and get out of order, and such an engine will last with fair attention a score or more of years of hard work. The engine is suited for fire extinguishing, and is rightly called the combined fire and garden engine. Its cost is only that of the best town-made garden engine.

Conversazione of Royal Society, on Wednesday evening, was a brilliant success, and proved, as usual, one of the great scientific events of the season. The contributions were numerous and varied, and the experiments and demonstrations were watched with much interest by the visitors. The Royal Gardens, Kew, contributed sugar-cane seed and seedlings, which were highly interesting, as it is anticipated that, by cross fertilization and a careful selection of seedlings, it will be possible to raise new and improved varieties of sugar-cane, and renew the constitutional vigour of plants that have become deteriorated through continuous cultivation by cuttings or slips. Of equal practical interest was Professor Marshall Ward's exhibit of a selection of transparent photographs, showing the habit, &c., of various trees from different parts of the world; the comparative structure and anatomy of several European timbers; and some of the more prominent features of diseases of wood, &c., and fungi causing them.

Mr. Stanley's Reception in the City on Tuesday is in the nature of a guarantee that British interests in Africa are less likely to be muddled and murdered in the near future than they have been in the more recent past. It has not been possible to sacrifice Stanley as Gordon was sacrificed, nor has it been possible to prepare the way for his suppression by the dissemination of false reports and coloured representations of facts for party purposes. Stanley stands alone, but does not forget his birthright, and in annexing a vast territory bordering the eastern limits of the Congo State in the interests of Britain, he can but act provisionally, and leave the rest, not so much to the Government, as to that public opinion which underlies all government, and renders public policy a gauge of the general intelligence. In the "rush" for Africa Britain has a great game to play, and, having many times played false to her own interests, there is the greater need now for the diffusion of knowledge on this all-important subject.

Rev. W. Wilks will, we have much pleasure in stating, continue to occupy the position of secretary to the Royal Horticultural Society. Writing with reference to the announcement of his resignation, Mr. Wilks says:—"May I ask you to be kind enough to contradict the report of my resignation of the Secretaryship of R. H. S. The report has rather more truth in it than have most reports, for I am very anxious to find some one who will take up the work. The Society may, I think, now be said to have turned the corner and has I hope seen its worst days. I feel, therefore, that I have done my duty by the Society and that I could now hand things over to a successor in a far more satisfactory condition than I found them. A new era too is commencing with the prospect of a new Hall, and therefore it seems to me a most fitting time for a new shoulder to be put to the wheel. At the same time, though on many accounts I am very desirous of retiring into private horticultural life I have not resigned, nor shall I do so until a successor is forthcoming unless more urgent reasons should arise than I am glad to say at present exist."

The New Building Scheme of the Royal Horticultural Society may be reported on as making steady progress; and a circular has been distributed describing the general plan and mode of repayment of monies advanced on loan for the erection of a Hall for Horticulture. The trustees appointed are Sir Trevor Lawrence, Bart., M.P., Baron Henry Schröder, and Everard A. Hambro, Esq. It is urged by the promoters that while horticulturists of all grades and tastes are assuredly interested in the proposal to establish a metropolitan centre for horticultural operations, the commercial horticulturists are so likely to be directly benefited by it, that it is expected of them to be prompt and generous in their support. Many seedsmen and nurserymen have already entered their names for sums to be advanced on loan; and it has but to be made known to the trade generally, it is hoped, to ensure many additions to the present list, and the consequent completion of the sum required. It should not be difficult to raise £40,000, even as a gift, to ensure the provision of a hall that is so much wanted in vindication of horticulture in London. But gifts are not desired; all that is asked is the loan of the money, to be repaid by periodical drawing of the bonds. The subscribers now number fifty-six, and the total amount promised is £10,060.

RUNNER BEANS.

Although runner beans are not so well able to withstand the effects of heat and drought as the dwarf kinds there are but few seasons in which, with timely assistance from the watering pot, they do not produce a highly satisfactory crop. They are indeed so productive under ordinary conditions, that in proportion to the space occupied they contribute more liberally to the supplies for the kitchen than any other occupant of the kitchen garden. Whilst of a high degree of utility in gardens of large size they are especially valuable for suburban gardens of moderate extent, as they form capital screens and at the same time give a liberal and continuous supply of tender and delicately flavoured pods which seldom fail in obtaining a full share of appreciation.

One of the most important points in the cultivation of runner beans is to provide a deep and thoroughly rich soil and if sown in shallow trenches prepared in much the same way as for celery it will be a decided advantage. For some years past I have adopted the practice of sowing in trenches and the results have more than justified the little additional trouble involved in their preparation. Early in the season the quarter in which they are to be grown is selected and the preparation of the trenches proceeded with. If the quarter available is of sufficient size to admit of the rows being put far enough apart to allow of the intervening spaces being cropped with dwarf growing vegetables, the rows are arranged twenty feet apart, otherwise they are put eight feet apart and the intervening spaces not cropped. I prefer the larger of the two distances as the plants then receive a full share of both light and air on all sides. Having marked out a sunny space, two feet in breadth for each row, the surface is covered to a depth of six inches with half-rotted manure. The spaces thus marked out and covered with manure are then trenched to a depth of two feet, and sufficient of the bottom spit spread over the intervening spaces to the right and left, to lower the surface of two feet space two or three inches below the general level. The soil and manure are well incorporated as the work of trenching is in progress, as when that is done the results are better than when the manure is buried at the bottom of the trench, in accordance with the practice which obtains in some gardens. Trenches of great depth are unnecessary, for they are required simply for greater facility of watering during periods of drought, and a depression of two inches is quite sufficient for the purpose. The beans are sown in double rows, and to avoid overcrowding we allow a space of nine inches between the two rows and the same distance between the plants in the rows. Mindful of the partiality of the slugs for runners, as well as dwarf beans, during the earlier stages of growth, and the consequent risk of blanks, the beans are sown four and a-half inches apart. Then as soon as they are so far advanced that there is but little risk of injury from slugs every alternate plant is drawn out, excepting of course where blanks have been caused by the slugs. It is practically impossible to prevent some blanks, but much can be done to prevent their occurrence by making the soil quite fine over the rows and to some little distance to the right and left. When the surface soil is rough the slugs take refuge under the lumps. Dusting with lime and soot will also act as useful checks. When blanks occur they are filled as quickly as possible with plants from other parts of the row, as they suffer less from removal when quite young than when they have made several rough leaves. The first or general sowing is made about the middle of May, and the second or supplementary sowing a month later. All who are engaged in the cultivation of vegetables will be agreed as to the necessity of the first sowing but the importance of the second sowing is by no means fully recognized. It may, therefore, be useful to direct attention to the fact that the plants raised from the May sowing become more or less exhausted towards the end of August, and then yield but small supplies. The later sown crop will by that time be in full bearing, and maintain an abundant supply until cut off by the frost. So large a sowing in June as in May will not in any case be required, and as indicating the respective proportions, I would mention that in June I sow one row to every three rows sown a month earlier.

The question of varieties is not a difficult one to deal with, and it may be mentioned as a point of some interest that there is not a really bad runner bean in cultivation. There are different degrees of merit, but the most inferior of them will give a good return for the space occupied. As a result of a careful trial of the more popular varieties in cultivation, I would strongly recommend Mammoth Scarlet and Giant White for general cultivation. Both produce large fleshy pods of excellent colour and flavour, and they are enormously productive. The Giant White is, perhaps, better able to withstand the effects of drought than any of the other runners. Ne Plus Ultra is a capital variety, as, indeed, is Girtford Giant.

The stakes employed should be of sufficient length to stand six feet above the surface, and they should be fixed in position before the beans begin to run. Liberal supplies of water will be of great assistance during periods of dry weather, and care should be taken to gather the pods before they become tough and stringy, for not only are old pods objectionable when upon the table, but they impose so severe a strain upon the plants as materially to check the growth.

Old Spadesman.

Hampton Court Home Park and Bushey Park, though not actually closed against the public are so difficult of access that a movement has been started by the inhabitants of the districts adjacent to these parks for obtaining greater convenience of access. A meeting on the subject, under the presidency of the Lord Mayor, will be held at the Mansion House on Friday, June 13, at three p.m.

ROYAL BOTANIC SOCIETY,
FIRST SUMMER EXHIBITION, May 14.

The first of the two summer exhibitions forming part of the programme of the Royal Botanic Society was held on Wednesday, and owing to the material reduction in the value of the prizes offered, it was much below the average both in the number and quality of the collections. Roses in pots, pelargoniums, and azaleas were well represented; stove and greenhouse plants in bloom were unequal, and some of the collections were very poor; there were a few good collections of ornamental-leaved plants and ferns, but orchids, which have usually formed such an important feature at the May exhibitions, were in the competitive classes limited to two collections. The miscellaneous collections contributed by nurserymen were, on the other hand, numerous and remarkably good, and whilst doing credit to the resources of the exhibitors, afforded substantial assistance to the exhibition. That Mr. Coomber arranged the material at his command to the best advantage follows as a matter of course, and, as the result, the exhibition tent presented an attractive appearance.

Stove and Greenhouse Plants in bloom, although much below the average, formed an attractive feature. In the amateurs' class for ten, as also in that for six, Mr. W. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, Rugeley, was first with good collections, the specimens being chiefly the same as those shown at the Crystal Palace on the previous Saturday. The most noteworthy examples were those of Erica coccinea, Aphelexis macrantha, Ixora Dixiana, Dracophyllum gracile, Anthurium Scherzerianum, and Genethyllis tulipifera. Mr. Offer, gardener to J. Warren, Esq., Handcross Park, Crawley, was a good second in the class for six, one of his best plants being Franciscea calycina major. Mr. H. James, Castle Nursery, West Norwood, was first in the trade class for twelve and second in that for six. The premier award in the class for six was made in favour of Mr. J. F. Mould, Pewsey, Wilts, who had a splendidly flowered specimen of Bougainvillea glabra. Azaleas included several good collections, and produced an effective display. In the amateurs' class for six Mr. Offer was first with densely-flowered and remarkably fresh specimens of Mrs. Turner, Duc de Nassau, Baronne de Vriere, Roi de Hollande, and other good varieties. Mr. Scott, The Holme, Regent's Park, was second. In the corresponding class for trade growers, Mr. C. Turner, Slough, was first, his best specimens being, perhaps, those of Jean Vervaen, and Duc de Nassau. For six in twelve-inch pots, Mr. Offer and Mr. Lockie, gardener to Lord Otho Fitzgerald, Oakley Court, Windsor, were first and second respectively. For twelve azaleas in pots not exceeding eight inches in diameter, Mr. C. Turner was first with neat, well bloomed examples. Heaths were represented by medium-sized and nicely flowered examples. Mr. James obtained premier honours in the class for six, his finest specimens being Erica ventricosa coccinea minor and E. Lindleyana. Mr. J. F. Mould, Pewsey, Wilts, was second. Mr. Morle, Regent's Street, was third with small but superbly flowered examples of E. Cavendishiana. The same exhibitor also staged six nicely flowered examples of E. candidum.

Ferns and Fine-foliage Plants were well shown by Mr. Offer, who was first in each of the classes for these plants in which the competition was open to private growers. His collections were the same as those he had at the Crystal Palace on the 10th, and it is not necessary to do more than say that they did much credit to his cultural skill.

Roses in Pots were admirably shown, and formed one of the most important and attractive features. For nine, Messrs. Paul and Son, Cheshunt, were first with superbly flowered specimens, and the prizes for twenty plants in pots not exceeding ten inches in diameter, were awarded to Mr. W. Rumsey, Waltham Cross, Messrs. Paul and Son, and Mr. C. Turner, in the order of their names, the collections, although differing in merit, being good throughout. Messrs. W. Paul and Son, Waltham Cross, exhibited, not for competition, a magnificent collection of pot and cut roses, which, tastefully arranged in a semi-circular group near the centre of the tent, produced a very beautiful effect.

Orchids were few in number, but those staged were remarkably good. In the amateurs' class for twelve, Mr. Whillans, gardener to the Duke of Marlborough, Blenheim, was the only exhibitor, and had a collection that would have done him good service in a keen competition. It included Odontoglossum sceptrum, bearing five large fine-developed spikes, Lælia purpurata, Cattleya Mendeli, C. Lawrenceana, Cypripedium selligerum majus, C. Lawrenceanum, Dendrobium thyrsiflorum, bearing nearly thirty fully-developed racemes. D. Jamesianum, D. suavissimum and Odontoglossum vexillarium. The other class for amateurs was that for collections. Here Mr. Howard, gardener to H. Little, Esq., Baronshalt, Twickenham, was the only exhibitor, and deservedly had the award of the first prize made in his favour. The collection consisted chiefly of Cypripedium caudatum and varieties of Lycaste Skinneri interspersed with ferns. There was no entry in the two classes for trade cultivators; but to the miscellaneous class Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, contributed a large and important collection which in conjunction with ornamental-leaved plants and other interesting objects was very attractive. Mr. White, Winchmore Hill, had a group of orchids consisting chiefly of varieties of Cattleya Mendeli.

Show and Fancy Pelargoniums were quite equal to the average, and produced a bright effect. There was a keen contest for first place in the open class for six fancies, and in the result the premier award was made in favour of Mr. D. Phillips, Langley Broom, Slough, who had large, densely flowered, and finely finished specimens of Princess of Teck, Roi des Fantaisies, Lady Carrington, Delicatum, and Pilgrimage. Mr. C. Turner, who was second, also had a collection of great excellence. The exhibitor last named occupied the post of honour in the class for six show varieties, and in the corresponding class for amateurs Mr. Phillips was first. Mr. J. James, Woodside, Farnham Royal, near Slough, was first for twelve herbaceous calceolarias with medium sized well-flowered specimens. Messrs. J. and J. Hayes, Edmonton, exhibited an attractive collection of decorative pelargoniums.

Hardy Plants had two classes provided for them, and in each Messrs. Paul and Son were first with large and extremely beautiful collections. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, exhibited, not for competition, a large and attractive collection, in which the pæonies were especially meritorious. Messrs. Kelway and Son, Langport, staged the collection of pæonies exhibited at Westminster on the previous day.

Miscellaneous Contributions included in addition to those already mentioned a large, interesting and beautiful collection of flowering and ornamental-leaved plants from Messrs. J. Laing and Sons, Forest Hill; especially good in the collection being the begonias, caladiums, and orchids. Leschenaultia biloba major was admirably shown both by Messrs. W. Balchin and Son and Messrs. W. Cutbush and Son; and pansies and other flowers were shown by Messrs Ryder and Son and Mr. J. Forbes.

Novelties were plentiful, but the majority of those submitted have been already described. Botanical certificates were granted as under: To Messrs. H. Low and Co., for *Cypripedium Elliottianum*; to Messrs. Paul and Son for *Acer Prince Hendjery*; to Mr. White, Winchmore Hill, for *Cattleya Mendeli albens*; to Messrs. J. Veitch and Son for *Cytissus scoparius Andreanus*, *Abies excelsa mutabilis*, *Juniperus canadensis aureus*, *Acer Japonicum lacinatum*, *Nephrolepsis cordata compacta*; to Mr. Knight for *Calla Elliottiana*; to Mr. J. O'Brien for *Disa tripetaloides*; and to Messrs. Paul and Son for *Myosotes rupicola* and *Cytissus scoparius Andreanus*. Floricultural certificates were granted as under: To Messrs. Kelway and Son for *Syringa alba grandiflora*; to Mr. Ware for *Trollius caucasicus aurantiacus*; to Messrs. Barr and Son for *Tulipa elegans alba*; to Messrs. J. Veitch and Son for *Phyllocactus Brilliant*, *P. Exquisite*, *Rhododendron The Queen*, and *Gloxinia Mrs. J. Donaldson*; to Messrs. J. Laing and Sons for *Princess Victoria*, *Rosy Morn*, *Duchess of Portland* and *Profusa* begonias, *Gaspard Crayer* and *Mrs. H. Veitch* caladiums; to Messrs. W. Paul and Son for *Rose The Queen*; to Mr. C. Turner for *Azalea J. T. D. Llewellyn*; and to Messrs. J. and J. Hayes for *Pelargonium Empress of India*.

ORCHID NOTES.—ORCHID ALBUM.

Lælia Dormaniana.—An excellent figure of this interesting and rather pretty species is given at plate 401. Plants were gathered in September, 1879, by Mr. Henry Blunt, at an elevation of 2,000 feet, in Rio de Janeiro. It flowered for the first time in England in the spring of 1880 with Mr. Charles Dorman, The Firs, Lawrie Park, Sydenham. The late Dr. Reichenbach named it in honour of Mr. Dorman, and concluded that it was a natural hybrid between Cattleya bicolor and Lælia pumila. Since that time numerous plants have been imported, and as they are very uniform in character the editor suggests that it should rank as a species, not a hybrid merely. Messrs. Veitch, in their "Manual of Orchidaceous Plants," have come to the same conclusion. From a horticultural point of view this is not of very great importance. The species is winter-flowering, of moderate size, but very pretty, with its rich purplish-crimson lip and olive-green sepals and petals. It is not quite so easily grown as Cattleya Mossiæ, and its slender pseudo-bulbs suggest that over dryness at the roots may be injurious. The editor recommends the same treatment for it that is given to Lælia elegans. It is much handsomer than Cattleya bicolor and a useful winter-flowering species.

Calanthe Mylesi.—Many beautiful hybrids of these charming winter-flowering orchids have been produced in recent years, principally in the nursery garden of Messrs. Veitch, in the King's Road, Chelsea; in the gardens of Sir Trevor Lawrence, Bart.; Norman Cookson, Esq., Wylam-on-Tyne; and in some other collections. The garden hybrid named above has been raised by Mr. Myles, of Ryde, in the Isle of Wight, and is a cross between *C. nivalis* and *C. Veitchi*, and it is rather remarkable that the pink flowered Veitchi should produce a pure white variety, whiter than the other parent. But Veitchi is itself of a variable character; some very pale forms have been produced, and also a white one. Spikes of all these deciduous calanthes are excellent for cutting to place in vases during winter, and they last in beauty for two or three weeks. C. Mylesi is stated by the editor to have flowers so white that other white varieties appear yellowish beside it. It has a faint dash of yellow in the centre of the flower, and will doubtless grow as freely as other species and varieties of the vestita section.

Odontoglossum Alexandræ Outrami is nicely figured, and is a good blotched and spotted form of the type. These are now so numerous that it seems a matter of serious consideration whether they ought not to be thrown into groups. The variety Cooksoni is very distinct in its pure white ground and prominent dark blotches. Stevensi, again, is not so pure in the white, and has paler blotches, while the remarkably handsome Veitchianum is distinct from either. The difficulty would be to obtain varieties sufficiently similar to be recognized as belonging to either group, and so we go on giving distinctive Latin names to varietal forms indefinitely. This is a variety of the narrow-petaled type, and ought to have a varietal name. It is needless to say anything at present on the culture of these beautiful Mountain odontoglossums.

Cattleya maxima Marchettiana is a startling form of the species. It is the richest and deepest coloured of cattleyas, the flowers being described as crimson-lake and deep purple coloured, the blotches being so closely placed as almost to cover the flowers. The normal form of the species is well known, and finely figured in Bot. Mag., 4,902, from a specimen grown in the garden of W. G. Farmer, Esq., Nonsuch Park, Cheam, Surrey. The spike had seven flowers on it, and the flowers pale rosy lilac in colour, the lip variegated with purplish lines. Dr. Lindley had figured a darker form nine years previously in the "Botanical Register" for 1846 from specimens gathered by Hartwig when collecting for the Horticultural Society. The learned doctor suggested that "we may be excused for doubting how far this beautiful plant can lay claim to the rank of a species, for it evidently approaches both C. Mossiæ and C. labiata in many important particulars." But he seems to have admitted the claim, and now we have to place them all under the labiata section. Now that such a remarkable form has been obtained, others will be looking out for more of them in their unflowered imported plants. It is not so easily cultivated as some varieties of C. labiata, but the editor suggests giving it as much light as possible, being careful not to allow the sun to shine directly upon it. A good supply of air should also be admitted, and the plants kept near the glass roof. Pot culture is recommended, the pots to be well drained, the material good fibrous peat from which the finer particles have been shaken out, some sphagnum added to it, with pieces of charcoal to keep the whole open for the free escape of water. J. Douglas.

AUCTION SALES FOR THE ENSUING WEEK.

Wednesday, May 21.—Messrs. Protheroe and Morris, at the Nurseries, High Street, Watford; Greenhouse and Bedding Plants.

Thursday, May 22.—Messrs. Protheroe and Morris, at Beddington House, Croydon; Exhibition Stove and Greenhouse Plants.

Friday, May 23.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

Saturday, May 24.—Messrs. Protheroe and Morris, at the American Nurseries, Leytonstone; Greenhouse and Bedding Plants; also at St. John's Park Nursery, Blackheath.

CHATTER AND CHIPS.

Garden Screens and Bowers.

I may perhaps be somewhat singular in my taste as regards the materials used in garden furniture, as I have an idea that very much more may be done in embellishing our gardens with screens and bowers than has hitherto been attempted. My taste runs out in this direction in favour of rustic wood work, as it seems to me to be more in character with the surroundings. Iron archways and supports are all very well, and of course they are durable; but until they are well covered with growth they appear to me to present a degree of hardness in their lines that is not quite agreeable. But a bower or screen formed with rustic wood work is a presentable object as soon as it is erected, with an absence of the stiffness that is characteristic of metallic structures.

Having stated my preference for wood versus iron in this matter, I should like to direct the attention of your readers to the fact that where there are neither bowers nor screens in the garden, there is necessarily an absence of many climbing plants, because there are not generally other suitable places on which to grow them. The absence of such a class of plants is therefore a loss to the garden. Bower or screen gardening, if I may use the term, introduces quite a distinct class of plants into the place, such as honeysuckles, clematis, jasmines, roses, and the different forms of ivy, and many other plants of climbing habit that could not otherwise be provided with suitable positions. In the formation of rustic bowers or screens of any kind preference should be given to larch or oak wood. If the former is used it should, when possible, be selected of a suitable size, so that it does not require dividing. If the pieces are large, and they require cutting down the middle, such parts of the structure will decay sooner than those that are used with all the bark upon them. A good deal will of course depend upon the taste used in the construction, whether the effects will be pleasing or not. I may however remark here that there is a general inclination to make rustic bowers too heavy in the first place—in a word, too much timber is used. The result is that when the structure is well covered with growth it appears lumpy or ponderous according to its size. To make a pleasing feature in the garden, furniture of this kind should present a certain degree of lightness; then, instead of offending, it will charm the most sensitive or critical taste.

Fruit Trees in the Pleasure Grounds.

I was fortunate enough the other day to go into a garden where such fruit trees as apples and pears had some few years ago been liberally interspersed with other trees in the shrubbery borders and plantations that skirted the dressed grounds. The pears being then in full bloom, and the apples just showing colour, I was immensely pleased with the effect they produced by the wealth of blossoms they were showing. Such sorts of apples as Warner's King, Irish Peach, Lord Derby, and Ribston Pippin were particularly striking on account of the brightness of the blossoms, the colour almost approaching a pleasing tone of crimson. The sight of these trees conclusively proved the wisdom of those who planted them there, as they are beautiful when in flower, and of course useful to assist in filling the fruit store in the autumn. Nor is the swelling and ripening fruit to be regarded as other than a rich decoration.

Setting Melons.

Young gardeners often experience considerable difficulty in getting a good set of melons early in the season. Whatever may be said to the contrary by more experienced hands, my sympathy goes out towards the young ones, because as a rule they fail to get their melons to set properly by doing too much instead of too little to them. Such men, instead of being blamed, deserve to have all the help we older ones are able to give them. It is for that reason that I pen this short note. In the first place I should like to say that melons do not set their fruit so well early in the season, because they do not get so much air as later on in the summer. When the pits or frames can be liberally ventilated the internal air is kept drier; and under these conditions the fruit sets better than when the air is damp and confined. It is therefore very necessary from this time until midsummer day is passed to look after the ventilation more carefully, and to admit air whenever the weather is not too cold to allow it, and at the same time to be more cautious in increasing the atmospheric moisture in the structures. When melons are grown on hotbeds of manure, syringing or damping the foliage must not be indulged in until sufficient fruit is set to make a crop.

With regard to fertilizing the blossoms, my advice is, by all means assist nature, but do not pinch off the top of the shoot either then or at any time after. The shoot will soon cease growing as the fruit swells. It is also very necessary to keep the young growth well thinned out every day or two. This is where young hands make a mistake. They fail to attend to the plants until the frame is crowded with growth, and then cut away as much at one time as should have been done in three. The consequence is such a sudden removal of so much foliage to a certain extent arrests the growth of the plants, and prevents the fruit from setting. If melons are to be encouraged to set freely, there must be no sudden changes in the treatment either in extremes of heat or moisture, or any precipitate mutilation of the growth. If the bottom heat is strong the cultivator must also watch narrowly the soil in which the roots are growing. Melons will not set their fruit if the roots are in a dry soil.

Failures in Cucumber Growing.

In what I have to say in this paragraph I hope the amateur reader as well as the inexperienced young hand will not take offence at an old man's chatter, as it is written for their benefit. In the first place I should like to tell them that more failures in cucumber-growing arise through giving the roots too much water than anything else. I have many times been consulted when failures have occurred, and on inquiry often find that the plants have been too freely watered. I have met with the following reply to a suitable question: "Oh, I have given them a little every day." Now, there cannot be a greater mistake than to be giving these constant driblets of water to a soil that must be already wet. Under such treatment the plants make but slow progress, and the foliage acquires a yellowish, sickly hue, which denotes that the treatment is radically wrong somewhere. Although fruit is formed, it turns yellow after a few days and falls off. To avoid such a mistake root moisture should only be given when the soil is getting fairly dry. In dull, showery weather once a-week will be often enough, and then sufficient should be given to moisten all the earth to a depth at least of six inches. In very bright weather in the middle of the summer twice a-week will not be too much. Failures also occur through keeping the frames too close, which weakens the growth and makes the plants unfruitful. As the weather gets warmer the frames should be ventilated earlier in the morning and the air left on later in the afternoon. In what I may call real summer weather the frame should not be quite closed during the night, and a wedge of wood three inches thick should be placed under the back of the light. With this treatment the plants will keep free from insects, and will remain vigorous and fruitful until the end of the season.

Cucumbers with Other Plants.

I do not, in what I have to say on this subject, wish to make it appear that early cucumbers can be grown in all sorts of houses and all sorts of conditions. What I wish to point out is that there are certain cases in which it is possible to have a few early fruits in houses in which stove plants are grown. However, that is what a friend of mine does in quite a respectable manner. The house in which he grows the cucumbers is a lean-to, well heated. In this structure he forces early in the season Roman hyacinths, and later on lilies of the valley and similar plants, besides which he grows a few gardenias, eucharis, and stephanotis. On the front bench of this house he grows a line of cucumbers in 14-inch pots. The seeds are sown about the beginning of January, and in an average of seasons the first fruit is cut about the middle of April. There is nothing very special in this I am well aware, except we look at it from a labour point of view, and then we shall find as compared to forcing cucumbers on hotbeds, and to have them ready for table at that time, there is an immense saving. The number of fruit produced early in the season is not great; on an average I learn that from six plants three and four fruits are obtained every week, the number increasing as the season advances. In the instance I am referring to this plan of growing cucumbers in the stove or forcing house—whichever your readers like to call it—is adopted with a view to save labour. The supply for the late spring and summer months is obtained from frames, which have the advantage at first of a little bottom heat to start them. Chatterbox.

RIDGE CUCUMBERS.

A correspondent is, I am told desirous, of obtaining information on the cultivation of ridge cucumbers, and as I am glad to be able to render what assistance I can to the inexperienced, it is with much pleasure that I comply with the request to give a few hints on growing cucumbers in the open.

The correspondent has, I am informed, a liberal supply of manure at his command, and he should therefore not experience much difficulty in obtaining a good crop. Cucumbers, when grown without the aid of glass, make the most satisfactory growth when occupying raised beds resting upon a good foundation of manure or decayed vegetable refuse. I would suggest, as the first step to be taken, that a bed three feet six inches in width, and of a length proportionate to the requirements of the family be marked out. When this has been done, take out the soil to a depth of two feet, place on one side the top spit for future use. The remaining soil can be spread over the quarter or be wheeled away as may appear advisable. In the trench thus formed put sufficient manure when trodden moderately firm to form a bed about twelve inches higher than the general level. Cover the manure with the soil from the top spit to a depth of nine inches, and make it quite level on the surface. The bed will then be ready for the reception of the plants, which should be planted out in a line down the centre at a distance of three feet apart. It is too much the practice in gardens of planting both cucumbers and vegetable marrows on narrow rounded ridges or on small mounds. A more objectionable practice could not well be devised. Both cucumbers and marrows require rather liberal supplies of water in dry weather, and when occupying mounds and ridges of the description mentioned it is extremely difficult to well moisten the soil about the roots when it has become dry. By planting on ridges that are quite flat they have all the advantages of raised beds, and the watering can be done as expeditiously and efficiently as when they are planted on the level.

The end of May or the first week in June is the best time for bedding out the ridge cucumbers when no shelter can be given the plants, but when they can have the protection of handlights they may be put out in the third week of May. It is important to bed them out as early as is consistent with their safety. They require a rather liberal degree of moisture about the roots throughout the summer, and should therefore be watered when necessary. Overhead waterings in hot, dry weather will be beneficial, and the best time for these is the evening, when the sun has ceased to shine upon the plants. Improved Stockwood Ridge is one of the best varieties for outdoor culture.

G. S.

HOW I BECAME A GROWER FOR MARKET.

The Second Part.

Arrived in the mighty city, and after securing temporary shelter for my wife and children, I proceeded direct to the nursery, and had an interview with the outdoor foreman, who directed me where to find rooms for my family in the near neighbourhood, and told me I might present myself for work on the following morning. I succeeded in getting two rooms for 7s. 6d. per week, first week to be paid in advance. This rate, I confess, somewhat staggered me, but no better could be done in the neighbourhood of the nursery. I mentally calculated that this would leave 12s. 6d. per week out of my wages of £1, on which to support a family of seven, without making any allowance for broken time, and it at once flashed across my mind that I had jumped from the frying pan into the fire.

I will pass over the tearful scene of the transit of wife and family and the few relics of furniture that yet remained to us from our former home to our new abode, and the introduction to our landlord and landlady, which, owing to the marked difference in dialect which existed between the two parties, would have been highly amusing under different circumstances. I tried to make things as bright as possible, but it was uphill work under a sinking heart.

On the following morning at the appointed hour, I presented myself at the nursery, where I found assembled in front of the packing-shed my former friend, the traveller, who was also a junior partner in the firm, the outdoor foreman, and a number of men of various ages and complexions, waiting to be sent to work. Some of these men had not been long in from the country—others, by their jaunty manner and ready jibes, had seemingly spent some time in the interesting occupation of jobbing gardening in London. Others, again—mostly old men—with grimy faces, and looking generally "of the earth, earthy," were quiet and demure. Years of hopeless work had taken every trace of energy out of their frames, and every spark of intelligence out of their visages.

Now I would explain that my friend, the traveller and partner, on his frequent visits to Scotland soliciting orders, was ever kind and affable, whilst the warmth he always displayed in shaking hands with me on coming and going was truly wonderful. But on this—to me—memorable occasion, the only recognition I received from him was, "Mornin', Beanstalk," muttered between his teeth, and with only a side glance at me. This, I confess, somewhat staggered me. However, I was soon off in company with an "old hand" to work for the day. After much trouble a collection of tools had been hunted up for me, from different sheds and boxes, of which the following is an accurate list:—An old spade crusted with rust, with large portions of its edge pointing in a horizontal direction when put to the ground; a rake with handle lapped with twine, and two teeth extracted; a scythe which, although extremely "wavy and worn," was yet carefully wrapped in a "clout" as various in colour as Joseph's coat ever could be; a pair of shears, which wobbled and made quite a startling noise when handled; a hoe and a bushel basket, inside of which was a rubber also carefully secured in a variously coloured "clout"; and half-a-dozen geranium plants in pots. And all these I had to carry on my shoulders through the crowded streets of London for a distance of two and a-half miles before reaching the scene of our "job." Our line of march lay right under the windows of the rooms I had just taken, but with a furtive glance or two upwards I hurried past, feeling as if I'd rather the flags would open and swallow me than that I should be seen by the inmates of either of those two rooms. But it was yet early morn, and perchance sleep had come at last to all their weary eyelids, and in dreams they were again wandering by meadow and stream in far-away Midlothian.

My companion proved very communicative as we trudged along the streets, and his powers of conversation were wonderfully sustained throughout the journey, partly by practice, no doubt, and partly by the absorption of sundry glasses of beer during the progress of our journey. I was careful not to hazard much of an opinion, at least, so far as regards London work was concerned, feeling satisfied that on that point he was master of the situation. Arrived on the "job," we began operations on the lawn, and, as I proved myself to be the better scythesman of the two, I had the pleasure of having the major portion of the work to perform. In addition to a general clean up of the whole place, we had several rabbit hutches, a pigeon-cot, fowl-house and yard, and an ashbin to clean out. In the forenoon we had each a glass of beer placed for us on the step of the kitchen door, with a call and a point of the finger from the housemaid. In the afternoon two cups of tea were placed in the same elevated position, with a whistle this time from the fair handmaiden. In the evening I happened to get into conversation with the master of the house, when, of course, he soon discovered I was a Scotchman. He told me he admired my country, said it was a great nation, and finished by handing me a threepenny-piece to get my companion and I a glass of ale each! Thus ended the day. I had had some filthy and hard work to perform; but then, my country had been complimented, and I had received three-halfpence besides! Another two-and-a-half miles walk with the above-named collection of tools brought me again to the nursery to deposit tools and "time-sheet." I returned "home" just fourteen hours from the time of leaving, tired and jaded, and with a heavy heart, not knowing how long this sort of drudgery might last.

Eighteen months passed very much in this sort of way before I could obtain a situation of any kind. At last I took one in the suburbs on 25s. per week, with two rooms above the stables to live in. I took it out of desperation, and in order to shake myself clear of the City work I remained in it just five months. My employers were such good gardeners themselves that they would insist upon arranging and trimming the plants in the houses, opening and shutting the ventilators, assisting me in watering, &c., that I began seriously to think they had no need for my services at all. A small cucumber house was erected, and then the climax came. After the house was finished, I had the mould put in and all made snug, when one day the "missus" came to me and said, "Beanstalk, do you know how to grow cucumbers?" The answer came instantly, "Yes, ma'am, and how to eat them, too."

Two weeks after that date I was back to the nursery again, engaged in my former delightful occupation, which continued without intermission for another four years, sometimes walking long distances night and morning to and from, losing frequently quarter, half, and whole days together, and sometimes a week or two together, from frost, rain, and snow, obliged to perform the most menial work, such as cleaning out dog kennels, leading out dogs for airing and exercise, carrying home to the nursery pigeon and hen droppings in the evenings after work in sacks, &c, till at last I found myself growing careless over dress, appearance, and even cleanliness, with nothing showing ahead but the chance of my eventually being absorbed into the ranks of the confirmed jobber, that outcast of the trade, that pariah among gardeners.

In every application for a situation I was met with the objection the number of my children, and now my appearance was doubtless beginning to tell against me.

In my anxiety to get clear of the hated jobbing work I answered almost every advertisement I happened to see in the London papers. To by far the greater number of my letters no reply was ever received, and when I did receive a reply it was only to find, after a deal of trouble and some expense, that either I would not suit the parties or the situation would not suit me. I am induced to give the following account as a single example of the sort of men wanted whom the advertisers had the audacity to call *gardeners*. The advertisement ran thus: "Wanted, a competent gardener, at once. Apply in writing, with fullest particulars, to A. B., No. 4, Blank Road, Islington." I wrote at once, giving fullest particulars as to my experience, &c., and giving references. In due course I received a reply, asking me to call next day. I arranged with the foreman of the nursery about a man to fill my place for the day, and, thinking I was going to make a call on a gentleman of some position, I adorned myself as well as my rapidly-diminishing wardrobe would admit of, and set out. On reaching No. 4, Blank Road, I found it to be a large double shop, filled with all kinds of sewing machines, bath chairs, bicycles, &c. Thinking that some mistake had been made, I went in quest of another number four, but to no purpose. I then entered the shop and inquired for A. B. who appeared in the form of a small, thin, pasty-faced man, who looked as if he had not been out of London for a century. He inquired if I was Beanstalk, I replied in the affirmative. We then retired into a small office about seven feet square, containing two chairs. Very gravely we took one each, and then proceeded to business. A. B. took the letter I had written him out of his pocket, opened it, asking me at the same time if I had written myself. I once more replied in the affirmative. The reply came, "Well, Beanstalk, it does you great credit." I then, in my turn, ventured to ask him to grant me particulars of the gardener's situation, which he proceeded to do, first informing me that he did a good business in the letting out of Bath chairs. His garden, he said, was a very small one, and indeed of very little consequence, situated within a hundred yards of the shop—whilst it, in its turn, was situated in one of the busiest thoroughfares of North London.

My principal duties would be to attend at the shop regularly every morning at six a.m., where I would find employment in dusting, cleaning, and running messages until such time as a call was made by an invalid for a Bath chair, when I would have to proceed with it, perhaps, to the nearest square or park, and trundle it about during the invalid's pleasure. If my services in this line, however, were not required before a certain hour in the afternoon, then my duty would be in the garden for the remainder of the day. Wages, I was told, would be 15s. per week, with a bonus of one penny on each trip with a chair. A. B. wound up by expressing a hope that my references would be found to be of a satisfactory nature, as he intended to engage no one save a man of the most unquestionable character. I thanked him in the most polite manner I was master of, but said I thought he had better not take the trouble to write to the parties named as references till he heard from me again, and added that I suspected it was a porter he wanted, not a gardener. The result of this visit was the loss of my day's pay, amounting to 3s. 4d.. in addition to other expenses.

Beanstalk.

TOMATOS.

Which is the earliest tomato to fruit when sown in mid-winter and early spring? I am tempted to ask this question after seeing a number of healthy and fruitful plants in the glass houses of Messrs. James Lywood and Son, Market Gardens, Salisbury. The variety grown here exclusively is *Conqueror*, and what struck me most was the dwarfness of the plants when they commenced to flower and fruit. I have grown several varieties, but all of them have run up quite a yard high by the time the first truss of flower showed, and yet they are in the lightest place we can possibly give them. Now, the contrast between these and the plants referred to of Messrs. Lywood's is surprising, as these are not more than eighteen inches high, and some of the plants have six trusses of flowers open and opening; and the lower ones are set with fruit, and are not more than six inches from the surface of the border. This is one of the ribbed or corrugated tomatos, but they prefer it to all others owing to its fruitfulness. It will be interesting to watch the behaviour of these two lots of plants later on in the season. But I am inclined to think that the *Perfection* type is quite a month later than Conqueror when growing under similar conditions. C. Warden.

EARLY CHRYSANTHEMUMS.

Judging from my reading in the Gardeners' Magazine and other floral and horticultural papers, I fear that the early-flowering chrysanthemum is not appreciated at its true value.

As a herbaceous bedding plant, it has no equal to my knowledge for giving fine and long-enduring showy floral effects on beds and borders from early July to November. I have used it very liberally for the last five or six years in beds, borders, and clumps, and I am more and more pleased with it the more extensively I use it.

I append a list of varieties, with the heights, the colours of the the flowers, the times of flowering, &c., so as to assist anyone in planting. These notes were all made in my garden at Stakehill.

In planting out, put the tallest growers at the back if planting in a border, if in beds or groups place them in the centre; the medium heights plant next, and the dwarfs on the outer edge.

I have a round bed twelve feet in diameter, which I intend to plant as follows: In the centre a group of Fred Pelé, next to this Nos. 5, 7, 10, 12, 6, and 8, according to height and colour, and on the outer Nos. 1, 2, and 3. These will make a fine display.

I am quite sure that anyone trying these early chrysanthemums will be gratified at the result; to me they have been quite a revelation. In my garden at Llandudno they grow and bloom wonderfully; while at Stakehill, eight miles north-east of Manchester, under most ungenial conditions, they give me better results than anything else that I have tried. Saml. Barlow.

Stakehill House, Castleton, Manchester.

Early Flowering Chrysanthemums.

(1) *Little Mary.*—Height 10 to 14 inches, colour white, form large, pompon × × ×, flowers June to the end of October.

(2) *Golden Little Mary.*—Same as above, but flowers yellow.

(3) *Pompon Toulousaine.*—Height 15 inches, flowers the end of July to the end of October, colour orange-salmon, form of Cedo Nulli, free bloomer × × ×.

(4) *Precocite.*—Height 24 inches, yellow, free bloomer, flowers early in July to the end of October.

(5) *Gentilesse.*—Height 20 to 24 inches, colour blush with bronzy centre, form medium pompon, flowers July 1 to the end of October, form × × ×, abundant bloomer.

(6) *Mignon.*—Height 20 to 24 inches, grand pompon form, free blooming, flowers July to the end of October, very × × × ×, colour deep rich yellow.

(7) *Golden Fleece.*—Height 24 inches, colour yellow, form flat pompon, good, flowers June to the end of October, very free blooming × × ×.

(8) *Fred Manouet.*—Height 18 inches, form perfect pompon, colour bright golden bronzy yellow, flowers the end of July to the end of October, very × × × ×.

(9) *Fred Pele.*—Height 24 to 30 inches, bright Indian Red, flowers July to the end of October, the best of all the reds.

(10) *Madame Jolivart.*—Height 24 inches, form fine, like Sœur Melanie, colour blush, turns white, free bloomer, flowers end of July to end of October.

(11) *Madame Piccol.*—Height 24 to 28 inches, colour rosy purple, form large pompon, × × ×, flowers July 20 to the end of October.

(12) *Salter's Early Blush.*—Height 24 to 26 inches, colour bright lilac Cedo Nulli, flowers July to the end of October, × × × ×, free blooms in clusters.

(13) *Lilac Queen.*—Height 30 to 36 inches, free blooming, well worth growing, flowers July to end of October.

(14) *Adrastes.*—Like Madame Piccol, but inferior.

(15) *La Bien Aimee.*—Height 20 to 24 inches, fine pompon form, bright rosy lilac, flowers from July to the end of October, very fine × × × ×.

(16) *Early Festa.*—Height 34 inches, deeper and duller yellow than Golden Fleece, flowers the end of July to the end of October.

(17) *Pierre Perfiel.*—Height 30 inches, orange shaded, flowers July 20 to the end of October, Cedo Nulli form, very free bloomer.

(18) *St. Crants.*—Height 30 to 36 inches, colour and form between Salter's Early and Gentilesse, × × × ×, flowers end of July.

(19) *Nymph.*—Height 30 to 36 inches, flowers middle of August to the end of October, form good pompon, colour rosy purple, like La Bien Aimee, × × × ×, free bloomer.

(20) *Golden Luxemburg.*—Height 30 inches, colour reddish bronze, flowers early in August, Cedo Nulli form, free × × × ×.

(21) *Saint Mary.*—Height 30 inches, flowers middle of August, colour pure white, form × × ×.

(22) *Mrs. Cullingford.*—Height 36 to 40 inches, fine white, grand form, flowers middle of August to the end of October, fine second early.

(23) *Mrs. J. R. Pitcher.*—A late early.

(24) *Madame Domage.*—Height 30 inches, fine golden yellow, flowers early in August to the end of October, good form, × × ×, free bloomer.

(25) *Illustration.*—Height 20 to 30 inches, colour lilac, fine pompon form, second early.

(26) *Lyon.*—Height 3 feet, colour rosy purple, ranunculus-shaped flower, rather late, September 1.

(27) *L'Aine Condorcet.*—Height 24 to 26 inches, form fine, × × ×, largish pompon, colour primrose, flowers middle of August to the end of October, × × × ×, very extra and distinct.

(28) *Madame Desgrange.*—Height 24 inches, flowers middle of September to November, second early, white, well known, × × × ×.

(29, 30) *Yellow Madame Desgrange, G. Wermig, and Mrs. Hawkins.*—Flowers yellow, in other respects same as Madame Desgrange.

India-rubber Pavements.—When the gum obtained from *Ficus elastica* was first discovered to possess economic value, no one could have foreseen the myriad ways in which it would eventually be put to use. The most recent, perhaps, and certainly one of the most curious, is reported in the *Engineering and Mining Journal*, which says that experiments are being made in Germany with India-rubber pavements. They were first laid on the carriage-road of a bridge at Linden, Hanover, and are now being tested in Berlin and Hamburg with "extremely satisfactory results." India-rubber is said to combine the hardness of the stone pavement with the elasticity of asphalte, but does not become so slippery as asphalte.

ORCHIDS IN FLOWER.

Angræcums have for their chief representative at the present time Angræcum Sanderianum, an extremely elegant species met with in remarkably fine condition in Messrs. J. Laing and Sons' collection the other day. This species is of dwarf growth, and bears long pendulous racemes of pure white flowers. It was also very good at Upper Clapton, where A. citratum is still flowering.

Cypripediums are in strong force, and contribute liberally to the attractions of the intermediate and East Indian houses. At the present time they constitute an important and attractive feature in the nurseries of Messrs. H. Low and Co., at Upper Clapton, for large numbers of kinds are in bloom, and there are many thousands of flowers in various stages of development. In the structure devoted to the beautiful Cypripedium Elliottianum there are several forms in flower, all of which are remarkable for the rich colouring of their flowers. C. bellatulum, introduced by the firm a few years since, is now coming rapidly forward, and the flowers already developed are sufficient to produce an attractive display. As is generally known, this species has dark foliage and large white flowers, freely spotted and blotched with purple. Its near ally, C. Godefroyæ, is also in full bloom, and it is not difficult to see how far superior is the first named. C. hirsutissimum, so remarkable for the bright purple colouring of the petals, forms a good feature of itself, for the great breadths of plants are now liberally furnished with flowers. Still more numerous are the flowering examples of C. Lawrenceanum, in which we have combined finely variegated leafage and handsome flowers. Amongst the hundreds of plants now flowering are several very fine forms, and one was made special note of as bearing flowers of which the dorsal sepal was considerably above the average in size and the colouring especially rich and distinct. Other kinds flowering include C. Morganiæ, the finest perhaps of all the hybrid lady's slippers, the growth being vigorous and the flowers of the largest size and superbly coloured; C. vernixum, a distinct hybrid, with medium sized but very attractively coloured flowers; C. Argus, a handsome species, distinguished by the markings on the petals; C. Druryi, a charming species, with medium sized rich yellow flowers, which should prove of much value to the hybridist; and C. Harrisianum, a handsome hybrid, now generally known and highly appreciated; C. Boxalli, a distinct species of great beauty; and C. callosum.

Cœlogynes include a few good kinds, notably the elegant Cœlogyne Massangeana, which produces long pendulous racemes of cream-coloured flowers, and is very effective when grown in suspended baskets. C. cristata is rapidly approaching the end of its season, but there is still plenty of flowers of both the types, and its variety C. cristata Lemoniana distinguished by the lemon-coloured blotch on the labellum. C. pandurata with huge raceme of light green flowers, is a majestic beauty.

Dendrobiums constitute an extremely attractive feature, and at Upper Clapton they rank second only to the lady's slippers. In the Kew collection Dendrobium nobile nobilius is represented by a superbly-flowered specimen, and the robust and extremely beautiful D. Dalhousianum, by several fine examples. The general body of cultivators appear to be rather afraid of the last named of the two, for it is not generally met with in collections; this is much to be regretted, for its large buff-coloured flowers are decidedly handsome, and present a decided contrast to the other kinds flowering at this season of the year. Amongst other kinds flowering at Upper Clapton were D. Falconeri, an exquisitely beautiful species, not so easily grown as some other species, but the difficulties involved in its culture are by no means insurmountable. It thrives best in a basket or on a block suspended from the roof, and requires a liberal supply of water during the season of growth, and to be kept rather dry during the winter, but not so dry as is advisable in the case of many of the other kinds. The flowers are white, rose, and purple, and of comparatively large size. D. densiflorum, one of the most showy of the dwarf yellow-flowered kinds. D. thyrsiflorum, similar in character to the last-named, but the flowers have light sepals and petals, and a bright golden labellum. This effective species is also represented by several remarkably fine specimens in Mr. Smee's collection at the Grange, Wallington. D. fimbriatum oculatum, a free-growing species, bearing neat racemes of rich golden yellow flowers, having an elegantly-fringed labellum marked with a marone blotch. D. Cambridgeanum, a distinct species of moderate stature bearing yellow flowers. D. Jenkinsi and D. capillipes, two dwarf yellow-flowered species, specially adapted for growing on blocks. D. chrysotoxum, a sturdy-growing species bearing pendulous racemes of deep yellow flowers. D. suavissimum, a handsome species, having neat recemes of bright yellow flowers marked on the labellum with marone, D. Brymerianum, an elegant species with bright yellow flowers, and distinguished by the finely-fringed labellum. D. Findleyanum, a small flat-stemmed species with delicate rose-coloured flowers. D. Pierardi, a beautiful form with light flowers; and D. primulinum giganteum, a handsome variety, differing chiefly from the type in the size of its flowers.

Maxillarias are not, generally speaking, remarkable for their attractiveness. A few possess considerable beauty, and amongst these is Maxillaria luteo-alba, of which a large specimen has been in bloom at Kew for some time past. It is of neat growth with rather handsome foliage, and the flowers are large and creamy white, shaded with brown and orange.

Phalænopsis are unsurpassed in beauty by any other classes of orchids flowering at this season of the year, and when they have justice done them the East India House presents a very attractive appearance. At Upper Clapton, where they are grown in immense numbers and with exceptional success, there is an abundance of fairly developed racemes of Phalænopsis amabilis, which has large pure white flowers marked with rose on the labellum. This species is also well represented in the Burford Lodge collection, and on the 22nd inst. Sir Trevor Lawrence exhibited an especially well developed raceme. Very fine also at Upper Clapton was P. rosea, a charming little species, and P. leucorrhoda, a handsome form with slate flowers lightly tinted with rose at the base of the sepals and petals. But the most noteworthy of the phalænopsids in the collection was P. Cynthia, a supposed natural hybrid between P. Schilleriana and P. amabilis. The flowers are similar in size and form to those of the last named species, and are white suffused with rose pink, the wings of the labellum marked with rose-crimson and yellow on a pure white ground; the foliage dark green lightly marked with greyish green.

Vandas included the several forms of Vanda tricolor and V. suavis, and the East India house is now redolent with the perfume of this flower. At Upper Clapton the old and very distinct V. Roxburghi is now flowering freely. The flowers are white, purple, and yellow, and although less attractive than the other two species mentioned, are by no means wanting in beauty.

GOLDIE'S BIRTHWORT.

Aristolochia Goldieana.

Having announced the flowering of this interesting plant recently in the Royal Gardens, Kew, we have thought it advisable to again bring it under the notice of our readers, because it happens to be one of the few gigantic beauties that may be grown in any garden where the warmth of a stove is at command. The aristolochias are not in any special degree popular, and the "giants" of the vegetable kingdom are not in favour as subjects suited for cultivation in gardens generally. We should not, for example, recommend the titanic Amorphophallus, or the Rafflesia, or Welwitschia for addition to any amateur's choice collection; but the plant before us may be grown in a ten-inch pot, and will flower sufficiently often to pay for the attention it requires, and all things considered, it might be pronounced a quite "proper" plant for a stove of moderate dimensions, wherein room can be found for a few curiosities of more than average interest. As the flowers of this plant are exquisitely beautiful—far beyond the suggestion of the best figures that have appeared—and measure over a foot in diameter at the margin of the limb, it must certainly be entered in the list of "wonderful" things that one can afford to wait for a reasonable length of time, and will not soon forget when the gratification has been secured of a display of its floral capabilities. The plant so admirably flowered by Mr. Watson at Kew might, as we remarked at the time, have been crumped up into a man's hand, although the flower must rank with the largest that nature produces.

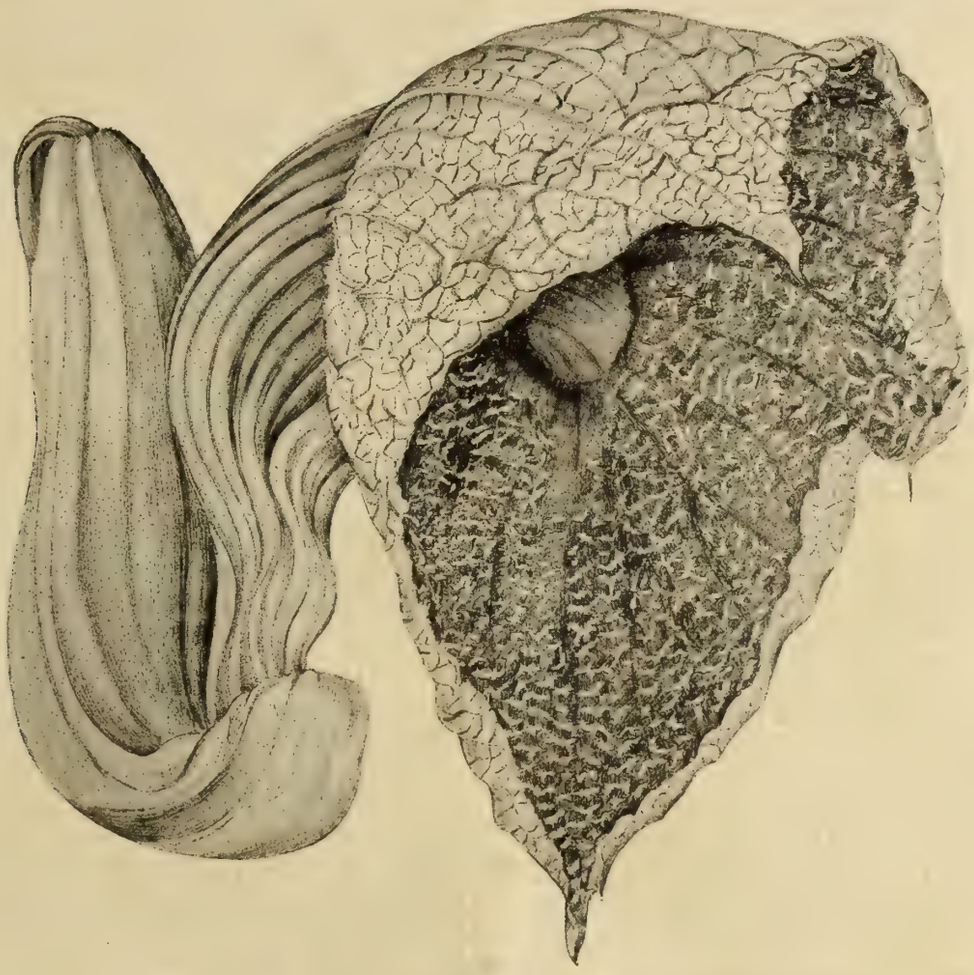


GOLDIE'S BIRTHWORT, *Aristolochia Goldieana*, showing general habit and leafage.

Giant aristolochias have been regarded as the products of South America exclusively, and one known as A. grandiflora has obtained some fame for its immense size and atrocious odour. But *Aristolochia Goldieana* is a native of Old Calabar, and was first made known in this country by means of a specimen communicated by the Rev. W. C. Thomson to Sir J. D. Hooker in 1864, soon after which it was described in the "Linnean Transactions" (v. 25, p. 185), and was named in honour of the Rev. Hugh Goldie, of the United Presbyterian Missionary Society.

The merit of first flowering the plant in Britain is due to Mr. Clarke, of the Glasgow Botanic Gardens, where, under his management, it flowered in July, 1867, and from this example was obtained the first figure—and an excellent figure it is—drawn by Mr. W. H. Fitch, and published in B.M., t. 5,672.

In some trifling particulars this aristolochia differs from other species, save two, which also are natives of West Africa, in the number of stamens, in the three-lobed perianth, and the stigmatic lobes of the column. In all its leading characters it agrees with the American species, and unfortunately it agrees with those that emit an unpleasant odour. Its beauty, as remarked above, is unique and satisfying. On the exterior the perianth is richly marked with bold longitudinal lines and connecting reticulations of rich purplish-brown on a ground of pale green. Within it is marked in a similar manner, but more profusely and with richer colours, while the interspaces, instead of being green, are of the tint now known as old gold. This beautiful coloration is enhanced by the ivory white of the curiously constricted tube, which is faintly marked with a few longitudinal lines leading up to the constriction which forms the base of the funnel of the perianth. Seen from within the funnel, or "throat" of the flower is even more beautiful than the richly painted inner side of the expanded portion of the perianth, and as this last expands to a foot in width, there is almost room enough to put one's head in to enjoy more completely the pellucid painting of the funnel. But the plant does not tempt one to do this, for in a certain way it seems to say "don't."



Flower of *Aristolochia Goldieana*, showing the interior markings and opening of the funnel.

Mr. C. Beck has been engaged as head gardener at Harpsden Court, Henley-on-Thames, the residence of R. Raikes, Esq.

Mr. Thomas Copper has been engaged as head gardener to Sir Joseph Crosland, Royds Wood, Huddersfield.

WORK FOR THE BEE-KEEPER IN MAY.

The month of May is a merry one for the bee-keeper as nothing can please him better than to see bees tumbling pell-mell in and out of the hives and so busy that there does not seem time to keep out of the way of each other. When this is seen, as it may be seen by a glance at the entrance of really prosperous colonies, the bee-keeper need have no anxiety about the prosperity of any such as described; but where few bees are passing in and out it is a pretty sure sign that all is not well. Where a number of colonies of bees are kept there are sure to be a few such as these—or say one at least in every apiary. The most common cause of this is, in my opinion, their having faulty queens at their head. Where this is known to be the case, or where they do not make satisfactory progress with the advance of the season and stimulation combined, note should be made of such, and when manipulating and arranging the hives at the swarming season the queen should be removed and a swarm added to the hive; or the weak stock may be added to another colony from which it is intended to extract honey. Although bees will remove a faulty queen and rear another in her place, I am of opinion they are slow to take such steps and more often the colony dwindles down until it is unable to defend itself, when neighbouring bees soon put an end to them by taking what little store they had and in the warfare the old queen generally comes to grief. It is always a good plan to winter a fair number of colonies, and some even go so far as to have a greater number to stand over the winter than they allow to stand separate in the summer months, and keep all concentrated to the fullest extent for honey gathering and depend upon driven bees and other sources for making up their extras in the autumn. One cottager near me who is exceptionally successful as regards his stock of bees and his surplus honey, always winters a goodly number of colonies, and instead of hiving each swarm separately, he only hives a few of the best early ones or first swarms, and the others he empties into any of the hives he thinks stand most in need of bees, leaving the queens to fight the matter out amongst themselves. I think where this course is followed one is less likely to have faulty queens at the head of colonies as the best one wins in the conflict.

Swarming.—Probably by the end of the month this will be common, but where the colonies of bees are very forward and trays of sections are placed over them or room given the busy workers by other

means, the swarming impulse will be delayed; but do not be tempted to add to the room in the hive until they are built up to a good standard—say from eight to ten frames and crowded with bees. But in most instances bees will want the assistance of a little stimulation for some days to come, for it is the very worst practice that can be followed to get the bees on for a certain time by assisting them with syrup and then withholding it just at the time it is most needed, viz: when the hive is crowded with brood and before the main flow of honey comes in. It is well where early swarms do come off to feed for a few days after hiving them to give them a start in their new home. Many were the plans advised by teachers of bee-keeping some few years ago for the prevention of swarming, such as overhauling the frames in each hive every so many days to cut out the queen cells. This practice I never adopted and would not advise others to follow. Swarming being quite natural to the bees, they should be allowed to follow the natural course to some extent. Where high trees surround the apiary, swarms are liable to locate themselves rather high and where it becomes dangerous to go up to remove them; but where nothing but low trees and bushes are very near the apiary the hiving of swarms does not give much trouble, and where the bee-keeper has his bees near high trees it would be well for him, where possible, to locate them farther off.

So far the season has been propitious for bee-keepers, and never do we remember more favourable accounts of the manner in which the bees came through the winter than has been the case this spring. We may now confidently look forward to a prosperous season if we are only favoured with sunshine during the months of June and July.

APIARIST.

FRUIT PESTS COMMITTEE.

Interesting Experiments at Toddington.

Through the kindness of Captain Corbett a reporter of the *Evesham Standard* was invited to accompany the Fruit Pests Committee to Toddington. May Day, as everyone knows, was a glorious one, and the pretty drive along the base of the Cotswolds, glorified by the bright sunshine which caused the lark to sing his happiest carol and the cuckoo to constantly repeat his mellow notes, was in itself a great pleasure. The committee met at Capt. Corbett's house, those present being:—Messrs. W. Gibbon (chairman), J. Masters (secretary), J. Swift (Manchester), Pritchard, F. Hooper, E. Grove, T. E. Doeg, J. C. Hiam (Astwood Bank), and H. Masters, jun. They were received and welcomed by Captain Corbett, Mr. Wise, and Mr. Manson, who has been very active in making the experiments at Toddington. A move was almost immediately made for the gardens. Passing herds of deer grazing in the fresh green park a beautiful view of the mansion at the end of long rows of firs was obtained. A little way further on we entered the gardens where all fruits and most flowers are grown, and the air was filled with sweet odours. We did not proceed far before arriving at a long line of young plum trees which had been treated with various insecticides. On the great majority Paris green paste and London purple had been tried. The committee were first shown a number of trees which had been syringed with a mixture of London purple fluid in the proportion of eight gallons of fluid to 40 gallons of water and Paris green in the proportion of eight ounces to 40 gallons of water. This was not really a fair test, as the two should not be mixed. Many dead caterpillars were found, but the leaves were found to be scorched, and young caterpillars which had probably sprung into existence since the application were living. In the very act of eating the leaves the caterpillar provides a certain amount of protection for itself. It extracts the sap from one side and the leaf then curls up and surrounds the grub in a close covering, which shields it from the spray of fluid. Insecticides therefore, which only kill by contact with the caterpillar are of little avail to destroy the grub thus protected, and it is necessary to impregnate the leaves with certain fluids, the consumption of which will be fatal. Both Paris green and London purple are said to have this effect. Trees syringed with Paris green in the proportion of eight ounces to 40 gallons of water were shown. A good many caterpillars were found to have escaped, and there were traces of the fluid on foliage. Many of the caterpillars, however, did not seem in the best of health. They had an unhealthy yellow look, and appeared, according to one member of the committee, to be suffering from a severe attack of influenza. Corpses also were numerous. Captain Corbett remarked that so far it seemed that the caterpillar was less numerous this year than it was in the last two seasons. He pointed out that this solution was put on before all the buds were out, and the caterpillars inside did not come under the influence of it. It was thought that the live grubs seen would be incapable of doing much harm, but it was explained that another application would be necessary. The unhealthy grubs which lived would no doubt succumb to the effect of eating the impregnated leaves. There had been, however, a great growth of leaves since the syringing operations, and thus fresh food was provided for the pest. The opinion was expressed that the syringing once a week was desirable. The application appeared to have done little real harm to the trees. Applications of Paris green two weeks ago in the proportion of two ounces to 40 gallons, were found to have had satisfactory results. The foliage was not damaged, and the caterpillar which then flourished was no more. London purple applied in the proportion of one part to twenty parts of water was found to have killed a certain number of the grubs, and those which survived did not possess the healthy green colour. It was seen that three ounces of Paris green with forty gallons of water had killed a considerable number, but it was not so effectual as the proportion of one ounce to ten gallons of water. Mr. Masters said he had found very satisfactory the proportion used on the next lot of trees, which was one ounce to eight gallons, but Captain Corbett said they were of opinion that one ounce to ten gallons of water was the best. Mr. Masters said he had given a stronger application without damage to the trees. The strongest application of Paris green used here was in the proportion of one ounce to five gallons of water, and the trees did not appear to be much damaged, while many grubs were found, in the expressive language of one gentleman, as dead as mutton. Notwithstanding the strength of this application, however, which, no doubt, has an injurious effect upon the trees, some unhealthy looking grubs ensconced in the cosy habitation of a curled leaf were found to be yet clinging to life. In some cases the blossom was seen to be damaged by the application, and this was probably where some of it dropped in a semi-solid condition. That is a little drawback to the use of powder. Some French pumps are used at Toddington, and it is found that if more than four ounces of the powder is put into the tin there is a considerable sediment at the bottom. After an exhaustive examination of the plum-trees, and the placing of many grubs both those living and those who have departed hence under the microscope, a move was made to another ground, where Paris green, used on apple and pear trees in the proportion of two and four ounces to 40 gallons of water, was shown. Here again both living and dead grubs were discovered. The leaves appeared to be scorched, and the blossom in some cases affected, but this was ascribed to the frost. Passing to another ground, a pear tree upon which a solution of two ounces Paris green to 40 gallons of water had been tried twice within four days, was seen. The caterpillar was found slaughtered in considerable numbers, but another application was advocated. Mr. Masters, however, advised that this should not be carried out until the cup of the blossom had fallen. The solution of two ounces of Paris green in 40 gallons of water was found to be too weak. Two rows of apple trees were shown which had been sprinkled with a solution of a quarter of a pint of cresyline to three gallons of water. Apple trees are more easily affected than the plum, and while this strong concoction had no doubt made the grub scarce, appearances indicated that the trees had also suffered. One pint of sulphate of ammonia to twelve pints of water had been used with better effect, though the grubs had not all been killed. There were four rows of apple trees on which a solution of four ounces of Paris green to 40 gallons of water had been used. This again was rather too strong, the leaves being scorched considerably. Other apple trees similarly treated, however, appeared to be in a rather better state. A quarter of an ounce of Persian mixture in three gallons of water was used without damage to the trees, while there was evidence of some of the grubs having suffered. This Persian mixture appears to be composed in a great measure of alum, of which Mr. Doeg is the advocate. Several trees had been treated with Mr. Doeg's preparation of alum in the proportion of half an ounce to three gallons of water. This dose, however, is found to be too weak. Alum rapidly despatches the caterpillars it comes across, but it does not affect the leaves so as to cause death to the consumers. It dries up the grub skin. The effect of the alum could not be properly seen for the reason before mentioned that the solution was too weak. While at this spot a man appeared armed with a French pump. These instruments have been used at Toddington for some time, but the one shown was only received the day before, and is a great improvement on the old ones. They are used on the vines in France. A tin vessel capable of holding some four or five gallons is attached to the man's back, and from this a tube issues on one side, and a pumping arrangement on the other. A beautiful spray is sent up with great force. It was stated that the fluid is so nicely distributed that upwards of half an hour is occupied in emptying the vessel. The instrument, which it was stated only cost a little over 30s-, was generally admired. Mr. Swift favours a machine called a Stott, which, he says, throws a spray like a Scotch mist to a great distance. After the working of the French pump had been noticed a move was made through some of the splendid glass houses, of which there are acres at Toddington. Flowers of every description were noticed, and we passed a large house full of luscious ripe strawberries, which looked very tempting. We passed through one of the houses full of fine tomatos yet green. The temperature was like a baker's oven, and it was a relief to find oneself in the fresh air again examining the grub once more. Other trees washed with Mr. Doeg's preparation of alum were shown, but here again the solution was too weak. An adjournment was made to Captain Corbett's hospitable roof, where a nice little lunch was enjoyed. A meeting followed, and afterwards further trees were examined, and an important experiment was made with a preparation of cresyline, one part of the latter being mixed with 100 parts of water. This was applied to the caterpillar, which it killed in five minutes.—From the *Evesham Standard.*

RAILWAY RATES AND CARRIAGE OF PLANTS.

At recent sittings of the Board of Trade Commission on Railway Rates evidence has been taken in respect of classification of minerals and manufactures of many kinds. At the meeting on Saturday last before Lord Balfour of Burleigh and Mr. Courtenay Boyle, C.B., the question was raised about the classification of plants.

On the question of "plants and shrubs in baskets, mats, pots, or tubs," Mr. Smith-Carrington, of Worcester, called attention to the fact that many plants in pots were exceedingly cheap, such as geraniums, and in nearly every order received by the grower they had to give a large quantity of valuable stock as compensation for the charge for carriage. The pots were carefully packed, and it was seldom that any damage occurred to them. Plants were sent very long distances. Large consignments went to Canada and the United States. At present a great many of the consignments would come under the head of smalls.

Mr. William Paul remarked that plants in pots comprised vines, roses, stove, greenhouse, bedding, and climbing plants. Vines in pots ranged from 2s. 6d. to 7s. each. With the exception of these and of exhibition plants, which were few in comparison with the bulk of the trade, all the goods contained under this description were very cheap, and they were conveyed in great quantities. During thirty years he had sent hundreds of packages away, and had not received as much as £5 for damage. A truck-load of shrubs would contain 400 or 500, and the average price for a truck-load would be £15. In his opinion the retention of trees, plants, and shrubs in the classes proposed by the railway companies would materially injure the trade and not benefit the companies.

Mr. Light (South-Eastern) defended the classification, in regard to which he said it was not proposed to alter the existing classification, which covered the valuable plants as well as those of a cheaper kind. So far as claims were concerned, it was the consignee, and not the consignor, who made the demand.

"The sago palm bears fruit but once. Its load of nuts is its final effort; it has fulfilled its allotted task in the great round of nature, and there remains nothing for it but to die. The nuts become ripe, and are strewn in thousands around the tree, until the fruit-stalk stands up by itself empty and bare. The great branches turn brown and drop one by one to the ground. Inside the trunk the work of decay is going on, until what at one time was a mass of white sago and pith becomes nothing but a collection of rotten brown fibres. One day the tradewind blows perhaps stronger than usual, and the leafless column of the trunk falls with a crash, destroying in its fall many of the young palms that are already springing from the nuts scattered some months before."—Wood's *Naturalist among the Head Hunters.*

Notes of Observation.

FUCHSIA, COUNTESS OF ABERDEEN.

This very distinct variety sent out by the Messrs. James Cocker and Sons, of Aberdeen, is pre-eminently the greatest acquisition that has been introduced for many years past, no firm having had the like good fortune to secure and distribute so great and interesting a novelty. From the days anterior to the introduction of Fuchsia fulgens I have been an ardent admirer of this graceful tribe, and have been familiar with almost every kind raised and sent out during that long period, and moreover have taken some interest and pains in the raising of novelties. Not one has given me much more pleasure than the one under notice, because it possesses all the essential characteristics combined to render it interesting to raisers and florists and acceptable to the million.

It is free in growth, and in the production of its charming medium-sized flowers of the purest white when not too much exposed to the extreme influences of the sun's rays and the external atmosphere. In fact no plant pays better than this when attention is given to shading when absolutely necessary. When her ladyship is wantonly exposed to rude treatment her neat pearly wax-like flowers become suffused with carmine, which is a fault, and in truth destroys the intrinsic beauty of the flowers. This can be readily obviated with judicious and liberal treatment. It may be said to be almost a perpetual bloomer, and may be had in flower both early and late in the season. In habit it is dwarf and robust, and makes an excellent decorative pot plant. The lovely white flowers, contrasted by a beautiful green and ample foliage, renders the whole at once highly effective. So floriferous is the plant that when only a few inches from the rooted cutting the flowers make their appearance. But there is no difficulty in growing this variety into a really handsome specimen, and lovers of the fuchsia will do well (if they do not already possess it) to secure a plant as being well worthy of a place in their collection. George Fry.

Lewisham.

GENTIANELLA.

Never before have I seen Gentiana acanlis flowering so well as at the present time on the rockery. The intensity of the blue of the flowers of this plant I think cannot be equalled by any other subject in the whole garden. Where many fail to grow it is, I fancy, through the continual interference with the roots. When once well established, leave it alone, unless absolute necessity demands its removal. Such is my advice, based on much experience and observation. Even under the best circumstances growth is but slow. A loamy soil intermixed with small pieces of limestone or old mortar, about the size of walnuts, will grow this plant if a position on the rockery where it will obtain abundance of sun light is given it. During growth frequent soakings of the soil about its roots should be provided, as it loves moisture at that time. Even during very hot and dry weather during May and June when the growth is being made I afford some shade to the plants by sticking in a few laurel branches, which keeps the roots rather cooler than they would be under ordinary circumstances. The result is, that growth is better, and consequently, not only the number of flowers on each plant is increased, but they are considerably larger and of course more showy. E. M.

HYBRID BROOM, "PARCEL GILT."

A shoot cut from a flowering broom has been sent to me with a desire that I will bestow on it a name. It is not a specific form, but a hybrid, and it appears to me to be identical with one that has been flowering for some time in a pair of circular beds near the walk that connects the Palm house with the Pagoda Vista. This beauty is the result of a cross between the common white Portugal broom Spartium album and S. purgans, the first having white flowers, the second pale yellow. The hybrid is a delicate mixture of silver and gold, which at a reasonable distance presents a most delicious appearance that may be described as golden cream. I know not the name the Kew plant bears, but as my correspondent asks for a name and this is but a garden plant for which a Latin name is not needed, I propose to call it the "Parcel Gilt" broom. It is one of the sweetest flowers of the season. S. H.

CHIONODOXAS.

The chionodoxas that were planted early in the autumn flowered under such favourable conditions that no better opportunity could well have been had for instituting comparisons between them. Later plantings were caught by the severe frost early in March, and although very attractive were not equal to those which preceded them. Chionodoxa Luciliæ, as so well known, is extremely beautiful, but to appreciate the beauty of the flowers it is necessary to have them immediately under the eye. C. Tmolusensis is according to my experience simply C. Luciliæ. In this matter my experience does not appear to be singular, for at the March exhibition of the Royal Botanic Society, flowers were shown under the name of the more recently introduced C. sardensis. A few years since I purchased several thousand imported bulbs of C. Luciliæ, but they included a considerable proportion of bulbs of C. sardensis. By carefully marking the plants when in bloom, I have succeeded in separating them, and the clumps of C. sardensis produce much the best effect, and one of the first to attract attention. C. Luciliæ gigantea is in fine form, with flowers much larger than those of the type, and they are of a bright azure blue. C. Cretensis is a white flowered form not without interest, but not sufficiently beautiful to justify the expectation of its becoming popular, even with those who take a special interest in hardy bulbs. Enterprising Amateur.

PINKS IN POTS.

The old dark variety, a lighter coloured one, and Mrs. Sinkins have flowered well with us during the month of April. They were much appreciated as growing in the pots, and perhaps more admired when made into button hole bouquets with their own foliage as a "backing" of greenery. The perfume from them is so delicious at this time of the year that no wonder the order is to grow more plants another year. There are three ways of procuring a stock of plants for the purpose of pot culture. First striking the cuttings in a cold frame in June, potting them from the frame into small pots, afterwards shifting them into four-inch ones. Grow them in cold frames for a while until well rooted, when the lights may be removed altogether. The second plan is to layer the strongest grass towards the end of summer, potting the roots when ready. The third method is to dig up one year old plants in the month of August, place them in pots according to their size, avoiding those which are larger than the roots can be comfortably got into, use fairly good soil and give them the protection of a frame for a time as pinks are impatient of too much moisture about the roots. They may be wintered in a cool greenhouse where they will flower at the time named, or a cold frame will suffice for the winter quarters. A gentle heat will bring them on faster, but is oftentimes productive of green fly which is a pest pinks cannot endure. M.

ALPINE BARRENWORT.

Epimedium Alpinum is a capital subject for a moist nook in the rockery or near a lake or small pond. Planted among stones close to the waters' edge, the pale yellow flowers in early spring before the leaves are developed are attractive. Afterwards the deeply veined leaves with their changing colours are very pretty and make capital greenery for mixing with cut flowers, and being of a firm nature when thoroughly developed, last a long time in a fresh condition. The leaf stalks are generally quite a foot long, thus fitting them better for use in large vases as well as small ones. E. M.

PERUVIAN LILIES.

The finest clumps of Alstromerias I have seen are growing in a border at each side of the path leading to a large span-roofed greenhouse in the gardens at Gunnersbury. The borders in question are raised at the back and slope down to the front in a southern aspect, just the spot where these flowers would luxuriate I should say. Sometimes we come across nice patches of one variety or another and occasionally meet with creditable bunches of cut flowers in herbaceous collections at exhibitions, but as garden decorative subjects we do not see nearly enough. Under favourable conditions—such as soil and position, these plants succeed fully. A sunny aspect, inclined to be dry at the base, the soil a mixture of peat, leaf soil, loam, and sand, will grow them to perfection. S.

THE FOAM FLOWER.

No more showy or suitable plant for the rockery or the front of the herbaceous border for flowering during May could be imagined than Tiarella cordifolia. The markings on the surface of the leaves are very showy in themselves, but thickly covered with the stout flower spikes so feathery-looking that a plant of great beauty is obtained. It is readily increased by division, many stout sucker-like growths are pushed up some distance from the clumps. If these be carefully taken up now with the roots attached a colony can soon be secured. As to the kind of soil required, it will flourish in almost any soil, but for preference loam and leaf soil, two parts of the former to one of the latter, will answer capitally. E. M.

DECIDUOUS MAGNOLIAS.

The order of flowering as I have observed it differs from that given in the note of E. M., at page 269. The first to appear is M. conspicua, then we have M. Soulangeana, a grand thing that I certainly consider superior to conspicua. As this goes out of flower M. purpurea puts forth its rosy purple flowers, a grand contribution to the glories of the spring. Probably E. M., takes his order from trees that are in different localities. I have them all in the same aspect and soil and the order every year, without variation is as stated above. R.

EVERGREEN CANDYTUFT.

The Evergreen Candytuft, Iberis sempervirens, is now flowering freely on the rockery, where it quickly establishes itself after planting, which is best done by raising a stock from cuttings, dibbled into a cold frame in September and planted out the following April. The flower stems should be removed then to induce the plants to make a better growth the same season, with the result of many more flowers the next year than if the plants were hampered with flower-spikes the first season. Planted in a mass this Iberis is effective in a sunny spot on the rockery, or as an edging to the paths in the kitchen garden or where such like edgings are required the one in question answers well. E. M.

MYRTLE-LEAVED KALMIA.

How delightful now is the bloom of *Kalmia myrtifolia*, with its dwarf, compact growth, and fine head of gauzy pink flowers. Our peat beds are all faced with the dwarfer kinds of ericaceous plants, and we get a lot of beauty in this way that is excluded from gardens generally. The rhododendrons of the exhibition order, with their huge trusses of resplendent flowers, are oppressive sometimes, and they certainly push out of many gardens less showy but more worthy subjects. Our groups of rhododendrons are really the more enjoyable by the invitations of the beauties in the front of them—the kalmias, andromedas, ledums, pernettias, ericas, and the like. These things make a "garden," the great rhododendrons may be said to make a "flower show." R.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

STOVE PLANTS IN BLOOM.—Amaryllis; Allamanda grandiflora; Clerodendrum Balfouri; Franciscea calycina major; Gloxinias; Ixora coccinea superba, Ixora Prince of Orange; Medinilla magnifica; Pentas carnea; Rhynchospermum jasminoides; Toxicophlea spectabilis; Stephanotis floribunda.

THE HOUSE.

FERNS IN CASES are growing freely and will require rather liberal supplies of water. It is, however, necessary to be very careful in this matter, for if a great quantity of water is given at one time most of it will run down amongst the drainage without wetting the general body of the soil, and cause sourness without any corresponding benefit. Supposing the soil of a fern case to be rather dry, we should advise the giving of moderate supplies of water for three or four days in succession. In the first place, the ferns and the soil should be well wetted by means of a syringe; then water may be poured into the crowns of the more robust ferns and allowed to spread and diffuse, but the quantity should not be sufficient to cause the affair to become waterlogged. Two or three such operations in the course of a week will result in thoroughly moistening the whole body of soil, after which a smallish supply about once a week will suffice until September, when watering should cease or be practised with extra caution. It will be well to shut up the cases after each watering for an hour or so, after which a little air should be given. It is a good rule now to admit a little air to the fern cases night and day, except where the filmy ferns are growing, and they need so little that we may almost say the less they have the better. However, we do give a little air all through the summer to our hymenophyllums and trichomanes, and find the growth to be rich and strong; but then we never forget them, as many people do. Where forgetfulness is practised it is perhaps a good rule never to give filmy ferns any air at all.

CONSERVATORY AND GREENHOUSE.

CONSERVATORY will now require embellishing with a fresh stock of plants in flower, as many of the climbers and other large subjects will soon be past their best, and tree pæonies, forced roses, and deutzias will be gone. Celosia pyramidalis, stocks, balsams, and globe amaranthus should be pushed forward; fuchsias and pelargoniums will of course be coming on well, and herbaceous calceolarias ought now to be making a grand show. It is necessary to have plenty of these things, because of the demand for cut flowers at the season when lawn tennis parties are in vogue, and a good supply will allow of frequent changes in the conservatory, where, if anywhere, variety and change are charming. Permanent occupants of the conservatory will now be growing with vigour, and must have plenty of water. Use shading sufficient to prevent scorching, but do not treat the sunshine as an enemy.

HARD-WOODED PLANTS will now require plenty of air, and specimen plants in flower must have shade. Allow nothing to form seed, unless seed be especially desired. Cut back specimens that are out of shape, and keep them rather close afterwards, to obtain good breaks, so as to bring them into proper shape, and get the wood ripened for next year's bloom. Where plants are crowded, many may be removed to frames, so as to allow of a free circulation of air.

FUCHSIAS AND PETUNIAS make beautiful specimens for pot blooming in the autumn if struck now and kept regularly stopped to July. They should not have a high temperature, fuchsias especially, which like shade and moisture.

CINERARIAS done blooming should be cut down and planted in rich soil, in a cold frame, to furnish offsets for potting.

CAMELLIAS AND AZALEAS that have made their young shoots should have a little more ventilation to prepare them to go in the open air next month to ripen their wood.

PELARGONIUMS out of bloom to be cut in, and allowed to break before repotting them, and the syringe and fumigator kept in use as may be necessary, to destroy red spider and green fly.

FIRE-HEAT should be dispensed with as much as possible, preparatory to clearing and cleaning out the house.

SHIFT, STOP, AND TIE out all soft-wooded plants that are advancing in growth; but if required to bloom shortly they must not be disturbed, merely kept in shape, and have plenty of water with free ventilation.

FORCING AND FRUIT HOUSES.

PEACHES AND NECTARINES ripening to have as much air night and day as can be given. Keep the atmosphere pretty dry, but the border must be moist while the trees are still growing. As soon as the trees show that they have made sufficient growth, assist them to ripen the wood by letting the border get rather dry, and the more the sun roasts them the better. By "rather dry" we do not mean dust-dry, for that would be most injurious.

PINES must be shaded lightly on bright days, and the soil about them kept regularly moist, and liquid manure used frequently. Suckers should be removed as soon as they make their appearance, except so far as they may be required for stock. Young pines for winter fruiting should be in a rather light soil, to prevent excess of moisture from stagnating about them. Pines for fruiting in autumn to have a bottom heat of 90 deg. by day, and 75 deg. by night, wish abundance of moisture.

VINERY.—Vines that have their roots in inside borders should be liberally supplied with water, and the shoots should be tied in in good time. Vines in pots will require frequent supplies of liquid manure, and stopping of laterals must be attended to to regulate the growth. Ripe spider must be kept in check by the use of sulphur, and the best method of using it is to paint the pipes with a mixture of sulphur, lime, soot, and water.

FLOWER GARDEN AND PLEASURE GROUNDS.

ANNUALS are held in light estimation, because people do not really cultivate them. Thin out the patches and top the branching kinds, and they will bloom so vigorously as to be altogether unlike the crowded spindling things on which people vent their abuse. Quick-flowering annuals sown in shady places at the end of the month or early in June will come into flower for succession to those that are exhausted, and prove of great service.

CHRYSANTHEMUMS lately struck to be potted off and have a little bottom heat for a week or ten days, and after that to be plunged in beds of coal-ashes or cocoa-nut fibre waste. Cuttings put in now will make shrubby plants by autumn if well treated. When shifted to 60's let them have a firm loamy soil, plenty of turf and well-rotted dung, abundance of water overhead as well as at the root, and exposure to all weathers. Chrysanthemums make nice plants for ordinary purposes from May cuttings, and better without than with bottom heat.

DAHLIAS should not be put out till quite strong, unless to be protected every night with inverted flower pots, each pot to be covered with a mat. Dahlias should be potted in rich stuff to ensure strong plants before planting out, and be gradually hardened.

KITCHEN GARDEN AND FRAME GROUND.

BEET of the first sowing to be thinned to one foot apart as soon as large enough. Time enough now to sow for a crop of moderate-sized roots to store for winter.

CAPSICUMS AND TOMATOS may be turned out on warm borders towards the end of the month, but there will be nothing gained by over-haste. Tomatos planted against south walls should be covered every night till the first week in June.

CELERY.—In pricking out, choose a hard bottom for the bed, on which lay four inches of rotten dung and two inches of light soil. Handle the plants tenderly, water lightly and regularly, and keep the lights over till they look brisk and growing. They will lift from such a bed with vigorous roots, and at the first planting out choose the forwardest plants, and let the others remain for the next set of trenches.

POTATOS.—How between the rows as soon as the plants appear, and hoe frequently irrespective of weeds and moulding up.

Sow beans and peas for succession, savoy for late crop. Cabbage, broccoli, kale, beet-root, kidney beans, both runners and dwarfs, lettuces, spinach, turnips, cucumbers, and marrows may now be sown in the open ground for a late supply.

VILLA FARM.

STOCKS of bees that have not yet swarmed, whether strong or weak, should during periods of cold and wet weather receive liberal supplies of artificial food, because if a spell of cold and wet succeeds a few weeks of fine weather the young brood will suffer severely, and in consequence the swarms will be much later than they otherwise would have been, and be also decidedly weaker. The supply of food should, in fact, be not only continuous, but liberal, for the bees are more active and will consume the syrup at a comparatively rapid rate. For feeding at this season of the year the syrup should be somewhat thinner than for winter feeding, but it must not be so thin as is frequently advised, because of the danger of its flowing more rapidly than the bees can consume it and injuring them. The best artificial food for use at the present time is made by boiling three pounds of the best loaf sugar in a quart of water, and it may be added that if given to the bees in bottles of medium size, rather than in large ones, the supply will be more regular, provided of course precautions are taken to refill the bottles as soon as it is necessary. When the bottles are of large size and about half full an increase of temperature will, by causing an expansion of air in the upper half, cause the syrup to flow much more rapidly than it should do, more especially when the syrup is prepared at the rate of one pound of sugar to a pint of water. Nitrogenous food is not less necessary than that of a carbonaceous character for the healthy existence of the bees, and skilled apiarians in England, on the Continent, and in America, are now generally agreed that to supply the bees with artificial pollen is as important as to give them syrup. There is not perfect unity of opinion as to what constitutes the best artificial pollen, and the American bee-keepers have a preference for unbolted rye flower, and the English apiarians consider pea flour to be the most suitable substitute for pollen. and it may be assumed that either may be employed with more or less success. There is not so much difficulty in giving the bees artificial pollen as in the late autumn months and in the winter, as they are now active and leave the hive freely, even if they cannot do much in harvesting honey. First of all should be provided one or more shallow pans of moderate diameter, and in these should be placed, to a depth of an inch or so, either the unbolted rye flour or pea flour, whichever may be the most readily procurable; but as the latter is readily procurable in packets and tins from most grocers it will generally be found the most convenient. To afford a firm foothold for the bees sprinkle a thin layer of finely cut chaff over the surface, and place the pans near the hives and in a position where the rains cannot reach them, for the flour must be kept perfectly dry. Should the bees not take to the artificial pollen at first, a small piece of old honeycomb laid on the top will be a sufficient source of attraction, and when the bees have once found out the flour they will continue to visit it until exhausted.

THE SEWAGE DIFFICULTY.

ALL solid refuse should be kept as dry as possible, and the fluids only enter the drains. If half the ingenuity and money spent upon disinfectants and sewerage farms had been used to carry out this plan, our rivers would be clean and pleasant, our farmers and gardeners would be rearing good crops of the finest and healthiest of the fruits of the earth such as no artificial manure ever produced, which seems to act upon the crops for which it is used much as drugs on the human system, usually leaving some deadly malady behind that shows itself sooner or later. Throwing solid refuse into water is wicked waste, and has brought the usual penalty—want. The earth is the best chemist and disinfectant in the world, and actually wants all waste matter returned to it to continue fertile; but in such a climate as ours this solid matter must not be flooded with fifty times its weight of water if it is to do permanent good. Why is it that suburban gardens, as a rule, produce nothing but sickly, diseased trees and plants? Mostly because all the refuse is swept up and carted away until the ground is so starved that nothing can live; whereas if all the refuse of every description was buried, the land would require nothing else to keep it productive, and the results would much astonish amateur gardeners. Where there is no garden, the dust and ashes now collected and the solid refuse should be taken away, and a valuable manure would thus be obtained, instead of the almost useless rubbish removed at a great and increasing expense to the ratepayers, and which has now to be got rid of at a loss instead of a profit. A correspondent of the *Times* says that the earth is losing its primal fertility, excepting trees and grass, which fairly balance their fertility expenditure, and he tries to show that we shall ultimately make the land so poor that it will not produce any crop at all, and that when artificial manures are exhausted we have no alternative but to starve. But I venture to hope that long before that event happens we shall have grasped the idea that, provided we return to the earth all the waste matters made on it in a natural and sensible way, that we can extend the time indefinitely before such exhaustion taken place, as it is only by the wilful waste that is now going on, that such exhaustion could happen, and by the time he mentions the very seas would be thick mud under the present system, unless we were all killed off by sewer gas.—*City Press.*

Exhibitions and Meetings.

CRYSTAL PALACE SUMMER EXHIBITION, May 10.

The summer exhibition at the Crystal Palace on the above date evinced a decided falling off as compared with the corresponding shows held at Sydenham in previous years. Not only were the entries comparatively few in number, but many of the collections were considerably below the average in point of quality. The plants were arranged in the north and south naves and in the central transept, in accordance with the practice which has obtained for some years past, but the exhibition would have appeared to greater advantage had less space been devoted to it.

Stove and Greenhouse Plants in flower and remarkable for the beauty of their leafage were sparingly contributed. Mr. J. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, Rugeley, was the only exhibitor in the class for nine plants in bloom, and was awarded the first prize, his finest specimens being those of Erica profusa and Tremandra ericæfolia. Mr. Chapman was first also for six plants in bloom, the specimens being superior to those forming the collection of nine. Mr. A. Offer, gardener to J. Warren, Esq., Handcross Park, Crawley, Sussex, was a capital second, with a collection in which Pimelia decussata was seen at its best. Mr. J. Hudd, gardener to F. W. Prior, Esq., Gordon House, Blackheath, was third. Mr. Chapman was first for a single specimen stove plant with Ixora Dixiana, and for a specimen greenhouse plant. Mr. C. Turner, Slough, was first with a well-bloomed azalea, and Mr. Chapman was second with a densely-flowered example of Tremandra ericæfolia. Azaleas made a bright display of colour. For eighteen Mr. C. Turner was first with neat examples, amongst them being Baron de Rothschild, an excellent double purple variety; Bernhard Andreas alba, a valuable double white; and Neptune, bright scarlet. The same exhibitor was first also for nine, with rather thinly-flowered specimens of medium size, the best example being that of Mdlle. Marie Lefebvre, a pure white variety of great excellence. Especially good were the specimens staged in the class for six azaleas by Mr. Offer, to whom the first prize was awarded. The plants were of medium size and densely bloomed; the flowers finely developed, and fresh and bright in colour.

The competition was by no means spirited in the classes for ornamental leaved plants, nevertheless a few good collections appeared. Mr. A. Offer was first for nine with a collection in which Croton Evansianum and C. Warreni were particularly well represented. The premier award in the class for six was made in favour of Mr. J. Ford, gardener to Sir C. Piggott, Bart., Wexham Park, Slough, who had an excellent collection; and Mr. A. Offer and Mr. J. Hudd were second and third respectively. There was a good competition in the class for six crotons, and the post of honour was occupied by Mr. Offer with dwarf, finely-coloured specimens; Mr. J. R. Bird, gardener to J. A. Causton, Esq., Lodgemore, West Dulwich, was a good second with specimens of large size, but wanting in colour. Mr. Bird was first for nine dracænas; and Mr. J. Lambert, gardener to H. W. Segelcke, Esq, Elfindale Lodge, Herne Hill, was second; and Mr. J. Hudd third. Mr. Offer and Mr. Bird were first and second for six. Caladiums were remarkably good, and Messrs. J. Laing and Son, Forest Hill, were first with a magnificent collection, the whole of the specimens being of large size, perfect in contour, and bright in colour. The varieties were Souvenir de Madame Bernard, Triomphe de l'Exposition, Comtesse de Condeixa, Candidum, Mithridate, L'Automne, Clio, Ferdinand de Lesseps, and Leopold Robert, all of which are of a high degree of excellence. Mr. J. Day, gardener to W. S. Gover, Esq., Casino House, Herne Hill, was second with admirably grown examples.

Orchids were few in number, but they included some fairly well bloomed specimens. Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, was the only exhibitor in the class for nine, and had the injustice done him of being awarded the second prize. The collection contained large well-bloomed specimens of Cypripedium villosum, Dendrobium nobile, Cattleya Lawrenceana, and other well-known kinds. Mr. Douglas was first for six with fairly good examples. Single specimens were, on the whole, rather poor, and it is not necessary to make any special reference to them.

Ferns included a few good collections, the best being that of nine from Mr. A. Offer, who was first in the class. The collection consisted chiefly of arborescent species, and comprised Dicksonia squarrosa, Alsophila Australis, A. excelsa, and Cyathea dealbata. The prizetakers for six were Mr. Ford, Mr. Hudd, and Mr. J. Douglas, the awards being made in the order of their names.

Pelargoniums and Herbaceous Calceolarias were well represented, and produced an effective display. Mr. D. Phillips, Langley Broom, Slough, was successful in occupying the post of honour in the class for nine show varieties with large finely flowered specimens of Kingston Beauty, Lady Isabel, Prince Leopold, and others equally well known. Mr. C. Turner was a good second. The exhibitor last-named had the premier award made in his favour in the class for nine fancies, and also in that for eighteen show and decorative varieties in six-inch pots, in each case staging excellent examples. Mr. Phillips was second for eighteen. Mr. J. Ford was first for eighteen and twelve calceolarias, with large splendidly flowered specimens representing a good strain. Mr. Mursel, Mr. May, and other exhibitors presented well-grown plants, but the flowers were wanting in both size and colour. Messrs. Sutton and Sons, Reading, exhibited, not for competition, a large collection of calceolarias consisting of well-grown specimens, representing their fine strain of these flowers. Gloxinias were admirably shown by Mr. Ballard, Sydenham; Mr. T. W. Willis, Cranbrook Villa, Upper Norwood; Mr. J. Hopkins, Lynwood, Gipsey Hill; Mr. J. Bateman, and Mr. W. Clark, Herne Hill, to whom the principal awards were made in the classes set apart for these flowers.

Roses in pots contributed liberally to the attractions of the exhibition, as the competing collections were supplemented by a large collection of superbly-flowered specimens from Messrs. W. Paul and Son, Waltham Cross, Herts. Arranged along the front of the great stage this formed an extremely beautiful feature. In competition for the prizes for eighteen in pots not exceeding nine inches in diameter, Mr. W. Rumsey, Joynings' Nursery, Waltham Cross, was first with comparatively large well-bloomed specimens, the varieties including: Merveille de Lyon, Dr. Andry, Beauty of Waltham, Celine Forestier, Albert Paye, Baroness Rothschild, and Ulrich Brunner. Messrs. Paul and Son, Cheshunt, and Mr. C. Turner, followed closely for second and third places. Especially good in the second prize collection were the standards of Marie Van Houtte and Madame Lambard.

Bouquets and Epergnes had liberal provisions made for them, and there was a keen competition in the several classes. Mr. Bawtree, Sutton, Surrey; Mr. T. Butcher, South Norwood, and Mr. E. Chadwick, were first, second, and third respectively for three stands for the dinner table with tasteful arrangements. Messrs. Perkins and Son, Coventry, were first in each of the two classes for hand bouquets, the other successful competitors being Mr. G. Newman, Mr. J. R. Chard, and Mr. Finch. Mr. G. Newman obtained premier honours in the class for six buttonhole bouquets, and Messrs. Perkins and Son were second.

Novelties were rather largely shown, and the following first-class certificates were granted. To Messrs. J. Peek and Son, Roupell Park Nurseries, Streatham, for *Anthurium Scherzerianum sanguineum*, a fine variety with large brilliant crimson spathes. To Messrs. Paul and Son, for *Cytissus Andreanus*, a handsome bloom producing flowers of large size, and very attractive in colour, the standards being bright yellow, and the wings rich crimson. To Messrs. J. Laing and Sons, for *Begonia Mammoth*, a fine double variety with large well-formed bright scarlet flowers. *B. Beauty*, a beautiful variety, the flowers of medium size, and fine form, the colour, bright carmine red with white centre; *B. alba fl. pl. compacta*, a dwarf growing and free blooming variety, bearing a profusion of neat pure white flowers, it is indeed so good as to deserve a better name. To Messrs. Ryder and Son, Sale, for the undermentioned varieties of Primula Sieboldi, namely: *Alba magnifica*, *Queen of the Whites*, *Leo H. Grindon*, *Mrs. Ryder*, *Harry Leigh*, and *Ruby Queen*. Messrs. J. Carter and Co., High Holborn, exhibited *Miss Primrose Carter* wallflower, a dwarf variety bearing primrose coloured flowers.

ROYAL HORTICULTURAL SOCIETY, May 13.

Floral Committee.

Present: William Marshall, Esq., in the chair; Rev. H. H. D'Ombrain, and Messrs. G. Nicholson, H. Herbst, W. Holmes, R. Dean, B. Wynne, T. Baines, C. T. Druery, H. B. May, W. C. Leach, E. Mawley, H. Cannell, R. B. Lowe, L. Castle, and G. Paul.

The contributions were sufficiently numerous to produce a bright and attractive display, and as they included a considerable number of specimens of hardy flowering trees and shrubs the meeting was rather more interesting than usual. A large and attractive collection of cut specimens of trees and shrubs was contributed by Messrs. Paul and Son, Cheshunt, to whom the silver Banksian medal was awarded. The species and varieties represented comprised Malus spectabilis, one of the most beautiful of the spring flowering trees of small stature. Cydonia Maulei, a handsome form, with large bright scarlet flowers; C. japonica alba, a beautiful variety, with pure white flowers. New Double Cherry, a fine variety, bearing larger flowers than the old form. Siebold's white and rose coloured cherries, which have white and rose-coloured flowers respectively, and are highly ornamental. Clematis montana, a free growing species, producing a profusion of small white flowers, and invaluable for clothing wall and other spaces. Cytissus præcox, a free-blooming species, bearing sulphur-coloured flowers. Andromeda formosa, a beautiful species, producing large racemes of pure white flowers. Rhododendron Mrs. Charles Butler, a handsome variety, flowering early in the season, and producing large rose-tinted flowers. Syringa alba grandiflora, a beautiful white variety, remarkable for the purity of its flowers. S. Lemoinei fl. pl., a handsome double variety. S. Madame Leguay, a promising white variety, with flowers of exceptionally large size. Staphylea colchica, now so highly appreciated for forcing; and azaleas and rhododendrons in variety. Messrs. Paul also exhibited a large standard specimen of Azalea mollis Consul Pecher, a handsome variety, with bright orange-red flowers. From the Royal Gardens, Kew, came a large collection of cut specimens of hardy trees and shrubs, comprising Rhododendron Kewense, an extremely beautiful form, bearing noble trusses of large pink campanulate flowers; hardy at Kew, simply requiring the protection of canvas when in bloom to prevent injury to the delicately coloured flowers. Magnolia obovata prolifera, a handsome variety, with comparatively large rose-pink flowers. M. Bovieriana, a distinct species, with medium-sized flowers of a light purple colour; and Olearia stellulata, a free-blooming species, with pure white flowers considerably above the average in size. Messrs. J. Veitch and Sons, Chelsea, presented Ledum buxifolium, a dwarf species, bearing a profusion of delicate pink flowers. L. latifolium, a handsome species, producing comparatively large clusters of pure white flowers, and valuable for the formation of marginal bands to rhododendrons and other plants requiring peat for their successful cultivation. Abies excelsa mutabilis, a distinct variety, remarkable for the bright yellow colouring of the young shoots; and Cydonia japonica Moorlezi, an effectively coloured form, on which a certificate of the first class was conferred. A bronze Banksian medal was awarded the firm.

Messrs. Kelway and Son, Langport, exhibited a large collection of tree and herbaceous pæonies and pyrethrums, which formed a bank extending nearly the whole length of the hall and produced a very effective display. The award of the silver gilt Banksian medal was made in favour of the firm. Bronze Banksian medals were awarded as under: To Messrs. Ryder and Son, Sale, for pansies and varieties of Primula Sieboldi. To Mr. J. Forbes, Hawick, for a large and attractive collection of pansies. To Messrs. Barr and Son, 12, King Street, Covent Garden, W.C., for an extensive and interesting collection of hardy flowers in which daffodils predominated. To Mr. F. Hooper, Bath, for a large collection of fancy pansies and two boxes of blooms of Her Majesty's carnation a pure white variety of much merit. To Messrs. H. Cannell and Sons, Swanley, for collections of decorative and zonal pelargoniums and several baskets of violas. The decorative pelargoniums included Cannell's Double, a pure white double variety of much value for bouquets and other arrangements of cut flowers. President Harrison, a charming variety, the flowers bright vermilion with white margin and centre, and Volonte Nationale alba, a white variety of this well-known and justly popular variety. Amongst the violas were Eynsford Yellow, which received an award of merit. Waverley bright blue, True Blue, deep cobalt blue, and Skylark, a distinct variety, the flowers white, suffused with canary yellow on the lower petals, and margined with bright blue.

Messrs. William Paul and Son, Waltham, Herts, submitted well-flowered examples of Rose Danmark, an extremely beautiful hybrid perpetual in the way of La France, received from Denmark, and now being distributed by the firm. The variety has a sturdier habit and more ample leafage than has La France; the flowers globular in form, very full, and delightfully fragrant; the colour bright rose pink, silvery rose at the edge of the petal. The examples staged fully indicated its value for pot culture, and there can be little doubt as to its usefulness for the garden. The same firm also exhibited examples of Rose The Queen, and Souvenir de S. A. Prince, to show that they are identical. The Queen originated in America, and was sent out by the firm in the spring of last year, and Souvenir de S. A. Prince is of English origin, and was also distributed last year. Both were evidently obtained as sports from Souvenir d'Un Ami, and it is a remarkable coincidence that this

fine old variety should have sported simultaneously on both sides of the Atlantic. Mr. G. Prince, Oxford, staged a box of blooms of Souvenir de S. A. Prince.

ORCHID COMMITTEE.

Present: Sir Trevor Lawrence, Bart., M.P. in the chair; and Messrs. Courtauld, H. J. Veitch, F. Sander, H M. Pollett, C. Pilcher, J. Dominy, E. Hill, J. Douglas, A. H. Smee, H. Williams, H. Ballantine and T. B. Haywood.

The contributions were rather numerous but they consisted chiefly of species and varieties that are well known. A spike of Lælia purpurata Brysiana was shown by Sir Trevor Lawrence, a good raceme of Odontoglossum maculatum was contributed by Mr. W. C. Atkinson, Aigburth, Liverpool, and Mr. Poë, Riverstone, Ireland, had a large raceme of Poe's variety of Odontoglossum Pescatorei, a beautiful form, the flower of medium size, tinted rose and blotched with purple; M. Lucien Linden, Parc Leopold, Brussels, sent several specimens, amongst them being Cattleya Warocqueana, a handsome form, the flowers large, the sepals and petals bright rose, and the labellum rich amethyst purple margined with rose; Dendrobium Galliceanum, evidently a variety of D. thyrsiflorum from which it chiefly differs in the labellum, being of greater length and of a lighter shade of orange, and Odontoglossum crispum virginale, a beautiful variety with large pure white flowers. R. J. Measures, Esq., Cambridge House, Camberwell, exhibited a small but very interesting collection, which included good specimens of Cattleya Mendeli Venus, a variety of great merit, having rather large flowers, the sepals and petals pure white, and the labellum white with golden throat and marked on the limb with a small purple blotch; Cœlogyne tomentosa, a distinct species which received an award of merit, and Masdevallia ignea Southgatei, an excellent variety distinguished by the large size and bright colour of the flowers. N. N. Sherwood, Esq., Dunedin, Streatham, contributed finely flowered examples of Odontoglossum crispum and Phalænopsis grandiflora, the latter being especially good. Mr. G. Studd, 11, Royal Crescent, Bath, sent an example of Lælia purpurata bearing several well-developed spikes. Messrs. F. Sander and Company, St. Alban's, contributed a form of Odontoglossum excellens in which the colouring was remarkably bright, and Mr. Cullimore, gardener to M. Cook, Esq., Kingston Hill, submitted a variety of Cattleya Mossiæ remarkable for the large size of its flowers, and Lycaste Harrisonæ, and Lælia purpurata. Mr. Balderson, Hemel Hempstead, sent Cattleya Mendeli and Cymbidium Lowianum; Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, exhibited eighteen medium-sized and superbly flowered specimens of Cypripedium barbatum major, one of the finest of the several forms of this well-known lady's slipper. As a recognition of this important contribution a vote of thanks was accorded!

FRUIT COMMITTEE.

Present: Sir C. W. Strickland, Bart., in the chair; and Messrs. R. D. Blackmore, Harrison Weir, T. F. Rivers, J. Cheal, W. Bates, G. W. Cummins, T. J. Saltmarsh, G. Bunyard, P. C. Veitch, G. Wythes, H. Balderson, F. Q. Lane, and J. Hudson.

A small but excellent collection of broccoli was sent from the Society's gardens at Chiswick, the finest varieties represented being Ledsham's Latest of All and Wilcove's Improved; Mr. W. C. Leach contributed good examples of Veitch's Model, a late variety of great excellence, on which a certificate of the first class was conferred; Mr. G. Aslett, Warren House, Hatfield, exhibited well ripened fruit of Alexander peach; and Mr. Miller, Ruxley Lodge, Esher, contributed excellent mushrooms.

NOVELTIES.

First-class certificates were granted as under:—

To Mr. G. M. Knight, gardener to Captain Elliott, Farnboro' Park, Farnboro', for

Calla Elliottiana.—A very distinct and beautiful arad, with large leaves freely spotted with pure white and bearing medium sized golden yellow spathes. One of the most important novelties submitted to public notice for some time past.

To Messrs. J. Veitch and Sons, Messrs. Paul and Son, and Sir Trevor Lawrence for

Cytissus scoparius Andreanus.—A beautiful variety of this fine broom; the plant is vigorous in growth and free in blooming, and the flowers large with bright yellow standard and crimson wings.

To Messrs. J. Veitch and Sons, for

Cydonia japonica Moorlezi.—A remarkably fine variety of the Japanese quince, the growth is robust, the flowers are exceptionally large and very freely produced, and the colour rich carmine red. An important addition to the hardy spring flowering shrubs.

To Messrs. Paul and Son, for

Acer Prince Hendjery.—A distinct and handsome Japanese maple; the leaves bronzy yellow suffused brown; bright and effective and desirable for its distinct shade of colour.

To Messrs. F. Sander and Co., St. Albans, for

Blandfordia nobilis imperialis.—A very distinct variety of this beautiful species. The flowers are very large, companulate in form and bright orange red with golden yellow margin.

To Mr. W. C. Leach, for

Broccoli Veitch's Model.—A late variety which has been in cultivation several years and is now largely grown and generally regarded as one of the best varieties for supplying the table during April and May. The pure white heads are large, solid, and well protected by the leaves.

Awards of merit were made as under:—

To Messrs. J. Veitch and Sons and Messrs. Paul and Son for

Juniperus canadensis aureus.—A handsome variety distinguished by the golden hue of the young growth, and very attractive at this season of the year.

To Messrs. W. Cutbush and Son, Highgate, for

Lunaria biennis variegata.—A variegated form, the leaves of normal size and irregularly margined with creamy white.

To Messrs. H. Cannell and Sons for

Pansy, Eynsford Gem.—A bright yellow flowered variety of much value for spring bedding.

To Messrs. Ryder and Son, for

Primula Sieboldi alba magnifica.—A pure white variety, with flowers of average size and good form.

To Messrs. J. Veitch and Sons, for

Enkianthus campanulatus.—A beautiful species, with flowers of a pleasing rose colour.

To Messrs. Kelway and Son for

Pæony Beatrice Kelway.—A charming variety, bearing large silvery-white single flowers.

To R. J. Measures, Esq., for

Cœlogyne tomentosa.—A distinct species, which may be described as interesting rather than beautiful. It has a robust habit, and the flowers are comparatively small and borne in pendulous racemes, the petals and sepals salmon-buff, and the labellum buff-yellow, marked with brown lines.

To W. C. Atkinson. Esq., Aigburth, for

Odontoglossum maculatum anceps.—A beautiful variety, remarkable for the large size and bright colouring of the flowers.

SCOTTISH AURICULA AND PRIMULA SOCIETY, May 8.

The fourth annual exhibition of this society was held in the City Assembly Rooms, Dundee, on the above date, and proved eminently successful. Auriculas were staged in large numbers, and in a condition that did much credit to the skill of the exhibitors. The single specimen classes were remarkably well filled, the white edge varieties being particularly good. Miscellaneous contributions were numerous, and contributed in no small degree to the interest and attraction of the gathering.

In the class for six show auriculas, Mr. W. Kilgour, Blair Drummond, was first with Mrs. Potts, Beeston's Apollo, George Lightbody, Lancashire Hero, Acme, and Kilgour's Andrew Millar; Mr. J. D. Kerr, Douglasfield, second with Acme, George Lightbody, Black Bess, Rev. F. D. Horner, Col. Taylor, and George Rudd; Mr. James Black, East Calder, third with George Lightbody, Brunette, John Simonite, Rev. F. D. Horner, Mrs. Potts, and Mrs. Dodwell. For four show auriculas, Mr. W. Kilgour first with Talisman, Acme, Blackbird, and George Rudd; Mr. J. D. Kerr second with Acme, Blackbird, George Lightbody, and Col. Taylor; Mr. W. Stratton, Dundee, third, with Lancashire Hero, Acme, Blackbird, and Alex. Meiklejohn. For two show auriculas, Mr. W. Kilgour first with George Lightbody and F. D. Horner, Mr. J. Kerr second with Acme and George Lightbody, Mr. J. Menzies, Duns, third with Acme and Mrs. Erskine.

Single specimens were numerous and of high quality. Green edge, Mr. J. Menzies, first with Prince of Green Edges (this was also premier in its class and premier plant of the show), Mr. W. Kilgour second with Rev. F. D. Horner, and third with Lancashire Hero. Grey edge, Mr. J. D. Kerr first with Alex. Meiklejohn, second with George Rudd, third with George Lightbody. White edge, Mr. W. Kilgour first with John Simonite, second with Regular, third with John Simonite. Self, Mr. W. Galloway, first with Patronella, Mr. J. Menzies second with Black Bess, Mr. W. Kilgour third with Heroine. Premiers. Green, Prince of Green Edges, from Mr. J. Menzies; grey, George Lightbody, from Mr. W. Kilgour; white, Acme, from Mr. W. Kilgour. Seedling selfs, special prize of ten shillings, awarded to Mr. W. Kilgour for Vidette (which received a first-class certificate), and Cornet.

For six Alpine auriculas, Mr. W. Kilgour first, Mr. J. Menzies second. Four, Mr. W. Storrie first, Mr. J. Black second. Six gold-laced polyanthus, Mr. J. Menzies was the most successful exhibitor. Six fancy, Mr. W. Stratton and Mr. O. Stratton were the prizetakers.

Mr. C. W. Cowan, Penicuik, staged a beautiful collection of daffodils, and was awarded the first prize in the class provided for these flowers. A fine collection of about forty well-grown auriculas was exhibited by Mr. W. Straton, hon. secretary and treasurer of the society. Mr. Moir, gardener to Miss Cox, Clement Park, Lochee, had a table of herbaceous calceolarias. Mr. J. Machar, gardener to Robert Mudie, Esq., Corona, Broughty Ferry, exhibited a collection of polyanthus, auriculas, and primulas. Mr. John Morris, Mains, staged twelve auriculas, in fine condition, consisting of King Lear, Fidelity, and Bluegown, Barlow's Mrs. A. Potts, Campbell's Duke of Argyll, Morris's Katherine Erskine, Cunningham's John Waterson, Headley's George Lightbody, Woodhead's George Rudd, and Kay's Alex. Meiklejohn, Leigh's Colonel Taylor, and Booth's Freedom. The local nurserymen were well represented in the miscellaneous class. Messrs. Laird and Sinclair had a collection of stove and greenhouse plants. Messrs. D. and W. Croll exhibited two stands of named pansies. Messrs. Storrie contributed a group of choice foliage and flowering plants.

Replies to Queries.

Syringing Peach Trees.—E. B.: Syringing the trees with clear water will keep the aphis in check.

L. W. B.—Say superphosphate 6, sulphate of ammonia 1, kainit 4, nitrate of soda 1.

Cider.—Honfleur will find a body of valuable information in "The Apple and Pear as Vintage Fruits," by Dr. Hogg and Dr. H. G. Bull, published at Hereford by Jakeman and Carver.

Allium.—We fear you have no remedy because of the protective clause. But the question may be properly raised how far that really affords protection to the vendor. Apart from that clause you certainly have a case, but you know how uncertain is the law in a matter of this kind.

W. Horley.—Your seedling primulas are an interesting lot of the kind known as Jack in the Green Galligaskins. Being sent loose in a dry wooden box the flowers were shrivelled out of character when they reached us, but having grown thousands of these things we can say we see nothing new or of special interest in the flowers sent.

London Purple.—T. W. H.: It is an arseniate of copper requiring experience for safe using, and being a dangerous substance in the hands of unskilful persons. It does not injure the caterpillars by being sprayed upon them, or at least, affects them but slightly. But by the deposit of poison on the leaves the caterpillars are killed by their food. It would be most unwise for you to apply it now to your gooseberry trees, for it would render the fruit dangerous to any persons who might eat it.

Roses.—E. B.: The following comprise some of the best varieties for growing under glass for the supply of cut flowers for market: Marechal Niel, Niphetos, Innocente Pirola, La France, W. F. Bennett, Isabella Sprunt, Madame Hoste, The Bride, Sunset, Duke of Edinburgh, and Gloire de Margottin. The plants should be purchased in pots before the summer is far advanced, and be shifted into pots one size larger within a short time of their coming to hand. After this there must be no disturbance of the roots until the summer following. "Rose Book," by Shirley Hibberd, price 6s., published by Groombridge and Sons, Panyers Alley, Paternoster Row, E.C.

Vine Border.—H. : The border for the vines should be formed with fibrous loam, lime rubble, and bone dust. The proportions should be seven cart loads of loam, one cart load of lime rubble, and two cwt. of bone dust. Half-inch bones are frequently used in the formation of vine borders, but they are so slow in action that unless the vines remain until they attain a great age they do not derive full advantage from them.

Names of Plants.—Plants rolled in brown paper. 1, Amelanchier Botryapium ; 2, A. alnifolia. Both are varieties of Amelanchier vulgaris, the snowy mespilus of gardens ; 3, Judas tree, Cercis siliquastrum ; 4, Sparmannia Africana ; 5, Megasea cordifolia ; 6, Polyganum cuspidatum. —T. : Your plant is a polyanthus primrose, the flowers being of the purest primrose type, but presented in an umbel on a visible stem. It is not scarce and scarcely curious, and in fact is of no peculiar interest whatever.—R. Waghorn : 1, Osmunda Claytoniana ; 2, Polystichum angulare ; 3, Cyrtomium falcatum ; 4, the crested variety of Lastrea filix-mas.—H. R. : 1, Bromelia lingulata ; 2, Nidularium cyaneum.

Ivies, creepers, &c.—Juventis : As you planted late, and desire to follow the simplest procedure, we advise you to abandon the idea of nailing in the growth on that great run of wall, for the task will be a severe one. Nail in a few leaders at intervals both of the ivies and the ampelopsis, but otherwise leave the growth to fall about in its own way, and do not cut or train any of it. As the warm weather approaches keep the border well watered unless it is naturally moist, in which case, of course, you may save that labour. If dry, however, it should be well soaked once a week during June and July, after which time you need not bestow water on it, for to be rather dry will be an advantage. The result of this simple course of procedure should be a free, irregular, and somewhat disorderly growth, which should remain untouched until the month of March next year. Then cut all down to within one or two inches of the ground line, and keep a watch upon the growth that follows. Train and nail where needful, and occasionally cut out any superfluous shoots, but otherwise allow freedom of growth, and in all probability the plants will train themselves and make a great extension and do far better in the end than if laboriously trained in during the present season. You must not cut them down now, they must be established first.

Moles.—Constant Reader is troubled with moles in a vine border. He says, "every year I set a dozen traps at a time, but they will not go near them." It is not the way of moles to "go near" traps unless the traps are set in their runs, in which case they will not only go near them but into them, and are then "down among the dead men." Trapping moles is not so simple a matter as trapping mice, and unless it is scientifically done, will fail completely, for moles are peculiar cattle and neither go out of their way for a bait, nor answer to any kind of call. The practitioner must known something of their ways and having noted the direction of a tunnel which is marked by the upheaval of the ground, he dexterously inserts the trap at the point where the mole will shortly begin to operate, and the creature is caught almost to a certainty. But there should always be raised the question if it is prudent to trap the moles. The present inquirer says, "I am sure they must disturb the young roots," but he does not say they *have* disturbed or damaged the roots. The probability is that the moles are saving the vines from damage by more insidious enemies, and were the vines our own we should leave the moles alone to probe the border and consume the grubs and worms that constitute their daily diet. When the moles leave the border, as they will when they can find no more animal food in it, the runs can be trodden down, and the vines will be found none the worst for the visitation, the advantage of this course being a saving of all the labour and fret of vain endeavours to entrap them.

TRADE CATALOGUES.

JAMES VEITCH AND SONS, 544, KING'S ROAD, CHELSEA.—*Plants, including Novelties for* 1890.

T. S. WARE, HALE FARM NURSERIES, TOTTENHAM.—*Dahlias, Delphiniums, &c.*

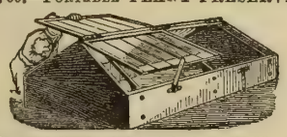
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ON May 2, at Balham, S., Mrs. H. ROSE, widow of the late Mr. H. Rose, who was for some years gardener to her Majesty, at Frogmore, and who died in 1874.

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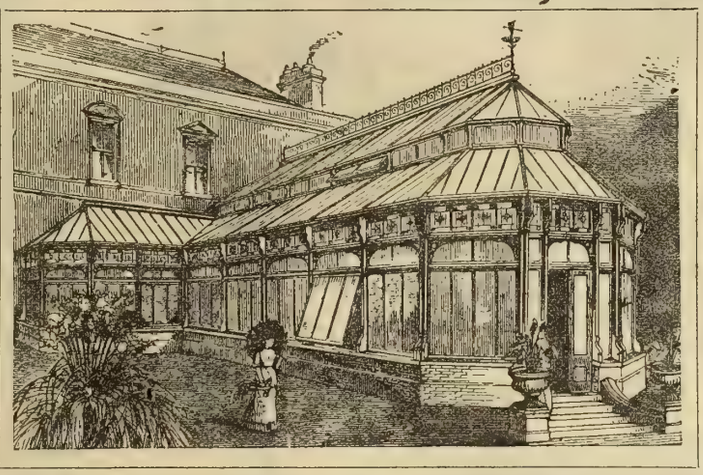


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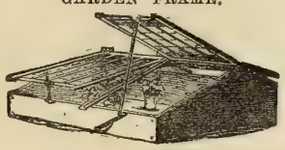
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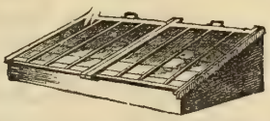
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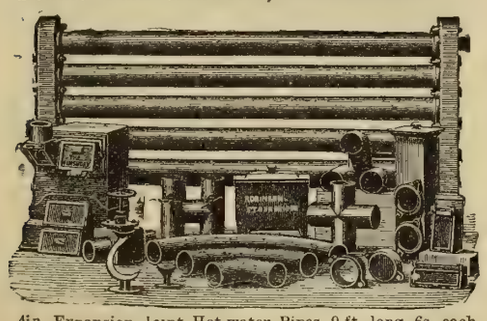
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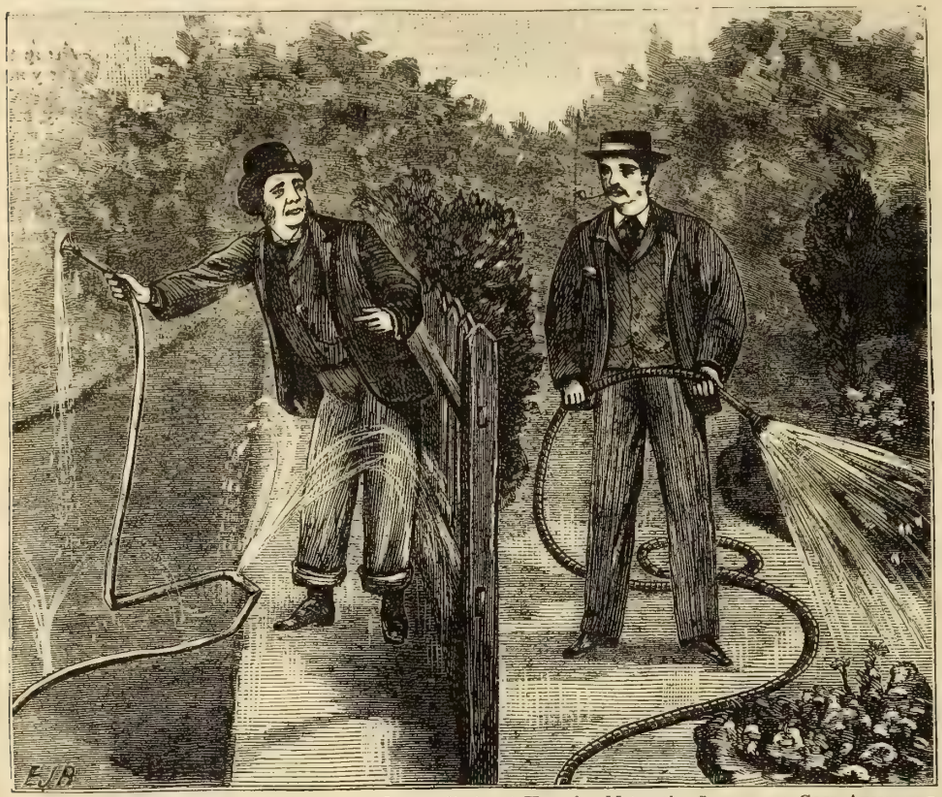
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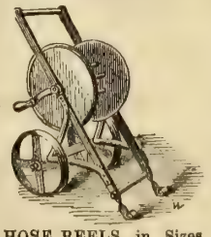
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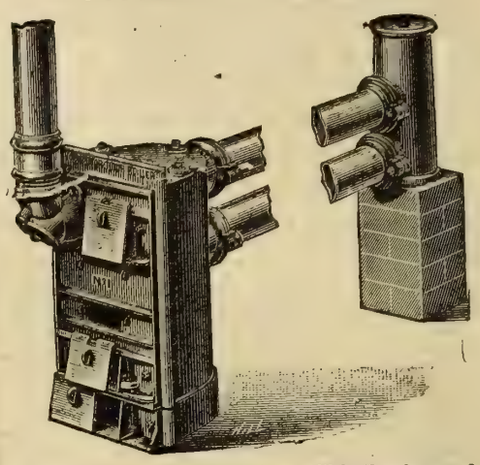
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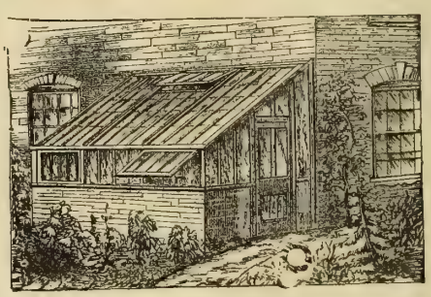
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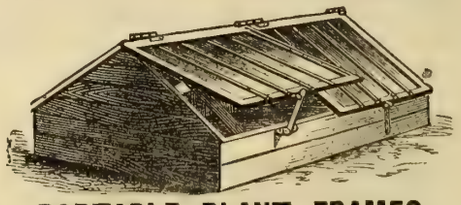
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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths before Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		140
25	S	**Whit Sunday.** *Pentecost.*	3 58	3 18	7 56	9 29	0 46	5 45	6 8	2 39	3 10	56·6	Dendrobium longicornum majus India.	145
26	M	*St. Augustin.* ☽ First Quarter.	3 57	3 12	7 58	10 37	1 11	6 32	6 59	3 33	3 57	56·7	Dendrobium transparens..... India.	146
27	Tu		3 56	3 5	7 59	11 45	1 32	7 27	7 58	4 24	4 52	56·9	Dendrobium tortile ..... Java.	147
28	W	Earl Russell died, 1878.	3 55	2 58	8 0	After.	1 50	8 32	9 10	5 23	5 57	57·2	Lælia grandis ..... Brazil.	148
29	Th	King Charles II. restored, 1660.	3 54	2 51	8 1	2 5	2 7	9 47	10 19	6 35	7 12	57·5	Lælia purpurata ..... Brazil.	149
30	F	Earl Spencer died, 1798.	3 53	2 43	8 2	3 20	2 24	10 50	11 18	7 44	8 15	57·9	Lælia purpurata Williamsi..... Brazil.	150
31	S	Dr. T. Chalmers died, 1847.	3 52	2 35	8 3	4 37	2 41	11 45	—	8 43	9 0	58·1	Chysis Limminghi ..... Guatemala.	151

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY SEVENTH ANNUAL SHOW, WEDNESDAY and THURSDAY, NOVEMBER 19 and 20. Schedules now ready.

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W. B. TROUP, Secretary.

Exhibitions and Meetings for the Ensuing Week.

WEDNESDAY, MAY 28, AND THURSDAY, MAY 29.—ROYAL HORTICULTURAL SOCIETY.—Temple Show. Meetings of Floral and Fruit Committees first day.
FRIDAY, MAY 30.—ROYAL BOTANIC SOCIETY.—Lecture.
SATURDAY, MAY 31.—ROYAL BOTANIC SOCIETY.—General Meeting.

Auction Sales for the Ensuing Week.

WEDNESDAY, MAY 28.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Greenhouse and Bedding Plants.
THURSDAY, MAY 29.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids.
FRIDAY, MAY 30.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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TERMS OF SUBSCRIPTION.—Post free from the Office, 4, Ave Maria Lane, London, E.C. to any part of the United Kingdom, One Copy, 2½d.; 3 Months, 3s.; 6 Months, 6s. One Year, 11s. 6d. (including the Christmas Number). To America, Australia, Belgium, Canada, Denmark, France, Germany, Holland, India, Italy, Spain, Sweden, and Switzerland, 14s. per annum.

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The Gardeners' Magazine.

SATURDAY, MAY 24, 1890.

THE WHITSUN EXHIBITION IN THE ROYAL BOTANICAL GARDENS, MANCHESTER, impresses the horticulturists of the metropolis who are invited to assist in the preliminaries as differing greatly in plan and purpose from the exhibitions with which they are most familiar. The general plan of a horticultural exhibition in London has so greatly changed within the past half-century that the thing scarcely deserves the name it once bore with truth and honour. It is now, in fact, much more of a trade advertisement than a competition in horticulture or a demonstration of the beauties of botany and the delights of gardening. The great difference between the flower show in the metropolis and the festival bearing the same name in any of the great provincial centres is seen in the general plan not less than in the details.

In the metropolis a quite new order of things has been established, while in the provinces, wherever wealth and public spirit exercise a definite influence, the changes that have occurred with the lapse of years are such as changing fashions and requirements compel, while the general plan and purpose remain unchanged, for the object kept in view is now, as ever, the promotion of horticulture. We refer now more especially to Manchester, because within the past week the cotton city has made its usual claim on public attention; but the same moral that may be deduced from Manchester will flow from comparisons made at Bath, at York, at Shrewsbury, at Glasgow, Edinburgh, and Dundee. In these places, and in others that might be brought into the comparison, the gentleman amateur and his gardeners find generous encouragement, and the exhibition is the collective result of contributions from private gardens, much more than from trade establishments.

It was ever held to be the primary object of a horticultural exhibition to recognize and reward horticultural skill and enterprise without respect to persons and special interests; and the leading exhibitions in the provinces continue true to the original doctrine, Manchester being exemplary in its faithfulness. Several results of an agreeable kind ensue. In the first place, the societies that minister to the spirit of emulation and keep the horticultural idea in the front of all their proceedings enjoy a certain amount of prosperity that heightens the contrast between them and the leading representative horticultural corporations of the metropolis. And while enjoying this prosperity, they justify it, and secure its continuance by the direct influence on gardens of their operations. In an analysis of the contributions to a provincial show we shall find that the purchasers of plants are pleasantly persuaded to exhibit their treasures, and their gardeners find advantage as well as honour in co-operating in the business. The number of persons thus interested constitutes what may be called a "public," and this special public influences the larger or "general" public, and thus the institution that lies at the root of the matter acquires and maintains a place of estimation in public opinion, and prospers in proportion to the length, breadth, and depth of the confidence it inspires and the consequent appreciation of its aims and endeavours. To the provincial exhibitions trade cultivators usually contribute liberally, and are welcomed by all. As commanding many novelties and enjoying peculiar opportunities, trade cultivators are often immensely serviceable, more especially when they make great features of their specialities; but they should always occupy a subsidiary or supplementary place, except when they compete in classes, when, as a matter of course, they are integral parts of the exhibition as defined by its schedules. Whatever wealth of colour and strength of subjects trade exhibitors may bring to an exhibition, the real life of the thing is in the contributions from amateurs and gardeners, for they represent gardening as it is pursued and enjoyed by the people; they represent the horticulture of the time, in its weakness as well as its strength; in its changes of fashion and taste; and, above all, in its relations to the domestic life of the nation at large so far as that life derives aid from gardening. The collections that appear to represent seed grounds and plant nurseries are in the nature of shops set up attractively for temporary purposes, but the contributions from gardeners are in the nature of household gods that meet in the show for a silent conclave, the primary purpose of which is to illustrate the status of horticulture there and then as a domestic institution.

The metropolitan shows were once upon a time framed on the plan that happily remains as a vital fact in the provinces, and the question may be asked if the metropolis is benefited by the decay of the original plan and the substitution of a new growth of a very different character? The Temple show of the R.H.S. will illustrate the case effectually. It will consist almost wholly of trade contributions, and will be in fact a collection of shops, all attractive in their way, but destitute of the peculiar interest that arises out of a proper competition in which lovers of gardens take part. The open neglect of the gentleman amateur and the scarcely concealed repudiation of the gardener by the Royal Horticultural Society sufficiently account for the non-appearance of these possible and sometimes efficient helpers, and not the less does it account for the indifference of the public to the Society's fortunes, and the consequent difficulty experienced in keeping the thing alive. The tradition of the competitive exhibition has died out in the Society, a fact in some part due to the demoralizing influence of South Kensington, but in

some part due also to the lack of the personal influence by which traditions are kept alive. What Mr. Findlay has done at Manchester, and Mr. Wilson at York, and Mr. Young at Edinburgh, is without parallel in London; we have a "council" that is annually refreshed with new men, and the pressure of the moment is always too great for the inception of a large policy, or even a clear apprehension of the general routine of horticultural work. At Regent's Park the traditions are not exactly dead, but so far enfeebled that it is not an easy matter to determine the lines of continuity, and the result is seen in the substitution of expediency for policy and of shifts and spasms for serious horticultural endeavour. Of the Crystal Palace it would be scarcely fair to say much in this connection for the simple reason that the Palace does not exist for any other purpose than to make a dividend for the shareholders. It is a trading concern, and if the tight rope pays better than a flower show we may expect to see the rope find favour at the expense of the flowers. In a general way the Crystal Palace is admirably managed and is one of the most useful institutions of its class, its normal scheme of operations being of a nature favourable to enlightenment and good taste. But it is not a horticultural society; it is a trading concern, and will encourage horticulture only as it may be found to "pay," for any other policy would be a falsification of its primary purpose. There, however, the gentleman amateur and his gardener find suitable persuasions, and we see their contributions, and so the trading concern in some degree supersedes the institution that exists solely for horticulture, and makes open profession of concern for its extension and improvement.

Will the contrast thus forced upon us by the events of the season continue in force or terminate in a better state of things? London is not easily moved. Influences that may be of a most moving character in a provincial city would be put to a test so severe in the metropolis that the comparison instituted might be enlarged. The sources of success for any public work in the metropolis are to be found in the spontaneous movements of public spirit, the individual being as nothing, but the wave of a passion irresistible. The wave could be commanded for a metropolitan flower show when the societies were true to their traditions, but they have been seduced and have apostatized, and now they ask in amazement, Why are we neglected? It is simply because they do not perform their duty, for sympathy is not an accidental growth; it is a response to some appeal whether of words or deeds, and it represents a feeling that has a foundation in experience of some kind or other. There is the great public as much in need as ever of elegant recreations, and the gardens exist also, and could pour their treasures into the show, but there must first be sympathy with the endeavour, and that is not quickly enkindled in the breasts of men who are openly ignored or so peculiarly treated as to feel that they are safer at a distance than in juxtaposition with a movement in which there is no place provided for them.

It will not always be as it is now in the metropolis. Common sense will prevail, and horticulture will be recognized as one of the more important of the domestic arts and a ministrant to all other arts, and the men who buy plants will be encouraged to co-operate with men who sell plants in making an exhibition. It should not be supposed by anyone that the trade exhibitors wish to exclude either the proprietors of gardens or their gardeners from exhibitions, for they would gladly reduce the extent of their contributions to make room for their customers, for some of them remember that trade was favoured simultaneously with the encouragement that was offered to gentlemen and their gardeners, and they do not fail to find edification in what they see in provincial shows where the love of the thing is adequately represented.

Colchester and East Essex Rose Show, July 1.

Luton Horticultural Society's exhibition will be held July 23.

Mr. Bull's Exhibition of Orchids in his nurseries at Chelsea is the subject of a paper in the *New York Herald* of May 20.

Birmingham and Midland Counties Chrysanthemum Show, November 12 and 13.

French Exhibition, Earl's Court, was opened by the Lord Mayor on Saturday last, and on Wednesday the performances in the arena commenced.

Mr. Martin J. Sutton wins all the prizes for Kerry cattle at the Oxford show of animals and implements opened on Wednesday last. This show is one of the best of the year.

Royal Caledonian Horticultural Society. A great International Fruit Show will be held in the Waverley Market, Edinburgh, in September, 1891, for which subscriptions are now being collected.

Tasman Refrigerator appears to deserve the special attention of all who are concerned in keeping fresh fruit for any length of time. It produces cold with dryness; all the cold storage hitherto employed being accompanied with damp, which is fatal to the preservation of fruit.

Northamptonshire Horticultural Society will hold its annual exhibition August 4 and 5.

Paris Horticultural Show, opened in the Champs Elysées on Tuesday was a gay affair, and great in rhododendrons, azaleas, roses, and orchids. Messrs. Sander and Co., of St. Albans, made a splendid contribution, and easily secured the gold medal offered by the Minister of Agriculture.

Carnation and Picotee Union.—The schedule for the Oxford show is now in course of distribution. It contains some novel features in respect of which Mr. E. S. Dodwell has sent forth a circular, defining and defending his position in the controversy on the classification of the picotee.

Temple Garden Show on Wednesday and Thursday next is likely to prove one of the greatest successes of the R.H.S. in recent years. The orchids and the border flowers will be conspicuous for variety and splendour. The Temple station on the District Railway is within a few yards of the show ground.

Floral Fete at Covent Garden on behalf of the Gardeners' Orphan Fund proved in every way a brilliant success. The Lady Mayoress, who was accompanied by the Lord Mayor and a civic party, performed the ceremony of declaring the show open in the presence of an admiring throng.

Messrs. Sutton and Sons' Many-headed Broccoli that we reported on a year ago keeps its character and would almost justify the title of Tree Broccoli. A sample just received carried six fair sized heads, which, when cooked were of excellent quality, and somewhat differing from the average of broccoli in the tenderness and sweetness of the rather lengthened green divisions that carry the flower. We saw a plantation of this variety in the garden at Great Gearies in May last and found the habit constant throughout.

Late Broccolis are always worthy of attention when they happen to be good. We have received three heads of *Late Queen* from a correspondent who signs "Bessborough." They are reported to be fair samples of some 500 plants, which are likely to give supplies of handsome heads to the middle of June. The samples sent are all that can be desired, neat, solid, spherical heads, the curd close, white, and in every way excellent. There is everywhere something wanted to come between the asparagus and the full tide of summer vegetables, and late broccolis that may be relied upon are invaluable.

Manchester can teach a lesson in the way of exhibitions, for while the metropolis makes a sacrifice of its birthright and is content with second-class flower shows, the enterprising provincial city is content with nothing less than a first-class performance. The Whitsun show at the Manchester Botanical Gardens, opened yesterday, is after the good old model, and while it is rich in good things of special interest, it has the sustaining interest of an exhibition that is good throughout, and a proper reflection of a liberal prize list and a clearly planned schedule.

Horticultural Club.—The usual monthly dinner and conversazione took place on Tuesday evening at the Rooms, Hotel Windsor, Mr. John Lee in the chair. There were present besides, Sir John D. T. Llewellyn, the Rev. W. Wilks, Messrs. Harry Veitch, Pearson, Druery, Shirley Hibberd, Bunyard, G. Paul, and others. Mons. Maurice de Vilmorin was the guest of the evening. A most interesting paper was read by Mr. Shirley Hibberd on "Common Sense and Common Nonsense in the Naming of Plants." A very animated discussion followed in which most of the members present joined. We understand that at the Committee meeting held previously it was determined to subscribe £50 to Baron Schrœder's scheme for a Hall of Horticulture.

Royal Gardens, Kew, will be opened to the public at 10 in the morning of Monday next. At this time the gardens may be said to be at their best, for the golden freshness of spring appears in the full leafage of the beeches and other trees, and although the summer flowers are not ready, those of the spring are not quite exhausted. Two grand beds of late or florists' tulips may be found on a lawn skirting the Museum of Woods a few yards distant from the main entrance, and in the Queen's reserve the blue bells are in full flower, making great breadths of colour like patches of clear blue sky. The famous Amorphophallus Titanum in the Victoria House now displays its noble leaf-growth. In the Azalea garden there is a rich diversity of colours.

Imperial Institute progresses, and is already pushing into the region of practical business. At the meeting of the Organizing Committee, on Tuesday, the Prince of Wales presiding, the assistant secretary, Sir Somers Vine, was directed to proceed at an early date to the African Colonies, the Colony of Mauritius, and adjacent settlements, for the purpose of arranging with the various governments for the provision of sample collections, and the organization of branches of the Commercial Intelligence Department. In the constitution of the Governing Council, one member will be appointed by each of the following bodies: London Chamber of Commerce, Royal Agricultural Society of England, Central Chamber of Agriculture, Royal Agricultural Society of Ireland, the Royal Society, Royal Society of Edinburgh, Royal Irish Academy, Society for Encouragement of Arts, Institution of Civil Engineers, Institution of Mechanical Engineers, Iron and Steel Institute, Chemical Society of London, Society of Chemical Industry, Institution of Electrical Engineers, City and Guilds of London Institute, Royal United Service Institution, Royal Academy of Arts, Royal Geographical Society, Royal Statistical Society, Royal Institute of British Architects, Mining Association of Great Britain, Trades Union Congress of Great Britain, and the National Miners' Union of Great Britain.

Mr. H. M. Stanley had a floral dinner and reception by Sir John and Lady Pender at 18, Arlington Street, on Monday last. The courtyard of the house was transformed into a tropical forest, and amidst the trees were myriads of electric lights. A large tent for the reception was profusely decorated with flowers in mirrored baskets, and all the principal apartments of the house were richly decorated. Messrs. Wills and Segar, of South Kensington, supplied and placed the plants and flowers.

Gilles's Weatherproof Garden Label does not exactly represent a new idea, but for all that, the thing must be designated a novelty. It is in the first place a glass label, and in the second place it is a paper label that anyone may write, and that may be altered on the instant to suit any plant. A neat flat glass tube is provided; it is small and unobtrusive. A paper label is inserted in this flat tube, and we read it through the glass, and it is, therefore, completely protected against the weather. To alter it we have but to draw out the written label and insert another, and so on *ad infinitum*. The manufacturer is Mr. W. C. Gilles, 172, Portland Road, South Norwood.

COVENT GARDEN FLORAL FETE, May 21.

The floral fête held in the wholesale flower market on Wednesday evening, on behalf of the Gardeners' Orphan Fund, proved in every way a brilliant success, and did honour to all concerned. The growers and stand holders contributed to the exhibition with a liberality worthy of so good a cause, and the arrangements were carried out in a manner that brought much praise to Mr. A. F. Barron, the honorary secretary, Mr. Asbee, the market superintendent, and other members of the executive. The display was fully equal, if not superior, to that of last year, every stand being filled to utmost capacity, and the plants on every side bore unmistakeable proofs of the remarkable skill that the growers for market bring to bear upon the subjects they take in hand.

The Lord Mayor and Lady Mayoress, Sir Julian Goldsmid, M.P., and Lady Goldsmid, and a select party arrived at half-past seven, and after making a tour of the market, they were conducted to the space specially reserved for the opening ceremony. Mr. Assbee, in the absence of the chairman of committee, addressed Lady Isaacs, and explained to her that the display of flowers had been produced by the growers regularly transacting business in the market for the purpose of assisting the fund established for the support of the orphans of gardeners. The Lord Mayor thanked the committee and stewards for the welcome they had given to the Lady Mayoress, and after expressing his admiration of the art by which such a magnificent exhibition had been produced, pointed out that the fête appealed not only to the eye, but to the heart, since it was a beautiful means to a beautiful end—namely, the alleviation of human misery. The Lady Mayoress then declared the fête open.

The most prominent of the objects forming the magnificent display were the decorative, zonal and ivy-leaved pelargoniums, marguerites, callas, lilies, calceolarias, heliotropes, pansies, carnations, hydrangeas, ferns, palms, mignonette, and miscellaneous plants with ornamental leafage. Especially attractive were the brilliant displays of pelargoniums on the stands of Mrs. Wetherill, Messrs. Bannister and Son, Messrs. J. and J. Hayes, Messrs. Wright, Messrs. Gregory and Evans, Messrs. Beckwith and Son, and Mr. J. Maller. Highly attractive collections of palms and other plants grown for their foliage were contributed by Mr. Ouvrard, Messrs. Rochford, Mr. Banse, Mr. Drost, and Mr. Brockhaus. Messrs. Page and Son had a tastefully-arranged collection of cattleyas. Hydrangeas were contributed in excellent condition by Mr. Motts, Messrs. Smith and Larke, Mrs. Pennell, and other growers; and Thomas Hogg, which has white flowers, appears to be rapidly acquiring popularity for house decoration. Interesting collections of ferns were staged by Mr. H. B. May, Mr. Oubridge, and Mr. Lewington. Lilium Harrisi was plentiful, and Messrs. Beckwith and Son had half-a-dozen large groups, which added immensely to the attraction of their stand, and proved to demonstration the value of this lily for general decoration.

DUTCH HORTICULTURAL SOCIETY.

At the meeting on March 18 of the Flower Committee, first class certificates were awarded to Messrs. E. H. Krelage and Son, at Haarlem, for *Iris persica purpurea*; Mr. A. van der Spiegel, at Velsen, for a collection of *Cyclamen persicum Quarlesianum* with multi-coloured leaves.

A second-class certificate to Messrs. Groenewegen and Co., at Amsterdam, for *Anthurium Scherzerianum atrosanguineum*.

Votes of thanks to Messrs. E. H. Krelage and Son, at Haarlem, for a collection of flowering bulbous and tuberous plants; to Mr. H. J. van Heyst, at Wyk-by-Zuurstede, for a collection of Alpine primulas and different bulbous and tuberous plants; to the Botanical garden at Leyden, for a flowering *Quesnelia roseo-marginata*.

Honourable mention to the gardening school at Watergraafsmeer, for an *Angræcum sesquipedale*.

At the meeting of April 15, the Flower Committee awarded a first-class certificate to Messrs. E. H. Krelage and Son, at Haarlem, for a collection of narcissi in 150 different species and varieties.

Honourable mention to Baron van Goldstein, at the Hague, for a *Lælia purpurata*.

Votes of thanks to Messrs. E. H. Krelage and Sons at Haarlem, for a collection of *Fritillaria meleagris* in 40 varieties, and for a collection of muscari; to Mr. O. J. van der Haer, at Arnheim, for flowering plants of *Odontoglossum vexillarium, O. vexillarium roseum, O. triumphans*, and *O. Cervantesii*; to the Botanical garden at Leyden, for *Ataccia cristata, Cephalotus follicularis*, and *Ananassa microcephala*.

A Collection of Violets possessing much interest was contributed to the agricultural exhibition, recently held in Paris, by M. Millet, a horticulturist of Bourg-la-Reine. The first varieties were Monsieur Arène, with large, dark violet, velvety flowers; Gloire de Bourg-la-Reine, with very ample, dark green foliage and extraordinarily large, pale blue flowers with rounded petals; Souvenir de Millet Père, with pale foliage and blue flowers; Armadine Millet, with leaves broadly margined with yellowish white and with small, dark blue flowers; Madame Millet, a variety of Parma with large flowers of a tender rose colour, very agreeably perfumed, and Swanley White, another variety of Parma with white flowers.

PICTURES IN THE NEW GALLERY, REGENT STREET.

The third exhibition in the new gallery sustains the high character the institution begun life with, and will be remembered for certain pictures of present beauty that will advance in merit and become famous in the future. The contributions number 436, whereof 258 are pictures proper, filling the three spacious and well lighted galleries. It is essentially a refined and comfortable exhibition.

In the West Room, Mr. E. A. Waterlow's "Night before Shearing" (6), attracts by its quiet truthfulness and subdued romance. The shepherd, lantern in hand, is having a look round to make all right for the morrow's great business. A striking picture is Mr. J. T. Nettleship's, "The Adversary" (8), a huge python leisurely rising from its repose to bid defiance to a pair of prowling tigers that hesitate to attack it. The colouring of the coils of the monster is the great feature of the work, which has the interest of an episode from a traveller's sketch book. The "Gentle Music" of J. M. Strudwick (11), is after the mediæval model, rich, simple, singularly effective. Mr. C. E. Hallé in portrait of Mrs. Harry Taylor (41), revives remembrances of Romney; the lady is in white dress, the pose is one of peculiar elegance, and in some sense original; the whole work masterly in purpose and characterized by peculiar grace. Mr. Alfred Parson's presents a "Bean Field" (46), that we take to be a trifle below his usual standard, but it is healthful and pleasing as his work ever is. Mr. Alma Tadema has three small works in his own peculiar and unapproachable style. In one he shows roses in showers (53), as in his Heliogabalus; in the other, called "Eloquent Silence" (51), two lovers somewhere in a city of marble—Rome probably—sit on a marble bench under a canopy of Clematis Jackmanni. This reads like an anachronism, but it need not be such. The vine bower, clematis viticella, is a wild vine of southern Europe, and one of the parents of the Jackmanni hybrid; and it is an interesting question if the artist may not, in a work purely imaginative, take a flower of to-day to illustrate an incident of the past. Mr. Edwin Ward in a portrait of Mrs. Norton Strode Jackson (66), favours us with a study of pink, that we venture to declare far away from the pink of perfection. It would improve this curiosity to fill up all the background with carnation. "Nature's Floral Carpet" (68), by W. S. Jay, happily decoys us from the pinks to behold primroses "how they grow" on a slope of an old beech wood with a rich setting of beech leaves to emphasise their simple colour, and to comfort them with the moist leaf-mould they so much love. The place of honour in this room is filled with a flight of imagination, by Mr. W. B. Richmond, illustrative of a passage in Shelley's Epipsychidion. It is an allegory of spring, who here appears as a beautiful damsel, whose footfall fills the earth with beauty, and whose breath takes form in rosy clouds and golden leafage and bright flowers everywhere. It will probably not be much admired, but it will be greatly valued by the few who care for works of this fanciful class.

In the North Room, "A Breaking Wave," by Mr. A. Stokes (97), we see the great wave rolling in, with its dark green under colour and its growing crest of foam, of which it advertises the coming by the smaller films and waving lines upon the sand which are the remains of the last breaker. A fine bit of portraiture is Mr. Philip Burne-Jones's "Presentation of the Hon. Richard Strutt" (102), in a harmony of blue and brown most delightful to behold. A curious thing is "Lovely Spring," by G. F. Wetherbee, a girl driving lambs that look as if they had been boiled through a green meadow suggestive of parsley, the girl being a kind of runaway street Arab. Yet here are the elements of a picture that might electrify us with delight if worked out with sufficient thought and care. As a rough sketch for serious work it may have great merit, but as a picture it is nought. Mr. Keeley Halswelle has exercised a rare self-restraint in his quiet though very beautiful "Byford's Mill" (109), a group of old buildings amid marshy meadows and waters, with all the sentiment of the moated grange infused into the truth that is spoken in purest simplicity. A delicious taste of spring, by Mr. Cecil M. Round, is entitled "Now Heaven walks on Earth" (127), a sheet of blue hyacinths with apple bloom above. At the present moment some twenty acres of blue bells may be seen in the Queen's reserve at Kew, and they justify the phrase "Heaven walks on earth." A "Perthshire Pastoral" (33), by Mr. Alfred East, is a delightful scene of red trees, rough stones, a heron, a woodpecker, and an atmosphere suggestive of sublime silence, save for the occasional call of the feathered occupants of the leafy wilderness. The place of honour in this room is occupied with what will prove to be the picture of the season. It is Sir John Millais' "Dew-drenched Furze" (119). Here is a peep into a Perthshire wood, with which the artist is familiar. The early autumn morning brings the golden light while yet the dews hang heavily, and we are in the midst of a furze brake where the pheasants are happy below, while over their heads the spiny vegetation is loaded with the pearls that night has deposited, and here and there are glittering films of gossamer; the big trees beyond adding to the glitter of the foreground by their rich tones of russet and deep green. Of all the noble landscapes of this prince of painters, we do not call to mind one that we would place before this, either for breadth of purpose or technical perfection. In the result it may be spoken of as jewellers' work, but if you make a close inspection you will but see faint dots and vague lines, and the method appears the more mysterious the more we study it. No young man, however gifted, could paint such a picture. To learn the trick of making an atmosphere agreeing with the "drench" may, perhaps, be comparable to Rembrandt's acquisition of the art of painting dark transparent backgrounds, a trick that was his own and that died with him. Should Sir John Millais give us nothing more than this, the world will have to say that he enriched it in great measure; but the hand that wrought this work still knows its cunning, and will again accomplish great things.

In the South Room is a brilliant picture by Mr. Richard Beavis, "Charcoal Burning" (171), a woodland scene with men and horses, and the burning sheltered from the wind by means of reed hurdles. The great cloud of smoke rises in grand rolling masses and loses itself amongst the leafy tree tops. It is a singularly cheerful picture, in high tone, with any amount of good work in it. Miss M. J. Davis contributes "From a Country Garden" (172), a good group of flowers. J. Fitz Marshall sends a bit of pear bloom in No. 178; good. A curious thing is "Peace and Fair Contentment" (191), by Ivystan Hetherington. A lively garden with a crowd of flowers, comprising a fair proportion of single dahlias. It is nearly good, but suffers from an excess of precision, for the flowers appear to have turned their faces all one way to have their portraits painted, and they are as sharp as cardboard patterns. Mr. C. E. Hallé, in "The Maiden and the Bird" (101), is tenderly sentimental. The lady is beautiful and very much in love, as we learn from the way she consigns a letter to a hiding place. It is a delightful bit of colour and quite Halléish.

ALPINE AURICULAS AT SLOUGH.

A REMARKABLE break of fine and striking seedling alpine auriculas has bloomed at Slough during the past season. So fine, indeed, are some of them that it seems as if the most sanguine forecasts of a few years ago have been more than abundantly realised. Respecting the parentage of many of these one can only deal in conjecture. Perhaps it matters but very little. Mr. Turner evidently does what many other florists have done, and are still doing—he seeds from the very best varieties, crossing flowers here and there when it seems requisite to do so, with the result that there is constantly appearing new types of beauty of striking character. The varieties shown ten and twelve years ago have scarcely comparison with what are exhibited in the present day. A great many of the new varieties raised at Slough and certificated are not put into commerce; they are too numerous to begin with; and, except in special cases, before a stock of any one variety can be worked up, it is distanced in value and quality by some new aspirant to fame. Some find their way into the collections of those who are willing to purchase at high prices, and this is how it is that varieties are seen exhibited that have no place in Mr. Turner's catalogue. Other persons are busy raising new varieties, and with satisfactory success; growers are no longer dependent upon one source of new varieties only; and the result is a very noteworthy levelling up of quality at auricula exhibitions.

Among the newer gold centred alpines in the Slough collection, which has been in bloom for the last six weeks, may be mentioned Flambeau (Turner), a very large finely formed and remarkably striking flower, having a rich golden centre, with a black base to the margin, broadly and evenly shaded with lively rosy salmon, a robust grower, and producing a noble truss of flowers. In this variety we seem to have reached the highest in alpine auricula culture, and yet it will be found but a stepping-stone to something even more advanced. Roger Cutler (Turner) has a deep golden centre, the margin slightly dark at the paste, and broadly shaded with dark rosy crimson. Olympia (Turner), dark shaded with pinkish salmon, very fine. John Bright (Turner), a massive and striking flower, rich bright golden centre, dark shaded with golden salmon. Sceptre (Turner), a superb variety, dark crimson shading to fiery crimson. Hotspur (Turner) bright golden centre, glossy dark shaded with bright puce. This variety was seen at the recent auricula show at the Royal Aquarium, and attracted attention by its lustre. Nemesis (Turner) is a variety in something the same way, yet distinct. Lastly, Melaine, bright gold shaded from marone to crimson cerise.

There is one advantage about the deep golden centred flowers—they are persistent, in that there is no change in the lustrous yellow, but that which comes from decay. But some auriculas are better than others, the gold will remain clear and bright, but the edging fades quickly, or changes so abruptly, and appearing as if a living centre was allied to a dead body. It is the edging which fades most quickly, and there may be on a truss at the same time young and perfect flowers, and some that though not dead appear in the last stage of a disfiguring decay.

There are some varieties having the centre so pale as to be denominated cream; and these are generally shown with the white-centred varieties. The great defect in many of these varieties is that the creamy centre is not persistent; and when the pip is nearly developed it has changed to a dead white, and so white-centred and cream-centred pips appear on the same plants, imparting to the truss a confused appearance. The well-known variety, Diadem, is a case in point, a charming variety when at its best, but liable to this disfigurement. Among the newer cream-centres, are Paragon (Turner), dark, with bright rosy purple shading, a beautiful variety when at its best; W. L. Walker (Turner), pale gold changing to cream, dark shading to a kind of soft rosy pink, extra fine; Countess (Turner), dark with a rosy lilac shading, a flower that becomes pretty well a good white centre by the time the pips are developed; Ariadne (Turner), dark shading to a pale bright lilac pink, but the shading forms a well defined edge; and Roland (Turner), dark ground shaded with pale purple.

The true white centred flowers have long been a weak class; but it will be so no longer, as in this year's seedlings at Slough there is a wonderful break of white-edged flowers. My model white centred alpine is George Lightbody (Turner), and when it is produced in good condition, with its clear centre and exquisite shading of black and pale blue, it is delightful, but the pip is thin, and the outline a little irregular. Nothing seems to go so well with a white centre as blue and pale blue. Some white centre flowers are shaded with purple, dull purple generally, and the shading appears to overshadow and actually stain the centre. One of the best in this class is Toujours Gaie, a seedling raised by Mr. J. Douglas, and when caught in good condition, a beauty. Countess may often be shown as a good white, though it is actually a cream centred variety. One of the best is Mrs. Harrey Turner (Turner); dark ground, shaded with bright lilac, and exceedingly pretty variety. Tennyson (Turner) is a remarkably good white; dark, purple, shading to bright lilac—a living white centre, not a dead one—a ghostly white as some are. This fine variety should find a place in every collection of alpine auriculas. Paragon makes a good white centre, but the character of the shading changes with the age of the pip, singularly bright in some, dull in others. Beatrice and Conspicua are two old white centred varieties, really white, but they are coarse in the pip. I am persuaded that in the course of two or three years we shall receive such an accession of strong white centred alpines, as will remove the reproach that successful as have been our raisers of new varieties, the white centred flowers are yet a weak section. And from the new Slough seedlings will come white centres in combination with new and novel tints of shading.

One danger threatens us—that of the accession of varieties too much alike. I saw in a stand of twelve alpines at the Royal Aquarium four plants—I hesitate to use the term varieties—that came very near to each other. This sameness certainly detracted from the general appearance of the collection, and I may be giving expression to what some may be disposed to regard as a floricultural heresy; but I confess that the clearly defined regularity of the shading on the petal edges of many of the new forms—which, indeed, has ceased to be shading, and taken the form of clearly defined lines—detracts somewhat from their beauty. I like to see the basal colour—the foundations of the marginal colour which encircles the centre—falling away imperceptibly into the paler colour on the edges, and so really answering to the term shading. To have the zones of colour as clearly defined as they are in the rainbow is, to my mind, imparting formality to the flower. This statement can be qualified to some extent by the relativeness of the two colours, but the general idea, in my mind, is that in the case of the alpine auricula we lose something of its peculiar and special beauty.

I know that I am in danger of subjecting myself to the hottest fire of adverse criticism. Well, no harm will be done, as nobody will be killed, and I am not in the least dismayed by the prospect that I may not find a single raiser or grower of the Alpine auricula supporting me in my contention.

R. DEAN.

ORCHID NOTES.—REICHENBACHIA.

THE present number completes the second volume of this important work; and the two volumes are in themselves enduring witnesses of the interest taken at the present time in orchid culture. Probably every orchid cultivator of any importance in England, on the Continent, or in America has become a subscriber to the work; or if not, it can only be from want of knowledge of its value as a treasure-house of the finest species and varieties of orchids grown in gardens at the present time. They are carefully drawn from flowering specimens by that excellent artist, Mr. Moon; and printed in colours with great care. The beginning of a new volume would afford an excellent opportunity for those intending to become subscribers. Whether the two volumes can be purchased complete I am unable to say; it has been stated that the early numbers are very scarce. The technical descriptions are in Latin; and the descriptive remarks are clearly printed in English, German, and French. The orchids figured in the present number are as follows:—

CATTLEYA ELDORADO CROCATA.—A very beautiful form of the species, with pure white flowers; with the exception of a deep orange blotch on the disc of the lip. It differs from the variety Wallisii in the rich, deeper orange stain; but both of them have white sepals and petals. In another respect the flowers of crocata differ in being of larger size. The editor can tell us much of the natural conditions under which the plants are grown, which are figured from time to time, and whether it is desirable to imitate those conditions in our gardens or not. In this instance he says it is not necessary. "It would be futile trying to imitate in our orchid houses the natural conditions to which Cattleya Eldorado is subject, and, indeed, experience teaches us that it is not only impossible, but unnecessary to do so." This distinct Cattleya was discovered by Mr. Gustav Wallis, in 1866, in the valley of Rios Negro, where the heat is excessive, any way it is subjected to much moisture at one season of the year, and great drought at another season. The species does best in the warm house, or a temperature of 60 to 65 deg. as a minimum; the maximum without sun-heat being about 70 deg. to 80 deg. In other respects the ordinary treatment recommended for Cattleyas suits it admirably.

ODONTOGLOSSUM SANDERIANUM is figured from a typical specimen. This is certainly a very pretty species; it is winter flowering, and scented like hawthorn blossom. It was introduced by Messrs. Sander in 1881. The sepals and petals are yellow marked with brownish lines and blotches; the lip white with a violet blotch in the centre. It is free in growth, and being a mountain species does well in the temperature of the Odontoglossum house; from 45 deg. to 50 deg. in winter; 55 deg. to 60 deg. in summer. Pot culture in good fibrous peat and sphagnum suits it well, and the treatment generally under which O. crispum lives and thrives. The editor also recommends fumigating with tobacco smoke for Odontoglossums, but with the proviso that the plants are not half destroyed with insect pests before doing so. It is recommended that the orchid houses should be fumigated when the plants are believed to be perfectly clean. This is sound advice, and should be acted upon, not only in regard to orchids, but all other plants, especially those that are specially liable to be attacked by green-fly, such as calceolarias, cinerarias, pelargoniums, &c. The plants may be believed to be clean, but lurking somewhere are sure to be a few specimens of our natural enemies, and very soon in the expressive language of the old poet, the little one will become a thousand, and the unequal contest begins when it is too late.

CATTLEYA LABIATA WARNERII.—An excellent variety of this is figured, and it is certainly one of the most beautiful of all Cattleyas, and has the advantage of some in being of vigorous constitution. We have grown the original type for many years, it having been purchased when the late Sigismund Rucker's collection was sold at Stevens's sale rooms, and the plants are as vigorous now as ever they were. The treatment must be rather different from that of C. Mossiæ or Mendelii. For one thing the plants require a much longer season of rest, and during the resting period they must not have more water at the roots than just to keep the bulbs from shrivelling. The resting period is immediately after the flowering period is over; and we keep them cool and near the glass until they start again into growth. By the term cool, must be understood the coolest end of the Cattleya house; and coolness is not so important as a moderately dry atmosphere and dryness at the roots. Soon after growth is completed the flowers appear out] of the sheaths. The plants of this species do not require very much pot room, and they will do well if not repotted oftener than once in three years. But they like plenty of good fibrous peat. Basket culture is recommended.

ODONTOGLOSSUM SCHRODERIANUM, also well figured, is a most striking and distinct species. It was introduced to this country by Messrs. Sander, from Central America, in the year 1881, and flowered for the first time in the rich collection of the Baron Schroder, The Dell, Staines. It is not at all a common species, and the editor states that it has been confounded by some growers with O. læve, from which, however, it is distinct. Dr. Reichenbach thought it was a natural hybrid between O. tripudians and O. Pescatorei. It should be grown in well-drained pots of sphagnum moss and fibrous peat, in the cool house in summer, and at the cool end of the Cattleya house in winter. Dr. Reichenbach's description is as follows: "Lip white with two mauve purple blotches in the fore part of the disc, and the calli are yellow, with some red spots. The lip is adnate to the base of the column, which is white, yellowish below the stigma, and with entire toothleted wings. A few mauve purple spots are scattered over it. What is it? Nothing like it has appeared before in Europe."

J. DOUGLAS.

THE GHOSTLY NEGUNDO.

THIS variegated maple (*Acer negundo variegata*) is valuable even at this time of year in the shrubbery. The pink tinge of the young leaves while expanding is very showy; whether on old or young trees the effect is just the same. We grow several plants of this showy subject in the front of the shrubberies, which by annual close pruning we are enabled to keep dwarf for many years. Right well do they repay the small trouble incurred by the pleasing tint of the young leaves in the spring, especially if associated with other plants of an opposite colour, either deciduous or evergreen.

E. M.

THE PROPHET FLOWER.

Arnebia echoides.

This fine herbaceous plant is now in flower, and being but little known in gardens, we present a figure, hoping thereby to increase the number of its admirers, for there is no good reason why the plant should be scarce or neglected. It is a borage-wort of free growth, rising one to two feet, with a free foundation of handsome green leaves and a showy head of tubular flowers with five-divided limb, after the fashion of a borage. The colour of the flowers is bright light yellow, with five black spots when they first expand, but which fade and ultimately leave the flowers a clear pale self yellow. Any good loamy soil will suit this useful plant, and a partial shade will suit it better than full sun. It is, however, quite hardy, and in no way particular about conditions, being a fine perennial, and lasting well on a fairly trained soil.



THE PROPHET FLOWER, *Arnebia echoides* (Flowers yellow with black spots).

THE CHRYSANTHEMUM IN CALIFORNIA.

Chrysanthemum culture is being encouraged in California. The Floral Society of that State offer a prize of fifty dollars for the best collection of fifty varieties in pots, and another of the same amount for the best collection of cut blooms. R.

SHOWY MESPILUS.

The family of spring-flowering shrubs known as the snowy mespilus are closely allied to the medlar. They are extremely useful for the mixed shrubbery, which they lighten up during the month of May. One of the best is *Amelanchier florida*, but *A. botryapium* is also a fine plant. The most effective way of cultivating the kinds here named is to graft them upon the hawthorn, so as to form a head six feet from the ground. In this manner by the quick growth which they make in their early stages and not being stopped by pruning, large heads are soon obtained, which overtop many other subjects of a dwarfer nature. By planting amelanchiers in clumps of three or more together a fine display is ensured of pure white blossoms, the whole length of the branches. Our plants have never been touched with a knife, the result is long flowering branches every year, fairly smothered with flowers. The one known as A. florida does not open its flowers before the leaves are formed. But A. botryapium does this, and it blooms earlier in the year. For this reason the variety florida is to be preferred, as the deep green foliage forms such a good contrast with the snowy blossoms, especially if the undergrowth is in harmony—dark foliaged evergreens for instance. In our strong soil this deciduous shrub thrives to perfection. E. M.

Notes of Observation.

FORGET-ME-NOT AS A WATERSIDE PLANT.

We use a number of forget-me-nots for filling up spare nooks on the margin of the lake, to hide the soil where hardy ferns and Solomon's Seal are established, and which have as yet barely begun to grow; in fact, any spare corner—at the base of trees, or amongst the rocks—is planted with forget-me-nots, and very pretty indeed is the effect in the early spring. Myosotis dissitiflora is the best of the group, I find, for the purpose. The growth is strong and compact, the flowers are large and rise well above the leaves, and, on the whole, form broad masses of blue. Some plants are put out in spare places in the autumn, while the remainder are kept in stock on a border, where they are grown for the purpose until early in April, when they are lifted with a good ball of earth attached to each, and do not feel the check at all. At this time vacant spots are more easily found than in the autumn, owing to loss of other subjects during the winter months. The plants are either raised from cuttings inserted in a cold frame in August, or from seed sown in a cold frame in July, afterwards planting them out on a spare piece of ground in an open position. S.

NEW AMERICAN ROSES.

Five new roses of merit were sent out by American firms during the past year, viz., Rosalie, Marshall P. Wilder, The Dinsmore, White Pearl, and Rainbow. The latter is a sport of Papa Gontier. Coupe d'Hebe, a charming variety of the "Hybrid Bourbon" section, has recently produced a white sport, which is described by its American owner as being much superior to the original variety. U. S.

LAURELS IN FLOWER.

I notice there is a disposition for a freedom of flowering in the laurels this season, more so than sometimes is the case. The Caucasian variety is the more addicted to proliferousness in this respect than any other sort. The bloom is followed shortly by a crop of berries, which, when ripe, are not always the least attractive subjects in the garden. For this reason this and the colchic variety are specially to be commended. E.

LILACS FOR THE SHRUBBERY.

A collection of varieties of lilacs is not the least interesting feature of a garden. There are no better plants for the decoration of the shrubbery during the spring-time. As a rule, two kinds, *Syringa vulgaris* and the variety *alba*, the common types of lilac and white, are the more generally found in the majority of gardens. But a greater variety of sorts would not only be more interesting, but provide a longer range of flowering plants which could not fail to be much more useful, both to the eye and for supplying cut blooms for the house. Seldom, indeed, is it that lilac is not a welcome addition to the household flowers in any form. The common lilac is the first to flower; it is quickly followed by the white. *S. Chinensis* and *S. Persica*, the Chinese and Persian lilacs, are very showy, being of quite a different growth to the common forms. Both being thin and wiry, the blossoms being large, have a drooping appearance; the former is violet in colour, while the latter is much paler. Perhaps the most showy of all the family of Syringa is that known as Charles X. In colour it is deeper than the common kind, the panicles are more dense in form, the growth, although robust, is not straggly, quite the reverse, erect, and short jointed. It scarcely ever fails to produce a full crop of flowers, even more freely than the common kind. Although the above kinds do not nearly exhaust the list, they suffice to form a useful and variable collection. E. M.

DOUBLE-FLOWERED ALMOND.

This variety of Amygdalus communis does not grow to such proportions as the more common single flowered sort, therefore for this reason is the more valuable where the growth must be somewhat restricted owing to insufficiency of space in the shrubbery. Backed up with evergreen foliage is where this plant shows to the greatest advantage at the present time of the year. Its warm flesh-coloured blossoms are very showy, even without their own foliage. It is but seldom however that the double kind is seen in good order. E. M.

SPRING ROSES.

Where a succession of bloom is required to succeed that from an ordinary greenhouse in which sufficient artificial heat only is maintained to keep out frost during the winter, such roses as Gloire de Dijon, Maréchal Niel, Lamarque, Catherine Mermet, Madame Lambert, and the like, will produce their flowers mainly during March and April, if trained under the south roof. If a few plants of the good old variety named above can be so planted as to grow in a northern aspect of a cool house, they will supply the want sometimes felt after the bulk of other house-grown roses is past. It is one of the good qualities of Gloire de Dijon that it succeeds in almost any position, given of course a reasonable amount of light. We have lately been cutting splendid blooms of this variety from the north side of a corridor, and the same side of a three-quarter span greenhouse, and extremely useful they have proved. H.

LONICERA TATARICA.

This Tartarian honeysuckle is not nearly so much cultivated as its merits deserve as a deciduous shrubbery plant where early spring adornment is a consideration. Planted in ordinary garden soil and given a small portion of manure at the same time to encourage a free growth, this variety annually produces a full crop of its pale rose-coloured blossoms. The growth is neat, seldom needing any trouble in pruning, therefore one of the easiest shrubs to deal with considering the returns made in the quantity of flowers produced during April and May. It is allied to Lonicera Xylosteum. E. M.

AN EARLY RHODODENDRON.

The variety known as *Prince Camille de Rohan* is one of the earliest flowering varieties we have and most useful for supplying flowers in advance of the bulk of varieties. It does not suffer from two or three degrees of frost when the buds are bursting into bloom. The colour is blush with a dark eye. The growth is compact, dwarf, and just the kind for the margin of a bed or border. For forcing purposes in pots by lifting in the autumn and bringing on gradually in a peach house or vinery this sort is one of the best. E. M.

THREE EARLY AZALEAS.

In my Surrey garden hardy azaleas are now in brilliant colour. I noted for you three that usually lead in the order of flowering, these three being just right on the 1st of May, the general collection not being in colour until the 10th. The early ones are *Rhombianum*, delicious satiny mauve, solid with bloom; *Mollis* (type), brilliant salmon; *Wateri*, light yellow, good. Where early flowers of this class are wanted, these three hardy azaleas may be planted with advantage. R.

DWARF FORGET-ME-NOT.

Anyone in want of an exceptionally dwarf variety of Myosotis would do well to grow a sort sent out by Messrs. Suttons which they style their "dwarf blue." The growth is very compact, the flowers smaller than dissitiflora and a shade paler in colour also. For edgings or patterns in small beds this sort will be found valuable, its only fault is that it does not open its flowers quite so soon as other varieties. This in all cases may not be detrimental to the sort but the reverse, where a later display is requisite than that produced by dissitiflora for instance. From seed this variety comes true to name, scarcely a "rogue" is to be found, which cannot be said of many seedling plants. E. M.

HAMMERSMITH CABBAGE LETTUCE.

In spite of this winter cabbage lettuce being an old variety it still maintains its reputation as being one of the very best kinds for supplying fresh crisp hearts quite solid during the month of April without any more protection being given it than that afforded by a south border. It is not necessary that the plants should be situated close to the base of the wall, for if a border of this aspect ten feet wide can be afforded them, nothing more is needed. To be eight inches apart all ways is ample space for the plants to be put out in the month of September or October. This variety will stand with impunity all kinds of weather and will provide a capital supply of tender lettuce at the time named and just before the Black Seeded Bath Cos is ready. So by planting some of both sorts a constant supply can be had until the spring sown kinds are ready for use, and without the aid of frames for their growth either. This is a consideration to some who have not these articles to spare for the growth of lettuce. E. M.

A GOOD CEMETERY PLANT.

While looking through the Dean Cemetery, Edinburgh, I came across an arrangement that might be followed with advantage by others similarly situated. At the north side of the new ground runs a high wall, facing south. Against this is planted the common ivy, which forms a dark green background, to throw up a red granite monument, and a well-coloured Euonymus Japonicus aurea, planted at each side of the grave, with a charming, quiet effect, in keeping with such a place. The Euonymus referred to are well coloured. Not a branch showing any signs of running to green wood, as one often sees them. I think the cause of this good colouring is traceable to their roots rambling in the old lime of the wall, and a well-drained, sandy border of loam. They have stood in this position for years without being touched by frost; a fact which shows they are capable of being used as decorative shrubs in suitable positions even as far north as Edinburgh Edward Gordon.

DOUBLE BUTTERCUP.

The double Ranunculus acris is the early flowering plant known as yellow Bachelor's Buttons. It is well suited for the front of the herbaceous border. The colour is a rich yellow; the flower stems erect, needing no support. The flowers may be cut with long stems, which renders them all the more valuable for use in a cut state, as they are better adapted for a variety of vases than when the stems are but short. This variety flowers in advance of the white aconitifolius, commonly known as the Fair Maids of France. E. M.

THE SACRED LILY IN NEW ZEALAND.

The Chinese Sacred Lily, or Chinese Fairy Water Lily, is a variety of Polyanthus Narcissus. In New Zealand they are imported by the Chinamen, and arrive here about December, which is about our midsummer. The bulbs are intended to be grown in pans or dishes of stones and water. Their flowering season here being summer, they are not much thought of, because we then have abundance of all sorts of other flowers. I saw on February 26, 1890, in a restaurant window in Manchester Street, Christ Church, seven pie-dishes full of clean-washed pebbles and quite clean water. Each dish had one bulb on the top of the stones. The bulbs had their side bulbs attached to them, and were nicely in flower. Some of the dishes had single-flowered varieties, and some had double-flowered kinds. The art of culture is to grow them so that the bulbs are exposed above the stones as much as possible. The advantage of this system is that the bulbs of any sort of Narcissus as soon as they show signs of starting into growth may be dished and placed in a full sun in a window, and the growth watched from the first until their flowering is finished.

John Dutton.

Springfield Road, Christ Church, New Zealand.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Orchids now flowering include:—Ærides odoratum, A. virens; Brassia maculata major, B. verrucosa; Calanthe veratrifolia; Cattleya citrina, C. quadricolor, C. lobata; C. Mossiæ, Cypripedium calurum; Dendrobium Devonianum, D. Falconeri; Epidendrum cinnabarinum, E. Stamfordanium; Lælia grandis, L. purpurata; Saccolabium ampullaceum, S. curvifolium, S. guttatum, S. præmorsum.

THE HOUSE.

During the current and two following months the aquarium will be greatly influenced by solar light, and it is important to remind those who have not had much experience that, if too fully exposed, the fish will suffer seriously. A strong light causes an excessive growth of minute algæ, and when this occurs a general break up of the affair may be expected. To prevent injury, screen the vessels from the full midday light. If no ready means are at hand use green calico or green paper. As everything should be in nice trim now, it would be well to cleanse the front glass with a soft sponge. When water-plants have been collected from ponds and rivers they should be used very sparingly in well-kept tanks, and should be well washed before they are put in. For the study of these it is advisable to have a few large bell glasses mounted on cheap stands, for when put into tanks that are kept for decorative purposes they often cause a collapse of the aquarium by the mischievous things that come with them and that are quite unfit to associate with handsome fishes that are made pets of.

CONSERVATORY AND GREENHOUSE.

Azaleas that have finished their growth may be put out to harden. Select for them a sheltered shady position, and stand the pots on bricks or slates to prevent worms getting in.

Camellias need air now night and day, and the swelling of the flower buds should be the signal to cease watering overhead, which may cause the flower buds to start into leaves, and spoil the next season's bloom. Plants that require a shift may have it now, but large shifts should never be practised.

Cineraria seed to be sown in pans of light rich soil with a sprinkling of very fine earth over. Lay over the pans pieces of glass or damp moss or tiles to prevent evaporation, but keep a watch that the plants are not blanched through keeping the covering on too long. Keep the pans in the shade till the plants are large enough to pot off.

Ericas and kindred plants should be in cold pits now, as it is next to impossible to give them air enough in a plant house.

Kalosanthes require an abundance of water now, as do all succulents that are growing freely. Liquid manure will now be of great assistance, and careful training must be practised where specimens are wanted.

FLOWER GARDEN AND PLEASURE GROUNDS.

Annuals of quick growth may be sown for autumn display. The blue nemophila blooms beautifully if sown at the end of June; better by far than from spring sowings. Balsams, asters, and stocks to be planted out where they are to flower. Sow Brompton and Queen stocks.

Bedders to have every necessary attention to regulate the growth and display the bloom; peg verbenas and other trailers as soon as they need it. If the ground is very dry, loosen the surface, and if necessary to water soak the ground well.

Border Bulbs may be taken up as soon as the leaves are withered, and to ensure a perfect ripening lay them in clumps as taken up without damage to the roots, in a shady place, with a sprinkling of earth over them.

Dahlias to be tied up betimes, or sudden gusts of wind will tear away the best branches from the base. On hot dry soils mulching is needful, and will prevent need of watering.

Lawns newly made must not be so closely mown as old turf. But mowing must be performed with regularity, or it is impossible to obtain a uniform velvety green surface.

Pinks must be supported by neat stakes to keep the blooms from being spoilt by rain and wind. The best way to propagate is by pipings, and now is a good time to secure plenty of them.

KITCHEN GARDEN AND FRAME GROUND.

Celery planted for early supplies to have an abundant supply of water if the ground is dry, as slow growth is ruin to it, and may cause half the crop to bolt. Continue to plant out, using abundance of rotten dung well worked into the soil of the trenches.

Cucumbers on Ridges may now have the handlights or other protection removed, so as to benefit by the night dews and showers. It is not advisable to stop them, but a little pegging to cover the beds regularly is beneficial, as creating a greater extent of bearing surface,

Leeks to be transplanted from the seed bed to very rich ground, and to be earthed up as they grow, to blanch the neck of the bulb.

Lettuce to be sown now where they are to remain. This is a golden rule to prevent bolting when the weather becomes torrid.

Turnips.—As there will soon be a demand for these it will be well to sow a small breadth in some odd place, so as to secure a few small bulbs in advance of the ordinary autumn supplies. Take especial care to break up and manure the ground first.

Vegetable Marrows should be planted out during warm showers. But they ought first to be somewhat hardened by placing the plants in a sheltered spot for a week. To take them from warm cucumber pits or propagating houses and plant them direct is a bad practice.

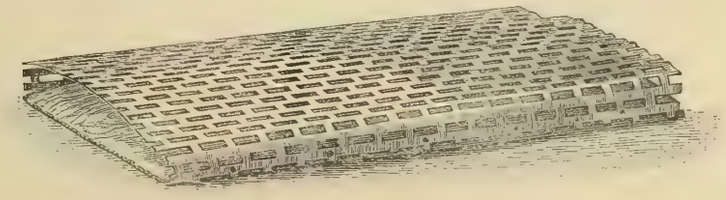
Winter Greens of all kinds to be planted out as occasions offer; a few of the forwardest plants of Brussels sprouts should be put out where they are to remain, in deeply-trenched and well-manured ground to furnish an early supply of buttons, as they are everywhere prized when the summer vegetables are over.

VILLA FARM.

The storage of eggs for use during the season of scarcity will now require attention. The work of storing may be delayed for a short time to tide over the hot weather and carry on the supply as far towards winter as possible, but it must be commenced before there is any material diminution in the daily supply. No general rule can be given, because upon the time poultry begin to lay depends the time when they will leave off, and there is no breed that will lay the whole year round without a rest. A cool place, not thoroughly dry, will keep eggs better than a place dust dry; therefore the bottom of the house is better than the top for egg preserving,, and in packing it is a decided advantage to place them large ends upwards. As to the various dressings adopted, they are not of much use; and we have found eggs keep as well without any of these preparations as with them; we know of no better way to keep them that to pack them large end upwards in fine charcoal, covering each layer completely, and a small tea chest or an old box, not very large, will come in useful for a lot. Several small boxes filled will prove more useful than one large one, and of course the date when filled should be written on each, so as to ensure the using of the stalest first.

A NEW NOTION FOR THE BEE-KEEPER.—SELF HIVING.

The accompanying illustration shows a copy of Mr. R. Bennett's self-hiving arrangement. This is a new arrangement which any bee-keeper may carry out, as it can be made in a few minutes. If there is a sheet of queen-excluder zinc at hand, he has simply to turn up the edges and tack them to a piece of board and shave down the ends so as to admit the bees passing from the entrance of one hive into the other—that is, so that the ends of the piece of board used as a floor for the tunnel that is to connect the entrance of the hive that is about to swarm, and the entrance of the empty one into which the bees are to be conducted, does not take up too much of the entrance and impede the ingress and egress of the bees. To put the self-hiver to work, suppose you have a hive you think is about to swarm. Get the empty hive in readiness and set it in front of the hive, and set one end of the self-hive on the alighting board of the full hive and the other end on the alighting board of the empty one so that it fits closely up to each. The worker bees will have ample room and air to pass in and out about their duties, and it is supposed that as the queen cannot pass through the holes in the zinc she will, when about to swarm, pass along the tunnel into the empty hive, and be followed there by the bees. It must be remembered that this is a new idea, and has never been put to a practical test, although it has been both approved in some quarters and condemned in others by those who are expected to know something of the matter. The thing is so simple that we place it before our readers that they may have an opportunity of putting it to a practical test. Of course,



it must be thoroughly understood that the self-hives should not be put on until the hive is very near swarming, and as soon as this has taken place, if successfully, the new swarm should be removed to its permanent position with as little delay as possible. Apiarist.

REPORT OF R.H.S. COMMITTEE ON THE NOMENCLATURE OF ORCHIDS.

The Council of the Royal Horticultural Society have adopted the following rules for the naming of orchids for garden purposes:

Sect. I.—Genera, Species, Well-marked Varieties, and Natural Hybrids.

1. The names of natural genera, species, and well-marked varieties, as well as of presumed wild hybrids, shall be written so as to accord with botanical language and usage, and to conform with the laws of botanical nomenclature (*Lois de la Nomenclature Botanique*) as adopted at the International Botanical Congress at Paris in 1867.

2. Exhibitors showing, for the first time, a plant under a Latin name, shall be required to furnish the name of the botanist who has described the plant.

Sect. II.—Artificial Hybrids between Genera.

3. Every bigener shall receive a generic name in Latin formed by combining the names of the parent genera, and a specific name also in Latin, the sign of hybridity, ×, being always added.

Sect. III.—Artificial Hybrids between Species.

4. Hybrids between species *raised artificially* shall be named in Latin, with the addition of the word *hybridus*, or the sign of hybridity, ×. (See par. 1).

Sect. IV.—Artificial Crosses between Varieties.

5. Crosses between varieties *raised artificially* shall receive suitable vernacular names.

Sect. V.—General Recommendations.

6. The Orchid Committee shall decline to recognise any unauthorised name, or any name that is deemed unsuitable, or is not applied in conformity with the preceding rules.

7. A name once authoritatively adopted shall not be altered.

8. An award may be made to any plant that is considered by the committee worthy of such distinction, even though it be unnamed, or not named in according with the preceding regulations, *provided that*, within a reasonable time, to be determined by the committee, a proper name be given. Any award made under these circumstances shall be suspended until the plant has been properly named.

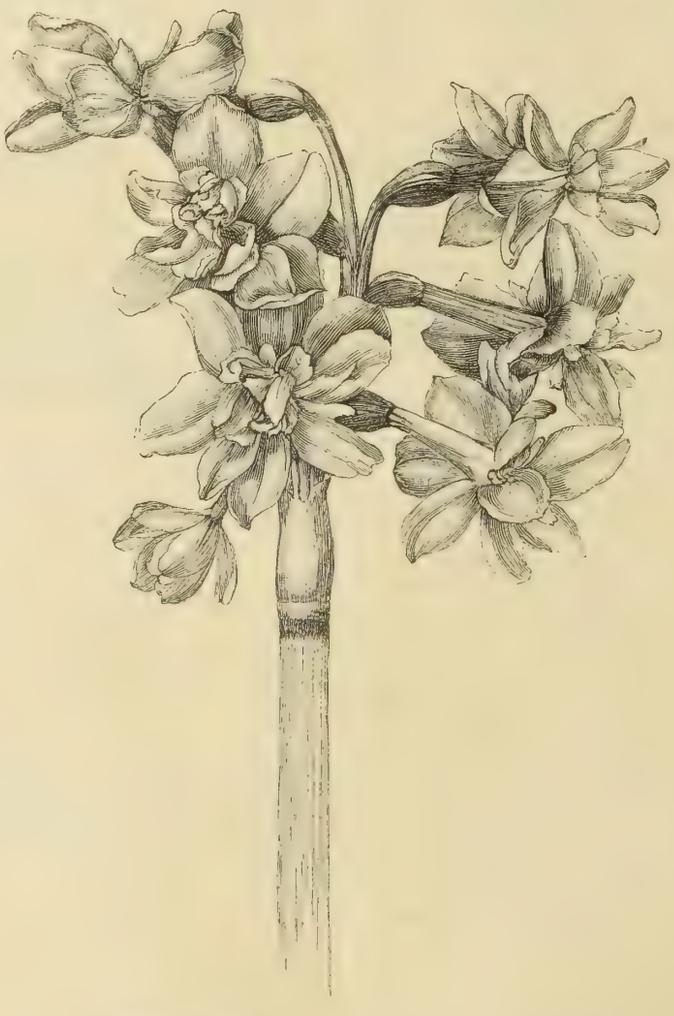
9. The operation of these rules shall be prospective, not retrospective.

10. The Council wishes to impress upon orchid growers the desirability of obtaining drawings or photographs of all new and certificated orchids, and of depositing such drawings in the library of the society for reference.

11. The Council also desires to remind cultivators of the great importance of preserving specimens for future reference and comparison, and suggests that, whenever practicable, specimens should be sent for this purpose to the Director of the Royal Gardens, Kew.

CHINESE SACRED LILY.

AT page 261 of our issue for May 3 will be found a note on the sacred lily, or Shui Sin Far, that has been introduced to this country for cultivation in bowls of water as a parlour adornment. One object of our note, as above, was to inform our readers of its exceeding beauty as a border plant, it having proved so with us as the result of planting in the open border in the month of January. When in flower it could be recognized on the instant, although in the midst of other narcissi at the same time in full flower. There are two varieties, or, rather, it should be said two forms, of the plant in cultivation. One produces single flowers that have been very generally likened to the variety of Tazetta known as Gloriosum. This appears to be the usual and, we are bound to believe, inferior form. The other and better form is double, as here figured. In this the cup no longer remains as such, being transformed into a series of petaloid pieces, which, like the outer divisions, are snowy white with a rich stain of apricot at the base. The habit of growth is somewhat stiff, and the stems carry the flowers without any need of support. The subjoined figure represents a portion of a plant which produced seven umbels containing a total of forty-eight flowers in all. So distinct and beautiful is this Tazetta narciss that we feel no surprise at what is told us of the admiration of the Chinese lovers of the narciss, and we must believe that the double form is the one to be sought for full enjoyment of its capabilities.



CHINESE SACRED LILY (a complete umbel, natural size).

HOW I BECAME A GROWER FOR MARKET.

THIRD AND LAST PART.

AT last, after about five and a-half years' bitter experience of London, came the turning-point in my life, at a time when despair had all but taken hold of me, with a wife but the mere shadow of her former self, and children, like all children of the poor, exposed to all the dangers and baneful influences of a life in London.

One day a letter arrived from an old friend in Scotland to the effect that he intended visiting the great City for the first time, and asking me if I could put him up during his stay. I could not refuse, he being an old and valued friend, although I felt strange misgivings on looking round our rooms and seeing the nature of the only accommodation we could offer him. He came, and on entering our abode, I shall never forget the mingled expression of grief and surprise plainly visible on his face as he looked from one member of the family to another. It passed away, however, his countenance quickly resuming its usual gay and happy expression and his voice its natural tones. He had taken in the situation in a moment, but with a mighty effort conquered his emotion, and ere many seconds had elapsed was at home and jolly with all the family as in days of old. All was procured that our means admitted of to make him comfortable, and a very happy evening was spent. Not one word did our guest utter throughout that long evening with reference to our circumstances. It was spent in conversation regarding other days, in ringing laughter, and in song, our friend's rendering of some of my wife's favourite Scotch songs bringing tears to her eyes more than once.

Next morning I did not go to work at my friend's request, but walked out with him to one of the London parks, where we sat down together and he revealed to me a plan for my future benefit, which he had hatched during the silent, and to him sleepless hours of the previous night. He began: "Beanstalk, you must clear out of London, bag and baggage, at once." "I cannot," was my reply. "You can; and if you don't your wife will die, and what then?" "How can I?" was my next reply. "You must rent, or buy, a small place, and start growing for market on your own account." I laughed, and said, "Where is the money to come from?" He replied, "I will help you." I was silent, and he unfolded his plan. As I had had no experience in the market line I was to obtain a situation in a good establishment in the country or suburbs, on any salary I could get, and if not enough to keep myself and family, he would add to it. In this situation I was to remain for some months, gaining all the knowledge I could, and then arrangements would be made for my future movements. I agreed, and at the end of my friend's stay he left me sufficient of the "sinews of war" to meet all contingencies in prosecuting my plans.

In the course of a short time I obtained a situation with a firm who had a very large area of glass, and who grew a great variety of fruit and vegetables for the London markets. The firm gave me a very respectable wage, and as their nursery was situated quite in the country I had the satisfaction of removing my wife and family to purer air, and far away from the baneful influences of London.

The district to which I went was one famous for its extent of glass houses for the raising of produce for the London and other markets, so that I had a good opportunity of making inquiries and gaining information. The establishment belonging to the firm that employed me was a large one, consisting mostly of large span-roofed houses, inwhich were grown cucumbers, vines, peaches, tomatos, mushrooms, and flowers of various kinds. On entering on my employ I soon discovered the work was carried on in a very different manner to that of a private establishment. I therefore made up my mind to compare the two systems by carefully watching and noting each operation, and the result of the same. Of course I had heard it said on hundreds of occasions, as every other gardener has, that it would never pay to take such care and trouble in the growing of market produce as is taken in private establishments; and I knew that, as a rule, private gardeners were sneered at by the growers for market as men only fit to make up a bouquet for a lady, rake a walk, and trim a lawn. I was no exception to this rule on entering on my new work. I believe by the foreman and men, at least, I was looked upon with the greatest contempt, and very frequently heartily laughed at. By the masters I was treated always with a kind of suspicion, which under other circumstances would have been very irksome to me. I was watched by all, more, I believe, in the hope of finding defects in my work than otherwise. I kept jogging along, however, watching closely in my turn, making copious notes, and as much as possible keeping my mouth shut with regard to my own opinions.

In order to see as much of the routine of a market establishment as possible, I remained fifteen months. When that time expired I had everything prepared to start on my own account in a small way, and I am glad to say that, although some years have elapsed since that time, I have never had any cause to regret the step I took.

During my fifteen months' sojourn in the establishment I was at times employed in all the departments, eventually making many friends among the employés. I had, therefore, free opportunities of inquiring, observing, and noting, and after the expiration of the fifteen months, and the most careful consideration of the whole matter, I arrived at the conclusion that, as a general rule, the more closely market growers, especially those who have glass houses only, adhere to the system of cultivation adopted by our best private gardeners, the better it would be for themselves, and this conclusion has been confirmed and sealed by the subsequent years of experience on my own account as a grower for market.

The oft-repeated maxim that anything is good enough for market is one, I think, that growers for market cannot be too often warned against. The production of inferior fruit and vegetables in England is, I believe, one of the great causes of success in the foreign competition of recent years, and I hold fast by the opinion that it is as easy and as inexpensive for the British market gardener to produce fruit and vegetables of the first quality which will fetch the first price as it is for him to throw upon the markets large quantities of stuff not unfrequently vastly inferior to that sent to us by our foreign friends, and which fetches but a sorry price. Fine consignments never fail to bring fine returns, and this is the object to be aimed at by our English market gardeners, in order to replace the present wasteful system of rough cultivation, and enable them the more successfully to combat the present alarming foreign competition. But this subject, being a wide one, would perhaps require to be dealt with separately from this history.

It is truly astonishing to find that in many of our English districts most famous for the production of indoor fruit and vegetables for market that only an extremely small percentage of trained and educated private gardeners are engaged in the industry either as principals or employés. I personally am acquainted with whole districts where scores of acres are covered with glass, and where not a man is to be found who has had a training, or has been employed as a private gardener; where the proprietors are *ci-devant* builders, carpenters, coast-guardsmen, commercial travellers, and the like; where the foremen have received their only training under such owners, and where the hands employed are simply labourers. Now is this as it should be? Certainly not, or what is the use of all our boasted skill and knowledge as British gardeners? What the advantage and benefit to be derived from our able and carefully conducted press? None whatever. All must be thrown to the winds if we are to stand outside the pale of British horticultural commerce, and allow others to pick up all the plums, the outcome of a recent and sudden spread of the knowledge of the skill possessed by *the* gardeners of England, the development of the studies of centuries.

Of course, I am well aware that it is not so easy, as in my case, for gardeners out of work to find a friend to assist them into something else, but it is a question, I think, well worthy of the consideration of nurserymen, societies, indeed, of all those interested in horticulture, if something could not be done in the way of amalgamation to assist deserving men out of work.

Under the revised Allotment Act land will not be difficult to get in any part of the country, and I would impress upon my brother gardeners the conviction, gained from hard experience, that it is better to rest satisfied with a small place which can be worked thoroughly, and from which can be drawn produce of the first quality, than either to spend their lives in a vain endeavour to obtain a grand situation, or to speculate in a large concern, even when money is obtainable. In the one case the mind is cramped and development ceases, whilst the body is weakened and the temper soured. In the other failure may, in many cases, be courted, but in the case of the small holder the chances of life-long peace and contentment are augmented.

BEANSTALK.



CHINESE SACRED LILY (a portion of a plant flowered in the open border).

THE HIBISCUS.

WHEN it is considered how very beautiful and varied a class of flowering plants is comprised in the genus hibiscus, consisting of more than one hundred species, growing wild in abundance in Asia, the warmer parts of America, in most if not all the tropical islands and Africa, to say nothing about sundry more hardy ones found at the Cape of Good Hope, in Europe, and even North America, it becomes matter for wonder why many of the most beautiful do not receive more general culture in British gardens, devoted as they are to the most beautiful forms of vegetation the earth produces. Travellers have revelled in the gorgeous displays they have witnessed of the Malabar rose (*Hibiscus rosa-Malabarica*), and Cameron's rose, and red-coloured variety (*H. Cameroni* and *H. Cameroni fulgens*), as met with amidst the tropical trees of Madagascar, and are not readily forgotten. Beyond the beauty of the genus, however, many species play important parts in connection with what I shall note as domestic, or national economy. Abounding in mucilage, the juices are used for clarifying processes, whilst the tenacity of the fibre has given such species as *H. cannabinus*, both in the Indies, Otaheite, &c., the most prominent position, amidst an extensive and varied vegetation, in the manufacture of ropes, twine, &c., matting being made from *H. tiliaceus*. The merits of these plants do not end here, however. *H. esculentus* is the vegetable named "okro" of the West Indies, the "ramturai" of India being also edible, whilst *H. Sabdariffa* is under the name of "red sorrel," as far as the calyxes of its flowers are concerned, used in making tarts, and to brew a fermented decoction greatly appreciated by the natives.

My present object, however, is to draw more direct attention to the genus in its capacity of easily cultivated, showy, not to say beautiful, flowering plants. This is the more desirable from the fact, though there are quite a score or more species, or their varieties, constantly catalogued and offered by the trade, all of exceptional merit, they are so rarely cultivated, and experts in the matter of plants and their culture seem to omit, or all but omit, them from modern works of reference. Though they are as easily grown in warm stoves as are camellias in greenhouses, attaining to similar size or stature, displaying lovely shining green foliage characteristically serrated, with numerous large blooms. During the winter they experience a season of quietude, if not of absolute rest. They require liberal treatment in the matter of watering, and slight shifts annually, or less frequently as is deemed desirable, into equalad mixtures of peat and loam.

Both stove and greenhouse kinds are readily propagated from young shoots inserted into sandy soil, with a bell glass inverted over them. For stove kinds a little bottom heat is also desirable, and indeed necessary, to induce root formation. Probably I should not do justice to these stove and greenhouse kinds if I omitted to say they are evergreens, and that therefore their ornamental green leaves are present throughout the dull winter months.

Bearing on this permanent green garniture, it is well to add how very desirable the single-flowered forms are for planting against back

or end walls of stoves erected as lean-to structures against walls. Here they give permanent features, frequent beautiful blooms, and plants less liable to insect pests than generally exist for such a purpose. I can say practically that hibiscus so planted last in pristine freshness many long years, with little attention beyond occasional scientific pruning and tying in, provided always they have fair root room and a few gallons of water occasionally applied to the root base.

My reference to desirable varieties to grow will be given departmentally, for the convenience of growers.

Stove Evergreen Hibiscus.

H. rosa-sinensis, or Chinese Rose, red-flowered; July.

H. r.-s. miniatus semi-plenus.—Semi-double, crimson-scarlet; May and June.

H. r.-s. Kermesinus.—From South Sea Islands; flowers very large, showy, very double; large rounded, undulated petals, centre petals erect, two or three rows of petals on the outer portion being reflexed, and the colour beautiful carmine-crimson.

H. r.-s. magnificus.—Rose-magenta colour with shades of crimson, with dark rich chocolate mark at base of each petal; an exceptionally gorgeous-flowered variety.

H. r.-s. fulgidus.—Perhaps the most beautiful of all single-flowered forms. The individual blooms average fourteen inches in circumference. Colour carmine-scarlet, shading down to rose colour, with a large blotch of deep crimson for centre.

H. r.-s. vivicans.—Very double, brilliant carmine-crimson, free-flowering and vigorous.

H. r.-s. zebrinus.—An exceptionally beautiful flowered variety; flaked and striped, scarlet and creamy yellow alternating throughout; very distinct and beautiful.

Other stove varieties are *H. Collieri, H. cruentus, H. Dennisoni, H. Lamberti, H. Lucien*; the forms of *H. Lindeni* (yellow), *H. puniceus, H. regina, H. Van Houttei*, and the very singular more recently introduced *H. schizopetalus*, with its long pendant foot-stalks and reflexed cut petals, and the older latticed *H. cancellatus*, a really interesting and charming addition to the small-leaved section. There are also the variegated leaved varieties, named *H. Cooperi* and *variegatus*, with leaves variously marked with green, white, and red, affording permanent decorative plants of no mean merits, the former an introduction from New Caledonia.

Greenhouse Evergreen Hibiscus.

H. chrysanthus.—A new species from Natal; colour of the flower, as the name implies, yellow, but with dark-coloured eye so characteristic of the genus. This valuable species having large, showy yellow or golden flowers, is likely to prove a very valuable and necessary addendum to collections in moderately cool greenhouses. Richardson's variety, with others from New South Wales, and other semi-hardy species are worthy of re-introduction.

Annual Hibiscus.

H. Africanus, lemon-coloured with dark eye, is a handsome half-hardy annual, averaging two feet in height, which blooms freely during the months of July to October, inclusive, if treated as ordinary half-hardy annuals require, and planted into rich ground and upon a sunny site.

H. trionum hispidus, sulphur colour with dark eye, is the "bladder ketmia" of Italy; is also, singularly enough, to be met with in the valley lands of Cashmere. Colour sulphur-yellow with dark eye; half-hardy.

Hardy Herbaceous Hibiscus.

H. moschatus, the North American August-blooming species, with white, pink, and purple varieties.

H. palustris.—American marsh species; pale rose, or pink; about three feet in height, and a fine border plant.

H. roseus grandiflorus.—Large blooms coloured as named; also a fine plant for herbaceous borders.

Hardy Deciduous Shrubby Hibiscus.

H. Syriacus is the Syrian plant known as Althea frutex. I cannot exclude it from the list, notwithstanding its name allies it to the hollyhocks. It is, as a hardy plant, so good a counterpart of the more exotic evergreen shrubs when in leaf and bloom, and notwithstanding its naked appearance from autumn to late spring, is invaluable as an August and September bloomer in seven or eight distinct varieties. No garden is complete without it, whether in single or double-flowered form, or variegated-leaved with striped flowers. To grow well it requires deep loam, and ample latent moisture at the roots during the whole summer. Indeed, summer drought is its only enemy, so very hardy does it seem. A sunny position is of great importance to its welldoing.

William Earley.

LATE DAFFODILS.

On the 12th our latest narcissi appeared, the double Poet's daffodil being then in perfection, as it continues on this, the 20th, when this note is made. In its way—which is a sweet old way—this double is as conspicuous for dignity and beauty as was the "Sacred Lily" during the happy time of its rare perfection. Very many Ornatus are still in a fresh and stout condition, this being the longest lasting variety of its class, and, all points considered, the best, save alone the glorious double. A few days more of bright weather will make an end of our "daffs" for the season, and we shall hope to gather a serviceable parcel of seeds, for we see everywhere pods swelling, and a few of the earliest are nearly ripe.

H.

Canadian Government has removed fruit and ornamental trees, shrubs, and plants from the list of commodities that may be imported free, and imposed a duty of 20 per cent. *ad valorem*. The duty upon seedling stocks of fruit trees from grafting is 10 per cent. *ad valorem*.

COMMON SENSE AND COMMON NONSENSE IN THE NAMING OF PLANTS.

By Shirley Hibberd.

Read at a Meeting of the Horticultural Club, May 13, 1890.

The subject of botanical nomenclature is one that may reasonably engage the attention of this Club for an hour, the more especially if we confine the consideration to a few points illustrative of our common use of plant names. In order to economise time I will beg you to excuse the absence from this paper of any introductory remarks on the importance and interest of the various questions of a purely academic kind that might be brought under your notice; and these being put aside we can proceed at once to serious business.

If you compare what I will term the pre-Linnean names with those that Linnæus established, you will perceive at a glance how fully possessed of common sense was the great botanical reformer. The ancient names I say nothing about now. Those in use in books in the time immediately preceding Linnæus are to be regarded as descriptions in brief, the names in the vernacular being held sufficient as such. In "Turner's Herbal," 1568, simple names occur, as for example Coniza Magna and Hyacinthus Maximus, but he trusts to names in the vernacular chiefly, and again in "Ray's Plantarum," 1685, the names are in reality brief descriptions, as for example, Hyacinthus orientalis vulgaris diversorum colorum, the ordinary Oriental Jacinth. Linnæus in his Genera "Plantarum," 1737, and "Species Plantarum," 1753, established the binomial system, having prepared the way for it by a general review of the vegetable kingdom in which, by the aid of his artificial system he made a near approach to a true association of affinities and prepared the way for the natural system which is now in general favour and has nearly, but not quite, superseded the Linnean classification. We must keep in mind the principles asserted by this master as of vital importance and we may do so to advantage without converting Linnæus into an impediment to scientific progress. Those of his canons that directly concern us now are that the same generic name shall be applied to all plants of the same genus; that each generic name must be single; that generic names compounded of two entire words or portions of two entire words are improper; that generic names derived from the Greek or Latin languages are alone admissible; that names are not to be adopted for the purpose of gaining the goodwill of saints or celebrated persons; and that long, awkward, and unpronounceable names are to be avoided as altogether objectionable. There are many more such, and there is a capital summary of them in Mr. Randal Alcock's work on Botanical Names, to which I will refer those who desire a clear and sufficiently full statement of the whole case. Mr. Alcock quotes from Plukenet Coriotragematodendros as an example of a "long, awkward, disagreeable name," and some of you perhaps will give way to the cruel thought that a man who seriously published such a name for the service of the world deserved to be seriously tarred and feathered.

A good name of a plant may serve two purposes. It may guide one to a plant not seen or known before. I submit as an example that Ilex cornuta does this, when we have learned to recognize the holly as an ilex, for the specific name admirably suggests the form of the leaf. But the plant being known, but always liable to slip out of the memory, a good name recalls it in the absence of a specimen, and assists to identify the specimen when found. A fanciful name is of no use for either of these purposes; it is simply a mnemonic sign, and a tax on the memory. A German botanist is reported to have said that it is not in the power of a man to attain to a knowledge by name, and, in fact, of more than ten thousand plants. Many intelligent and observant men of fairly good memory would be glad if they could master the identification correctly by name of ten hundred plants, but whoever will explore this field of labour will assuredly discover that good names are better than bad names, and that names alone, as such, have a literary and scientific value proportionate to their correspondence with the requirements of common sense. A man who coins a name contributes to the language of the world, and the world has some right to a voice in the matter.

And you will ask me what I mean by common sense in this connection. In a general way I will answer compliance with the Linnean method, but I must in the interest of common sense propose to you that we may with advantage build upon the Linnean foundation, so as to carry the edifice a few stories higher. And our building must be after a design that needs no explaining with materials of the simplest character.

For example, Linnæus admitted commemorative names, and they might even now be allowed were common sense in the ascendant; but it is not, and commemorative names have of late years been employed with such a lack of discrimination that the abuse suggests a necessity for their total abolition. There will be other ways of commemorating worthy persons in the field and the garden, as I will explain presently. Mr. Alcock says in defence of personal names:—"It might be said that the names of people applied to plants give no information, but this is not exactly the case. 'Sherardia' could not have received its name before the time of the Sherards nor Linnæa before the time of Linnæus; so that these names at least give us a scrap of information in botanical history." A scrap it is, for which we pay an exorbitant price, the commemorative system of nomenclature having been assiduously developed into an intolerable nuisance. The late Dr. Lindley usually exhibited strong common sense in his endeavours to interpret the facts of nature, and the method of his "Vegetable Kingdom" proves his desire to help the student through the medium of names. It is, therefore, lamentable to find him saying "it is of little real importance what name an object bears, providing it serves to distinguish that object from everything else," and he adds, "I agree with those who think a well-sounding unmeaning name as good as any that can be contrived." This is a sort of encouragement to the adoption of such names as Aldiborontiphoskiphornio, which is sufficiently unmeaning and has a pleasant sound, and might be substituted for Lindleya, a genus of rosaceous plants, the generic name of which is not a matter of the first importance. My respect for Lindley's work and name will not prevent me saying that to propound so lax a rule is equivalent to the abolition of all rule; it is admittedly a putting of sound before sense, and so it may be feared that to Lindley's hearing the blast of a trumpet or the roll of a drum was as sweet and good as any angelic song or demonstration of philosophy.

In a paper written by me for the Botanical Congress of 1866, the text of which will be found in the *Gardeners' Magazine* for June 9 of the same year, the following remarks on this subject occur: "The great sin of modern botanists is the wholesale adoption of *commemorative names*. They have, indeed, in this practice some small excuse in the commemorative principle on which many of the best known names are founded. Andromeda is, indeed, an example. But there is one still more noteworthy; it is that of the genus *Linnæa*, which Linnæus named in commemoration of himself, and perhaps to remind future ages of his own early lot, describing it as a 'little northern

plant, flowering early, depressed, abject, and long over-looked.' But the extent to which the commemorative principle has been carried is ridiculous. Botanists need not now examine the new plants they find or have submitted to them; they have only to remember the name of a friend if the plant is beautiful and sweet-scented, or of an enemy if it is ugly and emits a fœtid odour. A plant comes to hand, the characters of which separate it from all known genera. The trouble of inventing a name by means of an exploration of Greek roots is saved, because the botanist has a friend named Smith to whom it would be agreeable to pay a compliment. So Smith furnishes the generic name. For the specific name there stands Brown, and the thing is done. By-and-bye a variety of the species is met with, and again the process is repeated, and the variety is named after Jones. It is perhaps a fortunate thing for mankind that Adam had no ancestors and no brethren, for he might have named the lions and tigers and antelopes after such people as Methuselah and Enoch, and Abimelech, for those names would no doubt have been common had there been a pre-existing population at the time when our great progenitor named the creatures. The good ancients of the truly classic period flung their heroes up among the stars, and the process was called an Apotheosis. We dash them down into beds of nettles, and bury them amongst the herbage before their time, that they may live with posterity in the names of plants, though perhaps they never lived for fame, and have no desire to do anything for posterity at all, not even to mock its understanding, or needlessly burden its memory. Among the reputed British species of Salix, there are no fewer than twenty-two named after persons or places, and not one of the names is so good as that devised by a humble botanist who, finding a plant he had never seen before, and having no means of ascertaining its name, called it, because found by the roadside, *Rhodum Siaum*, as good a name perhaps as Georgium Sidus, and one that might be adopted and pass current without raising a laugh. In Curtis's *Botanical Magazine* for the year 1865 there are figures and descriptions of sixty-six plants, of which no less than twenty-eight derive their specific names from places or persons; or, to be more particular, nine are named from the countries or districts in which they grow, and nineteen from persons. With all respect to the botanists, I must say that these nineteen names at least are frivolous. Geographical names are, as a rule, not good. Very many of the plants found in Japan, and named (with how little effort !) Japonica, are also found in China; and species that inhabit both the old and new world cannot with any propriety at all have geographical names assigned them. If books of authority like the *Botanical Magazine* are thus open to animadversion, what shall we say of trade catalogues? What shall we say? I quit the unwelcome theme, and leave the trader in plants at his own free will to commemorate his relations, friends, and customers *ex officio*, for the simple reason that we are not bound to trade names, but we are bound to the names in the *Botanical Magazine*, and to all that come to us with the stamp of authority. In the *Botanical Magazine* during the year 1888 there were published 61 plants, of which 31 have specific names commemorative of persons, three are records of geographical location, and 21 are founded on visible characters, and may be regarded as descriptive. The secret cannot be concealed that the bestowal of a personal or geographical name saves time, and demands absolutely no talent; but for the bestowal of a good descriptive name a diagnosis is required, and it must be performed by a botanist familiar with the genus, and in a state of mind favourable to clear perception and discriminative comparison. But to name a plant in honour of somebody's niece, aunt, ninth cousin, or grandmother is an easy task, and might almost be done by machinery.

A generic name should cover all generic characters, and a specific name should clearly separate a plant from all other species in the genus. The thick or broad gauge men are lumpers, and see fewer species worth naming than the thin or narrow gauge men who are splitters, and usually see more species than common sense can acknowledge. The broad gaugers have increased at a rapid rate since Darwin gave a new interest to the generalizing faculty, and put it into the minds of men that all organic forms are transient and mutable.

When new names are required, the structure and affinities should determine the boundaries of a genus; and some distinctive characters of form or habit should determine the species. To name plants from their colours is bad practice. We have Digitalis purpurea alba, the white-purple foxglove, which is not more rational than to say the white black cat. Nor is it consistent with the aims of science to adopt names that reflect injuriously or unpleasantly upon persons. Linnæus has himself condemned commemorative names, not by words but by deeds; for he managed to convey a sneer, or even an affront, by his freaks of terminology. Sir J. E. Smith, who was a purist in this matter, refers to the Linnean name Buffonia tenuifolia as "a satire on the slender botanical pretensions of the great French zoologist, as the Hillia parasitica of Jacquin, though perhaps not meant, is an equally just one on our pompous Sir John Hill." But he does not approve of such satires; he says "they stain the purity of our lovely science; if a botanist does not deserve commemoration, let him sink peacefully into oblivion. It savours of malignity to make his crown a crown of thorns, and if the application be unjust it is truly diabolical." Mr. Alcock has put the case reasonably, thus—"Those names that point out a decided specific character are the best, as Arenaria trinervis, Chlora perfoliata, Epipactis ensifolia, and the like."

The greatest sinners against propriety in naming plants are the orchidists, for they ignore all settled rules, they repudiate the requirements of common sense, they make a law for themselves which they do not define, and which whenever they do define it, will convict them of frequent and flagrant violation. We must wait for the report of the committee that has taken the subject in hand, and has been toiling almost time out of mind, and meanwhile pray that they will not vex the shade of Linnæus to the extent of compelling him to get out of his grave to terrify the evildoers, but if they follow the example of Reichenbach it will be impossible to predicate to what it may lead them. The great orchidist was a notorious splitter and species maker, but his followers in this country accepted all his decisions without question, and never wavered in faith until the man was dead; then, finding that he had resolved we should not have his collection, his worshippers made the sad discovery that he was but a wooden god after all, but being dead and buried they were denied the gratification of knocking him to pieces. [Report of Orchid Nomenclature Committee was issued simultaneously with the reading of this paper.]

The raising of hybrid orchids has brought about a curious crisis in botanical nomenclature. The binomial system may be said to be nowhere in face of the new array of facts. Take a few examples. I will begin with the actual Cymbidium eburneo-Lowianum, Cymbidium giganteum, and Cymbidium pendulum. Then I will effect a cross between Cymbidium giganteum and Cymbidium pendulum, and the selected offspring shall be called Cymbidium giganteo-pendulum. This last I will cross with Cymbidium eburneo-Lowianum and the result shall be a beautiful orchid with the interesting name Cymbidium eburneo Lowianum-giganteo-pendulum. And again we have Dendrobium Wardiano-aureum, and we have Dendrobium crassinode Wardianum. I will cross these and secure a new beauty to be called Dendrobium-aureo-crassinode-Wardianum. We shall have to manipulate generic names in an equally elegant manner; we cross Lælia with Cattleya and obtain a new genus to be called Lelio-Cattleya, and we cross in an opposite direction to obtain Cattleya-Lælia. The broad gauge man will take the hint to keep garden varieties apart from species, and to make more sure of genera than to allow of such barbarities. To him it will suffice that the new genus has no existence as such, because the parents were necessarily not generically distinct; and you do not need that I should add that, however convenient the distinctions between Cattleya and Lælia may be, they have not the force of dividing lines for scientific purposes. The orchidists are endeavouring to turn the world back to what we may speak of as pre-Linnean times, and they substitute descriptions for names, and where a definition is wanted they provide a confusion. In passing through a village the other day I halted to light a cigar, and the voices of children arrested my attention. I heard one speak in a pretty manner a bit of rhyme apparently designed to puzzle a Scotch metaphysician, but it appeared to me to fit nicely to the new problem of the identification of an orchid. The rhyme ran thus :—

Supposin' I was you,
And supposin' you was me;
And supposin' we all was somebody else,
I wonder who we should be.

I submit that we are not to have descriptions in the place of names, and that while the binomial system suffices for all ordinary purposes it should be maintained in its original integrity. The use of supplementary names is allowable only as representing varieties, and may be framed on a variety of plans with almost unlimited latitude, consistent with propriety and convenience. Between liberty and licence in the bestowal of names, common sense will never fail to discriminate, and we must systematically repudiate offensive, deceptive, ridiculous, sarcastic, and "jaw-breaking" names, for it is not well that the language of the herbarium or the garden should provoke laughter or the contempt of mankind. Very often our plant names do both to the injury of science and the disgrace of the inventors of the ugly and unpleasant names.

In naming varieties, and especially garden plants, I repeat, there must be much liberty allowed; and here ample room may be found for commemorative names, and for such as may be termed fanciful and playful. But common sense will object to freedom in this region irrespective of the class of subjects to which the names are applied. For such things as dahlias, pelargoniums, and phloxes, descriptive names are rarely wanted. Within the limits of propriety, any names will serve for subjects that are generally speaking of only temporary interest. But in such a group of plants as the varieties of Ilex aquifolium for example, we seem to need descriptive names; those of a personal or geographical character being inappropriate. We have a holly appropriately named Laurifolia, and the name is useful as a guide to the plant. Another is named Latispina. This is an admirable guide, for the name exactly corresponds to the character. Suddenly in the midst of hollies we find Madame Briot, where a lady should not be in the midst of spines and sombre colours, and other characters that have nothing especially feminine about them. In full persuasion of the immense aid good garden names might prove in the identification of varieties that have somewhat of the solidity and permanence of species, I bestowed some care in the classification and nomenclature of the ivies, and in the year 1872 published a monograph of the species. In this I adopted or invented descriptive names for all the varieties I could obtain; and you will find them entered as lobed, arrow-leaved, wrinkled, round, angular, and so forth. The personal names I abolished without hesitation. For example, I found an ivy bearing the name of Glymii; and as the Glym would not light me to the character, I named it Tortuosa, because it has a twisted leaf. One that I found bearing the sweet name Rhomboidea obovata latifolia I observed had a leaf that might be likened to the Greek letter D, and I called it Deltoidea. The world did not accept my proposals with joyful thanks, for in truth I was pretty freely abused in the papers for altering the names. But I allowed it all to pass without complaint, and now there is a growing tendency to admit that common sense may by gracious permission have something to do with the naming of garden plants. It goes without saying that the men who knew absolutely nothing about ivies were the most free of their abuse; and I never condescended to tell them as I might have done, that many of the names they condemned as new and ridiculous, were good old names that I sought to re-establish in the place of later names that were altogether inappropriate. Had they looked through the book they might have discovered this; and the discovery would have saved them from a display of ignorance. But you know, critics of books do not read them; they cut them and smell the paper knife, and whatever odour the printer imparts to the book, determines the critics' estimate of its merits.

If you ask me what is to be done I can only answer that I have more faith in public opinion than in any of our organised societies, councils, and committees. In 1866, I proposed the constitution of a Board of Nomenclature by delegations from all the societies supposed to be interested in the subject. It is doubtful if such a board could be constituted considering how local and academic the so-called learned societies for the most part are. As the case stands anyone has power to force into use objectionable names, for the resistance of so-called authorities is of a purely passive and personal kind, and a little perseverance will overcome all obstacles, however philosophical, reasonable, or pedantic they may be. A revising board would need to be in correspondence with all botanical and perhaps with some horticultural societies not only of Europe and America, but of the world. I do not see anywhere an indication of the spirit that would be calculated to initiate such a movement, and yet, were certain common sense principles agreed upon for a basis of operations, an immensity of good work might be accomplished with but a shadow of the effort that appears to be inevitable so long as we consider the matter in the abstract only. Let us take the Bromeliaceous plants for an example. The late Professor Edward Morren has left for the appropriation of such a board a systematic revision and all the materials for a rectification of nomenclature. One example is as good as fifty. Specialists will be found to differ in their methods of operation, in their views on classification and nomenclature, but as a rule they may be relied upon for minute knowledge of facts, and the business of a revising board would be to turn their labours to account in aid of a distinctly formulated system; the board would have to harmonize rather than invent; and it would have to parcel out the work and keep controul in view of fundamental principles.

I am fully persuaded that botany and horticulture are seriously prejudiced by the ambiguous, variable, unpleasant, and ridiculous fashions that prevail in the naming of plants. When the name of a plant causes a curling of the lip, or a smile of surprise, that grave men who are philosophers sometimes can designate beautiful objects by ugly terms, those beautiful objects are depreciated by the contempt their names inspire. There is enough lead in the bowels of the earth to keep it steady on its axis; and it is waste of energy to clothe the flowers of the field with cumbrous loads of botanical stupidity. If this sort of thing goes on this poor old planet will become top heavy and will reel from its proper orbit into some deep abyss amid gorgons dire where the pursuit of botany will be impossible.

Exhibitions and Meetings.

OXFORDSHIRE HORTICULTURAL SOCIETY, MAY 14.

THIS society opened its sixty-first season with a very excellent exhibition of spring and early summer products, the Corn Exchange, Oxford, being filled to its utmost staging capacity. The weather was very favourable, and the society's members attended in considerable numbers.

ORCHIDS were well represented by a grand bank from the Blenheim Gardens, which included cattleyas, lælias, cypripediums, odontoglossums, and dendrobiums. In the competing class for four, Mr. G. Jacob, Whitney, headed the list with well-bloomed examples of Lælia purpurata, Cattleya Mossiæ, Cypripedium caudatum, and Odontoglossum triumphans; E. A. Bevers, Esq., Broad Street, Oxford, second, with Lælia purpurata, Cattleya intermedia, and Odontoglossum vexillarium; Mr. R. Price, third. Mr. G. Jacob, also enriched the class with tastily-arranged baskets,

STOVE AND GREENHOUSE PLANTS were in plenty, foliaged subjects predominating. For six, Mr. G. Jacob was first; Mr. J. Mattock, New Headington, second. Single specimens were very good for stove, E. A. Bevers, Esq., took the card with a noble specimen of Lælia purpurata; Mr. G. Jacob, second. For ornamental foliage, the first card was affixed to a bulky Latania borbonica; the second to a well-grown Kentia; and the third to a grandly coloured Croton Weismanni. The hardy specimen which secured premier honours was a fine example of Spiræa Japonica from Mr. Mattock. Mr. Walker, Thame, putting up a large clump of Dielytra spectabilis; while in the class for a greenhouse plant a large specimen of Plumbago capensis was selected for first place.

AZALEAS were a small show, Mr. Mattock taking first for six, in which were Stella, Van der Cruyssen, Sigismond Rucker, and Duchesse de Nassau.

PELARGONIUMS were in good condition, Mr. C. Jacob, Barton, Headington, leading with six, including Claribel, Madame Thiabaut, Gold Thread, Mrs. Freeman, Edward Perkins, and Digby Grand; while for four, Mr. W. Narroway, Headington Quarry, was a good lead with Madame Thiabaut, Duchess of Bedford, Claribel, and Edward Perkins; Mr. E. Thorne, Kingston Road, Oxford, second; Mr. Mattock first for six zonals.

ROSES were not a large show, but the cut flowers were generally good, notably in the class for six of one variety, Mr. J. Walker, Thame, taking the lead with very fine blooms of Maréchal Niel; Colonel Miller, Shotover Park, second with the same variety; Mr. J. Johnson, Garsington, third with Devoniensis. For twelve, Mr. Walker was the only competitor, his blooms being finely developed, the varieties represented being La France, Niphetos, Dupuy Jamin, Baroness Rothschild, Souvenir d'Elise Vardon, Maréchal Niel, Comtesse de Nadaillac, Lamarque, Souvenir d'un Ami, Devoniensis, Reine Henriette Marie, and Catherine Mermet. For six, Mr. John Saunders, Headington, first with a good selection, good for size and freshness. Mr. Geo. Prince, Oxford, stageda dozen blooms of Souvenir de S. A. Prince, a pure white sport from Souvenir d'un Ami.

The display of tulips was fairly good for the neighbourhood, and pansies in pots and cut were well represented, as were also hardy perennials.

CALCEOLARIAS and CINERARIAS were exceedingly dwarf and well-flowered, and hardy plants in flower (a novelty here) proved interesting.

FRUIT was limited to a few choice clusters of grapes and some excellent dishes of strawberries. Mr. H. Smart, The Market, Oxford, aided the display by a nice collection, including pine apple, melon, peaches, strawberries, and apples.

VEGETABLES, for which the locality is famed, were above the average for a May show, the potatos, broccoli, asparagus, cabbage, salads, and rhubarb being specially fine. The potatos which took the first cards in the open class were grown in eight-inch pots.

GLOXINIAS produced a fine display, the flowers large and rich in colour, the cards going to Mr. J. Walker, Mr. C. Jacob, and E. J. Trendell, Esq. (Abingdon).

BOUQUETS are generally a good feature here, the dozen by Mr. J. Johnson, Garsington, being much admired.

DINNER-TABLE DECORATIONS (three pieces).—The Mayor of Oxford (J. Hughes, Esq.) gave special prizes, and Mr. J. Bates, Blenheim Nursery, Oxford, was adjudged first, and Mr. Mattock second, both having tasteful arrangements.

BRUSSELS AMATEUR ORCHID SOCIETY.

The monthly meeting of this society was held on the 11th and 12th inst., in the Central Gallery of the establishment L'Horticulture Internationale (Linden), and was a large and interesting one. Some fine forms of Cattleya Mossiæ and C. Mendeli were staged, and cypripediums, vandas, and odontoglossums were well exhibited. Two new orchids were shown by L'Horticulture Internationale (Linden), one a cattleya, dedicated to M. G. Warocque, seems a thoroughly distinct species, of great beauty. This fine new species has appeared among a recent importation made by M. Linden. The jury, over which M. Van Lansberge presided, included MM. Kegeljan, secretary; J. Linden, J. Hye-Leysen, G. Miteau, and Wallaert.

In referring to the numerous contributions, it must be said that Madame Cannart d'Hamale contributed a large group, in which were well-flowered specimens of Cypripedium caudatum, Oncidium Marshallianum, Odontoglossum luteo-purpureum. M. G. Warocqué staged a number of plants, among which were some excellent varieties of Cattleya Mossiæ; Odontoglossum Halli Lindeni, a superb variety, several beautiful forms of natural hybrid odontoglossums, and others. M. R. Martin Cahuzac showed a well-flowered specimen of the rare Cattleya Reineckeana. From the collection of M. Jules Hye-Leysen came, amongst others, Odontoglossum amabile, a superbly-spotted form, of great merit. M. Van Lansberge contributed Cattleya Lawrenceana, in especially fine condition. M. Wallaert exhibited in his group a grand variety of Cattleya Mendeli, and a well-flowered specimen of Cymbidium Lowianum. From M. Peeters came Cattleya Skinneri alba, Peeters' variety, exceedingly fine; Cattleya Schrœderæ, Cypripedium leucorrhodum, a superb form of Cattleya Mendeli, and Odontoglossum polyxanthum. Several fine forms of Miltonia vexillarium came from the collections of M. van Imschoot, Dr. van Cauwelaert, and Dr. Capart. In the group staged by M. Miteau were Lælia purpurata Nelisi, a superb dark form, and Cypripedium ciliolare Miteauianum, undoubtedly the finest of its section. It has been well figured in *Lindenia*. Cypripedium Io Eldorado, having broader petals than the type, thickly studded with large black warts; a well-flowered specimen of Cattleya Mendeli; and several fine dark forms of Cypripedium caudatum. From L'Horticulture Internationale (Linden) came several large and interesting groups, among which were Cattleya Warocqueana, above mentioned, and Dendrobium Galliceanum resembling in growth and habit Dendrobium thyrsiflorum. The large, well-shaped labellum is of a bright, shining orange colour, finely fringed and margined with white; a most desirable acquisition. A large number of superb varieties of Cattleya Mossiæ, Lælia purpurata in variety, and finely-spotted forms of Odontoglossum crispum.

The large number of awards bear testimony to the excellent quality of the exhibits.

First-class Diplomas of Honour were awarded for *Cattleya Warocqueana* and *Dendrobium Galliceanum*, from M. Linden; *Odontoglossum amabile*, from M. J. Hye-Leysen; *Cypripedium ciliolare Miteauianum*, from M. G. Miteau.

First-class Certificates of Merit were granted for *Cattleya Mossiæ var.*, from M. Warocque; *Odontoglossum crispum virginale* and *Vanda suavis Lindeni*, from M. Linden; *Odontoglossum polyxanthum*, from M. Peeters; *Lælia purpurata Nelisi*, from M. G. Miteau; *Cattleya Mendeli superba*, from M. Linden; *C. Reineckeana*, from M. Cahuzac; *Cattleya Mendeli Yvonniæ*, from M. Linden; *C. Schrœderæ superba* and *C. Skinneri alba Peeters' var.*, from M. Peeters; *Odontoglossum Halli Lindeni*, from M. Warocque; *O. Harryanum*, from Madame C. d'Hamale; *O. Halli leucoglossum*, from M. Miteau; *O. luteo-purpureum*, from M. Linden; *O. hybrid*, from M. Warocque; *Cypripedium grande*, from Dr. van Cauwelaert; *Aerides Houlleti*, from M. Linden.

Second-Class Certificates of Merit were granted for: *Cattleya Mendeli*, from M. Wallaert; *C. Mendeli robusta*, from Mr. Peeters; *C. Mossiæ* and *Lælia purpurata alba*, from M. Linden; *Odontoglossum hybrid*, from M. Miteau; *O. Wilckeanum*, from Dr. van Cauwelaert; *Vanda tricolor Wallichi*, from M. de la Devansaye; *Cypripedium caudatum*, from M. Warocque; *C. Io Eldorado*, from M. Miteau; *Oncidium fuscatum* and *Calanthe masuca*, from M. Linden.

First-Class Cultural Certificates were granted for: *Cattleya Mossiæ grandiflora* and *C. Mossiæ superba*, from M. Warocque; *C. Lawrenceana*, from M. de Lansberge; *C. Mendeli*, from M. Miteau; *Cypripedium caudatum*, from Madame C. d'Hamale.

Second-Class Cultural Certificates were granted for: *Cattleya Mossiæ* and *Odontoglossum Pescatorei*, from M. Warocque; *Oncidium Marshallianum* and *Odontoglossum luteo-purpureum*, from Madame C. d'Hamale; *Oncidium concolor* and *Trichopilea suavis*, from M. Linden.

NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.

The monthly meeting of the members of this association was held in the Christian Institute, Aberdeen, on Wednesday evening, 7th inst. There was a good attendance, and Mr. Smith, the president, occupied the chair. Mr. Alexander Robson, of Messrs. Smith and Son, seedsmen, Aberdeen, read an interesting and instructive paper on the "Propagation and Improvement of Cultivated Plants." Mr. Robson reviewed the improvements of the last twenty years, showing that immense progress had been made in that time, mainly owing to the increased activity of hybridists and cross-breeders. This activity was due very much to the painstaking work of Darwin, who did more than any other man to make clear the knowledge of the effect of crossing and hybridising upon plants. He instanced Darwin's experiments giving chief prominence to cross-breeding as being the means by which almost all recent improvements had been effected. Darwin had shown that cross-breeding improved the quality and productiveness of the stock. He gave detailed lists of vegetables and flowers, showing that of the principal varieties of twenty years ago new and greatly improved varieties had since superseded them. The science of horticulture had been making as much progress as any of the other arts or sciences.

Mr. France asked Mr. Robson to describe distinctly the difference between hybridisation and cross-breeding. Mr. Robson replied that cross-breeding was the inter-union of members of the same family, while hybridisation was the inter-breeding of different species. Mr. France said he was not aware that it was possible to cross or hybridize two members of different families. They must belong, he contended, to the same natural order before they could be hybridised. Mr. Cocker also said it was impossible to get two plants of two different families to breed together. Mr. Robson remarked that Darwin, Burbidge, and Dr. Lindley had marked out clearly the distinction between crossing and hybridising, and it would be found in their books. The confusion between the two terms all resulted from popular inaccuracy in the use of them. It was only within certain degrees of affinity that hybridisation was possible. He defined the crossing of one species with another species as a hybrid, and the crossing of one variety with another variety of one species as a cross. With regard to the relative merits of old and new varieties, Mr. Mortimer thought careful cultivation had a good deal to do with it. Some of the old varieties, for instance, of cabbages, potatos, and peas far excelled the new in his opinion. Mr. William Reid, the secretary, agreed with Mr. Mortimer's remarks, although admitting, along with Mr. France and other members, that crossing had done a great deal to strengthen and improve certain sorts of plants. Mr. Reid remarked further that till within the last ten years cross-breeding was done in a haphazard way. Darwin had been the foremost to go about it in a scientific way. He agreed with Mr. Robson in considering a cross between two species of the same natural order a hybrid.

Mr. Robson was warmly thanked for his paper. The members at this stage proceeded to inspect a large number of specially fine exhibits, largely illustrative of Mr. Robinson's paper which were sent forward. Mr. Gregor, Fairfield, showed a collection of orchids—exceptionally well-flowered—a box of polyanthus and auriculas, for which he was awarded the association's cultural certificate. There were three boxes of daffodils, eighty varieties; a box of herbaceous flowers, thirty varieties: and a box of polyanthus and primroses, thirty varieties; two boxes of pansies, sixty varieties; ten pots of

Primula Sieboldi, ten varieties; and a climbing rose of rare merit, from the nurseries of Messrs. James Cocker and Son, and the fine collection was awarded a cultural certificate. Mr. Stephen, Crathes Castle, received a certificate for a capital collection of auriculas, primroses, daisies, etc., as did also Mr. Ross, Cranford, for a box of auriculas and polyanthus. The other exhibitors were Mr. McPherson, Deemount, who sent a collection of pansies and auriculas; Mr. Morrison, Waterton, who forwarded a display of polyanthus, daisies, and auriculas; and Mr. Mortimer, Tullos, who had on view a fine head of broccoli. It was agreed by the meeting that the exhibition be opened free to the public on Thursday. This was done with the result that large numbers visited and greatly admired the display. At the close of the meeting notice of motion was given to the effect that the association take into consideration the advisability of offering prizes for collections of spring flowers. Votes of thanks to the chairman and exhibitors terminated a most enjoyable and instructive evening.

ROYAL AQUARIUM, SUMMER EXHIBITION.

May 21 and 22.

The third of the series of horticultural exhibitions at the Royal Aquarium, under the superintendence of Mr. William Holmes, was held on Wednesday and Thursday, and proved not less successful than were the excellent shows in March and April. As on the two previous occasions the majority of the classes were well filled, the collections were of a high order of merit, and the display produced was at once rich and tasteful.

Roses included a magnificent bank of specimens and a large collection of cut blooms from Messrs. William Paul and Son, to whom an extra prize was awarded. The specimens comprised superbly flowered examples of Mrs. John Laing, which is evidently of the highest possible value for pot culture, Fisher Holmes, Captain Christy, Duke of Wellington, Merveille de Lyon, Hon. E. Gifford, Queen of Queens, Francois Levet, Ulrich Brunner, Lady Sheffield, Baroness Rothschild, St. George, and other good varieties. The cut blooms were remarkable for their size, freshness, and finish, and proved eminently attractive.

Groups formed an important and highly attractive feature. Messrs. J. Laing and Sons, Forest Hill, were first for a group of flowering and fine foliage plants, with an arrangement comprising orchids, caladiums, begonias, and miscellaneous flowering plants, tastefully interspersed with palms and dracænas. Conspicuous in the collection were Comtesse de Brose, Ville de Hamburgh, and Louise Van Houtte caladiums, three new varieties of great merit. Deserving of attention also was a highly coloured form of Cattleya Mossiæ. Mr. H. James, Castle Nursery, West Norwood, was a good second with an effective group, and Mr. C. Nunn, gardener to J. Soames, Esq., Maze Hill, Greenwich, was third with an excellent group, but rather too flat. In competition for groups of ferns, Mr. H. James was first with a collection consisting of admirably grown examples of well known kinds, and Mr. G. Collins, Wandsworth Common, and Mr. Nunn were second and third with excellent collections.

Caladiums formed a strong feature, and in the open class for nine, Messrs. J. Laing and Son were first with large specimens, perfect in contour and rich in colour. The varieties were Clio, Souvenir de Madame Bernard, Mons. d'Halloy, Triomphe de l'Exposition, Mithridate, Candidum, Leopold Robert, Ferdinand de Lesseps, and L'Automne. Mr. J. Day, Casino House, Herne Hill, second.

Azaleas and Pelargoniums produced a brilliant display of colour. In the principal class for azaleas Mr. H. James was first with large densely-flowered specimens; and Mr. C. Turner, Slough, was second with specimens equally well flowered, but a size smaller. In both the classes for pelargoniums Mr. C. Turner was first, and had specimens of large size and admirably flowered.

Calceolarias and Gloxinias were both admirably represented. In competition for Messrs. Sutton's prizes for six, Mr. C. Nunn was first with specimens remarkable for the cultural skill that had been brought to bear upon them and for the high quality of the flowers. The same exhibitor was first also for twelve, and Mr. G. Collins was second. In a second class for six, Mr. J. Lambert, gardener to H. W. Segeleck, Esq., Elfindale Lodge, Herne Hill, was first with finely-flowered examples; and Mr. Nunn and Mr. Collins followed for second and third places. In competition for the prizes for twelve herbaceous calceolarias, Mr. T. Mursell, gardener to Mrs. Burton, Tower House, Streatham, was first with large densely-flowered specimens; but the flowers were hardly so good in quality as could have been desired. Mr. H. Guyett, gardener to T. Gabriel, Esq., Elmstead, Streatham, was second with smaller examples, but the flowers plentiful and of good quality. For six, Mr. Guyett and Mr. T. Mursell were first and second respectively.

Pansies and Violas had several classes provided for them, and as they were well filled these flowers formed an attractive feature. Mr. R. Dean, Ealing, obtained premier honours in the class for twelve show pansies, and in the corresponding class for fancy varieties Mr. Hooper was first, and Mr. R. Dean and Mr. F. Weedon were second and third. For twelve violas Messrs. Paul and Son, Cheshunt, were first with an excellent collection, in which Lutea pallida, Countess of Kintore, Blue Bell, True Blue, Skylark, and Countess of Hopetoun were particularly well represented. Mr. C. Turner and Mr. R. Dean also exhibited well in this class.

Table Plants were plentiful, and in quality decidedly above the average. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, obtained premier honours in the class for twelve; and Mr. C. Lane, gardener to E. H. Coles, Esq., Burntwood, Caterham, and Mr. Easy, Highbury New Park, were second and third. The collections consisted chiefly of dracænas, crotons, and palms.

Hardy Flowers constituted a very interesting and highly attractive feature. For a collection Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, was first with a large and tastefully-arranged collection, comprising pæonies, gladioli, pyrethrums, ixias, cypripediums, anemones, and a host of other good things. Messrs. Paul and Son were second with a collection in which hardy azaleas and rhododendrons were strongly represented. Messrs. Barr and Son, 12, King Street, Covent Garden, were third with an excellent collection. Mr. A. Gibson and Mr. J. Nicholson occupied a prominent position amongst exhibitors of cut flowers of stove and greenhouse plants. Messrs. Perkins and Son, Coventry, were first in each of the two classes for bouquets, and the most successful of the exhibitors in the classes for epergnes were Mr. J. Lambert, Mr. E. Chadwick, Ealing, and Mr. D. B. Crane, Highgate.

Novelties were rather numerous, and first-class certificates were granted as under: To Messrs. Barr and Son, for *Hyacinthus amethystinus albus*, *Iris Korolkowi*, *I. germanica Kharput*, and *Trillium cernuus*; to Mr. R. Dean, for *Aubrietia violacea*; to Mr. T. S. Ware, for *Pæonia Wittemanni*; and to Mr. F. Hooper, for *Pink Her Majesty*.

BATH FLORAL FETE, May 21.

In true summer-like weather the Bath Floral and Band Committee held their spring show in the Sydney Gardens on the above date. The gardens were in fine condition, the many ornamental and flowering trees and shrubs being at their best.

The entries for the show were a good average. In the twenty-nine classes devoted to plants, there were but fourteen pots less in competition than in 1889, which was regarded as a big exhibition. The display was greatly helped by a long bank of miscellaneous subjects staged by Messrs. G. Cooling and Sons, who had several dozens of choice pansies in pots, petunias, three forms of aubrietias, viz., Græca, Rosea, and Leichtlini, and a wide range of hardy, greenhouse, and more tender subjects. R. Veitch and Son, Exeter, were even more showy with a numerous collection of acers, rhododendrons, pansies, heaths, azaleas, and stove and greenhouse novelties. Mr. W. Meddick, Bath, staged a collection of nearly one hundred cut pansies, and forty tulips for which he received a certificate of merit.

In a walk through the big tent, "the Queen of the West" as it is called, it was evident that the good people of Bath and neighbourhood are strong in,

Orchids.—The sum of £22 was offered as prizes in the classes for these subjects. For six the Rev. E. Handley took the card for large examples of Cymbidium Lowianum giganteum (three spikes), Vanda suavis (one spike), Lælia purpurata (eight spikes), Cypripedium caudatum (ten slippers), Dendrobium suavissimum, and Cattleya Skinneri (eight spikes); Messrs. Heath and Sons, Cheltenham, second with Cypripedium Lawrencianum (eighty slippers), Cattleya Skinneri (twelve spikes), Dendrobium thyrsiflorum (thirty racemes), Odontoglossum Pescatorei (thirty racemes), Lælia purpurata, and Cattleya Mossiæ. For four varieties there was a keen competition; the specimens of good size and in excellent condition. Rev. E. Handley was again first, staging Dendrobium Bensoniæ, Cattleya Mendeli, Lælia purpurata, and Oncidium ampliatum majus; Sir A. Ramsay, Bart., Cheltenham, second with Cattleya Mossiæ magnifica, Dendrobium suavissimum, Cattleya Mendeli, and Lælia purpurata; Mrs. Gouldsmith, Trowbridge, taking the third card with Cattleyas Mossiæ and C. Mendeli superba, Lælia purpurata, and Odontoglossum Alexandræ. In the class for one specimen the card went to Rev. E. Handley for a prime piece of Lælia purpurata (twenty-eight flowers); R. B. Cater, Esq., second with a plant of the same variety furnished with nearly twenty blooms. In the amateurs' class for one orchid R. B. Cater, Esq., led with a model example of Dendrobium thyrsiflorum (seventeen racemes); the second prize going to C. W. Mackillop, Esq. The groups of orchids and ferns, &c., on a space twelve feet by six feet, made a pleasing feature, Rev. E. Handley leading with a splendid and varied display of useful plants, among which was a plant of Lælia purpurata (variety Handleyana), the sepals suffused purple, the labellum rich glossy purple, with throat veined in strong lines. A certificate of merit was awarded. R. B. Cater, Esq., and Messrs. Heath and Sons were second and third with most meritorious arrangements. Special mention should be made of a noble example of Vanda suavis, staged by Rev. E. Handley, it being five feet high and furnished with eight spikes, carrying seventy flowers.

Azaleas.—These were generally good, the specimens scarcely gigantic, but all in fine condition. For nine the card went to Mr. J. Cypher, Cheltenham, for rotund bushes of Lady Poltimore, Reine des Pays Bas, Cedo Nulli, Mrs. Turner, Roi de Holland, Duc de Nassau, Madame Van Houtte, La Superba, and Beauty of Surrey; Colonel Landon, second. For four varieties, C. W. Mackillop, Esq., was strong with Extranei, Roi de Holland, Duc de Nassau, and Souvenir de Prince Albert; Mr. H. Jones, second with Souvenir de Prince Albert, Duchesse Adelaide de Nassau, Rembrandt, Bernhard Andreas, and Comtesse Eugenie de Kerchove. The trade class for six proved a smaller competition, Mr. W. C. Drummond, Weston Nurseries, being first with Rembrandt, Flag of Truce (large double white), Roi de Holland, and Etoile de Gand; Major P. Clarke, Trowbridge, second, his being Madame Van Houtte, Comtesse de Flandre, and Beauty of Wyke. For one azalea, C. W. Mackillop, Esq., took the card with a grand bush of Holfordi, the second card falling to Mr. W. C. Drummond, for a fine example of Stella.

Stove and Greenhouse Plants.—In the big numbers Mr. J. Cypher proved more than a match for his compeers in the class for sixteen plants, the specimens in flower, though full-sized examples, were scarcely as elephantine as the six palms which formed a suitable background. They comprised Pimelia Hendersoni, P. spectabilis alba, Hedaroma tulipifera, H. fuchsioides, Erica affinis, E. Cavendishi, Anthurium Scherzerianum, Stephanotis floribunda, Aphelexis Macrantha grandiflora, and Azalea François Dubois; Mr. J. F. Mould second. In the class for nine C. W. Mackillop, Esq., presented a lot of giants, fresh and well-flowered, the best were Pimelia Hendersoni, Hedaroma tulipifera, Clerodendron Balfouri, Anthurium Scherzerianum densiflorum, Erica ventricosa magnifica, E. depressa, E. v. alba tincta, Azalea Roi de Holland; Mr. J. Cypher second. For six Mr. Mould took first honours; Major Clarke second; and Colonel Mandon third.

Heaths.—In the class for four C. W. Mackillop, Esq., proved unapproachable, his specimens being large and densely-flowered. The varieties were Erica ventricosa hirsuta alba, E. v. grandiflora, E. v. coccinea minor, and E. Cavendishi. Mr. J. Cypher second with smaller examples. Mr. Mould third. For one heath C. W. Mackillop, Esq., was first with a perfect example of E. ventricosa magnifica; Mr. Cypher second with E. hirsuta alba.

Pelargoniums were but few, though fresh and dwarf-grown. For six Major Clarke occupied front place with full-sized plants of Royalty, Lady Isabel, Beauty of Kingston, Rob Roy, Duchess of Edinburgh, and Triomphe de St. Mande; Mr. E. Hall second.

Roses.—The honours were not difficult to distribute in the groups ranged on a space of twelve feet by six feet, the Rev. E. Handley staging fully eighty pretty fresh plants in about thirty varieties; S. P. Budd, Esq., second. The same order prevailed in the awards for half-a-dozen specimens, the first-named staging healthy bushes of Madame Lacharme, Mdlle. Therese Levet, Juno, La France, Earl of Pembroke, and Edouard Morren; Mr. Budd's groups including excellent specimens of Anna Ollivier, Juno, La France, Magna Charta, Madame Lacharme, and Comtesse de Sereyne; Mr. Mould third.

Exotic Ferns were generally very large examples; for one fern Major Clarke was first, and W. Pumphrey, Esq., second; while for nine foliage plants Colonel Landon took the card.

Calceolarias represented a prime strain, Major Clarke, first for nine dwarf-grown plants well furnished with fresh, brilliant coloured flowers; Mrs. Jolly second with richly marked forms, on taller flower stalks; W. Pumphrey, Esq., third.

Pansies were quite a large show as becomes the district Mr. W. Meddick first for six plants, his selection being Lord Salisbury, blue, purple blotch; Duchess of Albany, crimson, white edge; Princess Beatrice, purple blotch,

white margin; May Tate, marone blotch, yellow margin; Martin Rowan, yellow, maroon blotch; and A. J. Way, primrose, deep purple blotch.

Cut Blooms included some choice contributions. For an epergne, vase, or basket Mr. E. Hill, Bristol, and Mr. W. Bush divided the honours, while for a bouquet Messrs. Drummond and Hill shared the awards. The collections of flowers were nice gathering, Messrs. Richards and Son, Bristol, leading, and Mr. W. Pumphrey second.

Tulips, though fewer than usual, were well represented. For six the card went to Mr. W. Meddick, who had Emily (rose), Heroine (rose), Modesty (byblœmen), Celestial (rose), Duke of Devon (bizarre), and Lawrence Friend (byblœmen); Mr. G. Meddick second with some of the above forms, with Sir J. Paxton (bizarre) and Cherry Cheek (rose).

Pansies were in quantities, and of the usual West of England quality. For twenty-four Mr. F. Hooper, Widcome Hill, Bath, was first, and Mr. W. Meddick second; while for twelve Mr. G. Meddick and Mr. G. Hooper, Freshford, divided the honours.

Roses proved above the average for May. For twenty-four single trusses S. P. Budd, Esq., headed the list, his best flowers being Comte Raimbaud, Mrs. J. Laing, Camille Bernardin, La France, Pierre Carot, François Michelon, Innocenta Pirola, Ulrich Brunner, Baroness Rothschild, Charles Lawson, Duc de Rohan, Catherine Mermet, Madame Hoste, Earl of Dufferin, The Bride, and Royal Standard; Rev. E. Handley second; Mr. Matthew Cole third.

Fruit was a pleasing feature. The best strawberries in pots (six) came from Mrs. Hill, who staged Sir J. Paxton; Lord Justice Lopes second with President; Mr. M. Cole third with President. For a dish of strawberries, W. H. Long, Esq., M.P., first, and Lord Lopes second, with James Veitch; Mrs. Hill third with Sir J. Paxton. Apples were in force, the cards going to Wellington, while the other varieties staged included firm dishes of Red Jersey, Russet Pippin, Winter Peach, and Nonpareil Russet. The best pears were Beurre Rance and Uvedale's St. Germain.

Vegetables included elaborately arranged baskets of salads. Of potatos the premier card went to a noble lot of Royal Ashleaf, very large and shapely, the second to Myatt's Ashleaf, and the third to Royal Ashleaf. Of peas, Stratagem led, Telephone taking second and third prizes, William the First and Carter's First Crop standing fairly forward. Cucumbers in the winning dishes were Walter's Improved Telegraph (first and second), Ne Plus Ultra bringing up the rear. The collections of six dishes proved most meritorious, Giant asparagus, Sutton's Earliest and Wheeler's Improved cabbages, Canadian Wonder beans, Early Gem and French Horn carrots, Early Milan turnips, Late White and Ledsham broccoli, Red and Gilbert's Surprise tomatos, Stratagem peas, Telegraph cucumbers, Sutton's Seedling, Shiner, and Ashleaf potatos, with vegetable Cream marrows, forming the chief varieties submitted.

It should be stated that as a new feature here classes were provided for groups of miscellaneous plants, staged for effect, on seventy-five square feet. For these the prizes went to J. Murch, Esq., W. Pumphrey, Esq., and Mr. E. Hall; while for arrangements on one hundred and fifty square feet Colonel Pepper and Mr. W. C. Drummond divided the awards.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

A meeting of the above Association was held at the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, S.W., on Thursday, May 15th, T. F. Rivers, Esq., in the chair. The special object of the meeting was to consider the scheme for the fruit report which had been prepared by the sub-committee appointed for that purpose on May 1.

The Honorary Secretary in explaining the report and the method proposed to be adopted, stated that a work of this character had been part of the original intention of the Association, but until now they had not felt sufficiently strong to undertake it. It is intended that the report to be prepared shall give a faithful and impartial description of the present condition and prospects of fruit culture for profit in Great Britain and Ireland; it will be made as comprehensive as possible, and no visionary projects will be propounded. It is hoped to render the work a reliable guide to intending fruit cultivators, and of service also to those already so engaged, and the Committee invite the assistance of all interested in a work of public importance.

The scheme submitted and adopted unanimously is as follows:—The introductory chapters will deal with climate and soils in relation to fruit culture, land tenure, rent, rates, and tithes, hardy fruit culture, fruit culture under glass, fruit preservation, stocks, insects, fungi, diseases, and remedies. The report will include summaries of the chief counties in Great Britain and Ireland in reference to fruit culture, with descriptions of orchards and fruit farms, also of market gardens and private gardens where fruit culture is a special feature. The details will comprise extent of land occupied, situation, soil and subsoil, age and character of trees, varieties, stocks, and methods of culture. Sections will also be devoted to markets, dealing with supplies, salesman's charges, packing, and cost of carriage; to expenses, returns, and profits, and to the prospects of fruit culture, pointing out the land and districts best suited for fruit culture, the best systems, and the best varieties.

Arrangements are being made to collect the information required through the Committee, the local secretaries, and the members of the Association, but assistance of any kind will be gladly welcomed.

It was announced that Mr. Joseph Cheal, of Crawley, was about to undertake a long tour in the fruit districts of the United States and Canada, and he was therefore appointed delegate from the Association, with the object of collecting as much information as possible bearing upon the fruit question, and he expects to be home in time to give the results of his experience at the September meeting in the Crystal Palace. Messrs. Castle and Gordon proposed to devote a holiday in Ireland this year to an investigation of the condition and prospects of fruit culture there, and were also appointed delegates from the Association.

The programmes for the Conferences were discussed at some length, and Mr. J. Burn, of Leicester, who was present, stated that the meeting to be held there in August had already excited much attention in the local papers. Arrangements are being made for a series of lectures in suitable districts during the autumn.

Some discussion arose concerning the use of Paris green and London purple as insecticides, and the general opinion was that they were dangerous compounds, needing much care in their application. The Chairman gave, as the result of an analysis of samples of the two substances that Paris green was an arsenite of copper C^u H A^s O^3 or cupric arsenite, also known as Scheele's green. The basis of London purple is carbonate of lime, coloured with an arsenical aniline compound. It was stated that the old application for caterpillars, quassia, was still found more directly effective, used at the rate of 2 to 4 oz. to the gallon of water, with similar quantities of soft soap. A hearty vote of thanks to the Chairman concluded the business.

Replies to Queries.

Dissolving Bone.—A. S.: You will need some experience to do this well. A mixture of equal quantities of brown sulphuric acid and water should be poured over the broken bones and left for twenty-four hours. The acid is dangerous stuff to handle and the business must therefore be conducted with care.

Paraffin and Mealy Bug.—Subscriber: In using paraffin as an insecticide considerable care is necessary, and especially so in the case of hard-wooded plants infested with mealy bug. The safe course to take is to add one wineglassful of the paraffin to two gallons of water, and syringe the plants with the mixture two or three times a week. It is essential to keep the paraffin and water well mixed during the time the plants are being syringed, and the water should be kept constantly agitated. Unless this is done the paraffin will float on the surface and the risk be incurred of injury to the plants.

A Query for Photographers.—A correspondent signing L. W. B. asks a question of considerable importance, which we submit to our readers in hope of obtaining assistance in the reply it is entitled to, but which, at this moment, we do not feel competent to offer. L. W. B. says, "I practice photography, and often speculate on the possibility of employing for the aid of the garden, the waste liquid from the developer, which is highly charged with ammonia. The liquid is composed of nitrate of silver, bromide of potash, sulphite of soda, bromide of ammonia, and pyrogallic acid. Would it hurt my tomatos if I gave it them in a weak state, and is it adapted for use in the garden generally?"

Camellias—Cornered. Your camellias are in a deplorable state and a disgrace to all who have any degree of responsibility for keeping them. The enemy is scale which is lodged on the bark. The best course of procedure will be to apply gishurst compound by hand, not by any other means. The operator should hold a cake of gishurst in one hand and a sponge for the leaves or a brush for the bark in the other hand. The wet sponge or brush should be drawn over the compound frequently and every leaf washed with the compound and water; the bark to be similarly treated but with a brush. When this is done, the syringe may be used with pure soft water to finish the job.

Auriculas.—H. B. W.: It is not well to remove the stem on which the flowers are borne. Remove the flowers and let the stem die down. The "manure referred to" is in the muddled brain of the reporter. If auriculas were "grown in manure" they would not be taking first prizes. When auriculas are exhibited, any mutilation would disqualify, therefore, you must not remove the "pistil." When the stigma of the pistil is visible, the flower is called pin eyed and is out of form. Auriculas will bear so little handling that those who would "dress" them for exhibition would be in the same predicament as those who grow them in manure and remove the stigmas to improve pin-eyes—they would be nowhere.

Warp land.—F. L. S.:—By the term "warp land" is generally understood land newly reclaimed from bog, marsh, or estuary. The expression is frequently heard in the counties of Cambridge, Bedford, and Lincoln, where reclaiming from waterwaste is always in progress. We advise you to have nothing to do with warp land except under skilled advice on the spot. Of its value there can be no question, for many of the finest harvests of the country are taken from lands that have been reclaimed from marsh and bog, but it needs peculiar management until fully brought into cultivation. In what way the Scandinavian verb to warp, which means to throw, and is especially employed in reference to the labour of the loom, came to be employed as in the case now before us we cannot say, but land between the sea banks and the sea is usually called warp land, and the mole is known in some parts as the mouldiwarp, because it throws up mould.

Himantophyllum.—Verax: The use of the aspirate is optional, and this being a labour saving and hurried living age, the H is dropped at every opportunity as a hint that the age is deficient of aspiration. You may call these plants Himantophyllums, or Imantophyllums, or Clivias at your own discretion. It curiously happens that the plant commonly known as Imantophyllum Aitoni supplied the material for the founding of both genera, and both were published October 1, 1828, and have, therefore, equal claims; so far as the order in time is concerned. However, the world has ways of sifting and sorting, and the end of it is that in botanic gardens the name Clivia is usually employed, while in gardens Imantophyllum rules. When correspondents put the name in its strictly proper form as at the head of this note we make it a rule to allow it to pass because no mischief or misunderstanding can arise out of it.

Unhealthy Aerides.—Amateur Orchidist: The information you have given is not sufficient to enable us to speak definitely as to the cause of your aerides having become unhealthy. Probably they have been kept so wet that the material in which they have been grown has become sour to the injury of the roots. With reference to your question as to the possibility of restoring the plants, we can at once reply in the affirmative. Drastic measures will be necessary, and your best course will be to take them out of the pots, remove the whole of the old material from about the roots, and then put them in baskets with fresh material. When they have been divested of the sour sphagnum, well wash the roots in tepid water and cut away all that are dead or in a decaying state. At the same time, those that have become leggy should have a portion of the stem cut away, but you must take the precaution to cut the base of the stem off below two or three healthy roots. Use sphagnum, and be careful to have a layer of rather large crocks in the bottom of each basket.

White Flowers.—F. K. B.: Several of the white flowered decorative pelargoniums are of great value for the supply of cut bloom early in the season. One of the most useful is, perhaps, Venus, an old variety rather wiry in habit, but profuse in flowering. It is the earliest of all the white pelargoniums in coming into bloom, as with a very little heat it commences flowering in February, and continues in bloom for a considerable period. The flowers are of medium size and pure white, marked with a small pink blotch on the upper petals. Volonte Nationale alba is a pure white form of Volonte Nationale, and exceedingly useful for forming a succession to Venus. It has a robust habit, is free in blooming, and produces large finely formed flowers, which stand remarkably well when cut and placed in water. Belle du Jour is a useful semi-double variety in the way of Album plenum, but superior to that variety. The growth is not particularly robust, but the plants produce a liberal supply of bloom in proportion to the space occupied.

Names of Plants.—F. R. I. : The flowers of the heaths had lost much of their colour when they reached us, and therefore the names could not be readily determined. Nos. 1 and 4 appear to be Erica perspicua nana, and 2 and 3, E. ventricosa coccinea minor.—H. H. : Your tree is Amelanchier botryapium, commonly known as the Snowy Mespilus.—W. M. : 1, Olearia stellulata ; 2, Ledum buxifolium ; 3, Cytisus ruthenicus ; 4, Exochorda grandiflora ; 5, Amelanchier canadensis.—W. D., Watford : 1, Anthericum argenteo lineare ; 2, Fluggea Japonica ; 3, Reineckia carnea variegata ; 4, Selaginella cæsia ; 5, Streptocarpus polyanthus ; 6, Saxifraga pedata.—Mrs. Compton : The shrub is Ribes aureum.—Anxious Inquirer : Celsia arcturus.—Ivy Cottage : The leaves that have bronzy edges are Epimedium alpinum ; the other leaf is Saxifraga pedata. The beautiful spergula fulfilled the expectations of all who gave it the necessary attention, but it has quite gone out of use as a lawn plant owing to the trouble experienced in keeping it free from weeds. The seed merchants have ceased to supply seed of it. The plant may be obtained from Mr. Ware, of Tottenham, who catalogues it as Arenaria cæspitosa.—Harry : Your plant is Opuntia Rafinesquiana. It should be grown in a frame in the full sun, and have plenty of air and be kept dry during winter.

British Ferns.—Pilgarlic : The most complete enjoyment of the British ferns is to know them in their native haunts, and to hunt for the varieties in the way of the earnest collector. But not many can find time for this amusement, and you need have no difficulty in obtaining any number of beautiful varieties by the simple process of purchasing them. By all means give your mind to fern hunting as far as you can consistently with your means and opportunities, but do not tie yourself to a rule that you may not be able to follow. Obtain the fern catalogue of Messrs. Birkenhead of Sale, Lancashire, and Mr. C. T. Druery's delightful and most useful book on "Choice British Ferns," published by Upcot Gill, price 2s. 6d. Mr. Hibberd's "Fern Garden" is published by Groombridge, price 3s. 6d. As regards the out-door fernery, the fantastic scheme you propose is not necessary. At all events we advise you to postpone the formation until you have acquired some experience, when your judgment, doubtless, will be in accordance with your knowledge. If you can visit the Royal Gardens, Kew, in May and June, you may see in the out-door ferneries, one of the best collections in the kingdom.

Wallflowers.—John : These are so manageable that there is not much excuse for a failure anywhere. The seed should be sown in April or May. Sow thinly in drills six inches apart, and keep clear of weeds. When the plants have three or four leaves, and before they get crowded, plant them out where they are to flower, and at such distances that each plant will be at least six inches from its nearest neighbour. They may be scattered about borders indiscriminately, taking care they do not rob any other plants of light and air, and that they are put on ground that is likely to be free from stagnant moisture. We do not approve of the use of any manure in growing wallflowers. It is true the market growers manure for them to obtain large flowers, but their work is part of a distinct system that differs much from the practice of a domestic garden. Wallflowers should be in full light, on a dry soil, and should have no more water supplied than may be needful to help them when first planted. When on a rich or damp soil, the winter frost often disfigures and sometimes kills them. There are two or three good varieties of yellows, but the "blood walls" differ through many degrees, and all are good. All the doubles and fancy varieties are of but little value, although the purple is, when skilfully handled, a beautiful and curious novelty. We have not seen wallflowers anywhere so well displayed as in the circular beds on the Champs Elysées, Paris, where, in the time of chestnut blossom, they are truly delightful. The colours there used are yellow, blood-red, and purple.

Kew Gardens.—H. M. C. : These gardens are like all other such places : they bewilder strangers by reason of their many attractions, and many leave them in a state of mental confusion instead of carrying away a certain amount of distinct and useful impressions. Visitors will derive pleasure and instruction from their visits very nearly in proportion to the spirit in which they make their explorations. In the first place, you appear to be unaware of the existence of any guide or catalogue, but the officer at every entrance gate can supply half a-dozen official guide-books to the gardens, the museums, and the picture gallery. Then it will be found that, generally speaking, the plants are everywhere legibly labelled with their names and native countries, and the visitor may, by the aid of the official map, select any particular department at his own discretion for special attention. A student of water lilies will go to the water lily house, a visitor interested in the vegetation of the colonies will go to the temperate house, while a lover of trees will push down to the avenues of oaks near the river, the maples near the temperate house, or the pomaceous trees in the vicinity of the Pagoda. It is a quite common occurrence for visitors to museums, picture galleries, and such places, to endeavour to see everything, and the task being too great for the mind, the end of it is they see nothing, and the most marked effect of their visit is a sense of weariness. Kew does not provide personal guidance through its collections, but a personal guide might, no doubt, be secured with a little management in advance. So far as we know the place, the official staff is courteous and accommodating, and the conveniences for study ample and efficient.

Early Vegetable Marrows.—R. M. : There is no difficulty in obtaining a crop of vegetable marrows in advance of that produced by plants put out at the end of May, in accordance with the practice which so generally obtains provided the necessary conveniences are at command. If you have a two or three-light portable frame and a few loads of fermenting materials available, you will find the production of an early supply a very simple matter. In taking the first steps, mark out a space exceeding by twelve inches the length and breadth of the frame, and then excavate the soil to a depth of eighteen inches or two feet. Fill the space with leaves, manure, or other materials that may be available, and carry the bed up to about twelve inches above the general level. Beat the manure firmly as the formation of the bed proceeds, and when completed cover to a depth of nine or ten inches with soil. This may be the surface soil removed when the excavation was made, or soil from the potting bench such as that in which the strawberries that have been forced were grown. It matters not which of the two is used, but it should have a liberal addition of old hot-bed manure or decayed vegetable refuse. The frame should be put in position at once, and the plants be bedded out with as little delay as possible. If you have no frame available, make a bed in accordance with the directions here given, put out the plants at once, and protect with hand or bell glasses. If you have none of these, make a few boxes eighteen inches square and twelve inches in depth, one for each pair of plants. The boxes must be bottomless and be fitted with a moveable lid or cover. In the market gardens west of London these simple and inexpensive protectors are employed rather largely, as they enable the growers to put out the plants from a fortnight to three weeks earlier than would be safe where protection is not afforded.

Sawflies.—B. B., Fakenham : The only way to attack the sawflies is to remove the surface soil from beneath the trees early in the spring to the depth of three inches, and bury it in a hole. The earth removed should be replaced with that dug from the hole, or with earth from any open field, or with manure. By this operation the chrysalids are destroyed. By repeating the process annually the ground may be cleared of the plague. When the caterpillars appear many may be destroyed by a few industrious children. But the great point is to catch the enemy when buried in the soil beneath the trees.

Hybridising.—Faint Heart : The term is generally applied to the operation of fertilizing flowers with pollen from other flowers which are usually taken from other plants. In some cases, as when two distinct species are operated on, the one to supply pollen and the other to produce seed, the term hybridising is correct, for the object is to produce a hybrid of the two species. But when two varieties of the same species are operated on, although the same term is used, it would be more correct to describe it as cross-breeding. But while mere words are of small consequence the practical business belongs to the highest departments of horticulture, and may properly engage the attention of the scientist no less than the gardener. As regards the performance, it must vary with the class of plants ; in some cases being simple, in others complex. It has been our custom in teaching beginners, to take a fuchsia for a first lesson, as the stamens are readily seen, and are as readily removed from the flower selected for the seed parent. This being done early pollen is obtained from flowers on another and different kind of flower, and this is applied to the stigma of the flower that has been selected as the seed parent. You may learn the whole art without any teacher, by simply making a few experiments, but lessons from an expert would of course hasten your progress and save you much trouble and disappointment. One of the nice points is to know when stamens and stigmas are mature, and this can be learned by observation only. But by beginning with flowers that have stamens and stigmas prominently produced you may make wonderful progress even in one season.

Canker in Apple Trees.—Ignoramus : The question of canker in fruit trees was fully discussed at the Apple Congress held at Chiswick in the autumn of 1888, and the opinion was expressed by E. Tonks, Esq., who read a paper on the subject, that the cause of the disease is mal-nutrition, the consequence of an imperfect provision in the soil of the food required by the trees. Mr. J. Douglas, who also contributed a paper on canker, suggested that "canker is caused in two ways, and affects two different parts of the tree." He then proceeded to say :—"Perhaps the most serious disease is that which affects the trunk or larger branches of the trees. This, I hold, is caused by the roots pushing downwards into cold, undrained, or unsuitable soil. The other aspect of the disease is that which lays hold of the twiggy portion of the tree, for even the one-year-old shoots do not escape. The immediate cause of this is probably the rupture of the sap vessels by frost when the sap is in an active state. But I have a firm belief that the primary cause is to be found in the condition of the roots which, being in an inactive state owing to unsuitable soil or their penetration to a great depth, prevents the perfect ripening of the young wood." Mr. Douglas then recorded his experience with young cankered trees that were growing in a light gravelly soil. The trees were first lifted and the soil trenched two feet deep. Where the soil was not of a sufficient depth to admit of this being done, the gravel was taken out and utilised for a walk then being made and replaced with soil from the walk. He also added strong clayey loam and a liberal application of farmyard manure. The trees were in due course replanted and in the year following they were lifted, and as the ground had been so liberally enriched with manure some loam was then placed about the roots. The trees were perfectly free from canker for seven or eight years, when they were again attacked. On the canker making its appearance the trees were again lifted and replanted with a little fresh loam about the roots, the cankered parts being at the same time cut away. Mr. Tonks, in dealing with some trees in his collection that were so badly cankered that he had marked them to be cut down, proceeded on somewhat different lines. Speaking of the course he had taken, he said : "While studying the subject of plant food which involved the consideration of the analysis of various plants, I was very much struck with those of the fruit and wood of the apple. I found that the fruit contained an exceptionably large proportion of soda and the wood of lime." This suggested the idea that the soil did not contain sufficient of one or both these elements, and he then decided to give the trees a dressing of a complete manure instead of destroying them. He accordingly dressed the surface soil about the roots of the trees with a fertilizer prepared as follows :—

Superphosphate of Lime	12 parts
Nitrate of Potash	10 ,,
Chloride of Soda	4 ,,
Sulphate of Magnesia	2 ,,
Sulphate of Iron	1 ,,
Sulphate of Lime	8 ,,

This mixture was applied at the rate of ¼ lb. to the square yard, with the result that the development of the canker was arrested and the trees restored to a vigorous state of health. Your soil being naturally light, there can be no question as to the application of some suitable fertilizer being beneficial to the trees. Partly decayed farmyard or stable manure and the mixture recommended by Mr. Tonks are both suitable, and in either case the manure should be applied at once in the form of a top dressing. The whole of the surface as far as the roots are likely to extend should be top dressed.

EARLY PÆONIES.

Herbaceous pæonies make promise of a magnificent display, and the best of the named varieties will be out in from ten to twenty days from this date in and near London. The growth of the season is free and healthy, and the flower buds appear profusely on plants with every sign of intention and ability to do their duty. Amongst the many that are flowering now, we make a note of the following :—

Pæonia peregrina is of dwarf growth, with ample and beautiful glaucous leafage, the flowers smallish, rich rosy purple.

P. tenuifolia appears in many forms, the best being the one called *latifolia* which has much divided leaves with divisions less narrow than the type. The flowers are smallish, globular, usually of a deep red colour, but in this respect the varieties differ as they do in their leaves.

P. arietina. This fine species has much divided leaves forming a handsome plant with flowers of medium size, deep rich purplish crimson. Some of the varieties are a little coarse in leafage, and have lighter coloured flowers. Some forms of this are quite noble with globular flowers red or white.

P. anomala has leaves finely cut and somewhat suggestive of a delphinium. The flowers are of medium size, purplish crimson.

Correspondence.

CLASSIFICATION OF PICOTEES.

MR. JOE EDWARDS, Blackley, Manchester, writing to Mr. Dodwell on the classification of the picotee, says: "I should like your opinion upon that part of Rule 7 of the Northern Section of the National Carnation Society's schedule, underlined in accompanying copy, viz., 'Each picotee shall have one colour only on the edge. Blooms having two or more colours on the edge are disqualified.' Are there any bizarred picotees? and are they so undesirable as here implied? The rule, carried only by a very narrow majority, was raised because of the showing by Mr. R. Sydenham of Matthews' Novelty—a variety having pink and lilac for its margin—which, there being no class for this combination, was declared by a majority of the judges to be outside competition, though the terms of the schedule simply said, '12 picotees, all dissimilar.' Your answer in the gardening papers would be useful."

The rule is unwarrantable, and a grave offence. It proscribes or limits a point of chiefest excellence in florists' flowers—variety. "From whatever source, however arising, it is essential that the florists' flower, which would claim a high position, should not be deficient in this" (variety)—Rev. George Jeans.

I am surprised, indeed, to note the adoption of such a rule in these days. It is a survival of the barbarous ignorance which fifty years ago rejected the rose and salmon hues of the margins of picotees, and declaring Sarah Payne to be "rubbish," withstood ths recognition of the pink and purple in bizarres. With precisely the same propriety it might be ruled bizarres should not be accepted in the longitudinal markings—and I am astonished such a rule should have been issued by such an association. I very unwillingly thus assume the censorship of my brother florists, but to my sense the rule is nothing less than a scandal, and I cannot hesitate as a florist, and for the maintenance of floral law, to say no power on earth should induce me to be a party to it. I am a unit amongst florists only, as all are, and I hold there is nothing more intolerable than the affectation of personal pretension; so I ask nothing to be conceded to my opinion, but as I have known no grosser violation of cardinal law during my long floricultural experience, I cannot hesitate to declare not a day should be lost in obtaining its rejection. Whilst the rule stands violence is done to a cardinal law of floral excellence. Reject it, as from its inception it should have been rejected, and no wrong work will have been done to the few whose tastes, well or ill educated as may be thought, lead them to reject two colours for curvilinear markings. Individual preferences in such circumstances may lawfully be indulged, but no florist has the right to make his preferences the rule of his brother's life.

E. S. DODWELL.

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Obituary.

RECENTLY MR. GEORGE HOOPER, an eminent journalist formerly associated with the *Leader*, *Globe*, *Spectator*, and other newspapers, and author of "Waterloo, the downfall of the first Napoleon."

IT is our painful duty to announce the death of Mr. SIMEON CHARLES HADLEY, many years Alderman of the City of London for Castle Baynard Ward. During his time of activity as a corporator he was an earnest helper in the International Potato Exhibition and one of its most valued representatives in the City of London. In later years his lines were not in pleasant places, and he had a heritage of disappointment. He died of cancer.

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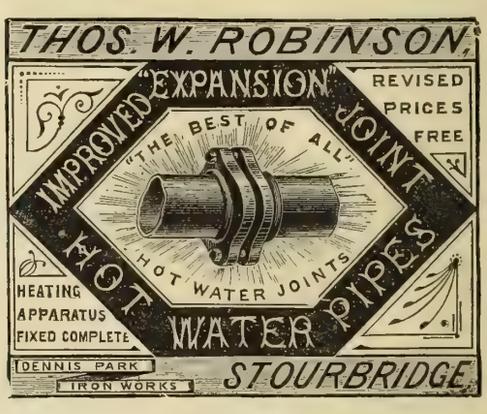
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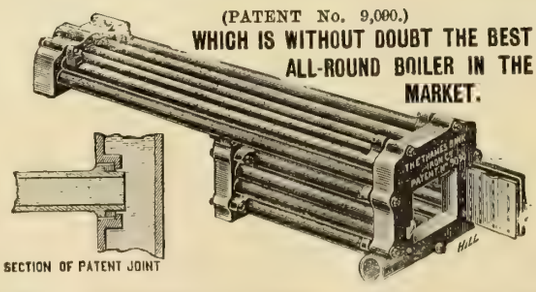
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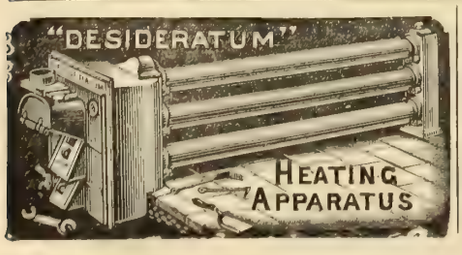
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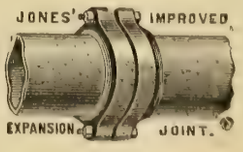
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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths before Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
1	S	**Trinity Sunday.**	3 51	2 26	8 4	5 58	2 59	0 8	0 28	9 33	9 53	58·4	Lælia Schilleriana ..... Brazil.	152
2	M	Garibaldi died, 1882.	3 51	2 17	8 5	7 20	3 23	0 49	1 11	10 14	10 36	58·6	Lælia Xanthina..... Guatema.	153
3	Tu	Trinity Law Sittings begin. ○ Full Moon.	3 50	2 7	8 6	8 43	3 55	1 33	1 53	10 58	11 18	58·8	Oncidium ampliatum majus..... Guatema.	154
4	W	General Lord Wolseley born, 1833.	3 50	1 57	8 7	9 59	4 36	2 15	2 37	11 40	—	59·2	Oncidium bifolium, &c. ..... Brazil.	155
5	Th	*Corpus Christi.*	3 49	1 47	8 8	11 0	5 33	3 0	3 22	0 2	0 25	59·4	Schomburgkia tibicina ..... Honduras.	156
6	F	Count Cavour died, 1861.	3 48	1 37	8 9	11 47	6 42	3 46	4 10	0 47	1 11	59·6	Trichopilia coccinea ..... Peru.	157
7	S	Reform Bill passed, 1832.	3 47	1 26	8 10	—	8 3	4 36	5 0	1 35	2 1	59·7	Acineta Humboldti ..... Mexico.	158

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, JUNE 4.—READING HORTICULTURAL SOCIETY.—First Summer Show.
THURSDAY, JUNE 5, TO TUESDAY, JUNE 10.—BATH AND WEST OF ENGLAND SOCIETY.—Exhibition at Rochester.
THURSDAY, JUNE 5.—LINNEAN SOCIETY.—General Meeting.
FRIDAY, JUNE 6.—ROYAL BOTANIC SOCIETY.—Lecture.

Auction Sales for the Ensuing Week.

TUESDAY, JUNE 3.—Messrs. Protheroe and Morris, at their Central Sale Rooms 67 and 68, Cheapside; Orchids.
FRIDAY, JUNE 6.—Messrs. Protheroe and Morris, at the Central Sale Rooms, 67 and 68, Cheapside; Orchids.
SATURDAY, JUNE 7.—Messrs. Protheroe and Morris, at the Stamford Hill Nursery, Amhurst Park, N.; Greenhouse and Bedding Plants.

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The Gardeners' Magazine.

SATURDAY, MAY 31, 1890.

THE GENERAL MANAGEMENT OF FLOWER SHOWS will be considerably influenced by certain characteristics of the exhibition that closed yesterday, May 30, in the Royal Botanical Gardens, Manchester. The experts engaged in the preliminary business will have carried far and wide a number of new and agreeable impressions, while the taste of the general public must of necessity advance in some degree as a result of a peculiarly artistic display that was seen and admired by thousands of persons. The leading features of the great Whitsun show have been often described in these columns, and although we have now to report on certain particulars of the highest interest, we must regard them only as expansions of the original plan, and as illustrations of the remarks we offered last week on the importance of a definite policy and of steadfastness in its development by a talented and courageous master of the business. It may be assumed that no horticultural society in the united home empire enjoys the present advantages of Manchester, but those advantages are the fruits of a sound policy wisely administered, for the great pavilion that supplements the exhibition house dates from days anterior to the international exhibition, and that same exhibition would probably never have been located in these grounds had not the Society prepared the way for it. Every feature, however immediately secured, is in the nature of a growth much more than any special good fortune, and the whole subject is within the domain of reason and common experience, needing no aid from accident or any "fortuitous concourse of atoms."

In the richly furnished exhibition house, where orchids held a court of their own, a special feature of interest consisted in groups artistically arranged for pictorial effect. The whole of the subjects were on the ground level, and that was a point gained for naturalness, effectiveness, and the well-doing of the plants. We will not vex the reader with any such eulogies as we would endeavour to pronounce were it possible to convey in words an adequate record of the beauty of these groups. The plants were variously mixed with ferns, and other subjects suited to bring out the peculiar characters and beauties of the orchids, and it will be understood that the combinations of form and colour were of a kind to be remembered. But the point that many will understand and appreciate was emphasized by the remark that escaped almost every witness in the early hours when technical criticism prevails, to the end that "this makes an end of timber staging, and we shall surely soon have our conservatories embellished in this style." We will not indulge in the dream of a sudden conversion of the world to common sense and good taste in this matter, for it is no new thing for the critics to denounce wooden staging, and we have had much to say upon the waste of timber for the disgrace of horticulture in provincial flower shows. The abomination survives in many places, and examples prove that good taste is not the universal inheritance of all who love plants and flowers. But this Manchester example will do more for good taste than any amount of literary persuasions, and we feel that in taking the course that has resulted in this splendid feature of the Manchester show Mr. Findlay has added greatly to the indebtedness of practical horticulturists for whom already he has done so much.

Many things are pleasant when put to the proof that do not sound so when announced in the abstract. It has been the custom to push the fruit into a place remote from plants and flowers, just as we put the kitchen as far as possible from the apartments that are devoted to ease and elegance. There was prepared for us a new surprise in the way of showing fruit. The great pavilion, with its sumptuous groups of pot roses, rhododendrons, azaleas, ferns, and indescribably beautiful groups of miscellaneous plants arranged for effect, would appear *a priori* to be just the place where fruit should not be staged, and we remember that the somewhat remote band house used to be the fruit garden. But now the case was altered. In the very centre of this deliciously furnished pavilion, with its amplitude of refreshing greenery produced by an unusually fine display of specimen ferns, there stood one table with white cloth on which were displayed peaches, strawberries, cherries, grapes, and other delicacies of the season. The effect was delightful. It was acknowledged all round that such an episode was in the nature of a revelation, and the fanciful people went so far as to suggest that the scene was the true Paradise now first discovered by man, and the table of fruits was a banquet spread for the angels. Our business is with the fact and its teachings. Those who have not seen the Whitsun Manchester show may be regarded as somewhat in the dark as to the possibilities and true philosophy of a flower show, and those who are familiar with the institution may be advised to avoid reckoning that they have seen the end of things accomplished, for as time brings new holidays we do not doubt it will also bring fresh developments of the idea of a display of horticulture in that one happy spot where the art really prospers and obtains generous encouragement.

THE NEED FOR COMMON SENSE IN THE NAMING OF PLANTS is amusingly illustrated in the rules adopted by the Council of the Royal Horticultural Society for the naming of orchids for "garden purposes." Certain of these rules are not only proper, but necessary, and certain other of them are ridiculous. It is well that names of natural genera, species, and well marked varieties should be written so as to accord with botanical usage, and that plants brought forward for the first time should carry with the name the name of the authority, that the orchid committee may consider if the said authority is a properly privileged person. We make no objection to these rules. But the rule for naming assumed "bigeners" is another matter. We say "assumed," although that word does not appear in the official declaration. Be it observed that in accordance with rule 7 "a name once authoritatively adopted shall not be altered." This rule renders it important that the names adopted authoritatively should be in accord-

nce with common sense, although this consideration has no place in the document. We have an established "bigenus" in Cattleya-Lælia and its converse. In this groove we are doomed by the rules to go on sinning. What is to be done for the consciences of the unhappy persons who cannot see, or allow anyone else to see, generic distinctions between Cattleya and Lælia? And what of other assumed—we use the word advisedly, and repeat "assumed"—bigenera? The species makers are of course genera finders; and will be bigenera producers when they have good luck in their crossing. But common sense declares that we have as yet no bigenus that will endure searching criticism, and that, after all, the assumed bigeneric forms are nothing more nor less than *garden varieties!* But the cumbrous and ludicrous, and barbarous, and injurious bigeneric names thus far in use are not only sanctioned, but may be added to, and the field for the exercise of such folly is commensurate with the whole field of orchid culture. It is a consolation to know that the rules apply only to the naming of orchids for "garden purposes," and that the orchid committee of R.H.S. is the only collective wisdom bound to act upon them. But the garden names might be the better if for once and for all made square with common sense. We are to pile up words on foundations of the fancy, and these words are to stick in the throats of mankind as linguistic aids to orchid culture and contributories of honours to the Royal Horticultural Society!

There are two sides to the question of course. It may be urged that the so-called bigeneric names are in the nature of declarations of matters of fact. That must be granted. The compound name explains itself, and so far it is good. But names once registered remain; for even ugly, unmeaning, and misleading names acquire a certain persistency, and when doomed to death die hard. The very familiar Spiræa Japonica is an example. We may urge that the plant is an Astilbe, but the world has become accustomed to the wrong name, and takes it as an affront to be called upon to use the right one. A certain amount of error in naming will occur, and an individual may force a name into use, though without the necessary knowledge, and consequently being in no sense a proper "authority." The greater need therefore for those who profess to know, and who formulate rules for the bestowal of names, to secure the safest ground; that names passed into currency under authority are framed on the best plan in the first instance—say, based on certainties as better than assumptions. We have in the rules now agreed upon a system for the exaltation of garden varieties into quasi-generic importance; a carrying of work intended for the garden into the region of the botanist; and an organized confusion where directness and simplicity were equally and easily attainable.

Bedford and Bedfordshire annual show, July 17.

Mansfield Summer Show, Monday, August 4.

Professor Oliver has resigned the post of keeper of the herbarium of the Royal Gardens, Kew.

Mr. W. Carruthers has retired from the presidency of the Linnean Society, and Professor Stewart has been elected as his successor.

Onions Imported in April amounted to 297,649 bushels, as compared with 255,929 bushels received in the corresponding month of last year, or an increase of 61,720 bushels.

Royal Society's Government Grant Committee has allotted the sum of £100 to the Scientific Committee of R.H.S. for carrying on its inquiry into the causes of the injurious effects of London fog on plants.

Apples Imported in April show a large falling-off, as compared with the importations in the corresponding month of last year. The imports in 1889 amounted to 272,258 bushels, and in 1890 to 40,059 bushels.

Mr. Richard Cairns, some years gardener at Bonjedward House, near Jedburgh, has been presented with a purse of gold and a silver teapot by the members of the Jedburgh Horticultural and Apiarian societies.

Michigan Agricultural College has lost its botanical laboratory from fire. The laboratory, built in 1880 at a cost of 6,000 dollars, contained a large museum richly furnished with examples of the native flora and the products of economic plants; but fortunately this was not wholly destroyed.

Proposed Hall for Horticulture appears to progress satisfactorily. The total of subscriptions promised was, on Wednesday last, officially announced as £15,000. It was also announced that the capital fund was fixed at £40,000, "in shares of £1 each." It has not been presented in this quasi-commercial form till now. As we lean to the commercial idea, the announcement necessarily interests us.

An Aged Pear Tree.—In a letter from Mr. Lord, of Hessle, he says, "The original Hessle pear tree is still standing in my landlord's garden, just behind my house. It is hollow, and worn out with age, but still has a little life in it. Its age cannot be determined with certainty, but it is believed to be considerably over 200, some say 300 years." For the extract from the letter we are indebted to Messrs. Stuart and Mein, of Kelso.

Lily of the Valley, as grown by Messrs. Hawkins and Bennett, of Twickenham, are far in advance of all average growths of this popular flower in vigour and beauty. The large, richly-coloured leaves are accompanied with racemes of large bells that may be properly characterized as majestic, although the subject is one of the quietest in its way amongst our fragrant favourites. It is noticeable that in this growth the lines of division of the perianth are strongly marked, which adds much to the beauty of the flowers. The variety is known as the Victorian.

Kew Gardens in India.—We cut the subjoined from a newspaper. To speak of the Royal Gardens, Kew, as a 'horticultural nursery," is not quite proper, but it is a matter of no great importance. "The Gaikwar of Baroda is planning a magnificent horticultural nursery near his capital, on the lines at Kew. This nursery is intended to rival the famous gardens at Peredeniza, at Ceylon. Two emissaries from his Highness, one a Parsee, the other a Hindoo, have just arrived in England with a view to the study of botany and plant management at Kew Gardens. It is characteristic of the native way of 'doing things' that these two men are by no means experts in horticulture. They confess to having had no previous knowledge of the subject they are now to take in hand."

Ware and District Horticultural Mutual Improvement Society.—This young association has just completed its first session. Meetings have been held fortnightly since December. The attendance has been decidedly good throughout. During the summer months it has been decided to hold the meetings monthly. On the 6th a paper on "Poinsettia Culture" was submitted to the meeting by Mr. C. Anderson, which was much appreciated. On the 20th a capital muster of members assembled, the Rev. A. E. W. Lofts presiding. A paper on "Plants for Decorative Purposes" was read by Mr. J. B. Riding, and a discussion ensued, in which many interesting matters were brought forward.

The Holidays, though earlier than last year, were favoured with so much better weather, that out-door recreations carried all before them. The number of visitors to Kew Gardens on Monday is reported as over 100,000; the Zoo, in Regent's Park, had 28,000; the Crystal Palace, 62,000; there were over 70,000 persons on Hampstead Heath; and the Great Eastern Railway carried 135,000 persons to Epping Forest. Against these numbers we have at the British Museum, 3,500; the Natural History Museum, 6,000; South Kensington Museum, 10,377; National Gallery, 7,415. Nor were the seekers for pleasure in the open air subjected to any disappointments. The weather, not only in London but throughout the country was perfect, and the aspects of Nature were never more cheerful or more apparently promising of a year of plenty. Whether we shall have the plenty is beyond the power of any to say, but at present promises are certainly not of a gloomy kind, and the growth made thus far is, generally speaking, as healthy as it is bountiful.

Packing Apples for Export is receiving considerable attention in the Australian colonies, and a competition in packing fruit was some time since instituted by the Government of Victoria. A prize of £5 was offered for the best packed box of apples, each box to contain twelve varieties, eight fruits of each. It was stipulated that the boxes in competition should be sent from Melbourne to the London offices of Sir Graham Berry, Agent-General for Victoria, and that the prize be awarded to the box of which the fruit was in the best condition on its reaching its destination. There were two competitors, and on the boxes being opened at the Agent-General's offices on the 19th inst., the prize was awarded to Mr. S. A. Neilson, Richmond, Victoria. The fruits sent by Mr. Neilson were gathered on March 15th, and packed on the 20th of that month. They were put separately in paper bags, and arranged in layers with sheets of paper between them, and the intervening spaces filled with paper shavings. Of the ninety-six fruits contained in the box only five were injured, and these not to any material extent. The fruit sent by Mr. Draper, of Arthur's Creek, Victoria, who was the other competitor, came to hand in a more or less damaged condition. The fruits were wrapped separately in tissue paper, and then packed close together in the box.

The Magnificent Exhibition in the Temple Gardens by the Royal Horticultural Society, on Wednesday and Thursday last, gave general satisfaction to the Fellows and the public at large. The great trade growers near the metropolis poured out their treasures, and we had the begonias of Messrs. Laing, and the gloxinias of Messrs. Veitch; grand groups of roses from Cheshunt and Waltham Cross; rhododendrons from Berkhampstead, and herbaceous and Alpine plants from famous traders in the hardy line. But the provinces were not without a hand in the matter. Messrs. Backhouse, of York, were great in filmy ferns, and while judging them we could not but reflect on the task of bringing such plants in scores from York; Messrs. Sutton, of Reading, put up gloxinias in quantity; Messrs. Birkenhead, of Sale, near Manchester, presented a wondrous collection of ferns; and Messrs. Sander, of St. Albans, proved their capabilities in the way of orchids. The amateurs in orchids put forth their strength, and of these truly regal flowers the exhibition was one of the best that has ever been seen, for they were not presented in dozens, or even scores, but in numbers beyond counting in a general review of the show, the specimens being in many instances unique for size, and freshness and brilliancy of colour. At the head of Baron Schroder's group stood a Cymbidium Lowianum, bearing 29 spikes. Sir Trevor Lawrence was great in cattleyas and cypripediums. In all classes the contributions were liberal and splendid, and the large spaces at the command of visitors ensured perfect comfort. The visit of the Prince of Wales added to the interest of the event, and was the crowning incident of this glorious exhibition.

The Market Salesman and the Retailer as related to the producer in the gradation of prices and profits was the subject of a leader in our issue for May 3. It is now amusingly illustrated in a letter on the retailing of strawberries, which at this time of year often command fancy prices. Here is the letter in all its sweet simplicity. The commentary upon it in the *Times* of May 27 is in a spirit corresponding to our leader of May 3: "It is surely time to make a stand against the extortion (there is no other word for it) of some of the West-end tradesmen. I sent to several fruiterers in this neighbourhood to-day for 1 lb. of strawberries, for which the price of 7s. was demanded. My servant very wisely refused to purchase, and obtained most excellent fresh strawberries at a first-rate fruit shop in the City for 3s. per lb. Some days ago a large quantity of this fruit was obtained at the same place at 3s. 6d. per lb., whilst at the same time a West-end fruiterer supplied my breakfast table daily with a quarter of a pound at 2s., or 8s. per lb. Cannot growers of fruit combine, set up a market at the West-end, and sell their produce to the consumer direct at something under 200 per cent. profit?—Believe me yours, Live and Let Live.—*Belgravia, May* 24."

Laxton's Noble Strawberry has more than justified the high character we ventured to bestow upon it when it first came under notice as a new candidate for public favour. It has been very extensively cultivated, and has disappointed no one, save those who demanded or expected of it more than was predicated of its capabilities by others who had given it close attention. It has not answered unreasonable expectations as a variety adapted for forcing; but it was never recommended for forcing; and if it does not displace older kinds for that purpose, neither does it prove other than "fairly good" even for that purpose. As an open ground strawberry it is one of the best we have for a first supply, being prolific, handsome, and in quality equal to any equally early kind, and better than some that have obtained general favour. The capabilities of Noble were strikingly illustrated in the recent exhibition at Manchester by a group of twelve fruited plants in pots, shown by Mr. Samuel Barlow, from his garden at Llandudno. These handsome examples not only carried good crops of highly-coloured fruit, but the berries were large, averaging 1½ oz. to 2 oz. each, while a few of them would exceed 2 oz., and were still perfect in form and colour. These plants had never tasted artificial heat, and they represented a crop that began to ripen ten days in advance of Whitsuntide.

ODONTOGLOSSUM HYBRIDUM LEROYANUM.

Hybrid orchids are now numerous in some of the more popular and best known genera, but the artificial production of hybrid odontoglossums has hitherto proved too much for the skill of orchid cultivators in this country. Seed has been obtained and plants even have been raised, but they have either died or have failed up to the present to produce flowers. A remarkable exception in France is worthy of notice, however, and will always possess considerable historical interest as the first hybrid resulting from artificial crossing amongst the odontoglossums.

This is in the collection of orchids formed by the Baron Edmond de Rothschild at Amandvilliers, Gretz, a few miles from Paris, on the Strasburg line. It was secured from a cross effected about five and a-half years ago between O. crispum and O. luteo-purpureum, the former being the seed parent. The seeds were sown when ripe, and several plants were raised which have steadily progressed until the present year, when the most advanced produced a raceme of seven flowers early in May, and these are now fully expanded, the characters indicating a true combination of the two species named.

The pseudo bulbs are rounder than those of O. crispum, and more like O. luteo-purpureum, the larger being one and a-half inches in diameter and depth, and flattened, but the other is more conical in form. The leaves are ten to twelve inches long and one and a-half broad, stiff, and bright green. The flowers are three and a-half inches across from tip to tip of the petals, and two inches from the tip of the upper sepal to the margin of the lip. The sepals and petals are nearly equal, the latter slightly broader, the sepals of a pale yellowish ground tint, most strongly marked at the tips. The petals are whiter, and perhaps will become still more pure. The sepals have each three broad reddish brown bars, these being more clearly defined in the upper one than the two lower. The petals are undulated at the margin, with one large blotch in the centre, two smaller-rounded ones at the side, and a few still smaller near the centre of the base. The lip is three-quarters of an inch in diameter, somewhat like O. luteo-purpureum in shape, fringed at the edge, white, with one large reddish blotch, and a deeply-divided yellow crest at the base on a reddish base. In general appearance the flowers are very distinct, the sepals and petals being slightly curved forward. Baron Edmond de Rothschild specially desires the plant to bear the name of his gardener, M. Leroy, and I was informed that the hybrid will be depicted in an early issue of the Reichenbachia.

Lewis Castle.

TRADE CATALOGUES.

Osman and Co., 132, Commercial Street, London, E.C.—*Nurserymen, Seedsmen, and Florists' Sundries.*

Pitcher and Manda, Short Hills, New Jersey, U.S.A.—*Cypripediums—Special offer of orchids of De Witt S. Smith, Esq.*

William Bull, 536, King's Road, Chelsea.—*New, Beautiful, and Rare Orchids.*

Dicksons, Chester.—*Bedding and Border Plants, Dahlias, New Roses.*

George Share and Co., 72, King William Street, City, E.C.—*Tanks, Cisterns, and Enamelled Advertising Plates.*

B. W. Knight, Battle, Sussex.—*New and Choice Plants.*

SPRING SHOW, SOUTHAMPTON, May 26.

The Royal Southampton Horticultural Society held on the date named the first of what they term a spring show in their grounds at Westwood Park, which looked quite at their best. This society has not been favoured during the last two or three seasons in their finances owing to adverse circumstances such as wet show days and counter attractions. Therefere, with a view to improve their exchequer and provide value for their patrons the show in question was inaugurated and turned out to be a very pretty one, if not on a large scale. To give variety a few competitive classes were framed, otherwise the society depended upon friends to send exhibits gratis, which they did willingly. The whole of the exhibits were arranged in one large tent, the centre of which was occupied with a grand collection of rhododendrons in pots from the Red Lodge nursery of Mr. Rogers, Southampton, and these being interspersed with specimens of conifers in pots made an exceedingly attractive group. Want of space prevents our recording the names of all the good sorts staged, but the following were especially noticeable:—The Queen, a pale pink flower of excellent form; Old Port, a good well-known sort; Princess Mary of Cambridge; Nero, deep claret with a darker blotch; Lady Caroline Neville; Gulnare, delicate pink; Brayanum, rich crimson; and a seedling which Mr. Rogers has named Sir Neville Chamberlayne, deep lilac with a claret coloured blotch on the upper petals.

Mr. E. Wells, gardener to Mr. Pearce, The Firs, Bassett, Southampton, staged a semicircular group of miscellaneous plants most suitable for the purpose, which occupied one end of the tent entirely. Mr. T. Hall, gardener to the President of the Society, S. Montagu, Esq., South Stoneham House, Southampton, staged three dozen admirably grown gloxinias, many of them in very small pots and being tastefully arranged on a groundwork of Maidenhair ferns and Caladium argyrites made a pretty effect.

Mr. B. Ladhams, florist, Shirley, Southampton, had forty feet length of tabling filled with admirably grown plants of pelargoniums, petunias, &c., margined with Saxifraga Camposi in pots densely flowered. A capital lot of cut blooms of herbaceous plants were staged by the same exhibitor and were much admired. Mr. E. Carr, gardener to W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke, had a nice collection of orchids, specially noticeable were Oncidium sphacelatum with five grand spikes of bloom. Odontoglossum citrosmum, Lælia purpurata, and Cattleya Mossiæ. The last-named exhibitor was first for a miscellaneous group of flowering and foliage plants neatly and tastefully arranged. Amongst them were nice pieces of the following orchids: Oncidium Marshallianum, Dendrobium thyrsiflorum, Epidendrum vitellinum, Schomburgkia tibicina, Cypripedium Lawrencianum majus, and Cattleya Mendeli. Mr. G. Busby, gardener to F. Willan, Esq., Thornhill Park, Bitterne, was a good second.

Some capital spiræas were staged by Mr. Wills and Mr. Busby, the prizes going in the order named. Mr. Carr had the best box of cut blooms of roses and Mr. Rogers had a grand lot of cut blooms of rhododendrons.

LATE TULIPS IN THE OPEN GROUND.

We have occasionally invited the attention of our readers to consider the claims of the florists' or show tulips as plants for the open garden, and a few of the florists who are not tied to the idea of the absolute sacredness of a show tulip have been so bold and heterodox as to plant out rejected breaks and surplus bulbs of varieties of no special value, and have been well rewarded for their daring departure from the paths of strict floral propriety. At Hermitage we planted out rectified tulips in groups in accordance with the classification of bizarres, biblœmens, and roses, and found the experiment a paying one, the roses being especially cheerful by reason of their colours, although all were acceptable, the bizarres more especially as counterparts in yellow to the roses in red. It is with great pleasure we report that in the Royal Gardens, Kew, there are two large beds filled with florists' tulips mixed, a learned lecturer on the spot being needful to explain to the uninitiated the several distinctive characters of class, flame, feather, and other points. But these tulip beds are filled with splendid flowers of all the classes and their several divisions, and they are like chapters from the Scriptures in this respect that a wayfaring man, though a fool, shall not err therein, provided only he has eyes to see the flowers that are before him. Country cousins will please to understand that these beds are as heterodox as the flowers in them. They are not in *floral*, but they are in *grand* style, for each bed has a run of 40 rows and a width of 21 rows. For the uninitiated this means that each bed is about three times as wide as it should be for the proper exhibition of named varieties. But these are not named, and are planted for effect as garden flowers, and whoever will take the trouble to find them, and for only five minutes observe their distinctive characters, will be convinced that the florists were wise in their day to make and to value such flowers as these, for they had to make them, and they put their hearts into the work.

To find these beds is at once an easy and agreeable matter. Follow the main walk from Kew Green as far as the Museum of Woods which is at the point where the walk turns sharp to the left. There, as an adornment to the museum are these two immense beds of rectified tulips that two hundred and fifty years ago would have been worth thousands of pounds, but now are not worth thousands of shillings. Between them is a circular bed filled with

Tulipa spathulata.—One of the gesneriana group, It is of tall growth, the flowers large fiery crimson scarlet; a very fine variety.

T. viridiflora will not betray itself, but must be looked for. About midway in the length of the main walk between the museum and the circular jardinet is a little lawn on the right where the walk opens to the view of the old Kew Palace. On this little lawn is a circular bed of this dwarf tulip the flowers of which are green edged with greenish yellow. It is a most unattractive and yet quite interesting variety.

T. carminata rubra fills a corresponding circular bed. It is rather tall in growth, the flowers dull red and green.

T. fulgens fills a circular bed in the rear. It is tall, the flowers have long petals thst spread as the flowers mature; the colour is rich cimson scarlet with yellow bottom.

T. macrospeila fills the corresponding bed. It is a model tulip of its class, the stem of medium height, stout, the flowers in admirable form, the colour glowing crimson. Were we adjudicating on these tulips we should bestow upon this three marks × × ×.

A few late tulips may be found on the long bulb border next the wall of the herbaceous ground. Having reported on the earlier kinds we have to say that the sorts now in flower here have not much interest.

Potatos Imported in April show a material decline, as compared with the corresponding month of last year. The importations in 1889 were 72,728 cwts., and in 1890 36,187 cwts.

Replies to Queries.

Dublinensis.—Grey rubber best of all.

Canterbury Bells.—M. D: To ensure success in the cultivation of these beautiful biennials it is essential to select the best varieties, to sow the seed rather early, and to place the plants under the conditions most favourable for making a strong growth. The variety known as Campanula media calycanthema and bearing flowers with coloured calyces is far more effective than the old form and should have the preference. There is a considerable diversity of colouring amongst the hose-in-hose Canterbury bells, but the best are the type of which the flowers are blue. Alba, pure white; Rosea, a beautiful new form with large rose pink flowers; and Mauve Beauty, a variety of recent introduction with purplish mauve flowers. These will be quite sufficient for your purpose, and we would advise you to obtain the seed at once and sow it immediately it comes to hand. Sow thinly in drills on a rather shady border, and if the soil is dry at the time, fill the drills with water previous to sowing. They may be pricked out on a bed in the open or they may remain in the seed bed until the end of the summer and be then transferred to the beds and borders in which they are to bloom. In the latter case some amount of thinning will be required, and the plants removed should be put in a reserve bed. It is necessary to keep a sharp look out for slugs during the earlier stages.

Planting out Tomatos.—B. W: It will be perfectly safe to plant out tomatos at once, and unless done without further delay much valuable time will be lost. From two feet to thirty inches is a good distance at which to plant them apart when grown against walls and fences, and they should have a similar space in the rows when grown in the open. In the latter case the rows should have spaces about three and a-half feet apart between them. Excellent results may be obtained by training those grown in the open quarters to horizontal rods fixed to uprights about two feet high. This style of training is adopted in the nurseries of Messrs. G. Bunyard and Company at Maidstone, and last season the crop was one of the finest that has yet come under our notice. If you decide to train them horizontally, put the plants three feet apart each way. In consequence of the season being too short for much of the fruit produced by the secondary growth the laterals should be suppressed as they make their appearance, and this is best done by nipping them off as they make their appearance. The leaves ought not to be removed, excepting a few towards the end of the summer. The plants will require moderate supplies of water until they are established, and also afterwards during periods of dry weather.

Paraffin Emulsion.—J. W. H: The paraffin emulsion so largely used in America for the destruction of aphis and other plant pests is by no means difficult to prepare. One quart of soft soap is mixed with one or two quarts of boiling water and as soon as the soap is thoroughly dissolved one pint of the best paraffin or kerosene oil is added. This addition is made whilst the water is quite hot. On the oil being poured in, the mixture is vigorously stirred until the whole is thoroughly mixed with the solution, or in other words until the oil is so thoroughly incorporated that it will not come to the surface on the mixture being allowed to stand some time. The best way of mixing is with the syringe. When required for use add enough water to make fifteen pints, so that of the mixture applied one fifteenth will be oil. The liquid is applied by means of a syringe or garden engine. This is a much higher strength than is considered safe by English cultivators who use paraffin as an insecticide, and therefore we would suggest some degree of caution until you have by experiment determined its effects upon the foliage of roses and such fruit trees as are liable to the attacks of aphis. The general rule in using paraffin in English gardens is to add the oil to the water in the proportion of one wine glassful to two gallons. Even then as the oil does not properly mix with the water some care is necessary. If the liquid is not kept constantly agitated the oil floats on the top and there is a risk of the syringe drawing up at one time nearly pure water, and at another a large proportion of oil.

Double Wallflowers.—R. Smith: The double German wallflowers may be readily raised from seed, but the other double varieties must be raised by means of cuttings. The present time is the most suitable for raising a stock of the several sections. The double German varieties are dwarf in habit and produce neat spikes of attractively coloured flowers. The preferable course is to obtain them in separate colours, and in arranging them in the border to form clumps of distinct colours each consisting of three or four plants each. Sow at once in pans; place in a frame where they should remain until the seedlings are furnished with about two rough leaves each, when they must have the lights withdrawn for a week or so, and be then pricked out in a bed in the open in rows about nine inches apart, the plants to be four inches apart in the rows. In propagating the double wallflowers generally grown in English gardens, select the moderately vigorous side shoots and either slip them off or take them off near the base, using a sharp knife in performing the operation. Remove a few of the lower leaves, and then insert them in pans or pots filled with light sandy soil and having a surfacing of same. Keep them moderately close and moist, and screen from the sun until they are struck, when they must be planted out in a reserve bed or in the borders in which they are to bloom, the latter course being preferable. It will in all cases be necessary to pay careful attention to the watering until the plants are established.

Crotons and Caladiums.—Exhibitor: Although Caladiums and Crotons are frequently seen growing side by side, they differ so much in their cultural requirements that it is practically impossible to have both in first class condition when placed under precisely the same conditions. Crotons require light and air for the development of the colouring of their leaves, but caladiums must have shade, and thrive in a comparatively still atmosphere. Crotons may be grown wholly without shade, and provided the house is freely ventilated, and a liberal degree of atmospheric humidity maintained, they will grow freely and become well coloured. In your case it will not be practicable to dispense altogether with shading material, because you cannot admit sufficient air to prevent the house becoming too hot without injury to the other occupants. Your best course will be to place the crotons in a light position near the glass, and to use as little shading as possible. Under these conditions the development of the variegation will proceed at a rapid rate, and the specimens be in a condition to do you good service on the exhibition stage. Although caladiums require to be screened from the direct rays of the sun, they ought not to be subjected to so dense a shade as is by many cultivators considered essential to success in their cultivation. When kept constantly shaded the colouring of the leaves lacks brilliancy, and the leaves are so thin that plants suffer more or less in being conveyed to and from the exhibition.

N. L.—Your tomatos are badly diseased. They have been too cold and damp. Give less water, or none for a time, give plenty of air, and, while the weather is so cold, keep on a little heat to promote a healthy growth. If they are overshadowed by other plants, they are not likely to recover, and it would be prudent to destroy them. They have wanted light, air, and warmth.

Peach Trees.—Young Gardener: It is very important to keep the young growth of peach and nectarine trees free from aphis and other insect pests. When, as is frequently the case, colonies of aphis are allowed to become established at the points of the shoots they receive so severe a check that even when the colonies are effectually broken up they do not attain their full size early enough to be well ripened. Dipping the points of the shoots in strong tobacco water is an excellent remedy, but any other approved insecticide may be employed. The dipping should be followed by syringing with clear water.

Ferns for Rooms.—B. M.: Comparatively few of the large number of ferns in cultivation can be successfully grown in living rooms, but fortunately these comprise some of the most beautiful kinds. The finest, perhaps, of those which can be kept in the best possible condition for an indefinite period in rooms in which gas is regularly burnt are Asplenium bulbiforum, a robust and elegant species; Cyrtomium Fortunei, a distinct species with bold dark green fronds; Nephrodium molle; Polystichum setosum, a Japanese species, compact in growth, elegant in appearance, and nearly hardy; P. angulare proliferum, an elegant variety of one of the best known indigenous species; P. lobatum, an elegant species, attaining a height of about two feet; Pteris cretica, an elegant species unsurpassed for the table; and Scolopendrium crispum. Adiantum cuneatum, so popular with all classes, is not well adapted for growing in rooms. It may be kept in very good condition for several months in rooms that are only occasionally used, but when exposed to dust, draughts, and the fumes of gas the fronds soon begin to lose their freshness and beauty. If you grow the ferns in a case the selection may be materially increased, as large numbers will thrive in the temperature of an ordinary living room that are unable to withstand the effects of dust and other injurious influences to which they are exposed. It is important in the management of ferns grown indoors to keep the fronds free from dust, and during the winter they should have the fronds occasionally sponged with tepid water, and at other seasons of the year they should be taken outside and receive a syringing or overhead watering as often as may be necessary.

Correspondence.

WONDERFUL ORCHIDS.

IN the London Letter of the *Birmingham Daily Post* of May 9, the writer says, speaking of orchids and their importation, "Much caution must be used in opening the cases, huge spiders and centipedes rush out from among the bulbs. Sometimes scorpions have been known to harbour among them. . . The fierce ant, belonging exclusively to one species—the Schombergia tibicina—a valuable plant, is so dangerous, that men are laid up for weeks from the result of its bite." Will you tell me the native country of the Schombergia tibicina [Honduras], and, if possible, the name of the fierce ants "which infest it in its native haunts." [Formica sanguinea].

Again, "The plant seems to possess the same mysterious power as that belonging to the serpent, for M. Rozel declares that when he first beheld the specimen of Flor de Majo he was seized with such emotion that he choked, while the Indian to whom it belonged refused to part with it at any price. . . A magic lantern was irresistible, and he carried off the flower." Again, "A certain rare specimen had been lent to Professor Reichenbach upon the following conditions: Not to show it to any human being; not to speak about it; not to take a drawing of it; not to have a photograph made; not to look oftener than three times at it."

It seems to me that possibly M. Rozel, and certainly Professor Reichenbach were poking fun at their correspondents. May I ask whether you are acquainted with the Flor de Majo? [It is well known and much cultivated as *Lælia majalis.*] A. N.

SHADING GRAPE VINES.

Permit me to say that I fully agree with what Mr. J. C. Clarke says in his note on shading vines, and that I hope the note will serve as a warning to many grape growers. In 1887 the crops in several vineries in this district were roasted because of their not being shaded. As a rule, the rods are in this neighbourhood trained so near the glass that during the stoning process the grapes are roasted, and in consequence they are small and worthless. When the rods are from eighteen inches to two feet from the glass the berries are less liable to injury and usually become fully developed. It would be interesting to know what distance from the glass is generally considered to be the best, and were cultivators to give their opinion upon this matter they would do a good service. I also agree with Mr. Clarke as to shading being beneficial from the time the stoning process commences until the berries begin to take on their colour, when air and heat are both required to ripen the fruit, and the canes also that are to produce the crop in the year following. Grapes that are ripened with insufficient air are generally indifferently coloured. In using lime-wash on the outside of the glass for shading some degree of care is necessary, as I find that the lime-wash materially cools the house. This can, however, be overcome by closing the ventilators an hour or so earlier than would be necessary with other descriptions of shading.

Tenby. JOHN JENKINS.

WIRE WORM.

WHEN pasture land is taken into a garden there is usually trouble from wireworm. A primrose bed at Wisley was much injured by them. A good gardener told me if bits of oilcake were sunk in the ground, they eat it and burst, and a great gardening authority said that it killed them. My gardener put a number in a box with some cake, but so far they seem none the worse, but it is a most effectual trap. Pieces about the size of a hen's egg sunk three inches in the earth, with a stick to mark the place, and taken up after three or four days, will be found to have wireworms imbedded in them, eight to twelve to a piece of cake. We have killed many hundreds. Old stagers know the use of oilcake, and gas lime is said to be effectual, but with plants in the bed this would be dangerous. I think some of your readers may not know oilcake as a trap, and be glad to try it.

Heatherbank, Weybridge Heath. GEORGE F. WILSON.

CHATTER AND CHIPS.

Striking Pink Pipings.

Here is a chip from a very old block. It is a sound one, too, when put into practice, as I can testify from having seen it carried out many more years ago than I care to mention. At the time of which I am writing laced pinks were in high favour with the general public, nearly every one interested in gardening having a fancy for pinks. They not only grew them well, but they exhibited them at local and other shows. The admirers of pinks in those days embraced men both of large and small means, the latter being quite as enthusiastic as the more favoured ones. All sorts of contrivances were brought into use for striking the cuttings, as glass was not so cheap then as it is now. The most primitive, and at the same time the most successful, plan of striking the pipings was adopted by an amateur grower of very small means. Yet in point of numbers his stock of plants was always greater than his neighbour's, although he had only a few flower pots and some squares of glass to put over them. His plan was to place the pipings round the side of 4-inch pots, having the soil rather sandy and made quite firm. The cutting pots were then dropped into another two sizes larger, and over the larger pot a square of glass was placed. They were then stood in a partially shady place, as the grower had neither frame nor greenhouse in which to place them. As regards results, he certainly did not fail of success, for by careful watering and shading nearly every piping put in grew; and what was more, his plants were always rooted sooner than those of persons who had a greater choice of contrivances. The grower to whom I refer always made it a point to take the pipings as soon as the plants were well in flower. He used to say that the growth was in better condition then to form roots than at any other time.

Abutilons for the Flower Garden.

Comparatively few persons think of planting out abutilons in the summer the same as they do many other half-hardy plants. Yet they are as suitable for that purpose as the majority of similar subjects. Indeed, I might go farther, and say that they are superior in many respects, as if strong plants are put out at the proper time they commence to flower almost directly, and continue to do so until late in the autumn. Their greatest merit, however, is in their distinct character as compared to the ordinary run of summer bedders. There is less stiffness in their appearance, while the flowers have a very graceful bearing.

Those who have not seen or tried the abutilons bedded out in summer would be surprised how freely they flower and how bold and handsome the foliage is as compared to specimens cultivated in pots. The informal character of their growth, and the nodding flowers as they are wafted about by the wind, are altogether distinct from the majority of the plants that are planted out in beds and borders during the summer months. It will be found that any of the strong-growing varieties are suitable for the purpose, and those with yellow flowers are particularly effective.

Winter-flowering Carnations.

Not far from where I write is a man who grows flowers very largely for the market. He is particularly noted for the large quantities of cut flowers that he produces during the winter, and carnations that flower at that season of the year are one of the features of his trade. But what may appear strange to the ordinary reader, he only grows three kinds, or rather varieties. These are *La Belle*, white; *Miss Joliffe*, flesh colour; and *Lucifer*, scarlet. These three sorts are grown in large numbers. The stock has filled a span-roof house 45 feet long and 10 feet wide all the past winter. The number of flowers they have produced is surprising. On looking over the place the other day, I noticed that the plants for next winter's work are ready for shifting into the pots in which they are to bloom. Young stock is increased every year from cuttings struck early in the spring, as young plants flower better than old ones.

Blister on Peach Trees.

Peach and nectarine trees are badly blistered in some cases this season, for which there appears to be no remedy in the ordinary management. But where the trees are liable to injury every season from the same cause, I have found that lifting the roots and replanting again in some fresh soil at the end of October the best thing to do. I believe that the chief cause of blister is unripened wood, and if the roots are deep down in a cold, ungenial soil it is very plain that the growth would not be so well ripened as when they are nearer the surface, where they can feel the influence of the sun's warmth. I am aware that this blister is very generally supposed to be caused by the cold east wind in early spring; but in my opinion that is the secondary and not the first cause of it. Cold acting on the unripe wood, I maintain, may be the immediate cause of the blister, but the imperfect ripening is the ultimate cause. I am supported in this opinion by the fact that peach trees under glass are sometimes affected in the same way, although not to such a serious extent. It is a well-known fact that when the borders in peach houses are too deep or too rich the wood does not ripen better than that on open walls. Seeing that the trees under glass are protected more or less from cold wind, it is very plain that it is not cold alone that causes the blister. Just now, however, the cultivator is more concerned about the treatment of trees so affected. The best and only thing that can be done that is likely to benefit the trees is to remove the affected leaves and to wash the trees with clear water twice a week through a garden engine. The washing will prevent greenfly from effecting a lodgment. When these insects become numerous on the leaves they will do as much harm as the blister, and be quite as difficult to get rid of.

Feeding the Vines.

This note may be described as another chip from an old block, as although the practice of feeding vine roots in the way I am about to describe was practised by some few growers a good many years ago, it is a rare occurrence to see the same material used at the present time. The practice I refer to applies to inside vine borders only, and the material used for feeding the roots was fresh-collected horse droppings, which at the time of which I am writing were laid on the surface of the border over the roots three inches thick. As soon as the manure was laid down it immediately had a good soaking of water. This soaking was repeated about every ten days, but every afternoon when the house was closed the surface was damped down through a rose water pot. I should have stated before that the droppings were put on as soon as the thinning of the berries was finished, so that the vines had the full benefit of the washings of the manure just at the time they most required assistance. The practical reader can well understand how readily healthy vines would appreciate the fertilizing matter that reached the roots in such a form. Anyway, I know that vines so dealt with quickly showed a difference in their appearance. The foliage took on a fine dark green colour, while the berries grew more rapidly and swelled to a larger size than those on vines that had not received such assistance. I advise those who have weak vines—especially those that have been in bearing a good number of years—to work out the same plan. I am sure they will be well rewarded for their trouble.

Chatterbox.

ORCHID NOTES.

Phajus Humblotii.—Hundreds of vigorous growing examples of this species are now to be seen in the St. Albans nursery of Messrs. F. Sander and Company, many of them in flower. The plants are evidently under the right cultural conditions with warm moist atmosphere, and pot culture in peat and a little sphagnum. The species is well figured in *Reichenbachia*, tab. 17, but much has been learned of its culture since that plate was published. When Mons. Leon Humblot discovered this fine Orchid in Madagascar, he also found a plentiful supply of *P. tuberculosus*, and sent consignments of both to Messrs. Sander about eight years ago. The last named species is also well established in the same tropical house, the plants thriving amazingly but under slightly different cultural conditions, the species, P. tuberculosus, succeeding best as a basket plant. They are both in their way so distinct and beautiful that now their culture is perfectly understood no orchid collection will be complete without them.

Odontoglossum vexillarium in the St. Albans Orchid establishment of Messrs. Sander is now an imposing spectacle. One of the long Orchid houses has the centre table filled from one end to the other with this showy species, reminding one of the long beds of tulips we used to see forty years ago. There are thousands of plants all in flower, and amongst so many flowering for the first time in England there are numerous distinct varieties. A very few with flowers entirely white are the most valuable. One with a white labellum three inches across, with the usual deep yellow centre, the sepals and petals white tinged rose at the base, is a great novelty. Another had whitish centre with well defined radiating lines of a rich rosy crimson colour. A distinct type are those with deep rose coloured sepals and petals, the margins white and more defined in some cases than in others. This fine species is easily grown in an intermediate house. The secret of success consists in keeping the plants free from thrips and not allowing the house to be too warm in summer. We remove our plants to the cool house as the summer advances.

In the old town nursery of the Messrs. Sander are now to be seen some hundreds of plants in flower of

Cypripedium Curtisii.—The pouch or slipper of this is larger than that of any other of the same type; colour a deep marone red or slightly purplish tinge, the greenish dorsal sepal has a whitish margin and is decorated with red purple lines, the lateral sepals are beautifully spotted.

Cypripedium niveum in the same house has not a spot anywhere. A few selected plants of C. Lawrencianum were most attractive, the large broad dorsal sepals being fine.

C. Vollantianum.—This new species of which there is a good stock may not take the highest rank as a new species. The flowers are borne on very tall stems, the dorsal sepal is greenish with yellow margin, the lateral sepals are greenish with a dull red purple colour at the extremities, the lip is also greenish, the leaves are beautifully mottled.

Pescatoreas, Bolleas, and Batemanias are growing with great vigour, and with them a fine healthy lot of the wonderful

Sobralia xantholeuca.—Few growers have hit the right treatment for Bolleas and Pescatoreas. The plants are grown in baskets near the glass in a moist not over warm atmosphere.

Warscewiczella velata was in flower, the sepals cream colour, the petals and lip bluish. A pale variety is figured in Bot. Mag., tab. 5,582. The lip is cream coloured with radiating purple lines at the crest and margined bluish. This class of plants are much better understood now than they were in 1866, when Mr. Bateman wrote. "The genera Huntleya, Bollea, Warrea, Warscewiczella, Pescatorea, and Zygopetalum, form a sort of tangled skein which neither a Lindley nor a Reichenbach has yet been able to unravel." Dr. Lindley had just died and now Reichenbach is gone, but I fancy importers and cultivators like the Messrs. Sander, now that they have mastered the culture of these plants, and have the living specimens constantly before their eyes, will be able to tell us more than the botanists can with their musty herbarium specimens.

Lælia purpurata is undoubtedly the most handsome species in a genus containing some of the most important of garden orchids. The recent large importations have now flowered, and some of the best

forms in the St. Albans Orchid collection are remarkable for their pure white sepals and petals with rich crimson labellum. The variety Russelliana is distinct in its pale rosy lilac labellum with deeper coloured veins. Some of them are of the handsome Williamsi variety. The fault of the ordinary forms of L. purpurata is the peculiar character of the sepals and petals which reflex at the edges so much that they look as if they had been rolled up, and the best forms are not free from it. They like a warm temperature when in growth.

LARGE-FLOWERED PELARGONIUMS.

By W. Bradbury.

The show pelargoniums with their spare wiry growth and fugacious flowers have almost wholly disappeared from cultivation, and we have in their place a race of varieties in which are happily combined a sturdy free branching habit, and flowers remarkable for their effective colouring and persistency of petal. That the decorative or regal pelargoniums should have superseded the so-called show varieties is not surprising. Certainly it is not a matter of surprise to those who have had sufficient experience to be in a position to recognize the importance of a robust habit and an abundant production of flowers in plants grown for the embellishment of the conservatory, and the adornment of the indoor apartments.

I can carry my recollections back to the time when the raisers devoted equal attention to the habit of the plants and the shape of the flowers. But some twenty years ago as the result chiefly of the practice which obtained in awarding certificates, the necessity of a good habit was lost sight of, and we have had large numbers of varieties introduced that had flowers of good form and colour, but so weakly in constitution as to be utterly worthless. As the varieties having flowers conforming to the requirements of the florist began to decline in popularity, Digby Grand and other old varieties grown largely for market, began once more to obtain attention, and with the new introductions of continental origin come rapidly to the front, and eventually established themselves in public favour. They were, however, a comparatively long time before they received recognition at the hands of the various bodies entrusted with distributing the pasteboards, otherwise known as certificates. It was not, indeed, until the formation of the Pelargonium Society that they were placed on the same rank as the other varieties. If that society had done nothing more than this it would have done good service. The large flowered or decorative pelargoniums form one of the most useful classes of plants we have for the conservatory during the spring months. They are remarkably varied and attractive in colouring. They can be had in bloom during a period extending over at least three months, and densely flowered examples can be produced without imposing a very heavy tax upon the skill and resources of the cultivator.

The most important matter is to my mind the selection of varieties, and with reference to this, I would say that in the majority of cases the selection is unduly restricted. In no private garden will a collection approaching completeness be required; but as a diversity of form and colour in the flowers adds immensely to the interest of a display, the private cultivator should proceed on different lines to the grower for market. In other words, instead of growing a few of the most showy varieties only, he should have a fairly representative collection. The decorative pelargoniums may for convenience of reference be divided into two groups, one comprising those having flowers more or less smooth and even in outline, and the other varieties with semi-double and fringed flowers.

In selecting from the first of the two groups attention should be first given to the following, as they represent the finest varieties in their several lines of colour, and will form a good selection. Having obtained these the cultivator can extend the collection according to his taste and the space at his command. Duchess of Bedford is still unsurpassed amongst the light varieties, and must be included in a selection however small. The flowers are white with small pink spot on the top petals. Similar in colour, but distinct in character is Venus, an old variety, not generally grown, but invaluable for the supply of cut flowers. By having a dozen or so of strong plants and placing them in a light airy structure in which the temperature is rather higher than that of the greenhouse, a liberal supply of flowers may be obtained from February until May. The habit is rather poor, and it is in consequence not so well suited for the conservatory as the first-named, and some of the light varieties with fringed flowers. Turning to those with richly coloured flowers, I would direct special attention to George Shephard, a superb variety, dwarf in habit, free in blooming, and having large brilliant vermilion scarlet flowers, with dark markings on the top petals. This variety, although unequalled in its colour has not, so far, as I am aware, any place in the catalogues, and is only occasionally met with. Edmond About, an excellent variety, the flowers large, the top petals marone, and the lower petals bright blue, the centre pure white. Annie Hemsley, still useful, the flowers bright orange-red, with dark blotch on the upper petals, and pure white margin and centre. Gold Mine, rich orange, with white centre, high in quality, and effective. Rosetta, bright lilac-rose, very free in flowering, and distinct and effective in colour. Decorator (Hayes) deep-red, with dark blotch; as there are two varieties under this name, and this is in some respects the best, the name of the raiser is of importance. Donna Maria, a pleasing variety, the flowers large, rose pink feathered with marone. Lady Isabel, one of the most beautiful varieties in the section; the flowers large, slightly frilled, and of a bright rose lilac colour. Mr. John Hayes, an effective variety, the flowers bright salmon-pink, with dark blotch on the upper petals. Wilhelm Von Dracke, a fine variety, with large purplish crimson flowers. Mons. G. Desmoulin, a very distinct variety, the flowers large and of a bright rose-crimson hue, with white centre and margin. Madame L. Harmant, a pleasing variety, the flowers white feathered with crimson, and Kingston Beauty still unsurpassed, the flowers pearly white marked with a large purple blotch on each petal.

From the second of the two sections should be selected, Carl Klein, an excellent variety, neat in habit, and having brilliant scarlet flowers. Volonte Nationale is a very effective variety of great value for general decorations, being exceptionally pure, and the flowers are remarkable for their persistency. Volonte Nationale alba, a pure white sport from the foregoing, is exceedingly useful for decorations and the supply of cut flowers. Madame Thibaut, white, richly painted with rose, as so well-known one of the most beautiful in the series. President Harrison is a sport from the last-named, with deep pink flowers, marked with marone on the upper petals. It is equally free and not less useful. Edward Perkins is one of the most effective varieties in the series, and should form one of six. The growth is robust, but very bushy, and the flowers are of a bright orange scarlet hue. Gloire de Tours, crimson scarlet, with dark blotch on upper petals, and Denise, double white, an excellent variety for the supply of cut flowers.

To obtain plants that will produce large heads of bloom early in the season, it is necessary to strike the cuttings somewhat in advance of the time usually considered the best for the propagation of the show pelargoniums. Excellent examples may be produced from cuttings struck in July, but, not equal to those raised from cuttings struck at the end of May or the beginning of June. Contrary to the general opinion, it is not necessary to wait until the shoots have been ripened, as soft shoots that have not flowered can be readily struck and will make good plants. They require rather more care, as they are more susceptible to injury from the sun and shade. The shoots selected for propagating should be taken off rather low down, have the lower leaves removed, and be inserted round the sides of five-inch pots, filled with a light sandy mixture, and be shut up in a pit or frame. Shading and a rather moist close atmosphere will be required until they are struck, but the moisture must not be overdone or a large proportion will damp off.

When struck, they should be put singly in three-inch pots, and when those are well filled with roots, be shifted into others, six-inches in diameter, in which they should remain until they have flowered. It will be necessary to stop the shoots two or three times, the first stopping to be done when they have become established in the three-inch pots, and the last to be regulated by the time they are required in bloom. Turfy loam, to which moderate proportions of old hotbed manure and sand have been added should be used throughout. Some times the liberal use of manure is recommended, but it is much better to restrict its employment in the preparation of the compost, and assist the plants with top-dressings of some artificial or with supplies of liquid manure, early in the year.

Those who are desirous of obtaining a stock of any of the varieties mentioned, should purchase plants at once, and utilise every scrap of wood for propagating purposes. This will be better than waiting until next spring, and then purchasing young plants.

GARDENERS AND BEE-KEEPING.

Under the heading of popularising bee-keeping in a leader in the *British Bee Journal*, the writer indulges in regretful language that gardeners generally do not encourage or practise bee-keeping. He sets it down that a want of knowing bees is the main cause of this indifference, and remarks that with few exceptions the bee meets with scant consideration at the hands of the gardener. Now, the value of bees as aids to fertilization has been known to gardeners for many years. They have frequently been spoken of as of value for putting into peach houses for setting the blossom. This, I think, is too much at the cost of the bees, as when on the flight they are sure to fly to some light corner of the glass and there buffet themselves against it, often till they are dead, and never do any good among the blossoms. But in cool houses that can be thrown wide open to allow the bees free access, they will often come in great numbers and do a deal of good, as also they do immense good amongst every kind of fruit tree in the open air and on walls. I have frequently noticed that when the weather is cold and sunless about the time apples are in bloom the bees do not get out to visit them, neither do other insects, from the same cause, and partly from the pollen being badly developed we seldom get a good crop of fruit; but if the trees can be heard as well as seen at this season, if they diffuse from their flowers a regular hum as I have heard from some trees this season, a good crop of fruit generally follows. The only occasions on which I have known bees disliked by gardeners is when they have a good bloom of show pelargoniums, and the bees visit them much, they are sure to drop their bloom soon. But cases like these, where any anxiety is felt about flowers injured by them, are few and far between as compared with the immense amount of good they do. The keeping of the ground clean near to the hives is often a source of anxiety, as some workmen cannot be persuaded to go near a hive of bees. I have known some get so nervous that when a fly happened to buzz about their head they would begin to throw their arms about to beat them off. Such men as these should never be set to work near bees. But those who have more confidence should do the work, and the best time in the day to do any job, such as hoeing, weeding, or planting near the hives is in the early morning.

Hives of bees in all cases should be placed where it is not necessary to pass immediately in front of the hives. Some gardeners are still of opinion that bees injure ripe fruit, but from observation made for some years past I have never been able to confirm that opinion. It is well

known they will sup moisture from many sources, but they will not break the skin of the most delicate fruit.

So far as the desire may be to see beautiful sections of honey set on the table of their employers by gardeners, I may say this is already an accomplished fact, and during the past eight or nine years I could point to many gardens where bee-keeping has been added to the duties of the gardener, and in most instances it is taken up and worked with credit to them.

C. Warden.

Clarendon Park.

ROSES FOR WALLS.

Roses of vigorous growth are unsurpassed amongst flowering plants for clothing walls and fences, but it frequently happens that they do not appear to advantage or do credit to the cultivator, and a brief reference to them may perhaps be useful. There are several causes of the comparative failures so general, but the two most important are injudicious selection and a starving system of culture. The first of these has much to answer for. On the one hand we see large spaces covered with the free-growing roses possessing but little beauty, and on the other hand efforts being made to cover the walls with varieties that are only suitable for cultivation as bushes and standards. The common evergreen roses so extensively employed for choice positions should only be planted in positions where freedom of growth is of more importance than beautiful flowers, and with but one or two exceptions the hybrid perpetuals should only be grown as standards or bushes or for low fences.

In making a selection for spaces of which the height exceeds ten feet, the robust-growing teas must be taken full advantage of, for they are not only exceedingly beautiful, but they are free and continuous in flowering. The most useful of these is Gloire de Dijon, for when its roots have the advantage of a rich border it will quickly cover a wall some twenty feet in height and produce immense quantities of flowers. As a companion to it, Waltham Climber No. 3 may be strongly recommended. This variety is very vigorous and free in blooming, and the large finely-formed flowers are of a rich crimson colour and very sweet. Gloire de Bordeaux, Belle Lyonnaise, Madame Berard, and Madame Eugene Verdier are also useful. The last-named is not quite so hardy as the other varieties, but it is the best of the yellow teas for walls, as Belle Lyonnaise is the best of those with lemon-coloured flowers. From the hybrid teas may be selected Cheshunt Hybrid, Reine Marie Henriette, and Reine Olga de Wurtemburg. They form an excellent trio, and the last-named is exceptionally vigorous, and specially adapted for planting where it is desired to cover a large space quickly. The large bright-crimson flowers are freely produced, but hardly so double as could be wished. Polyantha grandiflora is a good single white variety, not continuous in flowering, but this is in some degree compensated for by the crop of handsome fruit which follows. The noisettes include several desirable varieties, the best being, perhaps, Lamarque and Reve d'Or. To ensure a full measure of success in the cultivation of the noisettes a warm south wall is necessary.

The border in which climbing roses are grown cannot well be too rich. In its preparation a liberal addition of farmyard manure should be incorporated with the staple, and subsequently its fertility must be maintained by top-dressings. If it is not convenient to top-dress with farmyard or stable manure, some good artificial fertilizer must be brought into requisition. After they have occupied the border five or six years some of the old soil may with advantage be removed, and replaced with fresh loam to which partly rotted manure has been added. Summer planting from pots has much to recommend it. Planted now, they will become well established by the autumn, and in the spring be in the best possible condition for making a vigorous growth. Sometimes roses lifted from the open ground do not make much progress until the second summer after they are planted. Much, of course, depends upon the condition of the roots and the time of planting, but by planting now a good growth may be depended upon next summer, and all risk of a loss of one season be avoided.

Amateur.

AMERICAN NOTES.

Trilliums at Home.

Writing to the *Garden and Forest* from Hancock Co., W. Va., Mr. W. E. Hill says:—The Trilliums (*T. grandiflorum* and *T. erectum*) in this region are especially luxuriant and abundant, and often afford specimens nearly twice the size of the common type. The last season I met with a clump of the white species, consisting of four stout stems, measuring twenty inches to two feet in height, and with leaves and flowers corresponding in size. Of the purple species, which is scarcely less common, the flowers will measure uniformly two inches and a half or three inches across, or nearly double that given by some botanists. Do not these facts suggest the capabilities of these beautiful plants, and the hope that a race might be secured larger and superior to any yet seen in cultivation?

Number of American Nurserymen and Seedsmen.

The New American Florists' Directory of florists, nurserymen and seedsmen, for the current year, is evidently a carefully prepared list, and contains a total of 6,687 names. Of these, nurserymen alone count 431; nurserymen combining the trade of florists and seedsmen about 400, making nearly one thousand, more or less, in the nurserymen's class. The seedsmen and combinations foot up 450, or so, while those having something to do with flowers, or listed as florists, come up to very near 6,000 names. Fifty years ago there was not probably a score of exclusively florists in the country.

Lycoris Squamigera.

The plant, writes a correspondent in the *Garden and Florist*, has been known to cultivators for several years, under the name of *Amaryllis Hallii*. It was brought originally from China by Dr. George R. Hall, of Bristol, Rhode Island, and appears to be the same as a rather rare Japanese species of Lycoris collected by the distinguished botanist, Maximowicz, of St. Petersburg, on the beach near Oyo, in the island of Kiusiu. It was previously known to Siebold, however, as is shown by his herbarium, and a good figure of it is found under the name of *Natsu-dzuisen* in the illustrated Japanese work, "So-Mokou-Zoussetz" (vol. v., t. 59), by the native botanist Yokoussai. Dr. Hall had it in cultivation in his garden at Shanghai before 1860, and he states it is often planted by the Chinese in their cemeteries. It may therefore be the same plant that is referred to by Mr. Baker as found in grave-yards at Ningpo, and which he thinks will probably prove distinct. The present plant, however, accords very well with the descriptions of *L. squamigera*.

In appearance it strongly resembles the true Amaryllis (*A. belladonna*). The bulb is large and globose, sending up in spring half a dozen bright green leaves, a foot and a half long by an inch broad. These leaves die down in late summer, and are succeeded by the flower-scapes, which are nearly three feet high, stout and solid, bearing an umbel of four to seven fragrant flowers within two large bracts. The flowers, on pedicels nearly an inch long, are three or four inches long above the ovary, somewhat decurved, of a uniform light rose colour shaded with a peculiar grey. The curving segments are much narrowed downward, and unite to form a rather narrow tube nearly an inch long, in the throat of which, above the insertion of the stamens, is a row of short truncate scales. These scales are peculiar to this species, and give it its name. The very slender filaments and style are declined to one side and about as long as the petals. The plant is of easy cultivation, and proves to be perfectly hardy in our New England climate, in this respect differing from all others of its near allies so far as known, though there would seem to be no reason why the other three or four species of the genus, which are also natives of Japan and China, should not be equally hardy.

The genus Lycoris is closely related to Amaryllis, Hippeastrum, and Crinum, all of which have flowers very much alike in general appearance. Hippeastrum, several species of which are cultivated under the name of Amaryllis, differs from Lycoris in its hollow stems and in its flattened instead of swollen black seeds. Its species all belong to the warmer parts of the American continent. The true Amaryllis belongs to South Africa, and, like Crinum, has large, round, green and fleshy seeds, and the fruit never opens by valves as in Lycoris and Hippeastrum.

PICTURES IN THE GROSVENOR GALLERY.

The exhibition of the present season is but a poor affair. It startles one to compare—as one cannot avoid doing—the present with the past, and the comparison is heightened in interest by remembrance of the high pretensions of the Grosvenor when in the bud and the first bloom. But there are some good things in Sir Coutts Lindsay's gallery, and amongst them is No. 36, Mr. D. Q. Orchardson's portrait of himself. He is a trifle older than when the portrait was painted, which of course is a common-place fact, but his visage at this hour is not greatly different to his visage at that, and we thank him heartily for presenting his agreeable frontispiece that we may, without intruding on his privacy, pay our respects to him. Near it is "Cloud-capped Snowdon" (37) by Mr. Bernard Lucas, solemn, but not severe. A curious picture is "Mary, Queen of Scots, in the woods of Roseneath," by Mr. J. Lavery (41), which students of the special history would do well to look at with attention. It is a serious and historical comment on the melancholy song, "My lodging is on the cold ground." In the commanding position of fronting the opening to the west gallery from the one that adjoins it, where we always expect to find a grand picture, is Mr. J. M. Swan's "Maternity" (68), a lioness lying at ease with a school of cubs tugging at her for a supper, and she lifts up her head to look upon them, and we seem to hear her say "Pretty dears." We must believe her, though we cannot see their faces, which are buried amidst her dugs, and her look of complacency is the great point—the central idea—of the picture. From M. Fantin-Latour we have a few charming flower pictures, and one of them is here labelled "Marguerites" (78), a nice group of Chrysanthemum leucanthemum, very sharp and bright, and all that could be desired in a flower picture. Tha "Last Boat" by Tom Graham (92) is a grand bit of realism; a stony station by the sad sea waves, and the signalman putting up a light for the last boat. A solid and earnest piece of work. Sir Coutts Lindsay contributes "The Vision of Endymion" (102), a very fanciful Diana with swans, one of which is struck in the breast by an arrow; at the "r.w." of the scene is the daring young shepherd sleeping as soundly as a dormouse.

In the east gallery "The First of September," by Dendy Sadler (149), we have, according to the settled theory of this trinitarian, a group of three old fogies, and they are variously engaged, but the main business is to brew a bowl of punch with which to sprinkle the partridges. "The Sandal" by J. Haynes-Williams (152) is a superb bit of delicate work, and the story is that a beauty is dressing and a pretty maid fastens her shoe on—a delightful picture with a poor motive. The "Flora" of Mrs. Louisa Jopling (156) we are much concerned about, and being skied we are compelled to look up to it. Flora in this picture is a theatrical young lady holding a green jar filled with parrot tulips. The "Washing Day" of Mr. John Reid (164) is not so red as this able painter might have made it, and we congratulate him on his healthy colour. We have a river, a hamlet, a group of women and children, and much of the bustle of domestic life: it is a charming picture. "The Druids" by Messrs. G. Henty and E. A. Hornel (173) is a new reading of an old story. The Druids here are Indian or Persian; not British certainly; and the picture is rich with colour and golden decorations. A dreadful thing is Mr. William Stott's "Diana, Twilight, and Dawn" (190), for we see Diana the chaste goddess absolutely nude, and in the most insipid display of her charms, while Twilight and Dawn appear to have lost their way in the wood, and they wake Diana to inquire the way home. A piece of string is not a sufficient costume for Diana. Mr. Hubert Vos contributes a good picture, "In a Brussels Alms House" (248), full of character and strong in realism, but with all the pathos proper to such a scene. We hope we shall not offend by saying that it pleasantly recalls Mr. Herkomer's picture of the Chelsea pensioners, for it is in that line of art, though very different in tone and colouring.

In the Fourth Room Ivystan Hetherington presents a garden of lilies (267), in which a couple of children appear on a walk between two borders of flowers. The scene is delightfully gardenesque; the details are beautiful, and the painter has hit the happy mean between clear definition and truthful generalization. It differs so in purpose from the flower pieces of M. Fantin that to make comparisons would be unfair. We will be content, therefore, to say that not often do we see the garden so justly treated as a subject for the painter, and the reason is that to paint flowers is a thousand times more difficult than is commonly supposed.

LATHAM'S LADY'S SLIPPER.

Cypripedium Lathamianum.

This distinct variety, raised from C. Spicerianum and C. villosum, has been favourably regarded as a valuable addition to the great group of hybrid cypripediums, and the figure will show that it has the merit of distinct form and definite expression. Messrs. Veitch and Son regard it as one of the best of the many they have had the good fortune to produce.

The flowers are about the same size as those of C. villosum. The upper sepal has a deep purple line at the fold, the basal colouring is yellow green which passes into white above, forming a handsome banner. The petals are spathulate, the mid-line deep purple, the superior half red brown, the inferior half light apple green. The labellum is dull green, with a faint tinge of brown. The square staminode is light rosy purple, with white border. Amongst many of its kindred this variety is easily recognized, and it affords an interesting example of the association of green with other colours.

FLEMISH FLOWER MARKETS.

The old Dutch motto—"there is pleasure in gardening"—is more than a mere theory in Belgium as in Holland; it is carried out to the letter, so far as could be gathered from a hurried inspection. In the isolated cottage in the country as in the smallest and stuffiest of crowded city street, the same passion for flowers and plants is distinctly noticeable. The poorer classes in Belgium do not in this respect differ from those of our own country, but they go in far more extensively for choicer plants. For example, instead of the perennial "Houseleek," or another ancient succulent in its seedy stage of existence which one cannot help seeing in rural districts in this country, one notices quite as frequently, and under similar circumstances, in Belgium, well-grown plants of Himantophyllums, a good azalea, and a nice specimen or two of camellias. This fact does not arise from any superior taste or from any better horticultural abilities on the part of our neighbours. Nearly all Cape of Good Hope, Japanese, and Chinese plants flourish with extraordinary vigour, are propagated in vast numbers, and are consequently to be purchased there as cheaply as geraniums and mignonette plants in England.



LATHAM'S LADY'S SLIPPER, *Cypripedium Lathamianum* (Upper sepal green and white with purple line, petals light green and red, labellum green with tinge of brown).

The chief medium of plant distribution in Belgium among the poorer classes is the open-air flower market held once or twice a-week in the market place of nearly every town and city. But these markets cannot be said to represent the best efforts of Belgian floriculture; quite the reverse, in fact. In the ancient and dull, but intensely interesting, city of Bruges the Saturday market is one full of quaint and delightful surprises for Englishmen unacquainted with Continental life. It embraces nearly every conceivable article of commerce, including, of course, plants and seeds. Primulas, cinerarias, fuchsias, and Himantophyllums, with a plentiful sprinking of young palms and small ferns, were the most conspicuous so far as numbers were concerned. The general appearance of the plants themselves was anything but good; indeed, they were a very poor lot, with a mediocre exception here and there. So far as the present writer could gather, it is only the very smallest of nurserymen who send plants to these markets. At first sight one would be tempted to conclude that the horticulture at Bruges was much neglected, but this is not the case, for on the outskirts of the town there are numerous nurseries as well managed and as successful as any in Belgium.

The flower markets of Ghent are naturally of greater importance than those at Bruges, being not only two or three times more extensive, but containing a much better stock of plants. They are usually held from 6 a.m. to 12 noon on Wednesdays and Sundays. Easter Sunday being a holiday, the flower market was held on Monday instead. The field which became the Place d'Armes in 1812, is now the flower market. Other than that afforded by the trees around the square, there is no protection from wind or rain. Here, as at Bruges, the number of well-grown varieties of Himantophyllums is noteworthy, whilst on every hand pots of mignonette and clumps of pansies are being sold for a few pence each. Each dealer's small plot of space, a few yards square, is for the most part backed up with healthy-looking specimens of Arum Lily in flower, and here and there a nice plant of Epacris attracts the attention. Bushy Deutzias and second-rate cinerarias, moderately good geraniums and proliferous spiræas, abound on all sides. Citrus in fruit appear to be very popular, but among plants grown on account of their foliage none appears to be in such demand as Ficus elasticus, of which we noticed very many healthy and sturdy specimens. Humbler growing plants evidently much in demand are primroses, red daisies, arabis, anemones, ranunculus, and lily of the valley. Trillium grandiflorum was among the less numerous plants, as was also the common variety of Clianthus, which also appears to be excessively popular in Belgium. A number of capital rhododendrons in pots, several tastefully arranged baskets of plants, and, *à propos* of Eastertide, a quantity of firs in pots and about three or four feet in height, conclude our notes of a look around the Place d'Armes on one of these very interesting market days. Whether it was because the traders had disposed of all their wares—which is scarcely likely—or in consequence of a rigid police enforcement of the time of closing, we cannot tell, but certain it is that long before one o'clock there was not the remotest trace of six hours' brisk sale.

So far as the plants exhibited for sale are concerned, the flower market at Brussels does not differ materially from that at Ghent. The conditions are considerably more inferior, although the historical surroundings are among the most famous and the most picturesque in Europe. The flower markets are held in the market place, and on every side we have splendid mementoes of a magnificence long since dead and buried. There were plenty of buyers, and a very lively trade appears to be done. The beautiful summer-like weather of Passion Week evidently caused the fair sex of Brussels to look after their gardens, and to make fresh additions thereto. At Brussels a very large trade appears to be done in cut flowers, but more especially in button-holes, chiefly of roses. There were two or three florists at the Ghent market, but quite twice or three times as many at Brussels. So far as the present writer could gather, the prices do not differ materially from those asked in London at the same season for similar flowers. W. Roberts.

EARLY TULIP LA CANDEUR.

Those who are in want of a good late tulip for beds or borders would do well to try the one above-named. It has flower stems exceptionally stout, and is just the sort to stand heavy rains or strong winds when in flower. The blooms are not over large, pure white, with the exception of the outside petals, which are slightly green, but which pales off with age. No tulip that I know stands so erect when growing out of doors without the aid of stakes, which is a distinct gain for open places. E. M.

PARK PLACE, HENLEY-ON-THAMES.

The noble mansion and beautiful grounds of John Noble, Esq., are on the Berkshire side of the silvery Thames, and the association with Henley, which is on the Oxfordshire side, is one of neighbourhood and convenience solely. The river is in the best of keeping here. The green banks are perfect, the reaches open, and the scenery rich, various, and homely. The hanging woods on the chalk cliffs, where Park Place overlooks the beautiful stream, contribute a romantic character, and justify the admiration of travellers who come here to enjoy English scenery in its purest and most pleasing form. The approach to Park Place from the foot of Henley Bridge, on the eastern side, is by a winding road that ascends by a rather steep gradient, for the house is on a high table-land, commanding a series of magnificent views, while its own local adornments of tree dotted lawns, mixed woodlands, gardens, and breezy, open spaces are many and various, and comprise a number of fine features that are rich in distinctive characters. An opening from the high plateau to the river is formed by a natural "coombe" or "comb" of the kind common in chalk countries. This is approached from the dressed grounds by way of agreeable park scenery, or by a tunnel through the chalk, the ends of which have been, in times long gone, faced with Roman arches and galleries, and other appurtenances of an amphitheatre, forming an interesting episode, and a noble introduction to the river scenery. Below on the banks of the placid river—now quiet, but clamorous with a population of a full mile run of house boats in the height of the summer—the boat-houses form picturesque landmarks, and have their uses in aid of the agreeable navigation.



From a photograph by Wilson Noble, Esq., M.P.

WATER SCENE IN THE GROUNDS OF PARK PLACE, HENLEY-ON-THAMES, THE SEAT OF JOHN NOBLE, ESQ.

A corresponding institution to the tunnel and the Roman remains, and more genuine as regards its origin, is the Druidical temple, originally within the boundaries, but now separated by a fence, which, however, does not exclude the visitor to Park Place. This is a circle of stones, put together as a series of cromlechs and forming a noble monument. It was not established here by the Druids, but was brought from the island of Jersey as a gift to General Conway from the inhabitants of Jersey. The stones were removed from a hill near St. Heliers in the year 1785, and on or near that hill in 1888, in the company of Mr. Harry Turner, the writer of this note found a cromlech in a state of ruin and half concealed by brambles, that probably originally had a synchronous connection with the removed temple.

If these attractions give special interest to the park and the greater scenery, the home gardens and the specimen trees are, in their way, even more interesting. One of the "lions" of the place is the "conservatory," which forms an integral part of the mansion, and is, in fact, a sumptuous withdrawing-room. Here is a glass roof coloured to resemble a ceiling, and air is admitted by narrow, longitudinal ventilators, on the lines of the low pitched lantern, the ventilators being invisible, and the current practically imperceptible. A rich carpet and a great variety of beautiful furniture tend to complicate the case, and to keep plants in such a place seems impossible. Yet the principal panel is occupied with a great mirror, that is liberally enriched with a surrounding of green ivy growing *in situ*, and this is kept in health by sponging the leaves, for the syringe must not be seen here. On every hand we see fine plants, dracænas, palms, hydrangeas, all that well-kept plant-houses might supply, and the happy end is accomplished, a complete combination of ease and elegance, with living plants to assist humanity to "drive dull care away." This conservatory was constructed by Messrs. Weeks, of Chelsea, and might be properly referred to as one of their finest triumphs over difficulties. Another interesting structure adjacent to the mansion is a fernery in the fashion of a magic cave, the roof clothed with rugged stalactites, the nooks and angles clothed with ferns, and everywhere mirrors, that enlarge the scene, multiply its incidents, and occasionally so far deceive one that we very nearly shake hands with ourselves. This was the work of Messrs. Pulham, of Broxbourne.

The gardens are all bright and in modern style of keeping, the glasshouses substantial, roomy, numerous, with the later inventions for moving ventilators by leverage, and everywhere the most serviceable plant furnishing, whether for use or ornament. Orchids are well done, but there is no pretension made of special orchid culture. Mr. George Stanton, the head man here, is known for his grand "all-roundedness," an evidence of which we had in 1866, when at the famous "International" of that year he was awarded a medal for practical proficiency in a great variety of subjects. It is a famous place for fruit, both under glass and in the open; and one of the features is an orchard of apples and pears formed as the result of the Chiswick conferences, and containing selections of the best varieties that were then prominent, and were specially recommended for beauty, usefulness, and profit. The trees are all in fine health, and have set well for a crop; in fact, fruit prospects here are generally of a cheerful nature. Amongst the many matters of interest noted during our pleasant wanderings over the place, the figs were especially attractive. The Brunswick and Brown Turkey figs thrive here in the open fruit garden and one fine lot of trees forms a feature worthy of a note. We have a wall well clothed with mature growth on which the figs are now about half grown. From the base of these wall trees a series of long rods is carried forward in an easy slope to an archway over which they are trained to form a bower walk. Thus one set of trees has two sets of branches, the wall and the bower being furnished by them. The fruit on the bower is apparently as forward as that on the wall, but the last-named will, of course, ripen first.

We should be wanting in proper sympathy were we to omit mention of the admirable arrangements established by the generous proprietor for the advantage of the young men employed in the gardens. A considerable number of gardeners are trained in this place and their bothies are in a comfortable range in the midst of the glass houses where the greater part of the better class of work occurs. All that health can require and considerable personal liberty are secured by the economy and regulations of the establishment, and a notice posted on one of the walls informs the thrifty men that when special consideration arises touching the personal fortunes of any, a savings' bank book or some similar document will be asked for as evidence that the man who needs something has at least made some effort to anticipate his own wants.

In such a place ten thousand beautiful scenes and objects may be found, and the "peeps" that are prudently kept open in the woods, are of great value in aid of the pedestrian who can rejoice in a sudden revelation "over the hills and far away," for here the hills rise on either side of the river in

majestic masses, and the woods and green slopes afford a most proper setting for the noble river. We have snatched one of the "bits," in the shape of a water scene, adorned with the giant leaves of the butterbur, Petasites vulgaris. And this pretty pool reminds us that on every hill in this property is established a similar tarn or lakelet, every one having a character of its own. As for the butterbur, it grows here to gigantic proportions, for the soil no less than the moisture suit it. The place is rich in its botany, owing to diversity of soils and situations, and probably there has not often ruled here a manager so well versed in British plants as Mr. Stanton, who is a keen observer of their haunts, their peculiarities, and their variations. In one part of the approach the common cowslip acquires such predominance as to give the grassy spaces a distinct colouring, but at a certain point comes to a complete stop, and its place is taken by the cuckoo flower. The primula holds to the chalk, and will not go beyond it, and the cardamine holds to the clay, and the dividing line marked by Nature is as definite as though struck by the surveyor's chain. For the lover of British orchids there is a glorious feast in the season on the cliffs at Park Place, overlooking the Thames. Happily this beautiful place is not barricaded against the wayfarer, but, on the other hand, many things are so managed as to render a landing from the river a most agreeable diversion in a day devoted to pleasure.

BOARD OF TRADE AND RAILWAY RATES.

AT recent meetings of the Commission presided over by Lord Balfour of Burleigh, evidence has been taken on the carriage of manures, hops, garden produce, and the representatives of the several interests (including the railway companies), have addressed the court.

Mr. Poyser on behalf of the chemical manure manufacturers, objected to the amount of the rates proposed to be charged; also the principle upon which they were fixed. He pointed out that not only did the new proposals of the railway companies retain their old Parliamentary powers, but that they gave them power to charge increased rates—in some instances more than 100 per cent. higher than the existing rates. He objected to the increased rate of charge for short distance traffic. There was no justification whatever for an increase of charge. On behalf of the traders he asked for a two-ton rate similar to that which the companies included in their schedules for Class B, and also for an owners' risk rate which would clear up the question of value. The traders were prepared to take all the risk upon themselves, and value apart from compensation ought not, he urged, to have anything whatever to do with rates. Upon the question of station terminals he denied the right or equity of the proposed charges in that respect when the station accommodation was not required by the trader, and all the company did was to receive a truck-load of goods at a siding. So far as service terminals were concerned, he contended that the traders should be protected against excessive charges for the actual services rendered, and that the railway companies should be required to specify under separate heads the precise services rendered. At present there was not a word in the schedules which would compel them to do this, but without loading or unloading, if they simply moved a truck for a few yards, the railway company would be entitled to charge a service terminal up to their full *maximum* powers.

Mr. Gay, for the market gardeners and hop-growers of Worcestershire, and also on behalf of the Corporation of Eastbourne, said it was a matter of the greatest consequence to hop-growers of both counties that the rates and charges should be reasonable, so that they might be able to compete with foreign producers. A pocket of hops weighed from 1¾ cwt. to 2 cwt., so that, having regard to weight and bulk, it ought to go into Class 3 instead of Class 5. The effect of putting it into Class 5 would represent an increase of 17s. 6d., per ton upon the carriage of hops from Worcester to London. If the only effect of a revision of rates was to enable the railway companies to increase their present excessive charges, he failed to see what advantage the traders would derive from the recent legislation. In regard to live stock, he found that the present charge of the Brighton Company, under their Mitcham and Tooting Act, was 7s. for the conveyance of twenty sheep ten miles, inclusive of terminals. Under the proposed rates the charge, including terminals, would be 30s. against 7s. In no single instance had the Brighton Company decreased their charges upon agricultural produce, but in every instance they proposed to increase them.

Mr. H. C. Richards then addressed the Court on behalf of the Corporation of London. The contention of the Corporation was, he said, that the companies were not entitled to charge terminals by any existing Act of Parliament: secondly, if they were, that the terminal must not be an average one, but one fixed by the present tribunal on the cost of each station in town and country; thirdly, when the trader performed cartage or delivery, or any service such as the companies now demanded additional rates for, the trader should be allowed a rebate where he performed those services himself; fourthly, that the proposals with regard to smalls would cripple the entire trade, as it was admitted that the largest portion of the trade in London was distributive; and fifthly, with respect to empties the proposals of the companies were absolutely prohibitive.

Mr. Berry, of Kent, for the fruit and vegetable growers generally, dealt with the ripe and soft fruit carrying. He said that now corn growing was no longer profitable in this country attention was being turned to fruit growing, and he asked that distinction should be drawn between the cheaper fruits and the dearer, and that fruit like plums, consigned in two-ton lots, should be in Class 1, while those in smaller lots should be in Classes 2 and 3, according to the lots. He said that the large towns, such as London and Manchester, consumed this fruit very largely, and it was not worth more than £10 a ton. This cheap fruit could be easily loaded. He admitted that raspberries, strawberries, and cherries should go a class higher than plums. He spoke for the growers all over the country, in order to save the Court from having to hear a dozen speakers. He asked also that jam in half-hundredweight tubs should go in Class 3.

Mr. Beale, for the Midland Company, said that the experience of the companies as to the stated case in loading fruit was not in line with the views of Mr. Berry, and the consignments were much below the weights mentioned by him. Then, too, the claims for delay and consequent damage to the fruit were heavy. The reduction asked for could be ill-afforded.

Mr. Wilkinson remarked that the railway companies had themselves built up this fruit trade, which required a special service, at a special time, and with a special staff. Moreover, the trucks could not be made to carry heavy weights, as the fruit could not be pressed. Then, too, the companies were willing to give special rates for special consignments.

Mr. Light (South-Eastern Railway) said that the plums, if ripe, could not be packed closely, and the trucks could not be loaded up.

Mr. Berry insisted that five tons could be packed in a truck. One-half of the traffic from Kent went through London to the principal towns of the north. No truck was ever sent through to the north which contained less than a ton. So far as the claims upon the companies were concerned, they arose principally from cases of wrong delivery. If a consignment of fruit was wrongly delivered, the merchant who received them neither allowed them to decay nor wasted time in inquiries as to whom they belonged. He simply sold them on behalf of the person to whom it subsequently turned out they belonged, and handed over the proceeds. The trade by passenger train had been greatly developed within the last 20 years. Formerly, all that was necessary was to attach a single carriage to the night mail train from King's Cross, but nowadays it was necessary to put on three or four carriages to the night express trains of every railway out of London, and special trains were run from Kent in exactly the same way as express goods were now carried between London and Manchester. The train left Kent at eight in the evening, and arrived in the north in time for the morning market There was a considerable trade now carried on in cut flowers, and on behalf of the growers he would suggest that cut flowers all round should be included in Class 4. An enormous quantity of wallflowers, stocks, narcissi, and other flowers were sent to London. They required but little protection or care. The camellias, roses, orchids, and more valuable flowers were packed in boxes. At present one kind was in Class 3 and the other in Class 5. He would suggest that fourth class all round for flowers would meet the requirements of the case.

Mr. Light pointed out that some of the flowers now sent in the fifth class were of great value, and entailed great care and responsibility upon the railway companies.

The question of "empties" was then discussed, and also the classification of hay and straw.

This closed the inquiry, which, including the sittings in Edinburgh and Dublin, has extended over 85 days.

WALLFLOWERS.

NOTWITHSTANDING the severity of the frost to which wallflowers, in common with other plants growing in the open, were subjected early in March, they have bloomed in the most profuse manner during the past two months, and are still resplendent in crimson and gold, and contribute liberally to the attractions of the flower garden. In some neighbouring gardens, not less favourably situated than that of which I have charge, they suffered from the severe weather in the month mentioned, but that was entirely owing to the plants being rather weak as the result of the practice which obtains as to the time of sowing the seed. According to my experience, one of the most important points in the cultivation of these flowers is to sow the seed early in the season. When this is done the plants have sufficient time to acquire a full degree of strength by the end of the autumn, and as the result they pass through the winter safely, and bloom profusely in the spring following. In mild winters plants that were raised from early sowings will commence flowering in February, when their flowers are especially welcome in the drawing room and other indoor apartments. It is quite common in gardens for wallflower seed to be sown towards the end of June and early in July, although the results year after year are as unsatisfactory as they well could be. The plants raised so late as midsummer do not attain to a sufficient size to produce a good effect, and there is a risk of their being injured by adverse weather.

For many years past I have adopted the practice of sowing early in May, and I am not disposed to alter the time excepting it be to sow in April. The seed may, however, be sown until quite the end of May with the assurance of obtaining strong plants by the autumn. A warm border is selected for the seed bed, and the only preparation necessary is to make the soil moderately firm and quite fine on the surface. As we transplant the seedlings to a nursery bed when of a suitable size, the seed is sown broadcast, and covered with the aid of a rake. When it is intended to allow the plants to remain undisturbed until they are transferred to the beds and borders in which they are to bloom, the seed should be in drills from twelve to fifteen inches apart. By sowing in drills with a space of at least twelve inches between them, and then thinning moderately, the plants make a satisfactory growth. I prefer to transplant because the removal checks any tendency to make a too vigorous growth during the earlier stages, and what is still more important, promotes the production of fibrous roots. The seedlings are planted four inches apart in rows, with a sufficient space between them to admit of the hoe to be used in keeping down weeds. The transplanting of a few hundred wallflowers is not a heavy task, and if a dull day is taken advantage of for the work, and the plants well watered in, they will soon become established, and require but little attention beyond keeping them free from weeds. An open position in the kitchen garden is selected, and as a rich soil is not necessary, no manure is applied when the quarter is prepared for their reception. As a rule they are planted in the beds and borders before the end of September.

To select good strains is not less necessary than to sow early, and the prudent cultivator will purchase fresh seed every season, instead of saving it himself. Owing to the several colours being grown in close juxtaposition it is impossible to keep the strains so true in the private garden as on the seed farm. Therefore it is in all cases best to obtain seed that has been produced under conditions favourable to the colours being kept distinct. The most generally useful strains are those known as Dwarf Blood Red and Selected Yellow, which have crimson and yellow flowers respectively, and are bushy in habit and of medium height. Cranford Beauty is a fine yellow strain, the plants rather tall, and the flowers large and very rich in colour. Belvoir Castle Dwarf Yellow is an excellent dwarf yellow strain, admirably adapted for small beds, and for the front row of the shrubbery border. In arranging wallflowers in the mixed border it is advisable to plant them in rather bold groups of distinct colours.

Notes of Observation.

IBERIS TENOREANA.

This variety of perennial candytuft follows closely after such kinds as sempervirens in the time of flowering, and is therefore desirable for rockery adornment. The growth too is more compact, and the flowers not so straggling. Taken upon all points it is perhaps the best of the family, but where space can be devoted to these early-flowering evergreen kinds of candytuft, it is well to have a succession of them by the employment of various sorts. The one in question is easily increased by cuttings inserted in a cold frame in the early part of September, and which will be ready to plant out where required the following April. E. M.

PLANTING OUT ARUM LILIES.

Now is a good time to plant out the roots of Callas with a view to their preparation for next year's flowering. Some people prefer to keep the plants in pots during the summer, shifting them into others towards the autumn. The planting out method is to be preferred for the reason that the trouble entailed during the summer in watering and such like is comparatively nil; more than that the crowns made by the planting out system produce better blooms.

A border with a western aspect suits admirably; where the soil is strong the plants grow well and need less water than in sandy soil. Our plan is to manure the land in the autumn, digging it deeply over. The method we adopt in dividing the roots is the following:—Those plants which flowered in seven-inch pots are planted whole; they will produce several crowns during the summer and are in the autumn put into eleven-inch pots which throw up abundance of flowers from October until May. The plants which this year bloomed in the largest size pots are broken up into single crowns, which are intended for seven and eight-inch pots and make capital small plants for house decoration. These latter are planted in rows eighteen inches apart and the same distance from plant to plant. Six inches more space is given to the larger roots. By following the system of dividing the roots annually a good stock of suitable sized plants is always obtained. Should the weather be dry during the summer abundance of water is given to the plants. S.

ROSE LA FRANCE.

If this is not generally regarded as the finest of all hybrid perpetuals it comes very close to that idea. Whether it be in the border during the summer, or growing in small pots for the front stage, or for larger specimens for exhibition it is equally valuable. At the last exhibition at the Regent's Park I saw a good specimen which proved its adaptability to specimen growing. It was not because it was so numerously covered with show flowers, but for the excellent form of those produced, which numbered about three dozen, while the colour of this variety thus early in the season was all that could be desired. One point in favour of this sort is that it is easily increased by cuttings, which root very freely, especially at this season of the year, after the plants in pots have flowered. E. M.

FUNKIA UNDULATA.

This golden variegated dwarf growing variety is useful for the margins of groups of plants, when mixed with maidenhair ferns, for instance. The broad markings of pale yellow of the leaves are very conspicuous for brightness and purity. Grown in three-inch pots, a single crown in each, they would be useful in a variety of ways where decorative plants are in request on a fairly large scale. M.

THREE FLOWERING CHERRIES.

On the 1st of May we had in our shrubbery three beautiful cherries in flower, and I name them as suitable for smallish collections of choice trees. The best double cherry is *Cerasus avium flore pleno*, a tree rarely seen in a proper state, because the gardeners will prune it. When left to grow in its own way it makes a noble tree, and flowers most profusely, the flowers being large snow-white rosettes. *Cerasus mahaleb*, known in nurseries as a stock for grafting cherries on, makes a fine flowering tree when allowed to grow unchecked. In general appearance at this time it may be likened to a pyrus, the leaves being less cherry-like than those of the cherry proper, which is Cerasus duracina. The third is Cerasus Pennsylvanica, which, in its likeness to a pyrus in the smallish fragrant flowers, agrees very nearly with C. mahaleb. This cherry has a beautiful bark, marked with broad, purplish bands, and forms a free-flowering and useful shrubbery tree. R.

SPRING STAR FLOWER.

Triteleia uniflora lilacina is an interesting subject for flowering at this time of the year in pots in the cool house. Although introduced as long back as the year 1836, it is not often met with in gardens—not nearly so much as could be wished by lovers of curiosities in spring-flowering subjects. E. M.

THE FRINGE TREE.

Chionanthus virginica is not common in gardens; only in some few do we meet with it at all. In strong, cold, wet soil it does not flourish nearly so well as in districts where the soil is sandy, and, consequently, both drier and warmer during the winter months. Where it does succeed it is generally very much admired for its quaintly formed flowers and delicious perfume. It takes the name of the Fringe tree on account of the many times its flowers are cut. This variety of chionanthus forces well, and may be had in flower during the month of April by starting the plants early in a cool house, afterwards giving them a moderately warm position if they need pushing on for any special reason. Messrs. Veitch had some finely flowered plants at the Drill Hall, Westminster, on the occasion of the Auricula Show, and they were much admired. M.

THE ABYSSINIAN PRIMROSE.

Primula verticillata is a charming plant for the cool house, to have in flower during April and May. The flowers are produced in whorls; they are pale yellow; the leaves are thickly covered, especially on the under side, with a white mealy powder which contrasts well with the flowers, which are freely produced on tall, stout spikes. Massed in a broad pan is the way in which this variety is seen to the best advantage. E. M.

SPIRÆA ASTILBOIDES.

What a splendid decorative plant this spiræa makes for flowering during April and May! It is a great improvement upon the more common S. japonica, so largely used for forcing, both in market and private gardens. I am aware that the difference in price between the two has an effect in determining which of them is to have the greatest favour, but if price were equal this plant would be universally preferred. Capital plants in six-inch pots can be grown, and are extremely useful and much more showy than perhaps any other variety in the spiræa family. E. M.

DEUTZIAS FOR THE SHRUBBERIES.

As shrubbery plants Deutzias are not employed nearly as much as their merits deserve. Seldom indeed do we see any at all growing out of doors, whereas by their employment in suitable positions a capital effect is produced during the month of May. The position chosen for them should be an open one to the sun so that abundance of light and sun-heat may be obtained to ripen up the growth made following the flowering of the plants. The more numerous and vigorous the shoots made the better crop of flowers will be the result the following spring. The varieties *D. scabra D. candidissima* often throw up growths from the base which attain a height of four feet in one season. From shoots of this strength the finest blossoms are obtained the following year. It is not wise to encourage a too luxuriant growth for the reason that the plants would be less able to stand a severe winter in that condition than though the growth were less strong but more matured. A strong soil with the addition of a little peat and leaf mould will grow deutzias well. A light sandy soil needs more manure. Beside the two varieties previously named (the latter evidently being synonomous with *crenata fl. pl.*,) *D. gracilis* makes a handsome shrub for the borders. Given space to develop its branches abundance of flower will be annually produced. The first named sorts are more suited for a position away from the front of the shrubbery as they grow six feet high. E. M.

THE JUDAS TREE.

The brilliant flowers of *Cercis siliquastrum* are now in full perfection. This is an uncommon plant in gardens, for not one in twenty can gratify us with a sight of this fine tree, with its bright rosy-purple flowers, which are produced freely in the month of May. It is interesting to note that the flowers come from the main stem and branches, giving it a singular appearance. Indeed, this is one of the most interesting features of its growth. In a sandy, peaty soil this cercis grows the best; it should be well sheltered from easterly winds, which somewhat spoil the flowering if too much exposed. In our soil—a heavy, retentive one—the growth is not free, yet a crop of bloom is produced every year. E. M.

DOUBLE FLOWERED CHERRY.

The double white-flowered cherry known as *Cerasus avium multiplex* is always welcome in the shrubbery, or on the grass it forms a fine object when allowed to grow in a free manner in half-standard form, afterwards allowing the branches to droop nearly to the ground. It then forms a perfect head, and being kept thin rather of branches, not by shortening the rods, but by slightly thinning the side shoots, the spurs on which the main of the flowers are clustered get thoroughly well ripened, and hardly ever fail to set a good crop of bloom. When grown as a shrubbery plant over a thick growth of aucuba japonica for instance, which is useful to cover the soil under the cherry, if kept low by annual pruning, the bottom branches of the cherry should be pruned close to the stem until this attains a height of four or five feet. The branches above will not then interfere with the shrubs below, and will form shapely heads in its own way, which cannot fail to be a source of attraction during the month of May. E. M.

THE SILK OAK OF AUSTRALIA.

Grevillea robusta, well known as an elegant greenhouse plant when young, has been acclimatized in California, and is now used as a shade tree in San Bernardino county. R.

LEOPARD'S BANE.

Doronicum plantagineum excelsum is the best of the Leopard's Bane family. The flower is quite circular in form, the points of the petals recurving slightly. But the great feature of this variety is the intense yellow colour, which is especially rich. This is one of the showiest early spring flowered subjects we have in the herbaceous garden, and one that ought to be extensively diffused in gardens. E. M.

OUT-DOOR AURICULAS.

Much more use is being made of these flowers for the decoration of beds and borders than was formerly the case. They are excellent border flowers, and are not affected easily with changes in the weather like some things. The stock can be so readily increased from seed that no difficulty need be experienced in obtaining a sufficient number of stout plants. Perhaps the way in which they grow to greater advantage than any other is in a mass of one shade of colour only, whether it be light or dark kinds. Planted rather thickly together in a circular bed for instance, the surface being mulched over with cocoa fibre, a pleasing effect is produced, and the blooms when expanded are kept quite clean. Nor do the slugs trouble the plants nearly so much as when minus this covering of the soil. E. M.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Hardy Plants in bloom comprise :—Campanula persicifolia, C. persicifolia alba ; Œnothera Fraseri, Œ. grandiflora ; Achillea millefolium roseum ; Iris Xiphium ; Delphinium formosum, D. Hendersoni ; Dianthus alpinus ; Dianthus plumaris ; Potentilla grandiflora coccinea, P. lutea fl. pl., P. rupestris, P. variabilis ; Broad-leaved Thrift, Statice latifolia ; Sweet Williams in variety.

THE HOUSE.

Cage Birds will enjoy the fresh air now, but care must be taken not to put them in the full sunshine or in cold draughts. It makes one's heart ache to see the mistakes people make in putting cage birds where they must suffer much, and where perhaps their lives are in danger. "More offend for want of thought than offend for want of feeling." Abundant facilities should now be afforded the birds for bathing, and they should receive rather liberal supplies of green food, the tops of watercress, lettuce, and groundsel being of special value.

CONSERVATORY AND GREENHOUSE.

Azaleas not yet done growing must be kept moist and shaded, but beware of pushing the growth too far, as unless they are well ripened and rested there will be few flower buds form. There is not much danger of that however just yet, except with those forced early.

Climbers in free growth look best when left a little to themselves, but some tying and training must be done, and the cultivator must have an eye that the rods intended for future flowering are not unduly shaded by disorderly growths. There is a happy medium between training climbers in a severely artificial manner and leaving them to sprawl about and choke themselves, which medium course it should be the aim of the gardener to discover and encourage.

Pelargoniums of the show class now require much attention. See that stakes and ties are in order to keep the plants in the required form as they come into bloom, and remember that the fewer ties the more credit is due to the cultivator. This is such an important matter that varieties with a sturdy habit should always be preferred, unless there are some very strong inducements to select weak growers. Give shade as the plants show flower, and keep the whole stock as cool and airy as possible, avoiding damp and cold draughts.

FLOWER GARDEN AND PLEASURE GROUNDS.

American Plants recently moved must have an abundance of water overhead as well as at the root. Remove by carefully snapping out with finger and thumbthe dead blooms of rhododendrons and azaleas to prevent seeding.

Auriculas will want occasional fumigating ; keep them in a cool place on a hard bottom, and pour water amongst them on the ground surface to cause a moist air. An old light may be rested on pots over them during storms, otherwise let them have the benefit of all showers.

Asters may now be turned out in the places where they are to bloom ; make the ground rich, and choose showery weather. If the place is infested with snails, plant a few small lettuces behind the back row, which may be pulled up as soon as the asters are well rooted. These to flower in pots to have a good shift and cold frame.

Annuals of quick growth sown now will bloom late for succession. Nemophilas never make a better effect than from sowings in June, in moist shady places. Asters and balsams to be planted out during moist dull weather.

Dahlias planted out to be staked before the roots extend. Plant out all that are in pots at once ; they will do better in the ground now than with any more nursing. The shoots of dahlias may be bent down so as to render very short stakes sufficient.

Herbaceous Plants may now be propagated from cuttings as they go out of bloom. Alyssums, Wallflowers, Perennial Iberis, &c., are easily propagated, and the borders may be richly furnished with them by a little timely trouble.

Pansies.—Take cuttings of the best, look over seedlings, and root out and destroy all inferior ones. Sow again for autumn bloom.

Tulips.—Remove the shading, and let them have the benefit of rains and dews.

FRUIT GARDEN AND ORCHARD.

Apricots to be thinned, young shoots nailed in, caterpillars destroyed, and water engines used smartly if any sign of fly.

Search among raspberries occasionally in the morning for snails, which take shelter on the stakes and among the side shoots. If large fruit is required thin the blooms at once and give liquid manure. Disbud and nail in. Pot trees to have plenty of water, and if weakly in their new growth pretty strong doses of liquid manure at intervals of at least a week each. Pinch, regulate, and where fruit shows thick thin it out.

Wall Trees to be nailed in and the shoots thinned as they grow, that there may be no crowding of unnecessary wood. Shoots that run away with undue vigour to be cut clean out to the base, unless in positions where much needed, in which case shorten them back.

KITCHEN GARDEN AND FRAME GROUND.

Cucumbers, tomatos, and capsicums may be put out; the soil should be rich, and for tomatos a sunny aspect must be chosen. All salad plants should have a shady position, or they may run to seed. In sowing peas and beans, it is best to depend on the earliest sorts at this time of year, as they are soon off the ground.

Celery to be got into trenches as fast as the ground can be made ready by the removal of other crops. Take up each with a ball, and do not injure a single leaf. Hoe over those that are established in trenches to break the surface that has been hardened by watering.

Sow succession beans, marrow peas, lettuce, Portugal cabbage, cauliflowers, Walcheren broccoli, stone turnip, and turnip radishes.

VILLA FARM.

It is yet too early to sow any but the white-fleshed turnips required for early autumn use, as the yellow-fleshed varieties are apt to mildew when sown before July, and the swedes, excepting in the north, produce the best crops when sown about the middle of June. The Early Six Weeks is the most rapid in producing bulbs of a suitable size for feeding, but it is not so profitable as many others, and can only be recommended for sowing late to form what is commonly known as a stolen crop. The most useful of the sorts for sowing for autumn feed are the Red, White, and Tankards, which grow to a large size and possess excellent feeding properties, but do not keep in good condition long after the middle of October. The Red Paragon and Grey Stone are two excellent varieties for feeding purposes during the latter part of the autumn and early in the winter, and they are also useful to sow in August to stand over the winter. The white-fleshed turnips should invariably be sown on the flat and in rows about eighteen inches apart. Good cultivation—that is to say, a deeply-stirred soil and liberal dressings of manure and frequent use of the horse hoe—is essential to success, and it may be added that the crop of turnips, unless good, will afford a very poor return for the space occupied. Phosphatic manures are the most desirable, and there is not perhaps anything better than dissolved bones, applied at the rate of five cwt. per acre ; but in some districts there is a preference for a mixture consisting of three cwt. superphosphate, two cwt. of salt, and one cwt. of fish guano. A good tilth is of the highest importance, for if the soil is at all rough on the surface there is a much greater risk of the plant being seriously injured by the fly. Three pounds of seed per acre is the usual allowance, but if the weather happens to be dry at the time of sowing it will be prudent to allow an extra pound of seed, and, as it may make all the difference between a full and a light crop, the additional cost is not worthy of being taken into consideration. One of the best means of checking the ravages of the fly is to sow quick lime at the rate of eight bushels per acre, just as the young plant is making its appearance and should rain immediately follow it will be well to repeat the application, The frequent use of the horse hoe, by keeping the weeds down and the surface well loosened, is of immense assistance in promoting a rapid growth.

HORTICULTURE IN NEW ZEALAND.

I have just received the Christmas number of the Gardeners' Magazine, and you are undoubtedly aware that the Christmas season here is our summer, and instead of assembling around our hearths before a warm fire, we prefer to enjoy ourselves by going for a picnic and sitting under the shade of trees should the weather be fine. You will not need any praise from me as regards the value of the G. M. on all horticultural subjects, yet I offer you my best thanks for many hours of pleasant reading which your paper has afforded me, thanks to all who contribute to its pages, especially those who have given your readers such a large amount of knowledge of Mistress Mum and her Lovers. The example of a few earnest cultivators of any flower is soon copied by others as soon as they see their way, and are interested in the subject. Mistress Mum has her lovers in New Zealand who have a desire to show the world that they are not less loyal to their autumn queen of flowers, than are those who have been honoured by attending the banquets at her courts in our Fatherland. This just reminds me of a large playbill recently posted on fences here with words in large letters, "Hands Across the Sea," and the thought again came, yes, Hands Across the Sea ; why not, until I began to wonder where is the connection of the playbill and and my letter. It is impossible to reach by the hand any friend across the sea however much one might desire it, but in thinking of the past year I was led back until I reviewed the time of my arrival in New Zealand over thirty years ago. At that time we had to be satisfied if we heard from home once in six months by sailing ships. Then came after many years steamers which brought news in six weeks, then came the telegraph by which we can send a message in less than twenty-four hours sixteen thousand miles, which must be a great convenience to those who require it. But I perceived a quicker mode of realising first thoughts of hands across the sea.

The Gardeners' Magazine has caused me to invent it by the pleasing descriptions of Calls at Nurseries and Visits to Gentlemen's Gardens. Some of the districts described I well remember near London, and when I think for a moment I almost feel I am there, so that in thought the mind is in England, and in imagination I can join hands across the sea. Then again the G. M. arrives once a month, and brings news which in some instances helps to join hearts over the sea. Thus, it would be impossible to measure the good or the amount of pleasure that a trustworthy paper affords to its readers.

The history of the chrysanthemum appears to suggest that a valuable book might be written on the history of the origin of our garden fruits, flowers, and vegetables from their wild state. For example, the double primrose, the violet and other old choice florist flowers, it seems evident that they are not the children of chance or they would be more often seen in cultivation, so I offer the suggestion if the object is possible. I know it is believed by many that the secrets by which our forefathers obtained wonderful results have been lost with them and that they did not make known their secrets.

Horticulture in New Zealand is progressing steadily, but we require some thousands of families to settle here who have plenty of money to spend in making new homes and giving employment to our boys and girls and others who are poor here. The Gardeners' Magazine, December 7, 1889, gives tempting hints to intending colonists to go to Brazil. There is no doubt plenty of chances there for wild adventure, but New Zealand is the place for a peaceful home. Here in fifty years of settlement, the towns and villages have astonished visitors from England, our roads and railways are splendid helps to new comers, and New Zealand has many advantages to offer to settlers who have means and are able to use them. Our climate is the finest in the world for Europeans to live in, the soil is suitable for all kinds of European crops and fruits and flowers. Our native bush of shrubs and trees and ferns resembles a vast greenhouse of plants amidst whose treasures there is not anything to harm man or to cause fear in his rambles. If our forests cannot give such wonders of the floral kingdom as the Brazils, our timbers are more useful. Our discovered treasures are many and await a larger population to develop them.

John Dutton, *Florist*,
March 31, 1890. *Springfield Road, Christ Church, New Zealand.*

To Illustrate how Peas are Influenced by the Soils in which they grow, Professor Bailey, in a late bulletin, gives these facts concerning a plot of Golden Gem Peas in the garden of the Cornell University Experiment Station. The rows began in a good rich loam and ran into a stiff and strong clay. A good sod had been turned under a few days before the peas were sown. The ends of the rows were so dissimilar at picking time that they appeared to be planted with different varieties. The average height of the plants in loam was eighteen inches ; average number of pods to the plant, five and a-half ; all the pods, except sometimes the very uppermost ones, were ripe, and there were no flowers. The plants on clay were larger, deeper green, with more bloom, and a tendency, not apparent in the other case, to produce two pods on a peduncle. The average number of pods to a plant was seven ; only about two-thirds of the pods were ripe, and there were still some flowers.

Exhibitions and Meetings.

MANCHESTER WHITSUN EXHIBITION.

The exhibition of the Royal Botanical and Horticultural Society of Manchester, opened May 23, and closed May 30, was generally regarded as the best in the long series of such exhibitions which the cotton city can boast of having accomplished, but was also far in advance of all averages to which we are accustomed, whether in the metropolis or the provinces. In our few hurried remarks in our last issue, conveying the impressions of a first look round, we laid stress on the vitality of the competitive system that has been maintained in full integrity in the scheme of the Manchester show through a run of years from its original institution. The importance of this healthy stimulus to skill and courage in horticultural practice cannot be better estimated than by a review of such an exhibition, competitive throughout, awakening an immensity of the true interest in which such things should live; and tending directly to widen and deepen the sympathies of the public at large for the aims and objects and achievements of horticulture.

The exhibition in general plan agreed with the first of the series held twenty-three years ago, this being the twenty-fourth show with not a single variation of the general scheme, so sound was that in the first instance. But as regards particulars, great advances have been made, and the plan has been adapted to changes of taste and fashion; this being especially evident in the classes devoted to orchids and stove and greenhouse plants. In the exhibition house, recently rebuilt, one whole side was occupied with plants arranged for effect, producing what may be termed a garden for the gods; for in no private establishment could we expect to find such a sumptuous display, the result of the competition in both taste and material of the giants of horticulture, who are not traders in plants, but gardeners in charge of private gardens. That prizes should be awarded to the gardeners of seven dukes and four earls will suggest the potency of the principle by which this display is secured; and the wiser ones of the nursery and seed trades would sooner see exhibitions produced in this way than to fill up miles of staging with their own "nursery stuff," however excellent in quality, or useful as advertising the business. It is only wonderful that the trade do not protest against the system that prevails so injuriously in the metropolis, and compel, by some sort of "moral suasion," recognition at exhibitions of the men who purchase plants, and who cultivate them for domestic uses, and not as articles of commerce.

The splendours of the exhibition house were of a quite different kind to those of the great pavilion with its ample atmosphere, perfect illumination, and abundant space for promenading. Here were grand groups of roses, ferns, pelargoniums, rhododendrons, begonias, hardy flowers, and fruits, all so arranged that every object was in the best place to display its own beauties, and by association to help other and different objects, while all combined to produce a picture at once complete and beautiful, but such as we shall not at this time endeavour to describe. What an event for Manchester is this annual exhibition! The wealthy and art-loving inhabitants have their feast extending over three days, and then the holiday crowd pours in to find all things still fresh and splendid, and with a run of five days for the enjoyment of the scene. Would that such delights were provided for this chief holiday of the year in every city and town in the British empire.

Groups of Plants arranged for Effect were a very fine and greatly-admired feature. In the amateurs' division the leading class required an admixture of orchids with palms, &c., and five groups were staged in the exhibition house, the first prize going to Mr. Blair, gardener to the Duke of Sutherland, Trentham, whose arrangement was so perfect and so well finished as to be a triumph of the decorator's art. In the foreground were dot plants arranged on a bed of moss, conspicuous being some fine examples of Masdevallia rosea and Cypripedium bellatulum; behind these, exquisite mounds of orchids, surmounted with palms. Mr. Cragg, gardener to A. Heine, Fallowfield, was second with a very fine group, orchids being a striking feature; and Mr. McIntyre, gardener to Mrs. J. Gurney Pease, Woodside, Darlington, third. Extra prizes were awarded to Mr. Elphinstone, gardener to C. M. Royds, Esq., Rochdale, and Mr. J. Currey, gardener to Colonel Pepper, Salisbury. In the class for a group of miscellaneous plants, S. Baerlin, Esq., Didsbury, had a remarkably fine and effective collection, ferns forming the bed; crotons, dracænas, palms, &c., being employed with great effect. Mr. W. Elkin, gardener to Mrs. Thos. Agnew, Eccles, was second, and Miss Lord, Ashton-on-Mersey, third. The nurserymen's class for a group comprising orchids brought a very fine and effective arrangement from Mr. J. Cypher, nurseryman, Cheltenham, valuable orchids being a remarkably strong feature; Mr. John Robson, nurseryman, Altrincham, was second; these being the only competitors. The best group of miscellaneous plants came from Messrs. R. P. Ker and Sons, nurserymen, Liverpool, richly-coloured crotons and dracænas being used with the best effect; Mr. A. J. A. Bruce, Chorlton-cum-Hardy, was an excellent second.

Orchids.—If specimen orchids were a little less limited in point of numbers than formerly, there was yet some really magnificent specimens. The best twelve came from Mr. Whillans, gardener to his Grace the Duke of Marlborough, Blenheim, who had a splendid specimen of Cypripedium caudatum, with some fifty flowers; C. Selligerum majus, very fine; C. barbatum, and C. lævigatum; Lælia purpurata, with fourteen flower stems; a very fine piece of Cattleya Skinneri, also of C. Mendeli and C. Mossiæ, Dendrobium thyrsiflorum, D. Falconeri, D. Deari, and Epidendrum vitellinum. Mr. Blair, Trentham Gardens, was second, with fine examples of Cœlogyne cristata, Cattleya Mendeli, three fine varieties of Lælia purpurata, Odontoglossum Pescatorei, Miltonia vexillaria, and Dendrobium Wardianum; third, Mrs. Hodgkinson, Bowden, with six orchids. Mr. Blair took the first prize with some admirable specimens, consisting of Oncidium ampliatum majus, Cattleya intermedia, C. Mossiæ, C. Mendeli, Lælia purpurata, Cypripedium caudatum, and Dendrobium Deari. Mr. Johnson, gardener to J. Slatter, Esq., Whitefield, Manchester, was second, with excellent specimens of Odontoglossum crispum, O. Rossi majus, O. Pescatorei, Lælia grandis, L. purpurata, and Dendrobium thyrsiflorum. Mrs. Hodgkinson was third, with ten orchids, *bona fide* specimens. Mr. Cragg was first, with a fine lot, consisting of Dendrobium Dalhouseianum, D. thyrsiflorum, Vanda teres, Cattleya Skinneri, and its white variety, Phalænopsis amabilis, Lælia purpurata, and its white form, and Calanthe veratrifolia. Mr. Blair was second, his best specimens being Cattleya Skinneri, C. Mossiæ, Cœlogyne cristata, and Lælia purpurata. The classes for ten cattleyas and three vandas brought no competition.

Stove and Greenhouse Plants were a good feature, but the specimens were not so large as were at one time seen at Manchester. Mr. Nicholas, gardener to Lord Zetland, Upleatham, was first with eight plants, having capital examples of Franciscea calycina major, Boronia elatior, Anthurium Scherzerianum, A. andreanum, Dracophyllum gracile, Erica depressa, Darwinia tulipifera, and Aphelexis macrantha purpurea. Mr. Baerlin was second with much the same plants and Colonel Pepper third. Mr. J. Cypher had the best ten fresh, well grown, and bloomed specimens of Erica Cavendishiana, Stephanotis floribunda, Darwinia tulipifera, D. fuchsoides Anthurium Scherzerianum, Aphelexis macrantha purpurea, Pimelia Hendersoni, and three showy azaleas. Mr. J. F. Mould, nurseryman, Pewsey, Wilts, was second. Specimen stove plants were represented by Anthurium Scherzerianum, Messrs. Nicholas and Blair taking first and second prizes. The best specimen greenhouse plant was Darwinia fuchsioides from Colonel Pepper. Aphelexis rosea from W. Nicholas was placed second. Azaleas were indifferently shown. Mrs. Thomas Agnew was placed second with six, and they were the only ones found in the show. Greenhouse Ericas were fairly well shown, but it is early for them. Colonel Pepper was the only exhibitor of six in the amateurs' class; Messrs. Crossbee and Mould were first and second in that for nurserymen. The fact that it is yet early for Tuberous begonias accounted for the paucity of these popular plants. Messrs. Ford, Ashton-on-Mersey, were first with six fairly good single varieties, but the doubles were quite poor. In the nurserymen's division, Messrs. Ryder and Son, nurserymen, Sale, were the only exhibitors of twelve single and twelve double varieties, small but grand in growth and quality, and deservedly awarded first prizes.

Show Pelargoniums from Mr. C. Rylance, Ormskirk, with remarkably good examples, freely grown and fully bloomed; viz.: Prince Leopold, Beauty, Venus, Duchess of Edinburgh, Harlequin, Pygmalion, Lady Isabel, Gaiety, and Edward Perkins. The fancy varieties were poor, so were the zonals. Mr. Rylance had eight fair plants of the latter, but not up to the mark of his show varieties. Ivy-leaved varieties were in the form of nice bush specimens, shown by Mr. N. A. Earle and Mr. C. M. Royds.

Pot Roses are generally both good and numerous at Manchester. Mr. Wood, gardener to James Brown, Esq., Heaton Mersey, was first with ten plants, the best being Juno, Madame G. Luizet, Francois Levet, Marie Van Houtte, Madame H. Jamain, Devoniensis, &c. Mr. N. A. Earle was second. Messrs. Paul and Son, Old Nurseries, Cheshunt, had the best twenty plants, well grown and flowered examples, the leading varieties being Magna Charta, Celine Forestier, Paul Jamain, Centifolia rosea, Madame Lacharme, The Bride, Merveille de Lyon, Francois Levet, Madame Margottin, Innocenta Pirola, and Violette Bouyer. Mr. W. T. Williams, Stockport, was second, with small, but fairly good plants. Messrs. Paul also had the best thirty, such as Celine Forestier, Niphetos, Alba rosea, Caroline Kuster, La France, Comtesse de Serenye, Cheshunt Hybrid, &c. Mr. J. F. Mould was a good second.

Gloxinias were represented by very good strains, but the plants had suffered by being conveyed to the show. Mr. C. M. Royds was first, and Mr. C. J. Bishop second. Lilium auratum were shown in threes, the plants somewhat drawn by being forced into bloom in heat. Calceolarias were represented by very good strains in the form of compact well grown plants.

Herbaceous, Alpine, and Bulbous Plants were very numerous, and a very fine feature. The best thirty came from Mr. Vickers, gardener to J. Lamb, Esq., Bowdon, who had phloxes, pæonies, liliums, trollius in variety, Campanula grandis, spireas, S. aruncus being quite striking, gladiolus, &c.; all well grown and flowered examples. Second, Mr. Plant, gardener to R. P. Gill, Esq., Ashton on Mersey, also with attractive subjects. Mr. Gill was first with thirty plants, having some remarkably good things, including varieties of P. Sieboldi, P. obconica, Ajuga genevenses, campanulas, Rodgersia podophylla, Saxifrages in variety, a good example of the Edelweiss, &c. Mr. Lamb was a good second, having a pretty compact Alyssum saxatile, Saxifrages, pyramidalis being very fine; Iberis corifolia, phloxes, &c.; third, Mr. F. Blower, Children's Hospital, Pendlebury. In the nurserymen's class for the best collection of hardy bulbous and herbaceous plants, &c., Messrs. Dickson (Limited), Chester, had a very fine collection, showing large specimens of lilies, pæonies, saxifrages, narcissus, dielytra, and such-like subjects, forming a very bold and imposing group. Mr. W. H. Stansfield, nurseryman, Southport, was a good second with plants of somewhat similar character, with forty plants of Alpines in or out of flower. Messrs. Paul and Son were first with a capital lot having Cypripedium parviflorum, Globularia trichosantha, Ramondia pyreniaca, and its white form also, a good piece of the Edelweiss, Dianthus alpinus, Lithospermum prostratum, Edraianthus serpyllifolius, Myosotis rupicola, Omphalodes lucillæ, &c. Messrs. Dicksons were second with Onosma taurica, Saxifraga McNabiana, Dodecatheon integrifolium, Heuchera sanguinea, and such like; third, Mr. W. H. Stansfield. Clematis were represented by six plants from Mr. N. A. Earle, small, but nicely grown and flowered.

Pansies and Violas in pots are always a very attractive feature. In the amateurs' class the best twelve pots of pansies came from Mr. F. Blower, who had George Rudd, yellow self; Mrs. Laing, white self; Dr. Hardy, dark self; these being in duplicate, and a few yellow and white grounds. Second, Mr. R. P. Gill. Mr. S. Robinson, florist, Sale, was first in the nurserymen's class for twenty pots, staging admirable examples of W. E. Gladstone and Dr. Hardy, dark selfs; Cloth of Gold and George Rudd, yellow selfs; Mrs. Laing, white; Blue Stone, rich blue; Meteor, Lizzie Bullock, and Lady Derby, yellow grounds; Mrs. A. Buchanan and Mrs. Eades, white grounds. He was the only exhibitor, and also of twenty pots of fancy pansies, having admirable examples of Joseph Fleming, Robert Scott, W. A. Dixon, David Bond, N. McKay, Agnes Mitchell, Mrs. Nelson, &c. Mr. Robinson had the best twenty pots of violas, a very attractive exhibit, the leading varieties being Blue King, King and Queen of the Blues; Sovereign, Aldwell Gem, and Queen of the Yellows, yellow; Countess of Hopetoun and Pilrig Park, white; Skylark, edged with blue; Countess of Kintore, &c. Mr. Mellor, florist, Chorlton-cum-Hardy, was second. Collections of six pots of violas by amateurs were poor.

Plants with Fine Foliage are of great assistance in a large exhibition like this, to form backgrounds to flowering plants. The best ten came from Lord Zetland, consisting of Cycas circinalis, Crotons Queen Victoria and Thompsonii, Chamærops Fortunei, Dicksonia antarctica, Dasylirion acrotrichum, Kentia Belmoreana, and Gleichenia rupestris. Mr. S. Baerlin was second, having fine examples of Cordyline indivisa, Cycas circinalis, Encephalartos Lehmanni, some fine Crotons, &c. Mr. J. Cypher was first with eight specimens, staging Latania Borbonica, Cycas circinalis, Kentia australis, K. Forsteriana, Phormium tenax variegatum, Croton Disraeli, C. Queen Victoria, and Cordyline indivisa. Mr. J. F. Mould took the second prize. Some very fine ferns were shown. The best collection of eight came from Mr. F. Millward, gardener to R. Goodsir, Esq., Didsbury, who had Alsophila excelsa, Cibotium Scheidii, Dicksonia antarctica, Davallia Mooreana, D. pyxidata, and

D. polyantha, Adiantum pentaphyllum, and a golden Gymnogramma. Mrs. Gurney Pease was second with smaller but nice and fresh even examples of Gleicheinia rupestris, G. semivestita and Mendeli, Davallia fijiensis, Adiantum Farleyense, and decorum. Hardy ferns were, as is usual, a magnificent feature. Mr. R. Tyldesley, Worsley, being first with finely-developed crested examples of Polystichum, Athyrium, Osmunda, and Lastrea; Mr. N. A. Earle, Kersal, was second. The only exhibitor of twelve hardy ferns in the nurserymen's class were Messrs. H. Stansfield and Co., Sale, with a remarkably handsome collection, also Yuccas were represented by Aloifolia and its variegated variety, and a pair of good plants of filamentosa variegata.

Collections of Palms and Crotons were fine features. In the class for four palms Mr. S. Baerlin was first with Phœnix rupicola, a very fine Kentia Belmoreana, Thrinax elegans, and Kentia australis; Mrs. Thos. Agnew was second with Cocos Weddelliana, Latania borbonica, Geonoma gracilis, and Kentia Canterburyana. Crotons were small from amateurs. Messrs. Lord were first with six, but unnamed; Mrs. Gurney Pease was second. In the nurserymen's class for twelve Messrs. R. P. Ker and Son had a brilliant lot of highly-developed, medium-sized plants, consisting of Aigburthensis, gracilis, Newmanni, Montefortainensis, Queen Victoria, Williamsi, Ruberrimus, Baroness Rothschild, and Hawkeri. No second prize was awarded. Dracænas were small, but well grown and coloured. Colonel Wingfield, Shrewsbury, had the best six, consisting of Thomsoni, Baptisti, Norwoodensis, amabilis, Anerleyensis, and Gladstonei; Mr. J. Lamb, Bowdon, was second, his plants being Elizabethæ, Youngi, recurva, Lindeni, Baptisti, and amabilis. Messrs. Ker and Sons were first with twelve handsome specimens of Salmonea, Berkleyi, Madame Lecoq, Dumesnil, Alba marginalis, Norwoodensis, Dr. Aphland, Gladstonei, Halseyi, Versaillesensis, Barroni, and Lindeni. Mr. J. F. Mould was second.

Mr. Blair had the only collection of Pitcher Plants in the amateurs' class, small, well coloured, but unnamed. Mr. A. J. A. Bruce was the only exhibitor in the nurserymen's division, having all sarracenias, such as Courti, Hybrida purpurea, Flambeau, and Tolliana.

Japanese plants were well represented by a large and handsome collection from Messrs. J. Waterer and Son, Bagshot.

Cut Flowers consisted of roses, the best twelve tea scented coming from M. Bulley, Esq., Liverpool, who had very fine blooms of Comtesse de Nadaillac, Innocenta Pirola, Jules Finger, Souvenir d'Elise, Madame de Watteville, Comtesse des Parc, Caroline Kuster, Madame Lambard, Marie Van Houtte, E. Gifford, and Catherine Mermet. Mr. Thos. Gee, Allerton, was second. Messrs. Harkness and Son, Nurserymen, Bedale, were the only exhibitors of eighteen tea roses, having fine blooms of only Maréchal Niel. Mr. Brown had the best twelve blooms; and Messrs. Lord were second.

Fruit was an excellent feature, being well represented, and of high quality. The best eight dishes came from Mr. J. McIndoe, gardener to Sir J. W. Pease, Bart., Hutton Hall, Guisborough, who had excellent Black Hamburgh and Foster's Seedling grapes, Grosse Mignonne peaches, Lord Napier nectarines, Exquisite orange, Sir Harry strawberry, Queen pine, and Scarlet Premier melon. Mr. Blair, Trentham Gardens, was second; but closely run by Mr. J. G. Morris, who was placed third. Mr. Jas. Lowden, gardener to Thos. Barnes, Esq, Chirk, had three superb bunches of Black Hamburgh grapes; Mr. W. Speed, gardener to Lord Penrhyn, Bangor, was second with the same. Mr. Lowden was also first with white grapes, having excellent bunches of Muscat of Alexandria; Mr. J. G. Morris was second, with Foster's Seedling. Mr. McIndoe was the only exhibitor of pineapples; he was first with Queen and a seedling in the class for a pair, and with Charlotte Rothschild as a single fruit. Mr. Blair had the best twelve pots of strawberries; and Mr. Upjohn, gardener to Lord Ellesmere, Worsley, was second, both with Sir Harry; and Mr. S. Barlow, Stakehill House, Manchester, was awarded an extra first prize for finely grown and fruited Laxton's Noble. The best dishes of peaches were Hales' Early from Mr. Upjohn, and Grosse Mignonne from Mr. McIndoe. Lord Napier nectarines were well shown by Mr. R. Davies, gardener to the Hon. Mrs. Meynell Ingram, Temple Newsam, and Mr. McIndoe. Melons were numerous, the best Scarlet, Masterpiece; the best Green Flesh, High Cross Hybrid. The best dish of cherries was Black Circassian, from Mr. Davies; Mr. Blair was second with an unnamed variety. The best dish of strawberries was La Grosse Sucree, from Mr. Upjohn; Sir Harry and Noble following next in point of quality. Tomatos were represented by fine fruit of Perfection; and out of fifteen brace of cucumbers, Lockie's Perfection was placed both first and second.

Miscellaneous Collections of plants were numerous and highly effective. Mr. B. S. Williams, Victoria Nurseries, Holloway, had a large one, including choice orchids, some very fine amaryllis, Leschanaultia biloba major, freely bloomed, &c. Mr. F. Sander had a fine lot of orchids, including several new introductions of great beauty. Messrs. Charlesworth, Shuttleworth, and Co., Heaton, Bradford, also had a number of choice orchids; also Mr. W. Owen, nurseryman, Northwick. New, rare, and orchidaceous plants were shown by Messrs. Dickson (Limited), Chester, and by the Liverpool Horticultural Company, Garston. Messrs. Ryder and Son, nurserymen, Sale, had a superb collection of begonias, double and single; Messrs. Clibran and Son, Oldfield Nurseries, Altrincham, a large collection of flowering plants, cut examples of show and decorative, ivy-leaved and zonal pelargoniums, &c.; Mr. Hugh Stevenson, Whalley Range, a collection of excellent shrubby calceolarias; Messrs. Paul and Son, cut specimens of new lilies; and the orchestra in the concert hall was handsomely decorated by Mr. J. Mason, Market Street, with a highly valuable collection of plants.

First-class certificates of merit were awarded to Mr. F. Sander, for *Cattleya Schilleriana nobilis*, *Phaius Humbloti*, and *Cypripedium Rothschildianum*; to Messrs. Charlesworth, Shuttleworth, and Co. for *Odontoglossum crispum*, *Golden Variety*, and *O. crispum Wrigleyanum*; to Mr. Blair, for *Odontoglossum Alexandræ Wallisi* and *Lælia purpurata Imperial*; to Messrs. Paul and Son, for *Cytissus scoparius Andreanus* and two new lælias; to Mr. F. Perkins, Leamington, for pelargonium (decorative) *Princess Beatrice*; and to Messrs. Ryder and Son, Sale, for single begonias *George Paul* and *Sir Percival*, and double begonias, *Miss Ryder*, *Annie Ryder*, and *Sister Ethel*. A special certificate was awarded to Mr. Whillans, Blenheim Gardens, for melons.

ROYAL HORTICULTURAL SOCIETY, SUMMER EXHIBITION, May 28 and 29.

The exhibition held by the Royal Horticultural Society in the gardens of the Inner Temple on Wednesday and Thursday was in some respects highly successful, and having regard to its extent and the quality of the productions was the best of the three gatherings the society has had in the city. Four spacious tents were required for the accommodation of the various collections, the largest being devoted to the orchids, pelargoniums, clematis, roses, caladiums, calceolarias, and mixed collections, and the others were occupied by soft wooded plants in bloom, ferns, hardy flowers, and fruit. The general arrangements were carried out by Mr. Barron with his customary taste and judgment and the several tents presented an attractive appearance.

The show was formally opened on Wednesday by the Prince of Wales, who is a Bencher of the Middle Temple. His Royal Highness arrived shortly after one o'clock, and was received by Sir Trevor Lawrence, Baron Schröder, and other members of the Council, by whom he was conducted round the show. After a careful inspection and the presentation of some leading horticulturists, his Royal Highness proceeded to a daïs, erected at the north end of the large tent, and the following address was then read to him by the Rev. W. Wilks:—

"May it please your Royal Highness,—The Council of the Royal Horticultural Society desire to tender to you, on behalf of the Fellows of the society and the horticulturists of the kingdom, their grateful thanks for your presence here to-day. The Royal Horticultural Society was founded in the early years of the present century. It has been honoured with the gracious favour and support of her Majesty the Queen and her predecessors, and was presided over for several years by the Prince Consort. The Council believe that the society has, during the eighty-six years of its existence, conferred incalculable benefits upon the kingdom by directing and fostering a love of horticulture, and by the introduction and acclimatisation of a vast number of the trees and shrubs, fruits and flowers, which beautify all parts of our country. The Council are aware of the great interest taken by your Royal Highness in the work of the Royal Agricultural Society, and they are anxious to secure your interest in the work of the Royal Horticultural Society. This work they believe to be, under the altered conditions of agriculture, of great national importance, in that it encourages the application of horticultural methods to agriculture, enlarges the field of profitable cultivation of the soil, and varies and increases the food supply of the people. The Royal Horticultural Society, in addition to its ordinary work, is now devoting its energies to the provision of a great national want, a central metropolitan hall or home for the horticulturists of the kingdom. Such buildings exist in the chief European capitals and in the United States, and the Council have ample evidence from amateurs, and the very important trade engaged in horticulture, that they are urgently required in London. We earnestly trust that the views and objects of the society may recommend themselves to your Royal Highness's support and approval."

The Prince of Wales, in reply, said: Sir Trevor Lawrence, Ladies, and Gentlemen,—I am very much gratified by the address I have just heard, and I beg to assure you that I have visited this exhibition with the greatest possible pleasure and interest. I have always taken a great interest and pleasure in horticulture, and I must say I have never seen a more beautiful show than that we have witnessed to-day, or one better arranged. The best proof of the success of the society is the fine show we have all witnessed to-day. You have alluded to a great want, that of a central metropolitan hall. I sincerely hope your labours in that respect may be successful, for I feel sure that such a hall will be of the greatest use and advantage. Let me thank you again for the address, and once more assure you of the pleasure I have had in being present.

Orchids formed an important and remarkably attractive feature, the several collections being more than sufficient to fill the stage in the large tent, and the majority were rich in choice varietal forms. Large specimens were not numerous, but amongst those staged were several of special excellence. The most noteworthy of the specimens was unquestionably that of Cymbidium Lowianum, from Mr. H. Ballantine, gardener to Baron Schroder, The Dell, Egham, who is well deserving of the highest possible praise for the cultural skill that he had brought to bear upon the plant. Some four or five feet in diameter, it was in the most robust state of health, and had about thirty splendidly developed racemes. Hardly less remarkable was the specimen of Cattleya Skinneri, which formed such a conspicuous object in the collection from the same exhibitor. This also was in the best possible state of health, and was furnished with upwards of twenty-five excellent spikes, the flowers large, fresh, and bright in colour. Taking the collections in the order in which they were placed in the tent, we have first a remarkably attractive group from Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, in which were admirably grown examples of Cattleya gigas and C. Mossiæ, Odontoglossum crispum, and O. Pescatorei. The plants were arranged in a groundwork of Adiantum cuneatum, and presented an extremely pleasing appearance. Mr. W. H. Young, gardener to F. Wigan, Esq., Clare Lawn, Sheen, contributed a small but interesting group, in which Vanda teres, V. suavis, and Lælia majalis, were well represented, one of the forms of the last-named being particularly good. From Mr. Parks, gardener to H. M. Pollett, Esq., Fernside, Bickley, came a rather large and highly interesting collection. Especially noteworthy were the examples of Cattleya Mossiæ in variety, C. Reineckiana, an extremely beautiful form, Odontoglossum Pollettianum, a beautiful form, the flowers of medium size and richly spotted and blotched with rose on a white ground, O. Halli magnificum, a superb form, the flowers exceptionally large and superb in colour, and O. vexillarum in variety. Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, contributed a group comprising well flowered plants of Cypripedium barbatum majus, Anthurium Schezerianum, and other good things.

Mr. White, gardener to Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, exhibited a large and extremely beautiful collection. Amongst other examples made note of for their excellence were Epidendrum prismatocarpum, Dendrobium Dearei, D. transparens, a small flowered and beautiful species; D. revolutum, a singular species with white and green flowers; Thunia Bensoniæ, T. Marshalliæ, Masdevallia rosea, a dwarf growing and attractive species; Cypripedium Stonei platytænium, a good specimen of this rare and beautiful form with two spikes. C. grande, C. Elliottianum, C. præstans, a distinct species with small attractively coloured flowers. C. caudatum. Cattleya Wagneri, a beautiful form with white flowers. C. Warneri, of which there were several fine forms, all being remarkable for the large size of the sepals and petals. Mr. Ballantine exhibited in addition to the specimens mentioned, Cattleya Mossiæ in variety; C. Schroderæ, C. Skinneri alba, C. Regnelli, Lælia elegans, Odontoglossum Pescatorei, beautifully spotted. O. polyxanthum, O. ramosissimum, O. Halli magnificum, Masdevallia Lindeni and M. Veitchiana grandiflora, a fine form of this brilliantly coloured species, and Cypripedium Hyeanum, a distinct species, the flowers large with green petals and labellum and white dorsal sepal, marked with broad green lines.

Mr. J. Cypher, Cheltenham, contributed a comparatively large group in which Lælia purpurata, Cattleya Mendeli, C. Mossiæ, and Dendrobium Bensoniæ were numerous and in excellent condition. Messrs. Low and Co., Upper Clapton, had a very attractive collection including Cattleya Mendeli, and C. Mossiæ in variety, and excellent examples of Cypripedium hirsutissi-

mum, C. bellatulum, C. Stonei, C. Elliottinum, C. caudatum and Dendrobium Dalhousianum. Mr. White, Drayton Villa, Winchmore Hill, presented a bright and attractive group of cattleyas and lælias. Messrs. Sander and Co., St. Albans, exhibited an extensive collection, rich in novelties and therefore not less interesting than attractive. Amongst other kinds represented were, Dendrobium thyrsiflorum, Epidendrum macrochilum, Phaius Humbloti, Aerides roseum, Odontoglossum hastilabium, O. Bleui splendens, a beautiful hybrid on which a first class certificate was conferred, O. vexillarium Fairy Queen a light form of great beauty, Lælia purpurata, and Calanthe vestita oculata gigantea, a distinct form, remarkable for its robust growth and the large size of its flowers. Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, had a large group of superbly flowered specimens comprising Lælia purpurata, Vanda Dennisoniana, Odontoglossum citrosmum roseum, Oncidium concolor, Cattleya Mendeli, and other good things.

Roses were represented by several collections of great excellence, and proved remarkably attractive. Messrs. William Paul and Son, Waltham Cross, had a large collection of medium-sized specimens and a fine collection of cut blooms. Conspicuous in the collection were the examples of Crimson Globe, a fine hybrid moss raised by the firm, and distinguished by the award of a first-class certificate; Spencer, a beautiful pink hybrid perpetual; and Crimson Queen, a fine garden rose, with flowers of the colour indicated by its name, and belonging to the hybrid perpetual section. Messrs. Paul and Son, Cheshunt, exhibited a remarkably fine group, comprising over forty superbly-flowered specimens of various sizes. Especially attractive were the examples of Her Majesty. Mr. W. Rumsey, Waltham Cross, presented a dozen or so of well-flowered examples of Niphetos.

Clematis were limited to a collection from Messrs. R. Smith and Co., Worcester, and that was so good that it contributed in no small degree to the attractions of the exhibition. The whole of the specimens were of large size and finely-flowered, and the principal varieties were: Blue Gem, Duke of Norfolk, and Excelsior, which have flowers of various shades of blue; Marie Van Houtte and Imperatrice Eugenie, two beautiful white varieties; and Sensation and Purpurea elegans, two handsome purple varieties.

Mixed Collections of plants were not numerous, but they were all more or less meritorious. Messrs. J. Laing and Sons, Forest Hill, presented a large and effective group comprising palms, caladiums, orchids, begonias, and other flowering and ornamental-leaved plants. Messrs. W. Cutbush and Sons, Highgate, staged an attractive collection of hardwooded plants. Messrs. J. Peed and Son, Roupell Park, Streatham, exhibited a large group of remarkably well-grown anthuriums and sarracenias; and Messrs. J. Veitch and Sons, Chelsea, contributed a brightly-coloured group of azaleas, rhododendrons, and other hardy-flowering shrubs associated with Japanese maples. Messrs. H. Lane and Son had an attractive collection of rhododendrons, and Mr. Iceton a bold group of palms.

Hardy Plants and Flowers were contributed in immense numbers, and proved to demonstration the wealth of material at command for beautifying the garden at this season of the year, and their usefulness in the exhibition tent. Messrs. Kelway and Son, Langport, had a magnificent collection, comprising tree and herbaceous pæonies and irises in great variety, with large gatherings of miscellaneous flowers. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, staged a collection of cut flowers remarkable alike for its extent and the taste evinced in the arrangement. Poppies made a dazzling display of colour, chief amongst them being the varieties of the oriental poppy, the semi-double form being especially effective. Spiræa Japonica grandiflora, a distinct form distinguished by the large size and density of the flower spikes, Anthurium liliastrum major, Iris siberica, a tall and elegant species, I. racemosa, a handsome species with large blue flowers, which, arranged in combination with the white lupin, presented a very pleasing appearance. Messrs. Paul and Son, Cheshunt, exhibited a charming group of alpines and a large collection of cut flowers. Among the alpines were good examples of Ramondia pyrenaica, R. pyrenaica alba, Dianthus alpina, a dwarf species with comparatively large, bright, pink flowers. Edraianthus serpyllifolium, a beautiful dwarf campanulaceous plant bearing comparatively large violet blue flowers, and Myosotis alpestre. Irises were well represented in the collection of cut flowers, and Geum miniatum produced a dashing display. Messrs. J. Veitch and Sons contributed a large gathering of hardy herbaceous plants, and Messrs. J. Cheal and Son, Crawley, staged a small but very attractive collection of perennials. Messrs. Barr and Son, 12, King Street, Covent Garden, staged an extensive and beautiful collection of plants and flowers, comprising pyrethrums, pæonies, irises, and other seasonable subjects, and Messrs. W. Paul and Son had large gatherings of rhododendrons.

Softwooded Plants in bloom contributed liberally to the attractions of the exhibition. Gloxinias were presented in especially good condition, and Messrs. Sutton and Sons, Reading, had a magnificent collection in which the whole of the specimens were remarkable for their large size, the excellent condition of the foliage and the high quality and effective colouring of the flowers. Several varieties in the collection were selected for distinction by the Floral Committee, and an award of merit was made for the strain with "netted" flowers. Messrs. J. Veitch and Sons also exhibited a large and excellent collection which represented a strain of the highest class, the plants being remarkable for their fine habit and the flowers distinguished by their large size, superb form, and beautiful colours. Tuberous begonias were in strong force, and fully asserted their claims for consideration. Messrs. J. Laing and Sons, Forest Hill, presented a large and singularly effective group of double and single varieties, consisting chiefly of varieties of recent introduction. Henshaw Russell, Enchantress, and Negro Boy were selected for awards of merit, and in addition to these special mention may well be made of Leviathan, a robust growing and free-blooming single variety, producing immense flowers of a brilliant carmine-red hue, and Gigantea, a single variety bearing large, finely-formed carmine-pink flowers. Messrs. Cannell and Sons, Swanley, staged a large collection of single and double varieties, all of which were remarkable for the superb quality and effective colouring of the flowers. The firm also contributed a beautiful group of pansies and violas, and in addition they had a collection of cut flowers of zonal and decorative pelargoniums which produced a brilliant display of colour. Herbaceous calceolarias were represented by a collection of large well-bloomed specimens from Mr. J. James, Woodside, Farnham Royal, Slough, and show and decorative pelargoniums by an effective group from Mr. C. Turner, Slough. Mr. R. Miller, Southdown Nursery, Shoreham, submitted Pelargonium Pearl, a pure white sport from Madame Thibaut, and of much value in the conservatory and for the supply of cut flowers. Mr. F. Perkins, Leamington, exhibited his two beautiful new pelargoniums, Princess Beatrice and Prince Henry, both of which are so thoroughly good in every respect as to promise to take a prominent position in the decorative section. Princess Beatrice has large flowers, remarkable for their form and substance, and of a pleasing blush colour, marked on each petal with a rose-red spot. Prince Henry is of a similar character, and the flowers are of a brilliant carmine red with white centre and margin. Both varieties are dwarf in growth, and produce their flowers in trusses of noble proportions. Messrs. Dobbie and Co. contributed a large and beautiful collection of pansies.

Floral Decorations comprising bouquets, wreaths, sprays, and baskets of flowers were admirably shown by Messrs. Perkins and Son, Coventry, and Mr. G. Phippen, Reading, and proved so attractive that it was not an easy matter to get near them in the busy part of either day.

Ferns were represented by several collections of great importance, and formed a pleasing relief to the glowing masses of colour in other parts of the exhibition. Messrs. W. and J. Birkenhead, Sale, near Manchester, contributes a thoroughly representative collection, comprising good examples of all the finest of the British and exotic species and varieties. Messrs. J. Backhouse and Son, York, staged an exceptionally fine collection of filmy ferns, and Mr. H. B. May, Dyson's Lane Nursery, Edmonton, exhibited a large collection, whice, arranged in conjunction with various ornamental leaved plants, proved eminently attractive.

Fruit and Vegetables were not largely shown, but the greater proportion of the produce was remarkably good. Messrs. G. Bunyard and Co., Maidstone; Messrs. J. Veitch and Sons, and Messrs. J. Child and Sons, exhibited some remarkably good collections of apples for so late in the season. Especially good in the collections were the examples of New Hawthornden, Wadhurst Pippin, Wiltshire Defiance, Curltail, Belle Dubois, Betty Geeson, Dumelow's Seedling, Norfolk Beefing, Hormead's Pearmain, Balchin's Pearmain, King of Tomkins' County, Melon, and North End Pippin. Messrs. J. Veitch and Sons also exhibited a well fruited standard tree of St. John fig, a recently introduced variety of special value for early forcing. It is a heavy cropper and of high quality, aud is not so liable to shed its fruit as the other figs in cultivation. The principal exhibitors of grapes, peaches, and strawberries, were Mr. J. R. Featherly, Gillingham, Kent; Mr. W. Miller, Ruxley Lodge, Esher; Mr. E. Peters, gardener to J. L. Mansell, Esq., Guernsey; Mr. G. Wythes; Mr. J. Hollingworth, Woodseat, Uttoxeter; Mr. J. W. Reed, gardener to E. Pettit, Esq., Broadlands, Oatlands, Surrey; Mr. Maher, Stoke Court, Slough; Mr. G. Munro, Covent Garden, exhibited several baskets of grapes, strawberries, peas, and French beans, and a collection of radishes was sent from the Society's gardens at Chiswick.

Awards were made as under:—

Silver cups to Baron Schroder, Mr. H. M. Pollett, Messrs. B. S. Williams and Son, Messrs. Sander and Co., and Mr. J. Cypher, for orchids; Messrs. Paul and Son and Messrs. W. Paul and Son for roses; Messrs. W. and J. Birkenhead, and Mr. H. B. May for ferns; Messrs. J. Laing and Sons for begonias and for a mixed collection of plants (two cups); Messrs. T. Perkins and Son for bouquets. Silver gilt Flora medals, to Messrs. J. Peed and Sons for anthuriums and sarracenias; Mr. J. James for calceolarias; Mr. C. Turner for pelargoniums; Messrs. J. Veitch and Sons and Messrs. Sutton and Sons for gloxinias; Mr. Iceton for palms; Mr. Wiltshire for caladiums; Messrs. W. Cutbush and Son for miscellaneous plants; Messrs. J. Veitch and Sons for azaleas and rhododendrons; Messrs. H. Cannell and Sons for begonias; Mr. Ware for hardy flowers; Mr. Munro for fruit and vegetables; Mr. T. B. Haywood for orchids; Messrs. R. Smith and Co. for clematis; Messrs. H. Low and Co. for orchids; and Messrs. Kelway and Son, Messrs. Paul and Son, and Messrs. Barr and Son for hardy flowers. Silver Flora medals, to Messrs. H. Lane and Son, Great Berkhampstead, for rhododendrons; Messrs. H. Cannell and Sons for calceolarias; Messrs. J. Veitch and Sons for apples; Mr. G. Wythes for orchids; Mr. White for orchids. Silver Banksian medals, to Mr. Rumsey for roses; Messrs. Paul and Son for alpines; Messrs. W. Balchin and Son for leschenaultias, Messrs. J. Veitch and Sons for hardy flowers; Messrs. Dobbie and Co. for pansies; Mr. Campbell, Mr. Mansell, and Mr. Featherly for grapes; Mr. Reid for grapes and peaches; Messrs. G. Bunyard and Co. for apples; and Mr. Wright for orchids.

Novelties were numerous, and a considerable proportion obtained recognition. First-class certificates were granted as under:—

To Messrs. W. and J. Birkenhead, Sale, Manchester, for

Lastrea filix mas cristata fimbriata.—An extremely beautiful form, more elegant in habit than the ordinary crested variety of the male fern, and having the crests at the tips of the pinnæ, and the apex of the fronds finely fringed.

To Messrs. Barr and Son, and Mr. T. S. Ware, for

Aster alpinus speciosus.—A handsome form of this well-known perennial aster; the variety, as in the case of the type, is dwarf in growth and free in blooming, the principal point of difference being in the flowers, which are much larger and of fine form, the ray florets bluish mauve, and the disc orange.

To Messrs. Sander and Co., for

Cattleya Mendeli Prince of Wales.—A remarkably handsome variety, the flowers of exceptienally large size; the sepals and petals bright pink, the labellum pink with large brilliant amethyst coloured limb.

Odontoglossum vexillarium Fairy Queen.—An exquisitely beautiful variety, the flowers rather large, pure white, with lemon-coloured blotch at the base of the labellum.

O. Bleui splendens.—A distinct hybrid, evidently obtained as a cross between O. vexillarium and O. Roezli. The flowers are of medium size, the petals white, with rose-purple blotch at the base, and the labellum white with yellow blotch at base.

To Messrs. W. Paul and Son for

Rose Crimson Globe.—A superb hybrid moss, the growth bold, the leafage ample, and the flowers are of large size, globular in form, quite full, and produced in huge clusters, the colour rich glowing crimson. An extremely valuable addition to the list of garden roses.

To Messrs. Paul and Son for

Pæonia conchiflora.—A beautiful single herbaceous variety with medium-sized flowers of a bright salmon-rose colour.

To Messrs. J. Laing and Sons for

Saxifraga McNabbiana.—An exquisitely beautiful species, producing dense spikes of large flowers, freely spotted with red on a white ground.

Awards of merit were made as follows:—

To Mr. J. Cypher for

Dendrobium Bensoniæ album.—A distinct and beautiful form, the flowers pure white, with large yellow blotch on the labellum.

D. Falconeri delicatum.—A distinct variety, the sepals and petals white, tipped with pale rose, the labellum white with golden blotch and pale rose-coloured tip.

Lælia purpurata Empress.—A handsome form of this variable lælia. The flowers are above the average in size, the sepals and petals pure white, the labellum well expanded and marked on either side with a large purple blotch.

To Messrs. J. Laing and Sons for the undermentioned tuberous begonias

Henshaw Russell.—A superb double variety, the flowers of large size and fine form, the colour glowing scarlet.

Negro Boy.—A distinct variety, the flowers of medium size and fine form, the colour deep crimson.

Enchantress.—A beautiful single variety, the flowers of medium size and circular in form, the colour bright crimson with white centre.

To Messrs. Cannell and Sons for

Begonia Rev. W. Wilks.—A remarkably attractive double variety of high quality; the flowers are of large size and superb form, the colour delicate pink.

To Mr. F. Perkins for

Pelargonium Prince Henry.—An excellent decorative variety, the flowers large and produced in noble trusses, the colour brilliant carmine red, the centre and margin pure white.

To Messrs. J. Veitch and Sons for

Gloxinia Mrs. J. Donaldson.—An extremely beautiful erect variety, the flowers rather large, perfect in shape, and of a glowing crimson colour.

To Messrs. Kelway and Sons for

Pyrethrum Clemence.—a fine double variety; the flowers large and of good form, the colour bright crimson.

P. Carl Vogt.—A beautiful pure white variety; the flowers large, of grand form, and extremely valuable in a cut state.

Lupinus Foxei.—A distinct form, producing long and handsome spikes of blue and white flowers.

Delphinium Autolycus.—A remarkably fine variety, the spikes massive and the flowers large and of rich violet purple colour.

To Messrs. Sutton and Sons for the undermentioned gloxinias:

Her Majesty.—A pure white erect variety, remarkable for the high finish of the flowers.

Prince of Wales.—A handsome, erect variety; the flowers very large; the colour rich crimson, with white margin.

Princess of Wales.—A charming erect variety; the flowers pale pink, with white margin.

Empress of India.—A bold and handsome erect variety; the flowers large; the colour crimson, shading to purple.

New Netted Strain.—The varieties of this strain have flowers of various colours mottled with white.

To Baron Schroder for

Cattleya Lawrenceana delicata.—A beautiful variety, with bright rose-pink flowers.

Sarcopodium Dearei.—An attractive species; the flowers of medium size; the sepals orange, spotted with red; the petals yellow, blotched with crimson; the labellum bright yellow.

To Messrs. F. Sander and Co. for

Cypripedium Volonteanum.—A pleasing form, with medium-sized flowers, the labellum green suffused with bronzy crimson; the petals green tipped with rose and spotted with marone, the dorsal sepal green.

Oncidium Roraimense.—A showy species, producing tall spikes of medium-sized flowers, the sepals and petals yellow, spotted with brown, and the labellum bright lemon yellow.

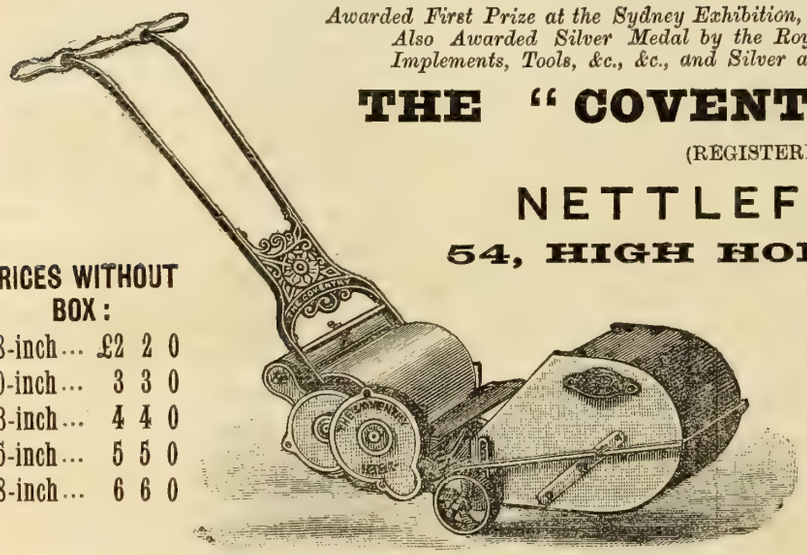
Anthurium album maximum.—An excellent variety, differing from the type in the larger size of the spathes.

NURSERY AND SEED TRADE ASSOCIATION, MAY 28.

The annual meeting of the Nursery and Seed Trade Association was held at the offices, 25, Old Jewry, on Wednesday, when a highly satisfactory report was presented to the members, and, after a brief discussion, unanimously adopted.

It appears from the report that during the past year there has been a considerable accession of new members, thirty having joined, as compared with fifteen in the year previous. The number of debts applied for was 870, and as the result of these applications the sum of £3,512 was recovered. Two prosecutions were successfully undertaken by the Association, one for the adulteration of seed, in which case the full penalty was enforced, and one for obtaining flowers, &c., under false pretences. The committee direct attention to the fact that in consequence of there not being any fund for the purpose of meeting the costs of these prosecutions, in one case they had to be met by a few members of the trade and in the other they were discharged by the Duke of Bedford. The committee express an opinion that if a fund were raised which would be available for meeting the expenses of such prosecutions, and if prosecutions were instituted in all cases which came under their consideration the frauds to which the traders are peculiarly liable would be very considerably diminished.

With reference to the rating question, the committee regret that members do not take advantage of the facilities offered by the association to so great an extent as they might do. In all cases which have been taken up by the association reductions have been obtained in the amounts of local rates hitherto paid. The attention of members is also called to the fact that nurserymen are liable to be assessed for the purpose of the local rates to the extent of one-fourth only of the assessment to the poor, and that by communicating the particulars of their rating to the secretary, the necessary steps will be taken for their protection. With regard to the assessments of nurseries to the poor-rate, the inequalities pointed out in the last report still exist, but the committee is watching the progress of the Bill recently introduced into the House of Commons relating to the assessment of trade machinery, with a view to the possible insertion therein of such provisions as will place the nursery men on the same footing as manufacturers. The committee has given the most careful consideration to the railway rates inquiry, and records with satisfaction the fact that already the railway companies have withdrawn some of their exorbitant proposals in consequence of the opposition with which they have been met by all sections of traders.



Awarded First Prize at the Sydney Exhibition, 1880. *Awarded First Prize at the Melbourne Exhibition,* 1881. *Also Awarded Silver Medal by the Royal Horticultural Society, June,* 1881, *for Collection of Garden Implements, Tools, &c., &c., and Silver and Bronze Medals and Certificate of Merit,* 1882.

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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths before Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.	
8	S	**1st Sunday after Trinity.**	3 47	1 15	8 11	0 21	9 26	5 27	5 55	2 25	2 52	59·9	159
9	M	☾ Last Quarter.	3 46	1 3	8 11	0 47	10 49	6 24	6 54	3 20	3 49	60·0	160
10	Tu	Oxford Fired at the Queen, 1840.	3 46	0 51	8 12	1 7	After.	7 26	7 58	4 19	4 51	60·1	161
11	W	*St. Barnabas.*	3 45	0 39	8 13	1 25	1 30	8 31	9 7	5 23	5 56	60·2	162
12	Th	Length of day, 16h. 29m.	3 45	0 27	8 14	1 43	2 44	9 42	10 16	6 32	7 7	60·4	163
13	F	Earl Rivers executed, 1483.	3 45	0 15	8 15	1 59	3 58	10 46	11 17	7 41	8 11	60·5	164
14	S	Battle of Marengo, 1800.	3 45	0 2	8 16	2 20	5 14	11 46	—	8 42	9 11	60·6	165

Orchids in Flower.

Aerides crispum	India.	180
Aerides maculosum	Bombay.	160
Aerides M'Morlandi	India.	161
Aerides nobile	India.	162
Aerides odoratum	India.	163
Aerides roseum	India.	164
Angulua Clowesi	Columbia.	165

ROYAL BOTANIC SOCIETY. GARDENS, REGENT'S PARK. SECOND SUMMER EXHIBITION of PLANTS, FLOWERS, and FRUIT, WEDNESDAY next, June 11.

Tickets and all information to be obtained at the Office in the Gardens.

WOLVERHAMPTON HORTICULTURAL SHOW AND FLORAL FETE.
JULY 15, 16, and 17.

Open to all England. Classes for Plants, Roses, Bouquets, &c. Gentlemen's Gardeners' Classes open to Staffordshire, Shropshire, Warwickshire, and Worcestershire.

Portions of the Park are allotted for Exhibits of Horticultural Appliances.

Applications for space should be made at once to the Hon. Sec.,
Mr. W. A. GREEN, jun., Corporation Street, Wolverhampton.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, JUNE 10.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral, Fruit and Scientific Committees.

WEDNESDAY, JUNE 11.—ROYAL BOTANIC SOCIETY.—Second Summer Show.

THURSDAY, JUNE 12.—GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Anniversary Festival.

FRIDAY, JUNE 13.—ROYAL BOTANIC SOCIETY.—Lecture.

SATURDAY, JUNE 14.—ROYAL BOTANIC SOCIETY.—General Meeting.

Auction Sales for the Ensuing Week.

THURSDAY, JUNE 12.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids.

FRIDAY, JUNE 13.—Messrs. Protheroe and Morris, at the Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, JUNE 7, 1890.

HORTICULTURAL EXHIBITIONS EXCITE CONFLICTING CRITICISMS, and are the subjects of proposals of divergent and even opposite characters. We are told by one superficial cynic that "the game is played out," by another that "they might answer with some substantial improvement," while a third, with a show of reason, demands a substantial reform as the preliminary to renewed success. One exhibition badly managed will influence many against the institution as a whole, and we shall often have to urge that local experiences and opinions are of small account as compared with the experiences and opinions of the great public. Flower shows are in as great favour as ever, and have, indeed, prospects of advancement, as a fair review of the facts will suffice to show.

The Royal Horticultural Society's Exhibition in the Gardens of the Temple, on the 28th and 29th ultimo, will suffice for a critical consideration, and it should be one of the most important. Here is a great show without the aid of money prizes, such, indeed, as the Society has many times had the advantage of as the outcome of the esteem in which it is held by many cultivators, both amateurs and traders. It is, in its way, an event to justify a sense of pride, or, at least of satisfaction, amongst the Fellows, that persuasions of a purely honorary kind suffice in this case to ensure a magnificent assemblage of horticultural treasures. Medals and cups were offered, and these without any specified rule or adjustment of values to the several exhibits, but with uncertainty from first to last as to who and what should be distinguished by them. As a mere experiment the result would be gratifying; but as a kind of settled institution—for such we may now regard it—this vague mode of recognizing special merit appears sufficient to ensure for the Society all the ends that are otherwise secured by an elaborate competition for prizes of considerable amount. The exhibition in the Temple Gardens was a success so far that the ground was richly covered, and the public participated freely in the horticultural feast that had been so tastefully laid out for them.

Although Manchester has had a fair share of attention lately, we are bound to refer to the recent exhibition there, as illustrating a quite different plan of operations. Here competition with a substantial basis of money prizes is the life of the business. It is no discredit to Manchester to say that were the Botanical Society to publish such a schedule as the R.H.S. prepared for the Temple Show, there would be no corresponding success in the Whitsun meeting in the Gardens at Old Trafford. The trade growers and the immediate friends of the Society would no doubt "put their shoulders to the wheel," as in the case of the R.H.S. in London; but it happens that the provincial city does not command so powerful a trade interest as the metropolis, and that is just one reason why we would not advise Manchester to take a leaf from the London programme. But we need not trouble about advising either way, for Manchester knows what it is about, and probably would be greatly shocked were the exhibitions of the two cities changed, as persons and things are changed in fairy tales. The textile metropolis rejoices in the competition, for it brings into the field what is the best part of every exhibition, every picture, every play, and almost every book—and that is the interest of humanity. In the Temple Show horticultural commerce was well represented, and was brilliantly countenanced by the contributions of a certain number of gentlemen amateurs possessing grand collections, much of which they placed at the disposal of the Society in evidence of their profession of attachment to its fortunes. But at Manchester and all provincial gatherings—with the occasional exception, perhaps, of one town that has a chrysanthemum show without the aid of prizes—the definite schedule is the governing condition of success, and it brings to the exhibition the men who practice gardening apart from all trading influences, and is, therefore, in a far higher degree representative of horticulture. In what is called a great exhibition in London the personal interest is reduced to a minimum, and varies but little; in a great exhibition in a provincial city the personal element is paramount, and it varies from time to time to such an extent as to ensure for the exhibition perpetual change, variety, and the inflow of new ideas for the encouragement of improvement in the general plan and its several details. The amateur who loves his garden may compete in an open class, or may more safely run with others similarly circumstanced. The gardeners enter with spirit into the business, and while aided by their generous employers are confident of recognition as well as rewards according to their several merits as determined by the judges. The great metropolitan show, when at its best, may be likened to a stage effect; the provincial show may be said to be the product of a guild of gardeners, and almost every separate subject represents an individual who has put his heart into the work.

The public are not weary of flower shows, for when they are attractive they crowd to see them, and a quite moderate organization with a little earnestness to give life to it, generally suffices to ensure ways and means. There are great shows and little shows, and some that come between them; and there is no necessity for any limitations, because where the thing is not wanted, or would not be appreciated, it will be found impossible to carry it beyond the experimental stages. But prosperous local shows are of incalculable service to horticulture, and should be encouraged with reasonable regard to local requirements

and opportunities, but they should be strictly competitive, or they are not worth attempting. It is very well to obtain a show by means of entries "not for competition," but it is a fatal error to welcome such contributions to the exclusion of competitions, for the rivalry has life in it every way, and the non-competition runs in the way of the shop, and at the best is comparable to a stage effect, for which a momentary glitter is sufficient, and the personal element never challenges attention. When the means cannot be commanded for a fair competition with prizes worth fighting for, it may be said, with advantage, rather than otherwise, that "the game is not worth the candle," for horticulture gains nothing from a paltry show, although a small amount of money may be made to do much, and the mere amount is not a matter of importance. A fair proportion of means to the end proposed is the vital matter, for a large prize list may prove paltry in particulars, while one of small dimensions may prove liberal in aim, and secure satisfactory results.

It cannot be doubted that we are on the eve of considerable improvements in the organization and management of horticultural exhibitions. We have preached against the gaunt staging and the timber merchants' bill to some purpose, but there lingers yet in many quarters a love for those enormities, and it is a kind of affection that takes a lot of killing. In the reports we shall have to publish as the season advances, we shall particularise, as on former occasions, the prominence given to woodwork and pots with the apparent intention of concealing the plants from view. But there will be less of this unpleasant work, for the promoters of timber bills are yielding to the promoters of taste, and common sense will soon acquire something like a mastery of the mechanical arrangements. At every exhibition there should be classes for plants and, as often as possible, for flowers also as grouped for artistic effect, for we are as yet in the infancy of this part of a general exhibition. The object of all, and especially of the immediate promoters should be to produce a harmonious picture that shall gratify by first impressions, and that shall sustain those impressions by the interest aroused in the particulars of the display. A great trade show may gratify by first impressions, but the interest is reduced to a minimum by the absence of the life that competition alone can give and that never fails to quicken inquiry and comparison and admiration.

Amongst many subjects that might obtain special attention with advantage we would in this connection make mention of roses and herbaceous plants. These never fail to attract, and they may even be said to pin people to them, so incapable of exhaustion is the enjoyment they afford. But while great groups from nurseries are of great value both to make a show and teach useful lessons, moderate quantities in classes from amateur cultivators are of the highest importance both for the pleasure experienced in their inspection and the healthy reflection of genuine life from many separate gardens where love is everything and trade is nothing. It is well that nurserymen should collect and cultivate and exhibit, but of what use is all their work except as gardens are benefited by it? That they contribute freely and apparently with complacency to exhibitions from which amateur purchasers of plants are practically excluded is in some degree matter for surprise. But doubtless they find it to their advantage even on such poor terms, and that consideration goes a long way to condone for a lamentable mistake in the general scheme of a horticultural exhibition.

WANSTEAD FLOWER SHOW will be held July 3.

TRENTHAM ROSE AND FRUIT SHOW will be held on July 3, instead of July 10, the date originally fixed.

CHERTSEY HORTICULTURAL SOCIETY will hold its annual exhibition July 2 and 3.

THE FOUR DAUGHTERS OF THE LATE REV. M. J. BERKELEY, F.R.S., have been granted pensions from the civil list.

MRS. WOOD, WIDOW OF THE REV. J. G. WOOD, the popular writer on natural history, has been awarded a civil list pension.

DR. JAMES CLARKE, M.D., has been appointed Professor of Natural History in the College of Agriculture, Downton, Salisbury.

HORTICULTURAL CLUB will meet on Tuesday next, June 10, at Hotel Windsor. Dinner as usual at 6 p.m., after which Mr. George Bunyard will open a discussion on "Early Strawberries."

CONVERSAZIONE OF SOCIETY OF ARTS will take place at the National History Museum, South Kensington, on Friday, June 27, the reception to commence at 9 p.m.

GARDENERS' ORPHAN FUND annual meeting and annual dinner, will be held at Cannon Street Hotel on Friday, July 18. At the meeting of committee on the 30th ult., the Honorary Secretary reported that Mr. Shirley Hibberd had consented to preside at the annual dinner.

TECHNICAL EDUCATION IN AGRICULTURE has been much considered by a joint committee of the Central Chamber of Agriculture and the Farmers' Club, and the conclusions arrived at were embodied in a report presented by Sir R. H. Paget, M.P., at a meeting held at the Society of Arts, on Tuesday last.

SECOND SUMMER SHOW OF ROYAL BOTANIC SOCIETY will take place on Wednesday next in the Society's gardens, Regent's Park.

ESSEX FIELD CLUB AND GEOLOGISTS' ASSOCIATION hold a joint meeting at Walton-on-the-Naze this day, June 7, under the leadership of William Whittaker, Esq., F.R.S. The train will leave Liverpool Street Station at 10 a.m.

AN IMPORTANT FEATURE IN THE BUSINESS OF TUESDAY NEXT in the meeting of R.H.S., in the Drill Hall, will be the award of a Silver Challenge cup offered by the Society to amateurs for the best collection of Herbaceous Pæonies. The offer should bring a good competition, both because pæonies need advocacy as amongst the best of hardy flowers for amateurs, and because the Society has of late years done little for the encouragement of amateurs and their gardeners. It is never too late to mend, and we hope that herein we see the beginning of a new and generous order of procedure.

PARISIAN BLINDS, introduced some years since by Messrs. Richardson and Co., of Darlington, are largely employed for shading the orchid houses in the gardens of A. H. Smee, Esq., at Hackbridge, and are regarded with much favour both by Mr. Smee and his gardener, Mr. G. W. Cummins. Their suitability for the purpose is sufficiently indicated by the robust state of health of the occupants of the several structures; and with reference to their durability, it may be mentioned that blinds which have been in use ten years will, in the opinion of Mr. Cummins, remain in good condition for at least another ten years.

LINNEAN MEDAL, instituted three years since by the Linnean Society, with a view of conferring honour on distinguished biologists, has been awarded to Professor Huxley. On the first occasion two medals were awarded, one to Sir Joseph Hooker, and the other to Sir Richard Owen, and last year the recipient of the medal was Professor A. de Candolle. In acknowledging the receipt of the medal, Professor Huxley said the aim of his life had been, in the words of the motto of the society, "Naturæ discere mores," and in the course of his labours he had endeavoured to show the fundamental unity of plant life and animal life.

SUPPLEMENT TO THE CATALOGUE OF ROSES, published by the National Rose Society, has been recently issued, and the selections of the finest exhibition and garden roses introduced since the publication of the Society's catalogue, will be found exceedingly useful to cultivators. The varieties recommended as suitable for exhibition comprise twenty-two hybrid perpetuals, of which fourteen have been raised in the United Kingdom, and fourteen tea-scented varieties. The garden roses recommended consist of five varieties of moss, one damask, ten hybrid perpetuals, three chinas, one bourbon, eight teas and noisettes, two hybrid climbers, three polyanthas, and six singles.

NIGHTINGALES are reported to have forsaken many of their customary haunts, and Mr. F. C. Hodgson, of Twickenham, started a discussion in the *Times* on the question of their possible or probable decrease. The resultant correspondence shows that the distribution of nightingales has been very considerably influenced in recent years by the growth of towns and diminution of woodlands, but in all probability as many of these birds visit the country now as in times of which we have any record. Having been on the move since the nightingales began to sing, we can aver that in our experience they are as plentiful as ever.

FAIRCHILD LECTURE at Shoreditch parish church, was this year delivered by Rev. T. G. Bonney, professor of geology in University College. This was the 160th Fairchild lecture, the first being delivered by Dr. John Denne, May 19 1730, and Professor Bonney, took the same text, Matthew vi., 28-30, the theme being the illustration of Providence supplied by the lily and the sparrow. Thomas Fairchild was a pious gardener of Hoxton, and in 1728 he made a will by which he vested £25 in the Churchwardens for the delivery annually of a lecture "On the Wonderful Works of God" or "The Certainty of the Resurrection of the Dead proved by changes in the Animal and Vegetable parts of Creation."

APPLE SCAB, caused by a parasitic fungus (*Fusicladium dendriticum*), occasions the American fruit growers much anxiety, as a severe attack results in a heavy loss. The injury to the fruit is often very great, and in neglected orchards the entire crop may prove of no value except for cider. Some careful experiments made by Professor Tait, of the Michigan Agricultural College, showed that the size of apples affected by the scab was reduced by one-tenth on an average, making a loss in bulk, not to speak of the loss in good appearance, of fully a bushel to a tree. Of various remedies tested the most effective was a spray of the so-called "Eau Celeste," somewhat diluted. The mixture is prepared by dissolving two pounds of copper sulphate in hot water in one vessel, and two and a-half pounds of carbonate of soda in another. The two solutions are mixed, a pint and a-half of ammonia is added, and the whole is diluted to thirty-two gallons.

A PINK SHOW FOR THE NORTH.—The intention of the Southern growers of the fragrant pink to hold an exhibition of their favourite flower in connection with the Rose Show at the Royal Aquarium on the 27th inst. appears to have induced some of the growers in the North to follow suit, and it is contemplated to hold an exhibition in the Botanical Gardens, Old Trafford, in connection with the Rose Show of the Manchester Botanical and Horticultural Society on July 19. There are a great many growers of pinks in the Midland and Northern districts, and Mr. Samuel Barlow is on the point of issuing a circular soliciting support, and asking for subscriptions towards a schedule of prizes. The matter could not be in better hands, and it is to be hoped the response to Mr. Barlow's request will be of a nature to admit of a show being carried out. The pink is a thoroughly hardy plant, and can be most successfully cultivated in the open border.

Open Spaces for London.—The Board of Agriculture have under consideration several regulation schemes, which will, if passed, have the effect of dedicating about 2,700 acres around London to the public as open spaces for ever. The lands in question comprise Epsom Downs and Common, Mitcham Common, Banstead Downs and Heath, Park Downs and Burgh Heath, and the Hackney Marshes. The promoters in each case have retained the services of Messrs. Horne and Birkett, the well-known solicitors to the Commons Preservation Society.

National Rose Society's Schedule of Prizes offered for competition at the several exhibitions to be held during the forthcoming season is interesting as indicating the spirit with which the work of the society is being carried on. The authorized rules for judging at page 8 of the schedule are especially deserving of the attention of both exhibitors and judges of roses at shows other than those held under the auspices of the National Rose Society. The annual dinner will be held in the rooms of the Horticultural Club, Hotel Windsor, Tuesday, the 24th inst., at six p.m.

Jamaica Exhibition was the subject of a paper read at a meeting of the Society of Arts, May 15, by Mr. C. Washington Eves, C.M.G. The author describes at length the principal products and industries of the island, referring especially to the attention bestowed on the botany and horticulture by Mr. D. Morris, when in charge of the public gardens and plantations of Jamaica. The island contains about 4,139 square miles of surface, diversified by mountains and their attendant streams, and the temperature ranges from 75 deg. to 80 deg. on the coast to 60 deg. and 65 deg. on the high mountains. In the discussion that followed, the principal speakers were Sir Henry Barkly, G.C.M.G., Mr. Morris, Rev. D. J. East, Mr. H. Steen, and the chairman, Mr. C. M. Kennedy, C.B.

The Grange Gardens, Hackbridge, so famous for their richly-furnished orchid houses and herbaceous borders, their extensive collections of hardy fruits and their delightful fern glades, were open to the public from May 28 to June 4, a privilege of which full advantage was taken by all classes resident in the district. The number of visitors was, indeed, so large throughout the week as to prove to demonstration that Mr. Smee's generosity in opening his gardens was not less highly appreciated this year than on previous occasions, and on Sunday afternoon more than one thousand visitors, including a large proportion of the members of the working classes, entered the gardens. Especially attractive to the visitors were the cattleya and odontoglossum houses, in which numerous forms of Cattleya Mossiæ and C. Mendeli, and Odontoglossum crispum and O. Pescatorei, of exceptional excellence, are now in bloom. No charge was made for admission, but, with Mr. Smee's permission, Mr. G. W. Cummins was careful to place collecting-boxes of the Gardeners' Orphan Fund in prominent positions, with the result that he will in due course be able to hand over a substantial sum to this excellent charity.

ORCHIDS IN FLOWER

AT THE VICTORIA AND PARADISE NURSERIES, UPPER HOLLOWAY.

The orchid houses in the nurseries of Messrs. B. S. Williams and Son, at Upper Holloway, are highly interesting and remarkably attractive at the present time, as will be seen from the following list of species and varieties now in flower.

Anguloa Clowesi.
Aerides Houlletii.
Angræcum Sanderianum.
Bifrenaria vitellina.
Calanthe masuca, C. Sanderiana, C. veratrifolia.
Cattleya Lawrenciana, C. lobata, C. Loddegesi, C. Mossiæ, M. aurea, C. M. a. magnifica, C. M. marginata, C. M. magnifica, C. M. Nevillæ, C. M. superba, C. M. conspicua, C. Mendeli, C. M. grandiflora, C. Wagneri, C. Warneri.
Cœlogyne Massangeana.
Cymbidium Lowianum.
Cypripedium Ainsworthi, C. Amesianum, C. Almum, C. argus, C. barbatum superbum, C. caudatum, C. c. roseum, C. calurum, C. ciliolare, C. Curtisi, C. conchiferum, C. Dayanum, C. Dauthieri, C. grande, C. Hartwegi, C. hirsutissimum, C. Hookeri, C. Peetersianum, C. selligerum, C. s. majus, C. s. rubrum, C. Swanianum, C. stenophyllum, C. superciliare, C. superbiens, C. Sedeni candidulum, C. vernixium.
Dendrobium Bensoni, D. Devonianum, D. formosum giganteum, D. Gibsoni, D. infundibulum, D. Jamesianum, D. nobile majus, D. Parishi, D. suavissimum, D. Schroderi, D. thyrsiflorum.
Epidendrum bicornutum, E. cuspidatum, E. inversum, E. vitellinum majus.
Geodorum candidum.
Lælia cinnabarina, L. elegans, L. grandis, L. purpurata, L. purpurata alba.
Lycaste Schilleriana.
Masdevallia amabilis, M. Chelsoni, M. Harryana, M. H. Bull's Blood, M. H. atrosanguinea, M. H. lilacina, M. H. magnifica, M. H. regalis, M. H. rosea, M. H. sanguinea, M. H. splendens, M. ignea, M. Lindeni, M. Shuttleworthi, M. Veitchiana, M. V. grandiflora, M. vespertilis.
Miltonia festiva, M. spectabilis rosea.
Odontoglossum Alexandræ, O cordatum, O. cirrhosum, O. citrosmum, O. citrosmum roseum, O. Harryana, O. luteo-purpureum, O. nævium majus, O. Pescatorei, O. Roezli, O. R. album, O. vexillarium, O. v. rosea.
Oncidium concolor, O. cucullatum, O. Krameri, O. macranthum, O. Marshallianum, O. sarcodes, O. stelligerum.
Paphinia cristata grandis.
Phalænopsis rosea, P. Sanderiana.
Scuticaria Hadweni.
Tricophilia crispa, T. c. marginatum, T. tortilis.
Vanda Denisoniana, V. suavis, V. s. Gotschalk's variety, V. teres, V. t. alba, V. tricolor insignis, V. t. Patersoni, V. t. the Glen variety.
Zygopetalum Clayi.

Exhibitions and Meetings.

THE ROYAL NATIONAL TULIP SOCIETY, May 28.

The annual exhibition of this society was held as usual in the Old Trafford botanical gardens on Wednesday, May 28, in connection with the great Whit week exhibition of the Manchester Botanical Society. There was a very large attendance of growers, and the flowers shown were remarkable for their general good size and finish. The competition in all the classes was very severe and the number of flowers staged was far above the average. The only prominent absentee from the exhibition table was the Rev. F. D. Horner, of Kirkby Lonsdale, whose bloom was unfortunately over. There were three maiden growers, who all promise to become good supporters of the society. During the past year the society has lost, by death, two of its oldest members, namely, Mr. Thomas Wardle, of Burton on-Trent, and Mr. Daniel Woolley, of Stockport, much to the sorrow of their confrères.

This year the Turner Memorial trustees offered prizes for special stands of twelve dissimilar tulips and six dissimilar seedling tulips. The stands that won these prizes were excellent in every way and will be long remembered. There were several good novelties in the way of seedlings, mostly raised by Mr. Dymock, of Stockport. The "blue ribbon" of the society was on this occasion won by Mr. James Knowles, of Staleybridge, with twelve admirably grown and well-marked flowers, whose chief fault was that the roses were dark and the byblœmens were rosy, giving a dull uniform look to the stand. Nevertheless the stand was a highly meritorious one and did Mr. Knowles much credit. The judges were Mr. Joseph Woodhead, of Staleybridge; Mr. Thomas Leech, of Guide Bridge; Mr. John Morris, of Lowton; and Mr. John Whittaker, of Royton, and the only fault that could be found with the way they performed their arduous duties was they were not quite severe enough upon impurity, a defect which cannot be too severely condemned, as there is no lack of pure flowers now-a-days.

Class 1, five stands of twelve dissimilar tulips two feathered and two flamed in each class.—Mr. James Knowles, Staleybridge, was first with Heroine and Modesty feathered roses, Mary Jackson and Triomphe Royale flamed rose, Connersby Castle and Mrs. Hepworth feathered byblœmens, Amazon and Talisman flamed byblœmens, Royal Sovereign and Sir Joseph Paxton feathered bizarres, and Dr. Hardy, and Sir Joseph Paxton flamed bizarres. Mr. W. Kitchen, of Stockport, was a close second with Comte de Vergennes and Minerva fd. roses, Mabel and Queen Henriette fld. roses, Violet Aimable and Trip to Stockport fd. bybs., Adonis and seedling fld. bybs., Typo and Masterpiece fd. bizarres and San Josef and Sir J. Paxton fld. bizarres. Mr. S. Barlow, of Stakehill, was third with a bright attractive stand, comprising Modesty fd. roses, Annie M'Gregor and Mabel fld. roses, Violet Aimable and seedlings fd. bybs., Friar Tuck and Carbuncle fld. bybs., Royal Sovereign and Garibaldi fd. bizarres, and Sir J. Paxton and Dr. Hardy fld. bizarres. Mr. J. H. Wood, of Royton, was fourth. Two good stands in this class were disqualified, the exhibitors having unfortunately placed two flowers of one kind in, against the rules.

Class 2, for eight stands of six dissimilar tulips there was a very stiff competition, over twelve stands being shown. Mr. D. Woolley, jun., Stockport, was first with fine well-grown examples of Mabel, King of the Universe and Typo feathered, and Duchess of Sutherland, Paxton and Olivia flamed. Mr. Kitchen was second with Comte de Vergennes, Violet Amiable and Paul Pry fd. and Clio San Josef, and a seedling fld. Mr. A. Moorhouse, of Wakefield, was third with Mrs. Lea, Adonis and Sir J. Paxton, fd. and Bessie, Dr. Hardy and Annie McGregor fld. Mr. Haynes, of Warwick, was fourth, Mr. W. Dymock, of Stockport, fifth, Mr. Knowles sixth, Mr. Wood seventh, Mr. J. W. Bentley, of Stakehill, eighth.

Class 3, for four stands of six dissimilar tulips (for 10s. 6d. subscribers only).—Mr. H. Housley, of Stockport, was first with good examples of Lord Lilford, Agnes, and Alice feathered, and Sir J. Paxton, Annie McGregor, and Lord Denman fld. Mr. R. Woolfenden, of Royton, was second with Heroine, Masterpiece, and Talisman fd., and Masterpiece, Sutherland, and Mabel fld. Mr. W. Prescott, of Lowton, was third with Lord Lilford, Andromeda, and Mrs. Pickering fd., and Aglaia, Paxton, and Queen of the May fld. Mr. S. Johnson, of Stafford, was fourth.

Class A.—Special Turner Memorial prizes for three stands of twelve dissimilar named tulips, six rectified and six breeders.—Mr. Barlow first with a beautiful, bright, attractive stand, comprising Modesty, W. Parkinson, and Wm. Wilson fd., and Mabel, Sutherland, and Paxton fld., with Paxton, Mrs. Barlow, Annie McGregor, Hepworth's 27/A, Glory of Stakehill, and W. Parkinson, breeders. Mr. J. H. Wood second with Mabel, Masterpiece, and Heroine fd., Mrs. Lomax, Talisman, and Delamere fld., and Storer's 12, Annie McGregor, Paxton, Lady Franklin, Miss B. Coutts, and Alice Grey, breeders. Mr. Kitchen third with Rose Hill, Dr. Hardy, Lady Franklin, San Josef, Hetty Barker, and a seedling, all flamed, and Mabel, Rose Hill, King, and three seedlings, breeders.

Class B.—Special Turner Memorial prizes for two stands of six dissimilar seedling tulips, three rectified, and three breeders.—First: Mr. Barlow, with six beautiful flowers, comprising Bob Morley, and Miss Hardy fld., and Gill's seedling bizarre fd., and three seedling breeders. Second: Mr. James Thurstan, of Cardiff, with six seedlings of his own raising. An excellent stand of Mr. Dymock's was, unfortunately, disqualified through the exhibitor having placed in it two breeders which the judges decided were the same kind.

Class 4, for six stands of three feathered tulips, one in each class.—First, Mr. Barlow with Sir J. Paxton, Annie McGregor, and Violet Aimable; second, Mr. Knowles with Conersby Castle, Industry, and Storer's seedling; third, Mr. Woolfenden, with Heroine, Masterpiece, and an unknown variety; fourth, Mr. Dymock; fifth, Mr. Kitchen; sixth, Mr. Bentley.

Class 5, for six stands of three flamed tulips, one in each class.—First, Mr. Housley, with Annie McGregor, Lord Denman, and Sir J. Paxton; second, Mr. Holden, with Sir J. Paxton, Mabel, and Denman; third, Mr. Moorhouse, with Triomphe Royal, Dr. Hardy, and Talisman; fourth, Mr. Haynes; fifth, Mr. Knowles; sixth, Mr. Bentley.

Class 6, for three stands of two tulips, one feathered and one flamed of any class, for maiden growers only.—First, Mr. John Hayes, of Lowton, with Sir J. Paxton, and Andromeda; second, Mr. S. Johnson, of Stafford, with Mrs. Jackson and Sir J. Paxton; third, Messrs. Stuart and Mein, of Kelso.

Class 7, for six stands of two tulips, one feathered and one flamed of any class.—First, Mr. Wood, with Masterpiece and Sir J. Paxton; second, Mr. Prescott, with Lord Lilford and Sir J. Paxton; third, Mr. Housley with Lord Lilford and Sir J. Paxton; fourth, Mr. Hayes; fifth, Mr. Knowles; sixth, Mr. Moorhouse.

CLASS 8, single blooms in each of the six classes.—In feathered bizarres, Mr. Simonite, of Sheffield, was first with Masterpiece; Mr. Housley, second, with Lord Lilford; Mr. Hayes, third, with Paxton and tenth; Mr. Wood, fourth; Mr. Bentley, fifth; Mr. Barlow, sixth; Mr. Woolfenden, seventh; Mr. Kitchen eighth, and Mr. Knowles ninth. For feathered roses, Mr. Hayes was first with Industry, also fourth and fifth; Mr. Kitchen was second with Comte de Vergennes, Mr. Housley third with Alice, Mr. Prescott sixth, Mr. Knowles seventh, Mr. Barlow eighth, ninth, and tenth. For feathered byblœmens, Mr. Dymock was first with King of the Universe, second, fifth, sixth, seventh, and ninth with seedlings; Mr. Housley third with Violet Aimable, Mr. Kitchen fourth and tenth, and Mr. Woolley eighth. For flamed bizarres, Mr. Housley was first with Paxton, Mr. Woolley second with Paxton and seventh, Messrs. Stuart and Mein were third with Dr. Hardy, Mr. Woolfenden fourth and sixth, Mr. Kitchen fifth and tenth, Mr. Barlow eighth and ninth. For flamed roses, Mr. Kitchen was first with Mabel, second with St. Amand, third with Aglaia, also fourth and seventh; Mr. Cliff was fifth, Mr. Barlow sixth and tenth, Mr. Knowles eighth and ninth. For flamed byblœmens, Messrs. Stuart and Mein were first with Talisman, Mr. Woolley second with Talisman and seventh, Mr. Kitchen third, fourth, and ninth, Mr. Housley fifth and sixth, Mr. Moorhouse eighth, and Mr. Barlow tenth.

CLASS 10.—Six stands of six dissimilar tulips, two of each class. First, Mr. Moorhouse, with Miss Headley and Queen of May byblœmens, Paxton and Dr. Hardy bizarres, and Mrs. Barlow and Leach's Sarah roses; second, Mr. Barlow, with Glory of Stakehill and Wm. Parkinson byblœmens, Sir J. Paxton and Hepworth's 27 A bizarres, and Annie McGregor and Miss B. Coutts roses; third, Mr. Kitchen, with Glory of Stakehill and King of the Universe byblœmens, Paxton and Sulphur bizarres, and Rose Hill and Olivia roses; fourth, Mr. Wood; fifth, Mr. Bentley.

CLASS 11.—For eight stands of three tulips, one of each class. First, Mr. Cliff, with Hardwick's 28, Queen of England, and Parker's King; second, Mr. Kitchen, with Rose Hill, Paxton, and a seedling; third, Mr. Housley, with Dr. Hardy, Philip I., and Mabel; fourth, Mr. J. Hague; fifth, Mr. Wood; sixth, Mr. Moorhouse; seventh, Mr. Woolfenden; eighth, Mr. Barlow.

CLASS 12.—Single blooms in each of the three classes for bizarre breeders, Mr. Housley was first with Dr. Hardy, and third with R. Tates. Mr. Moorhouse was second with Dr. Hardy. Mr. Barlow fourth, Mr. Wood fifth, Mr. Cliff sixth, Mr. Bentley seventh, and Mr. Holden eighth. For rose breeders Mr. Kitchen was first and second with Rose Hill. third with Annie McGregor, and seventh with Olivia, Mr. Moorhouse fourth, Mr. Prescott fifth, Mr. Woolley sixth, and Mr. Woolfenden eighth. For byblœmen breeders Mr. Haynes was first with Beauty of Litchurch, Mr. Moorhouse second and sixth, Mr. Barlow third and fourth, Mr. Dymock fifth and seventh, and Mr. Bentley eighth.

CLASS 13.—A prize for the best breeder in the whole exhibition was awarded to Mr. Moorhouse for the bloom of Sir J. Paxton, shown in his stand of six breeders. The prize for the best feathered tulip in the whole exhibition was awarded to Mr. Simonite for his feathered Masterpiece, and the prize for the best flamed tulip was awarded to Mr. D. Woolley, junr., for his Sir J. Paxton shown in his stand of six.

JAMES W. BENTLEY.
Hon. Sec. R. N. Tulip Society.

READING HORTICULTURAL SOCIETY, JUNE 4.

Showery weather so much needed by vegetation generally, very seriously interfered with the attendance of visitors at the Forbury Gardens, Reading, on the above date, when the society inaugurated its thirty-seventh season with a truly grand display of early summer products. These, as usual were arranged in the enclosure in the Abbey ruins. The exhibition, extensive as it was in the competitive classes, was greatly aided by a bank of decorative plants, orchids, floral designs, bouquets, &c., from Mr. G. Phippen, Reading, who was awarded an extra prize for general excellence. The schedule "open to all" comprised thirty classes in which the prizes were of good money value, commencing with

STOVE AND GREENHOUSE PLANTS, nine varieties. This proved a thoroughly good class, the premier (£8) group being staged by J. Marriott, Esq., Coventry, who put up fresh, full-sized specimens of Cattleya gigas, Anthurium Scherzerianum, Dipladenia regina, Azalea Model, Erica affinis, E. ventricosa minor, Dracophyllum gracile, Clerodendron Balfourianum, and Ixora Fraseri. Mr. J. Cypher, Cheltenham, was second, staging a fine specimen of Lælia purpurata, Anthurium Scherzerianum Wardi, Hederomas fuchsioides and tulipifera, Azalea Francois Dubois, Aphelexis spectabilis and A. macrantha rosea, Erica tricolor Wilsoni and E. ventricosa hirsuta alba. Mr. H. James, Castle Nursery, Norwood, was third. For one specimen, the first and second cards went to W. J. Palmer, Esq., and H. J. Simonds, Esq., for large bushes of Clerodendron Balfourianum, the plant from the first-named being perfect beauty in point of size, shape, and size of flowers; the third card falling to Mr. J. F. Mould, Pewsey, Wilts. In the class for six, the last-named was the only exhibitor. His best pair of plants were Erica ventricosa magnifica and Statice profusa.

FINE FOLIAGE PLANTS formed a large class, the premier card for six going to J. Marriott, Esq., who staged fresh bulky specimens of Cycas revoluta, Thrinax elegans, Kentia australis, Croton Disraeli, and C. Weismanni; Mr. James second, his selection including Dasylirion glauca, Cocos Weddeliana, Kentia Balmoreana, Theophrastra imperialis, Thrinax argentea, and Cycas revoluta; G. W. Palmer, Esq., third. A very pretty lot of small stuff was staged as table plants. Mr. T. Lockie, Oakley Gardens, Windsor, first with Caladium argyrites, Dracæna superba, Croton Weismanni, C. superba, Asparagus plumosus, and Cyperus variegatus; A. Palmer, Esq., second.

ORCHIDS were admirably shown and attracted much attention. For three specimens, Mr. Cypher was first with Cattleya Mendeli, Cymbidium Lowianum (with eight spikes, bearing 150 flowers), and Cypripedium barbatum (40 flowers); W. J. Palmer, Esq., a meritorious second with Oncidium sphacelatum (eight spikes), Dendrobium thyrsiflorum (fifteen racemes), and Cypripedium barbatum (twenty flowers); J. Marriott, Esq., third for Dendrobium superbiens-majus (ten racemes), Lælia purpurata (nine flowers) and Cypripedium barbatum (25 blooms); an extra prize falling to Mrs. Owen Knox, Caversham, for Dendrobium Falconerii, D. Dearei, and Cypripedium ciliolare. For one specimen, H. J. Simonds, Esq., took the card for a large example of Vanda teres (120 flowers); Mrs. O. Knox, second with a grandly flowered Sobralia macrantha (a dozen extra fine blooms); J. Marriott, Esq., third with a medium-sized piece of Cattleya Mendelii.

PELARGONIUMS were fairly shown, the groups a trifle irregular for size and flowering development. A very pretty four from W. Palmer, Esq., reminded one of the Slough specimens; and Mrs. Fanning's nine plants were large, fresh, and very evenly bloomed, the varieties being Norma, Duchess of Edinburgh, Spotted Gem, Alice, Lilacina, Mrs. Lewis Lloyd, Empress, Lady Isabel, and Triomphe de St. Mande.

POT ROSES were presented in sufficient numbers to make a pleasing feature, the specimens generally of good size, but scarcely so attractive as some other classes of flowering subjects, the blooming being somewhat uneven. For six, Mr. W. J. Palmer and Mr. Mould divided the honours; while for four, Mr. Lockie and Mr. G. W. Palmer took the cards.

HEATHS, though not a great class, were generally large examples, Mr. Mould leading with Erica Rothschildianum, E. Cavendishi, E. depressa multiflora, E. Shannoni glabra, and E. ventricosa rosea; Mr. Cypher taking second place with E. ventricosa rosea, E. Cavendishi, E. Lindleyana, E. ventricosa grandiflora, E. effusa, and E. tricolor Wilsoni.

FERNS AND LYCOPODS were staged in abundance. Of the latter, the premier six pans came from G. W. Palmer, Esq., who had matchless convex and pyramidal masses of Selaginella apoda, S. denticulata, S. Kraussiana aurea, S. K. variegata, S. cæsia, and S. Browni; Lord Saye and Sele second with nearly the same kinds. For fifteen ferns and mosses G. W. Palmer, Esq., presented a pretty group; while for four exotic kinds W. J. Palmer, Esq., led with large specimens of Gymnogramma Mertensi, Davallia Mooreana, Adiantum Farleyense, and Microlepia hirta cristata; A. Palmer, Esq., second with Davallia Mooreana, Lomaria gibba platyptera, Leucostegia immersa, and Todea superba.

RHODODENDRONS were represented by a premier group of thirty varieties staged by Mr. Lees, jun., whose father very kindly exhibited about 300 trusses of cut blooms of similar varieties.

GROUPS OF DECORATIVE PLANTS, on spaces twelve feet by ten feet, formed an interesting display, A. Palmer, Esq., taking the card with a fine lot of stuff, enriched by orchids and other choice flowering plants; J. O. Taylor, Esq., second; the cards for a smaller area (ten feet by five feet) falling to W. Palmer, Esq., and Mr. J. W. Hounslow.

GLOXINIAS, BEGONIAS, and CALCEOLARIAS formed perhaps the finest feature of the show in point of quality. For these Messrs. Sutton and Sons offered nearly £30 as prizes in the three classes—the competition being exceedingly keen and the plants near perfection. For gloxinias, W. J. Palmer was first (£5); B. Simonds, Esq, second; M. Lonergan, Esq., Cressingham, third; and Mrs. H. La Malet, fourth. Calceolarias: first (£5), G. W. Palmer, Esq.; second, Mr. T. Lockie; third, W. J. Palmer, Esq.; and J. O. Taylor, Esq., fourth; while for begonias, Mr. T. Lockie took the card (£5) for dwarf-grown, large flowered specimens, the second and third cards going to G. Hammersley, Esq. and W. J. Palmer, Esq.

AZALEAS were scarcely equal to other classes, the blooming generally good, but the plants not well matched for size, the card for four going to Mr. Lockie, and a second to G. W. Palmer Esq., for nine.

CUT FLOWERS—In this section a forty-feet table was occupied by the ladies' arrangements of wild flowers as dinner-table epergnes; for a pair, Miss L. Phillips, Miss L. Cole, and Miss Creed shared the awards for truly artistic designs. For a dozen bunches of choice flowers the premier card fell to J. Marriott, Esq.; while for hardy subjects, Mrs. H. La Malet put up premier handfuls of Astilbe japonica, crimson cactus, arum lilies, Primula obconica, and crimson passion flowers. Fancy pansies were good as shown by Mrs. O. Knox, J. Hargreaves, Esq., and C. Littledale, Esq., the show forms being small.

CUT ROSES were fresh and of good size. For twelve, J. Hargreaves, Esq., led with a nice box, the best flowers being Grace Darling, W. A. Richardson, Reine Marie Henriette (very fine), Marechal Niel, Jean Pernet, Jean Ducher, Rubens, Catherine Mermet, Gloire de Dijon, and Avocat Duvivier; the second card (no name) going to a well matched set comprising Merveille de Lyon, Marquise de Castellane, Marie Baumann, Louis Van Houtte, Baroness Rothschild, Francois Michelon, Abel Grand, Ulrich Brunner, Magna Charta, and Gloire de Dijon; equal thirds being awarded to E. D. Lee, Esq., Aylesbury, who had noble blooms of Marechal Niel (premier of the show), Adam, Catherine Mermet, Madame Lambard and Souvenir d'un Ami; and C. Hammersley, Esq., whose premier flowers were Catherine Mermet, Marechal Niel, Devoniensis, and Cheshunt Hybrid.

FRUIT.—A fair quantity was submitted in competition. For white grapes, J. Hargreaves, Esq., Maiden Erleigh, filled the post of honour with dual clusters of Foster's Seedling; C. D. Crews, second with Buckland Sweetwater; Mrs. Fanning, Whitchurch, third with the same variety; she also leading in the class for black; J. Hargreaves, Esq., second. But one dish of peaches (Alexander) were presented; these were well up, and secured E. D. Lee, Esq, the card; there being also a fine dish of Elruge nectarines and Brown Turkey figs. Melons were smaller examples than usual, Mr. T. Lockie and others having fully ripe fruits of Blenheim Orange; while to aid the show, from The Vineries, Wokingham, there came a collection of forty melons comprising six Golden Perfection (weight 27 lb.), six Conqueror (41 lb.), one Gem (7½ lb.), three Scarlet Invincible (9 lb.), and three Hero of Lockinge (9 lb.). The dishes of strawberries were superb. C. Hammersley, first with James Veitch; W. Palmer, Esq., second with Sir Joseph Paxton; a fine dish of Noble coming from Malshanger Park.

VEGETABLES were plentiful and good; specially so were the collections, the premier award going to Mr. T. Lockie for grand exhibits of Carter's Model and Lockie's Perfection cucumbers, Hero of Lockinge melon, Reading Perfection tomatos, Reading Giant asparagus, Ne Plus Ultra beans, Early London cauliflowers, Millard's Reliance cabbage, Ashleaf potatos, Early Gem carrots, Lyon leeks, White Queen onions, Chelsea Gem peas and turnips; C. Hammersley, Esq., a capital second, very good were the dishes of Early Nantes carrots, Telegraph cucumber, Perfection tomatos, Little Gem pea, &c.; W. Wilder, Esq., third. Special interest centred in the class for cucumbers (Carter's Model), Mr. T. Lockie taking the premier in this and the society's division with fine examples. Of the potatos too much need not be said, save that size and form were equal to the fullest desire; Mrs. Fanning taking firsts for Goldfinder (kidney) and Sutton's Seedling (round), the other prize dishes being Sutton's Improved Ashleaf and Early Border. Cauliflowers, lettuces, asparagus, mushrooms, &c., made up an interesting display. In this department Mr. C. Fidler submitted two dozen of his new cucumber, a distinct form and prolific, and an equal number of Winter Green Cos lettuce, large, crisp, and solid.

PERENNIALS FROM SEED.

HARDY herbaceous plants differ considerably in the facility with which they can be multiplied by means of seed, but there are comparatively few that cannot be so increased by those whose knowledge of their requirements is simply of a general character. In the majority of cases they can be as readily raised from seed as the commonest of the annuals, and it has often struck me as very singular that many amateurs and gardeners who experience no difficulty in raising annuals that require considerable care should shrink from taking advantage of the aid afforded by seed in increasing the stock of perennials. To my mind the raising of the choicer kinds of hardy herbaceous plants from seed is one of the most interesting of the several phases of garden practice, and as the seedlings usually grow vigorously and soon form strong clumps, a border may, at a small cost, be quickly furnished with their aid.

The practice that obtains in some gardens of raising hardy perennials under glass with the assistance of a high temperature and a humid atmosphere enables the cultivator to obtain rather large plants in a short time. Beyond this, it has nothing to recommend it, and I would strongly advise a more rational course of procedure. Hardy plants that have to be grown in the open ought not to be subjected to artificial heat at any stage, for when they become drawn and weakened to any appreciable extent they are slow in recovering when transferred to the borders, and not unfrequently they fail to bloom so satisfactorily as others raised in the open. The fact that by sowing early in the year in heat some of the kinds may be had in bloom the same season ought not to be taken into consideration, for when it is desired to obtain a display of flowers within a short time of the seed being sown, the annuals should be taken advantage of. An exception may be made in favour of kinds of which the seed is very slow in germinating, but all sowings made under glass, whether with or without artificial heat, require considerable care.

In raising herbaceous plants from seed without the aid of glass the best course is to set apart for the seed bed a portion of one of the open quarters in the kitchen garden. Borders are not so suitable for the seed bed as the open quarters, for on shady borders the young plants have a tendency to become drawn, and on the southern borders frequent waterings are necessary to maintain a sufficient degree of moisture in the soil. The bed should be from three and a-half to four and a-half feet in width, and of a length proportionate to the number of kinds of which seed is to be sown. The bed having been marked out, the next step will be to make the surface soil as fine as possible, and the course of procedure should be much the same as in preparing ground for carrots and onions. In dealing with soil that has been recently dug over it is an excellent practice to allow it to become dry on the surface, and then in the evening give it a moderate watering, using a can to which a rather coarse rose is affixed. Usually soil so dealt with can, in the early part of the day following, be readily broken down with the rake. If there are to be several beds parallel to each other a space eighteen inches in width should be allowed between them, but in private gardens one bed will be ample. The seed should in all cases be sown in drills, as the several kinds can be more readily kept separate, and these should be about nine inches apart, to admit of the hoe being plied between them to keep down weeds. The drills should be made across the beds, as the majority of the kinds can then have a row wholly devoted to them, and the intervening spaces can be stirred with a Dutch hoe without those using it having any occasion to tread upon the bed. The drills should be about one inch in depth, and if the surface soil cannot be made so fine as could be desired a barrowful of the refuse soil from the potting bench should be passed through a fine seive and used for covering the seed. Thin sowing is advisable, and if the soil is dry at the time previously pour water along the drills to ensure a proper degree of moisture in the soil. Watering the bed when the drills are open and before the seed is sown is more beneficial than a surface watering immediately afterwards. With reference to the best period in which to make sowings of seed of herbaceous plants, I would say that there is no more suitable time than the present.

The details requiring attention subsequent to the sowing of the seed are comparatively few, but by no means wanting in importance. To maintain a sufficient degree of moisture in the soil to ensure the germination of the seed is essential, and what watering is necessary must be done in the evening, and with a can having a moderately fine rose. The evaporation would be greatly checked by laying mats over the bed until the seedlings are beginning to make their appearance, but there is so much risk of the covering remaining too long, that the use of mats for this purpose cannot be very strongly recommended. Should the surface soil become beaten down by the repeated waterings or the rain, the spaces between the rows should be stirred with the hoe as soon as the seedlings are sufficiently advanced to indicate the several lines. Transplanting must be commenced as soon as the plants are strong enough to bear the removal with safety, and generally speaking, the best results are obtained by pricking them out in a nursery bed at a distance of three or four inches apart each way. Here they will rapidly acquire strength, and soon be in a condition for being transferred to their permanent quarters.

Seed of the kinds to be raised under glass may be sown at any time between the first week in May and the end of June with the most satisfactory results. Shallow boxes or pans of moderate size are preferable to pots, and in preparing them place a layer of medium-sized crocks in the bottom, then cover with a layer of moss or other loose material, and fill to within half-an-inch of the rim with light sandy soil. Make the surface moderately firm and quite level, distribute the seed thinly and evenly over the surface, and cover lightly with fine soil. A pit or frame will afford the most suitable accommodation for the seed pans, and until the seedlings begin to make their appearance mats should be laid over the glass. Immediately the first seedlings are seen, reduce the shading by covering the glass in bright weather only. At the same time commence to ventilate the frame by tilting the lights at the back, and concurrently with the development of the plants increase the admission of air. On the seedlings becoming of a suitable size they may be pricked off into other pans or boxes, and be kept under glass until they are established; or, as is preferable, they may be transferred to a nursery bed in precisely the same manner as advised for the seedlings from the open bed.

PRACTICAL CULTIVATOR.

EARLY-FLOWERING CHRYSANTHEMUMS.

THE readers of the GARDENERS' MAGAZINE are much indebted to Mr. S. Barlow for his excellent report on early-flowering chrysanthemums at page 285. As Mr. Barlow states, they are of immense value for enhancing the attraction of the herbaceous border towards the end of the summer and early in the autumn, when there are comparatively few other plants in bloom. I have for some years past had a rather comprehensive collection of the early varieties, and am in a position to say that the list given by Mr. Barlow comprises nearly all the best varieties, and that the merits of the several kinds are very justly indicated by the marks given them.

The varieties enumerated are more than sufficient for any one garden, but there are a few others that should have attention. Especially desirable are Fiberta, a small growing pompon producing rich yellow flowers; Alice Butcher, a bright orange red sport from Lyon; Goldsmith, a new variety with comparatively large flowers of a rich golden hue. Well deserving of attention also is Mrs. Burrell, a primrose-coloured sport from Madame Desgrange, not so showy perhaps as the golden forms of this well-known Jap, but extremely beautiful. It may perhaps be useful to state that Yellow Desgrange and Gustave Wermig are synonymous, and that Mrs. Hawkins is a distinct sport, having flowers of a much richer shade of colour. With reference to Precocite, which stands fourth on Mr. Barlow's list, I would like to impress upon some cultivators the desirability of their recognising the fact that there are two pompons under this name, one a yellow variety flowering in the summer and the other blooming in October and bearing rich crimson flowers. I have my garden well stocked with the first of the two, and am desirous of adding the other to my collection, as the flowers are so useful for decorative purposes in a cut state in association with those of Mrs. Cullingford and Sœur Melanie, which may be had in abundance in October. Twice I tried to obtain the crimson Precocite, each time adding the name of the raiser, and twice I have had sent me the yellow variety. I shall take a different course the next time I make an attempt to obtain Delaux's Precocite, and shall purchase two or three plants when they are in bloom and raise a stock from them.

It would be interesting to know what Mr. Barlow's experience has been in wintering the early-flowering chrysanthemums. For several years I allowed the old stools to remain in the border during the winter, but although my garden is favourably situated in the matter of climate, and also sheltered, the results have not been satisfactory. For several winters they were either killed by the frost or so crippled as to be of very little use. In mild winters they have fallen a prey to the slugs, and the young growths have been eaten off as fast as they made their appearance above the surface. The slugs keep them down so close to the surface that at first I thought the chrysanthemums had not commenced to make new growth. I now lift in the autumn as many of the stools of each variety as I am likely to require for propagating purposes and winter them in a cold frame, with plenty of sandy soil about the roots. We keep them cool without exposure to severe frost, and maintain the soil in a nice moist state. After new growth commences the frame is freely ventilated. The protection of a frame is especially necessary in the case of Madame Desgrange, which is the most susceptible to injury from frost of any variety with which I am acquainted. The stock is multiplied early in the spring by cuttings and division, and of the two methods of increase, propagation by means of cuttings is in some respects preferable. When division is resorted to, I put them in pots and allow them to remain until they are established and are commencing to grow freely, when they are planted out.

This year, notwithstanding my previous experience, I divided some clumps of Madame Desgrange, and planted the divisions in the border. Although each division had three or four shoots, at least one-third of the plants were destroyed, and one-third so severely crippled as to be of little use, My garden is not more infested with slugs than are the majority of gardens. A friend of mine who grows chrysanthemums largely for the market divides up the clumps and plants them out without having any losses, but in the field there are not so many harbours for slugs as in the garden, and, moreover, when there are such large numbers the slugs are unable to injure any considerable proportion of them. Even if the winter is so mild that the plants escape injury they ought to be lifted, for when they remain in the same position more than one season they make an unsatisfactory growth in consequence of the exhausted state of the soil.

ENTERPRISING AMATEUR.

MR. HUGH MAXWELL has been engaged as head gardener to Lady Musgrave, Tourin, Waterford.

AMERICAN ASSOCIATION OF NURSERYMEN held its annual meeting at New York during the past week. An excellent programme had been prepared, the papers including contributions from the leading authorities.

Notes of Observation.

MAGGOTS IN BONE MEAL.

I AM very interested with the correspondence under the above heading, as I have lost a number of my fuchsias. I used a little peat-moss manure when they were repotted last spring, but I have not seen, on examination of the roots, any of the maggot referred to, though I believe it to be the same grub that ate away some of my seedling begonias and Harrison's musk twelve months ago. I never saw the maggot until then, and cannot think how it has made its appearance.

Burton-on-Trent. W. ROBSON.

WANTED, THE NAME OF THE EARLIEST TOMATO.

Mr. Warden, in the GARDENERS' MAGAZINE for May 17, asks for the name of the earliest tomato. I think it is a very proper question, because so many are interested in tomato culture that the name of the earliest to ripen cannot but be useful. With regard to the question of earliness, I think it will be generally conceded that the sorts with corrugated fruit are earlier than those with smooth fruit, of which we may take Perfection as the type. Such was my experience, however, last season, when I had about twenty different sorts under trial. Having settled the question of earliness in my own mind, so far as I am concerned, I planted my early house last Christmas with plants raised early in the autumn, the sorts being Sutton's Earliest of All and the Old Red. These set their fruit freely after the middle of March, and are now carrying a good crop of ripe and unripe fruit. But as the smooth-skinned sorts are most in favour I intend to destroy the first lot about the end of June and replace them with one of the Perfection class. The plants for this purpose are now about six inches high, and I hope will have at least one cluster of fruit formed, if not more, before they take the place of the others. I should be glad to dispense with the corrugated fruiters as the fruit is not so good looking as the smooth sorts; but until we obtain one of the Perfection class that will set its fruit as well under the same conditions as the Old Red I must not get rid of them. With what Mr. Warden says respecting the sort known as Conqueror I quite agree. It is an early and free setter, and a prodigious cropper, whether under glass or in the open air. But the fruit being deeply ribbed is against it.

J. C. C.

BEST EARLY TOMATO.

In the GARDENERS' MAGAZINE of May 17 the question is asked by your excellent correspondent, Mr. Warden, which is the earliest tomato to fruit? and having submitted this question he proceeds to speak of a crop of Conqueror that has come under his notice. In reply to this question I would like to say that according to my experience in tomato culture, Hackwood Park Prolific is as early and good as any of the varieties in cultivation. I have grown many of the kinds and have not found one to surpass it for earliness, productiveness or general utility. As Mr. Warden properly remarks, certain varieties do not come into bloom until they have attained a considerable height, but with Hackwood Park this is not the case. In fact it comes into bloom early and produces large trusses of flowers of which a fair percentage invariably sets. The growth is short-jointed and in a given space it will produce twice the number of fruits that can be obtained from the Perfection type. I gathered the first tomatos on May 10 from plants in pots and trained to the back wall of a cucumber and melon pit. The plants in question were raised from cuttings struck at the end of November. The first cluster of fruit was twelve inches from the rim of the pot which is by no means a great height. They are now about five feet high and in that length of stem have nine clusters of fruit containing from four to six each. W. H. STEPHENS.

The Gardens, Prescot House, Stourbridge.

BUDDLEA GLOBOSA.

The promise of a crop of ball-like blossoms upon this rather uncommon, yet extremely showy, subject this year is uncommonly good. While in flower from the end of May and during the month of June the orange-coloured tassels are very showy, hanging in bunches in grape-like fashion. The perfume resembles very much honeycomb, and is a favourite flower with bees, as they are to be found about the flowers in numbers during the time this plant is in full show. No subject amongst shrubbery occupants that I am acquainted with grows so fast as does this buddlea, if so planted that it is sheltered from easterly winds, which check the free growth of the plant very much in the spring. The check of course curtails the crop of flowers. A sheltered spot at the back of the shrubbery, where, of course, no overhanging trees interfere with it, is the most suitable place for it, and ample space should be allowed for a free development of the branches. Then a graceful specimen will soon be obtained which will not fail to give a full crop of flower every year when once well established. The plant is easily increased by cuttings or seeds. If the former are dibbled into sandy soil in a cold frame at the end of September, choosing half-ripened shoots, they will be ready for removal the following April. Until roots are formed the frame should be kept close and shaded from bright sun. This plant was introduced as long ago as the year 1774, the genus being named after Adam Buddle. The wonder is it is not more often seen in gardens. E. M.

THE CROP OF BUSH FRUITS in market gardens in West Middlesex is comparatively light, both currants and gooseberries having suffered from the frosts experienced shortly after their having flowered.

ASPARAGUS CULTURE.

I HAVE been very much interested in the discussion that has lately taken place in the magazine respecting the cultivation of asparagus. I do not propose in the following remarks to offer an opinion on the merits of what has already appeared in these pages, but shall content myself with recording the results of my own experience extending now over a good many years. Briefly stated, my opinion is that better asparagus is grown on fairly light, well drained soil with a limited quantity of manure than is produced where manure is abundantly applied on land that is heavy and badly drained. Recent experience has confirmed this view in the most unmistakeable manner. For nearly a quarter of a century I had to grow asparagus for a large family on land that was naturally heavy in character and badly drained, and although I manured the ground well both before and after planting I very rarely knew what it was to have a good supply of grass two seasons in succession. If the weather through the late summer and autumn months was warm and fairly dry the supply of grass the next spring would be moderately satisfactory, but after a wet autumn and winter the supply would be very indifferent. I tried the plants on level ground and on raised beds, also thick and thin planting, with applications of salt and without it, but the results were all the same. I could not get the strongest of the summer's growth to exceed a height of four feet; generally three feet was the average height, with not the least signs of any grass rising after the middle of July. After such an experience I came to the conclusion (and I think rightly), that it is not a particularly rich soil that asparagus requires, but a fairly dry and warm root medium. During the latter part of my time I used manure enough to force the summer growth to the height of the garden walls, but it had a contrary effect, as it made the soil sour and damp in winter. Any way it did no good in the direction intended, and if I had to go through the same experience again I would substitute road scrapings and trimmings for manure with which I would incorporate fresh lime when the materials were fairly dry.

To come to more recent experience I may state that two years ago last April I made a plantation on a piece of fresh land taken in from an arable field. Not a scrap of manure of any kind was put on the ground. It was dug up one spit deep and the asparagus (one year old plants) planted in the usual way. The soil, I ought to state, is a good, fairly heavy loam with a bed of gravel about two feet below the surface. From this new plantation I have been cutting a good supply of grass since the 20th of April. Some of the summer growth last year reached to a height of six feet, and that it should be understood without any manure. I gave the bed a dressing of stable manure last February and that is all the assistance it has had. My case is I think sufficient to prove, as I have already said, that a fairly dry warm soil is better for asparagus than one that is stronger and retains more moisture. J. C. C.

IVY LEAVED PELARGONIUMS.

THE elegant habit, freedom of flowering, and delightful colouring of the ivy-leaved pelargoniums render them exceedingly useful for conservatory decoration during the summer and early autumn, and their culture for that purpose might with advantage be extended in many gardens. Large formally trained specimens are by no means necessary to their full enjoyment, nor indeed, are they desirable, as the more naturally they are trained, the more pleasing is the appearance they present. I have long grown them rather extensively, and in addition to the trained plants occupying positions upon the stages and the floor, we have them trained up pillars and growing in baskets suspended from the roof. For baskets and pillars they are unsurpassed, and far superior to many of the plants employed for filling the one and clothing the other.

In the preparation of a stock for the embellishment of the conservatory an elaborate system of culture is by no means necessary. We find a very simple course of procedure to answer remarkably well, and when the most has to be made of the means at command it is perhaps the best that could be adopted. The ivy-leaved pelargoniums require a moderate amount of root space, and for the majority of the examples we employ eight-inch pots, which give them plenty of room, and render unnecessary such frequent waterings as are required by plants occupying smaller pots. Not less important is a substantial compost, as a vigorous growth is essential to an abundant production of flowers. The compost which I have employed with much success is one consisting of fibrous loam four parts, well rotted manure one part, and silver sand about half a part. The loam is broken up rather roughly, and the manure and sand then incorporated with it. Instead of growing the plants on singly until large enough to be shifted into pots eight inches in diameter, they are put direct from the three-inch pots into those in which they are to bloom. Thrifty examples with two or three shoots each are selected, and then put into the large pots three in each. In potting them care is taken to make the soil firm round the sides and between the balls, and to avoid twisting or otherwise injuring the growth. One of the best safeguards is to tie the growths to neat stakes of suitable length before they are removed from the small pots. These should remain until taller and stouter stakes are required for the support of the growth. After they are repotted, a spacious pit or frame will afford the most suitable quarters, and until they are established, as indicated by their commencing to grow freely, they should be kept rather close and warm and be screened from the direct rays of the sun. Subsequently they must be freely ventilated and receive but little shade, as a firm, short-jointed growth is essential to the abundant production of flowers. Stakes of sufficient length to stand from eighteen inches to two feet above the surface are the most suitable. To these the principal shoots should be trained

until they reach the top, and then have their points nipped out to encourage the production of lateral growth, which should be allowed to grow naturally. On their coming into bloom they may be removed to the greenhouse or conservatory, where they will with but little attention continue in bloom until the autumn.

Those to be trained to pillars and walls in the conservatory or along the rafters of the greenhouse may be grown in large pots, or be planted out as may be the most convenient. A border is in every way preferable, for they then make a more vigorous growth and require less attention. When occupying a well prepared border with their growth trained to a pillar, rafter, or wall these pelargoniums will continue in a flourishing condition for many years and produce annually a prodigious quantity of flowers. From some half-dozen plants we have trained to pillars about eight feet high we can at any time between May and September cut a large basket of flowers for indoor decoration without their being missed. The robust-growing kinds are alone suitable for pillars and walls, and of these there are more than sufficient from which to make a selection. Whether grown in pots or planted out they should have the advantage of a compost similar to that advised for those to be grown as dwarf specimens. To keep them within bounds and also well furnished with new wood an annual pruning will be required, and the best time to prune them is perhaps early in the year just before new growth commences.

In establishing them in baskets, for which they are specially adapted, a course very similar to that advised in the case of the dwarf specimens must be taken. Plants occupying three-inch pots and in a vigorous state of health must be selected, and in arranging them in the baskets they should be put sufficiently close together to fill the baskets within a short space of time, but without being so close as to suffer from overcrowding. The baskets will require to be lined with moss, and the compost to be packed firmly to prevent the water draining away so quickly as to fail to moisten the soil about the roots. As the baskets are filled they should be placed in a pit or other structure in which they can be kept rather close and warm until the plants are established in their new quarters. They may then receive more liberal ventilation, and in a week or ten days may be suspended in the conservatory.

To promote an excessively luxuriant growth is not desirable, but when the plants show signs of exhaustion towards the end of the season, they may receive a topdressing of some approved artificial fertilizer. Supplies of liquid manure would be highly beneficial, but there is so grave an objection to its use in the conservatory that I shall not recommend it. G. S.

TRUMPET LILIES.

Several years' practice in growing plants for market previous to my undertaking the management of a private garden taught me some lessons that have been of great assistance to me in the maintenance of an abundant supply of flowers and plants for indoor decorations. Amongst other things that I learnt were a full appreciation of the usefulness of the callas and the details of their successful culture. The gardens of which I first had charge were in a country district in which were several excellent establishments, and I can well remember the comments made by some of my friends as they saw me making a determined effort to work up a large stock. The majority of my friends grew the calla certainly, but it was more as a curiosity than otherwise, and in most cases it had a place in a tank in one of the fruit houses, where it grew fairly well and produced a moderate supply of small spathes. I am afraid that some of them did not have a very high opinion of my practical knowledge, and they certainly listened with some degree of incredulity to what I said in praise of the plant as an aid in the embellishment of the house and the conservatory. It is also well within my recollection that their manner changed very considerably when, some two years afterwards, they saw the houseful of plants I had, from which the spathes were rising in immense numbers, and that subsequently they were glad to obtain offsets, and follow my advice in the matter of cultivation. This is less than twenty years ago, and now there are but few gardens in which it is not grown in considerable numbers.

The practice I adopted at first, and have continued until the present time with but little modification, differs materially from that which obtains in many private gardens. It is characterized by its liberality, for no plant grown in English gardens will give a more ample return for a generous course of culture than will the calla. In my visits to gardens I find some cultivators acting as if it were sufficient to keep the plants alive, and as the result obtain but few spathes, and those of small size. To produce an abundance of full-sized spathes it is necessary to do something more than to keep the plants alive. They must be maintained in a robust state of health. To keep them in pots during the summer months is a serious mistake, for not only are they usually much weakened by being kept in the pots, but they require much more attention than do a similar number of examples that are planted out. The whole of our stock is planted out in a well-prepared border at the end of May. The preparation consists in giving the quarter a heavy dressing of old hotbed manure, and then digging it in to a moderate depth. They are planted from eighteen inches to two feet apart each way, according to their size, and in the process of planting some of the old soil is removed from about the roots. They are well watered in, and subsequently receive liberal supplies of water. Even when the leaves have died down and they are evidently at rest, the soil must be maintained in a moist state. The calla is a semi-aquatic, and any drying off with a view to ensure a thorough rest will be disastrous in its effects. They are lifted in September before the frosts, as a comparatively few degrees will suffice to injure the young leaves. Pots of a suitable size are used, with a compost consisting of turfy loam and old hotbed manure. As the potting proceeds the plants are placed in a house or pit, where they will be safe from frost, and in this they remain until they are required for starting in heat to promote the production of spathes. By introducing them in succession a supply of spathes may be had during at least the first four months of the year. W. J.

ILLUSTRATED CATALOGUES.

Amongst the many interesting publications representing the horticultural societies of the United States, copies of which are generously supplied to us, the proceedings of the "Society of American Florists" are conspicuous for fulness, variety, and fairly representative character. In the report for 1889 our esteemed friend, Mr. John Thorpe, late of Leicester, now of Pearl River, New York, proposes the formation of an experimental garden, and he is supported in the proposal by Mr. H. A. Bunyard, of Short Hills, New Jersey, who declares that "having had several years' experience in the experimental gardens at Chiswick," he believes that such a garden would be "of incalculable value to all those interested in horticulture," and would "prove a stepping-stone to all those who introduce new plants, fruits, and vegetables for profit or pleasure." A certain sensitiveness on the subject of the genuineness of so-called novelties finds expression frequently in the proceedings of the American florists, and suggests to us that the renaming of old things as new, and the falsification of characters are practices more common on the western continent than here, possibly because our friends of the west are less effectually protected by their horticultural press, and they have no such institution as the trial ground at Chiswick. Thus we find in one part of the proceedings the serious discussion of a proposal which, we venture to believe, would fail to obtain attention here, founded on the statement of Mr. J. D. Raynolds, of Riverside, Illinois, to the effect that "complaints have been made at sundry times from many people that they were constantly irritated by the false, misleading, exaggerated cuts displayed in the illustrated catalogues—especially in the catalogues of those who were offering new and high-priced novelties."

The formal propositions have a most portentous shape. They are to the following effect: 1. That catalogue makers be invited to send their pictures and descriptions, with specimens, to be examined and compared by the executive committee of the Society of American Florists, "or to any three members of that committee," for approval by certificate. 2. That publishers of catalogues be invited to send specimen copies for competition, and that "a certificate of highest merit be given to the best catalogue submitted." 3. "That when the attention of the committee is called to any catalogue" containing misleading cuts, the publisher shall be advised to remove them, and, failing to comply, the matter shall be brought forward in order that "the name of such recalcitrant publisher may become generally known."

The discussion was sufficiently earnest, but the report appears to us to represent a state of mind in the supporters of the proposal scarcely favourable to a just view of the case. Mr. Thorpe, indeed, who knows much of the catalogues that are current in the old country, illustrated it by reference to Giant Rocca onion, citing a case where, from the same packet of seed, one grower raised six onions weighing seven pounds, while the other obtained onions of insignificant size, the cultivation making all the difference. We will put out of view the possible actions for libel that might arise out of the determination of a "committee of three" to regulate a seedsman's catalogue and look at the matter from the horticultural side. An exhibition will illustrate the case most pertinently, for it brings together good and bad samples of the same varieties, and, generally speaking, the exhibits are all far superior to average growths, insomuch that (here, at least) cultivators actually quarrel with exhibitors for doing what the catalogue makers do, that is, setting up impossible models. No one, indeed, goes so far as to say that specimens exhibited are not realities, but very many who cannot grow fine specimens exclaim against those who can, and who put up flowers of faultless quality and secure for themselves reprehensions from the incapables who would have all things brought down to their own low level. The general and oft-repeated accusation against catalogue pictures is that they represent the flowers as finer than they really are, the peas larger than the truth, the potatos smoother than any that Nature has ever produced. It may be replied, first, that of necessity the best samples are selected for figuring, and many who have never seen the best may be pardoned for regarding the figures as exaggerations. But as regards setting before the public in a picture a better thing than the cultivator of ability may produce, the accusation is not only unfounded, but ridiculous. When the poet asked who can paint like Nature? he might well have had the botanical and horticultural artist in view, although we may be pretty well sure he did not think of either of them. We have had some experience in this matter, and there is one experience—that of observation—that many share who have never had occasion to make business of plant picturing. Those who have only observed will, we feel assured, agree with those who have worked in this business that pictures of flowers, plants, fruits, &c., &c., are always below and never above the mark. The artist may give all his energies throughout a lifetime to the endeavour, but he will still be so far away from the beauty of his model that he will be more often ashamed than proud of his work, for none know better than he whose eye has been trained to analytical observation that to "paint the lily" is not merely an "excess," it is impossible, and so let no one say the pictures show better things than Nature produces. We make no hesitation to say that better samples of any and every plant, flower, or fruit can be grown than have ever been pictured. It is true we have exaggerations of size and hard lines to represent the softest of forms, but no one is injured by these burlesques; no one is cajoled by the picture of a blue rose, and the few cases in which deception is actually accomplished are such as occur in connection with every branch of trade and commerce, in which usually the blame rests chiefly on the easy victim who puts himself in the way to be cajoled. We are no friends to falsifications; a large portion of our work is given to rectifications and reports of trials, comparisons, and critical tests. But we should show no special favour to such a proposal as that of the Society of American Florists, for a committee of three might manage a nice little puffing policy, and some good men might be put to the worse if found obnoxious to the operators on catalogues. We do not, of course, imply that our friends on the other side have in view anything but the public advantage, but principles are principles, and a tribunal for determining the *bona fides* of trade catalogues might some day forget how to spell such words as truth and justice.

Large Consignments of Strawberries are being received from France, and a few days since seven tons were received at Southampton from St. Malo.

NAKED FLOWERING PASSION FLOWER.

Passiflora racemosa. Syn. P. Princeps.

A CERTAIN amount of uncertainty prevails as regards the relationships and the labelling of this passion flower, and we have prepared a new figure from a good typical example in order to place the subject before our readers in an orderly manner to clear up the doubts and difficulties.

We label this "naked-flowering" in allusion to one of its special characters. The flowers are borne in a raceme, which is unusual with passifloras, leaves and flowers being commonly mixed. Here we have the flowers in pendulous extremities of the branches, often many together in a raceme without leaves and sometimes even without stipules. Thus the name is justified and offers the rare example of common sense, which has been set at nought by the dedicatory name bestowed on it by the Loddiges' of *Passiflora Princeps.*

But this presentation of the flowers in a raceme as shown in our illustration is not an absolutely constant character. Sometimes the flowers appear in pairs one on each side the foot-stalk of the leaf, and the tendril in the middle between them. Another peculiarity is seen in the leaves. They are sometimes described as simple and of cordate form. In our figure it will be seen that they are boldly three-lobed, and the explanation of the discrepancy is to be found in the fact that young plants usually have entire leaves, while entire or undivided leaves also appear occasionally on the mature growth. Such deviations from prevailing characters are so common that there is scarcely any plant but will afford examples; a "thornless" rose will produce thorns; a "one-flowered" narciss will produce two or even three flowers on a stem, and a plant that commonly has tendrils will sometimes manage to do without them. But it is the character of this passion flower to produce its flowers in leafless racemes, and it is better therefore that it should be known as *Passiflora racemosa* than by the dedicatory name which, for practical purposes, is entirely without meaning.

This plant is a moderate grower, requiring a place in the stove where it will be happier in a good border than in any box or tub. It requires no particular management save that the knife should never touch it until a thinning out becomes necessary for the accommodation of the plant to its support, when it must be thoroughly done without shortening of the growths. The flowers are of a brilliant scarlet colour with purplish centre.

Figures of this passiflora will be found in "Loddiges' Cabinet" 84, "Botanical Register," 285, and "Botanical Magazine" 2,001. It was first described by Brotero in the twelfth volume of the Transactions of the Linnean Society from plants brought from Brazil by Mr. Woodford, and Brotero named it P. racemosa. The name subsequently applied should be abandoned as at once ridiculous and out of order.

AN AMATEUR'S GARDEN.

THE pleasantest afternoon I have had away from home for a long while I spent a few days ago in Mr. C. Tite's garden at Shute House, Wellington. Although I had personally come into contact with the owner of this garden in connection with flower shows some years previous, and I knew him to be an ardent admirer of flowers, I had not the pleasure of seeing his garden and the plants and flowers which he watches over with such loving care, until Fortune, however, on this recent occasion having favoured me I found myself landed at Wellington, and in a garden of which I had heard so much. To properly appreciate what I have to say it is necessary to observe that Mr. C. Tite is a gentleman amateur with but little besides his garden to occupy his time. Now I fancy I hear someone say, "Ah, that accounts for his having a nice garden and so many beautiful flowers," but I say it is not altogether so. To have the time and means to devote to a garden is certainly very desirable, but to command such a garden as I am about to describe requires more than mere time and money. It must be a labour of love. Whatever may be the position or capacity of the owner there must be that constant watchfulness which only those who love the work are able to give it. The proprietor in this case, however, would be the last one to claim any such honour, if honour it can be called; but that he loves his garden, and the plants he cultivates with all the desires of an ardent cultivator is abundantly manifest, as he conducts his visitor from one attractive scene or flower to another. Amongst the large number of hardy plants grown on the rockery and in the open beds and border, the exact position of every plant of interest is known to the owner. A remarkable feature in this garden is that every subject grown appears to be perfectly happy, for we see vigorous growth and abundance of flowers. The characteristic feature of all the occupants is that they appear at home, and in prosperous circumstances. On my remarking this to the owner, his reply was significant, as he said, "I only grow now what plants I find will do well under the conditions which I can give them. For years," he said, "I fought against the elements in trying to do impossible things, only to find myself beaten in the end. Now, if a certain plant requires a shady position, and I cannot find one suitable, I do not make the attempt to grow it. The same treatment is followed with regard to sun-loving plants. Their requirements are studied in that respect, with the result that they afford pleasure instead of disappointment." There is more in this matter of selection of positions than the inexperienced reader would, perhaps, believe; but as it comes from such an authority as Mr. Tite, it is deserving the serious consideration of those who intend to form a garden of hardy flowers on similar lines to that of which I am now writing.

Before I go further, I must say here that it is not the large area of ground covered by the garden, or the number of glass structures it contains, that renders it interesting to visitors, but the excellent arrangements and splendid order in which everything is kept, and above and beyond all, the fine collection of alpine, herbaceous, and bulbous plants that it contains. These make it a perfect Eldorado for those who admire hardy flowers.

To say that the place is rich in many hardy plants that are but little grown is to say something that conveys but a poor idea of the many choice subjects to be seen growing here. On the rockery or in the borders there is something in flower to please and interest one from the time the winter aconite and snowdrops peep above the ground in spring until the winter cherry, *Physalis alkekengi*, produces its nodding balls of orange-scarlet coloured seed vessels in November. With such a wealth of subjects always waiting to be admired, it is no wonder that the owner finds pleasure in his garden, and that, be it remembered, as regards the subjects of which I am now writing, without any expensive glass structures. Hundreds of beautiful flowers which bloom at different periods of the year find an agreeable home here without the aid of the builder and the coal merchant, and without the fret and occasional vexation that accompany glass and boilers and protective agencies.

How much real pleasure is lost to those who do not look favourable upon hardy flowers can only be thoroughly realized by looking round such a garden as I am attempting to describe. When the selection is wisely made, as it has been in this case, there is not a week in at least ten months of the year without some fresh plant coming into flower. To briefly describe the place, I may here remark that there is a small lawn, with flower beds and borders, in front of the house. Passing through the residence, and a cool conservatory attached to it, we pass out into what I may call the hardy flower garden, for here is situated the rockery and several beds and borders, all devoted to hardy subjects. The space being restricted, no unruly or very tall growing plants are grown, every foot of space being devoted chiefly to plants of low stature. Early spring flowering bulbs are, as might be expected, in strong force. *Scilla bifolia*, *Chionodoxa Luciliæ*, or Glory of the Snow, *Triteleia uniflora*, and many others, appear in due season in impressive force and high beauty, showing that they are perfectly happy. My pocket book contains a long list of plants growing on the rockery, but space will not admit my transcribing them in detail. It must suffice if I say that such plants as Saxifragas, Phloxes, Dianthuses, Sedums, Irises, Primulas, Lithospermums, Myosotis, Cyclamens, and others of equal interest and beauty, have all found a genial home here. In the borders I saw large masses of *Cheiranthus alpinus*, which was quite a feature alone, *Achillea tomentosa*, and *Centaurea montana* were conspicuous, as was also *Linum flavum* and *Myosotis Victoriæ*. This last mentioned plant is seen here in two forms, one very low down and the other of the same character as *M. sylvatica*. In both cases the flowers are the same size and colour. It is in the latter respect quite distinct.

The front garden was very bright with wallflowers, red and white daisies, late flowering tulips, and similar plants, all of which will be replaced with the usual summer bedders at the proper time. There is a small kitchen garden walled in, the borders of which are chiefly devoted to herbaceous and hardy perennial flowers. Here I noticed plantations of various kinds of double primroses and polyanthuses, including the old Tortoiseshell, Jack-in-the-Green, Galligaskins, and other favourites of a bygone age. It must not be understood, however, that the owner of this garden has more affection for old than for new things. He is a gentleman of broad views. A plant has only to possess some attractive feature, and prove suitable to the place, to insure for it a genial welcome.

Hellebores, or Christmas roses, appear to grow in this garden as if by nature the plants and the place were intended for each other. Huge specimens are to be seen in barrels and large pots in the most luxuriant health, while small clumps grow into large ones in the open ground in one year. A small well-furnished vinery is not the least interesting feature, as the health of the vines is all that can be desired. Contrary to what I generally find in small gardens, the vines in this case had all the outside border to themselves. It is too much the practice to crop vine borders with vegetables or flowers, that one cannot help thinking sometimes that the gardener supposes that the vines have no roots, or, if any, they do not need the assistance of the soil. One word more and I must close. I desire to say this last word in the interest of those who wish to have cut flowers in quantities for household decoration throughout the year. There are many who think that they must do without them unless they possess several glass structures, and incur other attendant expenses in connection with them. Such an opinion is to a great extent erroneous, as the owner of this garden could tell anyone. Of course there will be times in the depth of winter when there are no outdoor flowers. But with some kind of glass structure to protect the chrysanthemums, and a selection of hardy flowers such as this garden possesses, the owner, in an average of seasons, would not be many weeks without flowers; and taking the year through, would have abundance and variety even to profusion, without in any way diminishing the beauty of the place.

J. C. CLARKE.

AMELANCHIER OLIGOCARPA is, says the *Garden and Forest*, a garden plant of great beauty; and the size it attains in cultivation, the vigour of its growth, and the abundance of its flowers are said to surprise those persons who have only seen the shrub growing in its home in northern forests. Specimens in the Arnold Arboretum are now nearly three feet high, and three or four feet across, forming perfectly symmetrical compact bushes, which this year have been covered as with a sheet with their handsome solitary white flowers, which, however, like those of the other species of amelanchier, are of short duration.



NAKED-FLOWERING PASSION-FLOWER, *Passiflora racemosa*. (Flowers crimson scarlet).

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

GREENHOUSE PLANTS in bloom comprise :—Aphelexis rupestris grandiflora; Dracophyllum gracile; Erythrina crista galli; Fuchsias; Cape Heaths; Indigofera decora; Kalosanthes coccinea, K. phœnix; Lapageria rosea; Leschenaultia biloba major; Nerium splendens; Passiflora Innesi; Pelargoniums; Statice profusa.

THE HOUSE.

PLANTS in window boxes must have frequent attention, and care be taken to keep them liberally supplied with water. Palms and ferns grown indoors should be removed to a shady position in the open once or twice weekly, and be syringed over-head.

CONSERVATORY AND GREENHOUSE.

GREENHOUSE AND CONSERVATORY PLANTS require special attention now. Turn out for the summer those that require to be in the open air for the completion of their growth and the ripening of the wood. A great many of these are suitable for decorating banks and odd places about garden seats, or for groups on the terrace, which is a more profitable mode of disposing of them than hiding them away among the sheds and outhouses. Take care in all cases to guard against worms finding entrance to the pots, and top dress at once any that require it.

HERBACEOUS CALCEOLARIAS are now in fine perfection, and we have reason to congratulate the breeders of improved forms on the robust habit and beautiful colours that have been produced. Any choice varieties to be seeded should be secured in duplicate, to keep up the varieties from cuttings, as the plants that furnish seed will probably die. Those to be cut from not to be allowed to ripen a single seed; cut away the flower stems as soon as the bloom is nearly over, and put them in a pit facing north, with the lights off night and day, and the sun kept off by a thick screen of mats. When watering, drench these mats, the evaporation from which will assist the plants to break; and secure cuttings as soon as they are large enough to be taken off.

CELOSIAS now showing flower will be benefited with weak liquid manure occasionally. They are most useful for conservatory decoration, and need the same treatment as cockscombs. Plants required extra fine to have a shift in rich light soil.

CINERARIAS are generally very mixed as to quality, owing to the two frequent keeping of seedlings that have pleased by their colour, but had no other good quality. Seeing how really beautiful varieties are now readily obtainable, it is a positive waste of time and glass room to propagate any seedlings that have not some decidedly good qualities. We name this now because many gardeners who grow these plants largely for decoration are at this time of the year tempted to propagate from whatever old plants they possess with too little regard for their quality. Every second-rate seedling should be thrown on the rubbish heap as soon as the bloom is over, so as to reduce the work of propagating to a few of the very best. Those to be kept should either be moulded up in the pots or be planted out on a shady border in rich sandy soil, an inch below the level, to induce them to break freely for increase of the stock.

FORCING AND FRUIT HOUSE.

MELONS need no shade if the hillocks are of good sound turfy loam, and the plants have water when shut up at night. We never knew scorching to happen except through mismanagement. The general causes of ill-health are watering with cold hard water, planting in rich light soil, or keeping them too dry while growing. To ripen the fruit dryness is essential, but while the plants are growing they require plenty of water, warmed by being put in the house every morning for use in the evening; and the soil to fill in with as the hillocks are occupied with roots should be tough turfy loam.

PINES must have an abundance of atmospheric moisture. Shut up early and syringe, and pour water on the floor of the house early every morning. Give a little air at night about two hours after shutting up to water. Use as little shade as possible to fruiting plants. The temperature may go up to 95 deg. for a maximum.

FLOWER GARDEN AND PLEASURE GROUNDS.

BALSAMS should not be allowed to become pot-bound until they are put into the pots in which they are to bloom, as it throws them into bloom prematurely and stops all growth. Therefore, as fast as they fill their pots with roots shift on in rich light soil.

BULBS are frequently lost through inattention at this time of the year. As the leaves decay all those that are usually taken up should be lifted and laid aside in a shady dry place with earth over them to ripen. They should then be cleared and stowed away, all named kinds with their tallies, so that at the next planting there need be no mixing of colours, or regrets for the loss of choice kinds through leaving them in the ground to be chopped up in some digging operation.

HERBACEOUS PLANTS out of flower may now be propagated from cuttings. These thould be put in a cold frame in a mixture of sand and loam and kept shaded. It is important to secure plenty of such things as Alyssum saxatile, double wallflowers, Iberis corræfolia and I. sempervirens, Aubrietia purpurea, Dielytra spectabilis, &c.

POMPON CHRYSANTHEMUMS intended for beds and clumps may be planted out in a piece of well-manured ground in the reserve garden, and the only further trouble they will occasion will be to stop every three weeks till the middle of July. When grown in quantities to make a display after the summer bedders are removed, this is the easiest way of all, as they can be lifted in October without losing a leaf by the operation.

ROSES.—Gardens newly made may be furnished with roses now as well as at any time of the year. The nurseries supply dwarf plants in small pots at a cheap rate, and these turned out with care, in ground well dug and liberally manured, will grow with vigour and bloom well in the autumn. In forming a plantation of dwarf roses we would as soon plant in May or June as at any time of the year.

KITCHEN GARDEN AND FRAME GROUND.

LETTUCES.—Sow two or three different sorts, and plant out on heavily-manured ground. Some should also be sown where they are to stand.

WINTER GREENS to be planted out in showery weather at every opportunity. If only one row can be put out at a time it is a benefit to the seed bed in giving the seedlings more room, and a benefit to the plants in preventing their being drawn. Brussels sprouts more especially to be planted out as quickly as possible.

VILLA FARM.

WITH reference to the feeding of ducks generally, it may be said that hardly anything comes amiss to them; corn of all descriptions is consumed with avidity, as also is meal of all kinds, when suitably prepared, and vegetables, green and otherwise, are eaten most readily in a cooked state. It is a debateable point whether ducks will pay for the food they consume, and the balance of opinion is on the side of those who hold that unless they have sufficient range to enable them to obtain a portion of their food for themselves, and that most of what is given them is produced at home, they do not pay for keeping, otherwise than as a hobby. As in keeping other classes of poultry, much, as a matter of course, depends upon the adaptability of the breeds for the purposes for which they are required, the skill evinced in selection and supply of food, and the care taken in the utilization of spare vegetables, pieces of bread, and other scraps from the kitchen, which would otherwise be wasted or turned to very little account. The kitchen scraps or surplus vegetables, cooked and mixed with a moderate proportion of pollard, and given to the ducks in a rather moist state, wil be much relished, and help in a material degree to keep them in good condition. The best corn for ducks is bruised oats, which should be given to them in a large pan filled with clean water, as they are then more readily accessible, and when fattening they should have in addition barley meal or pea meal mixed up with skim milk or water, but preferably the former. When the birds put up for fattening have cooked potatos or other roots, as they should do when there are surplus supplies, in addition to the meal, both roots and meal should be mixed together previous to feeding, as there is then a greater degree of certainty that the whole of the food will be consumed. The birds selected for the table should, if in poor condition, and wanted at a very early date, be kept within rather circumscribed limits, with plenty of clean water and liberal supplies of food; but when ducks are fed judiciously they will not require much extra feeding to fit them for the table. The Aylesbury and Rouen ducks are both most excellent breeds, and as they differ in their characteristics, it is necessary to take into consideration the conditions under which they will be kept, and the season of the year they will chiefly be wanted for the table. The Aylesbury is perhaps, taking all things into consideration, the finest breed, as the ducks commence to lay very early, and in consequence the ducklings can be hatched at an early period, and as they come along quickly they can be put upon the table considerably in advance of the other breeds; moreover, they are capital layers and produce an immense number of eggs at a season of the year when they are worth money. The Rouen breed has, on the other hand, the advantages of being hardier and requiring less water than the other, and will thrive where it would be hardly possible to keep the others; the birds are exceedingly handsome and of large size, attaining when well fed a weight of eight or nine pounds, and the flesh is of excellent quality. The Muscovy breed is much less valuable than either of the others, and therefore does not call for any special notice.

BOUQUETS.

By MR. J. PREWETT, Swiss Nursery, Hammersmith.

[Read at meeting of Ealing Gardeners' Mutual Improvement Society.]

THE art of bouquet-making at the present time is pretty well understood by our decorative florists, as also by many gardeners. This, no doubt, is owing in the main to the ever-growing love of flowers in our island, and the many prizes offered in competition every year at our various horticultural exhibitions.

HAND BOUQUETS.

It may perhaps be going too far to say that in the matter of the arrangement of hand bouquets we have reached the climax: that we have done so in the matter of size there is not the slightest doubt. In fact, I think we have passed the boundary line, inasmuch as a great many of the bouquets that we see at the present time are far too large and cumbersome A great deal of the weight, no doubt, has been dispensed with as compared with what it was formerly, by the manipulation of the stems from the flowers and using light wires instead; this also has the additional advantage of keeping the flowers in any particular position. A cardinal point in bouquet-making is to show every flower distinct without undue crowding, and, when possible in a natural manner. Apropos to the weight of bouquets, I am glad to see the Royal Botanic Society has taken the initiative and empowered the judges to decide against heavy arrangements.

In regard to the arrangement of colours, this must depend almost entirely on the lady's dress to be worn on any particular occasion, but as we have such an endless variety of shades and colours in the flowers for personal adornment little difficulty should be experienced in making a selection. The foliage plants, too, yield us an abundant supply, and if well arranged it is difficult to decide which is the most beautiful. Simplicity should be aimed at in any arrangement, and it should be borne in mind that more than two or three shades are sure to clash and kill each other. Some bouquets look very well made of one particular kind of flower only, such, for instance, as lily of the valley and its own foliage, heliotrope, mignonette, roses in many shades, also tulips. Roses may be used with their own buds and highly-coloured foliage surmounting and standing out boldly from the whole arrangement: this at once breaks up the formal character and heavy nature which it would otherwise possess. Then, again, we have in two shades a lovely combination. Take, for instance, a pink shade and a deep crimson or marone which we get in La France and Prince Camille de Rohan roses, using buds of each, surmounting the whole and forming a margin with either rose foliage and buds or some of the numerous maidenhair ferns. In preference for such a bouquet I should use A. Farleyense or A. Williamsii for an edging and for the surface a few light fronds of A. cuneatum or A. gracillimum. The top fern may be dispensed with if sufficient buds and light pieces of foliage are introduced. Ball bouquets may include with advantage a few not too highly fragrant flowers, and for colour use, when possible, those which come out well under artificial light. A bride's bouquet should be composed of all white flowers of the choicest kinds and the purer the better. Do not use any that have spots or bands of orange, yellow, brown, &c., for however choice they may be, they mar the beauty and take away that chaste appearance which should be the leading features in bouquets of this description. Unfortunately, these markings too often occur amongst many of our choicest stove flowers and orchids.

In referring to the making up of a bouquet I am not going to define any set rule, but I will give you my *modus operandi*, which has often been the means of bringing my arrangements to the front when placed upon the exhibition table. Having the requisite flowers at hand, which should previously have been wired, with a small handful of moss and a ball of twine, I commence

by selecting a good bold flower, such as eucharis, pancratium, rose, or gardenia. This I use as a centre flower, and. having bound sufficient moss around it to prevent the next flowers from overlapping or undue crowding, I usually start with smaller individual blooms or trusses of flowers in threes. Generally speaking, two, three, or six flowers will complete the first circle. I now introduce three or five light sprays, according to the weight of my base flowers, and let them stand out boldly from the rest; these are what are technically known as stick-ups. Any medium-sized flowers may be used in the next circle, unless a large bouquet is aimed at. These I use again in threes or fives, according to the variety I have at hand; the reason for this is to keep the arrangement well balanced. I again introduce a little moss to prevent crowding, and bind each flower firmly so that it has no chance to move after once placed. I now introduce some more stick-ups, and then commence the outer circle of the base with good bold flowers. These really mark the boundary line, but not in too formal a manner, a few more light pieces of flower outside the circle of large flowers has a good effect if allowed to droop gracefully on the edging of fern. All that now remains is to add a few light pieces of A. cuneatum or A. gracillimum for stick-ups. These are introduced immediately behind the centre flower and allowed to droop gracefully over the other flowers. As an edging Asparagus plumosus makes a capital substitute for any of the maidenhairs, and stands much longer. Bouquet papers are not much in favour just now, but they have the advantage of keeping the arrangement more intact, and if judiciously used need not be seen.

Buttonhole Bouquets.

Flowers most suitable for buttonhole bouquets should not range above a medium size, neatness being one of the leading characteristics to be observed in the making up of such. Every flower used should be wired after removing most of the natural stem, otherwise an arrangement when complete will be found to be too large in the stem for an ordinary buttonhole. This also has other advantages, as you can fix a flower in any assigned position, and there is no danger of the heads being broken off, which often occurs in roses, &c.; it likewise shows every flower to the best advantage, without crowding, consequently requiring less flowers. Whatever kind of foliage is used it should also be wired, or it will be found very difficult to maintain it in position chiefly as a background to the flowers. We have a great variety of flowers suited to the purpose, amongst which perhaps those with fragrance are most highly prized, such as lily of the valley, violets, tea roses, tuberoses, stephanotis, and gardenias, although the perfume of the latter is to some persons a little too powerful. Carnations, too, are greatly appreciated by many, and if backed by some of its own grass makes a very nice buttonhole by itself. Asparagus plumosus and A. tenuissimus, also Adiantum cuneatum and A. gracillimum, are very suitable as accompanying greenery to these flowers. The fern fronds should be well matured or they will not last. They should be of a pale green colour, and previous to use be immersed in cold water for several hours. Many of the popular orchids such as odontoglossums, dendrobiums, oncidiums, &c., are very suitable flowers, and they remain fresh a long time, Asparagus tenuissimus being very suitable to use as a background to these.

In regard to the arrangement it must be said that it almost entirely depends upon the size required by the wearer. Some prefer a single flower, as a rose or gardenia, with its own foliage simply, while others like as many as three roses or carnations. I think the tea roses are extremely valuable for the purpose, as they give us such a variety of beautiful colours, and may be had throughout the entire year. If two or three nice buds are arranged with small fairy rose buds, and either backed with rose foliage or maidenhair fern, we have a buttonhole bouquet that few will despise. Take a gardenia or two or three medium-sized tuberoses and arrange at back and front of flowers a light spray or two of white or pink bouvardia, backed with maidenhair of the pale green description, and you have at once a chaste and delicate arrangement. One of the sweetest and at the same time simplest buttonhole bouquet arrangements that I am acquainted with consists of tuberoses and forget-me-nots, or tabernæmontana, and the latter mounted in the usual way with maidenhair. Ivy leaves with a good bronzy colour come out in good relief with the same of flowers, and also with violets or a combination of violets and lily of the valley. The latter makes a very pretty coat flower in conjunction with its own foliage; a small piece of silver paper should be bound round the stems of each buttonhole bouquet, this not only hides the wires but prevents their pricking the hand of the wearer.

SOME PRACTICES IN GRAFTING.

Writing to the *Garden and Forest* on the subject of grafting, Mr. F. L. Temple, of Cambridge, Massachusetts, says:—The art of grafting, like nearly all other arts, has had much new light thrown upon it during the past generation, and some of its abuses have already been pointed out and corrected. There remains, however, something still to do in calling attention to some misuses of the art, which, next to that of the hybridizer, is the most fascinating of horticultural processes. It is well to discuss its scientific side, and show all that can be shown of the almost infinitely varied influences of stock on scion and scion on stock.

It is desirable also to keep in full view the practical, every-day side of the matter. Some friends of gardening in England have fallen into the belief that because many ill-assorted unions of trees are sold and bring loss and disappointment, the whole practice had better be abandoned. Not many will agree with such a sweeping condemnation, but there is good reason to look carefully into the misapplication of the art. When a whole section of a country engaged in fruit growing finds that a certain fruit grafted on a given stock cankers and fails, we cannot blame people if they try other stocks, and finally settle down to the practice of growing this fruit on its own roots, if it does better so. When a tree is so short-lived on another stock as to be valueless in two or three years, it is folly for nurserymen to continue its propagation in that way. A choice variety of anything grafted upon a stock which is absolutely sure to send up a multitude of suckers and overwhelm it, is a delusion and a loss, and this loss falls heaviest, finally, on the nursery trade.

An instance of this is the budding or grafting of the new varieties of lilacs upon a stock of common lilac, as are all those sent out from European nurseries. An example of a good plant on a stock where it will live but a very few years is *Prunus triloba*, the so-called flowering almond on plum or peach stocks. A mere touch separates the plant from the stock. Another is found in the working of the Rose Acacia on *Robinia Pseudacacia* with precisely the same results. So long has this sort of propagation been practiced that I know of many nurserymen, both in this country and Europe, who have never seen either the Flowering Almond or the Rose Acacia on its own roots, and some have even told me that neither would grow in that way. I have had the pleasure of sending specimens on their own roots to the unbelievers. There are really many things that would be far better on their own roots than grafted upon any other stock whatever, and there exists no sound reason for grafting such things at all. Some of this sort are the following: Weir's cut-leaved Maple, most varieties of elm, and every sort of grafted shrub on stock which suckers, since they can all be layered so very easily. The plum on peach stock may serve a useful purpose on sandy soils, but the indiscriminate sending out of budded plum trees is working untold harm to the general nursery trade.

The use of a tender stock for plants which must endure a greater degree of cold than the stock can stand, is illustrated by the use of *Rhododendron Ponticum* as stock for *R. Catawbiense* hybrids. It has caused considerable losses of this beautiful plant in Massachusetts, and the best growers now see the desirability of raising them all from layers on their own roots.

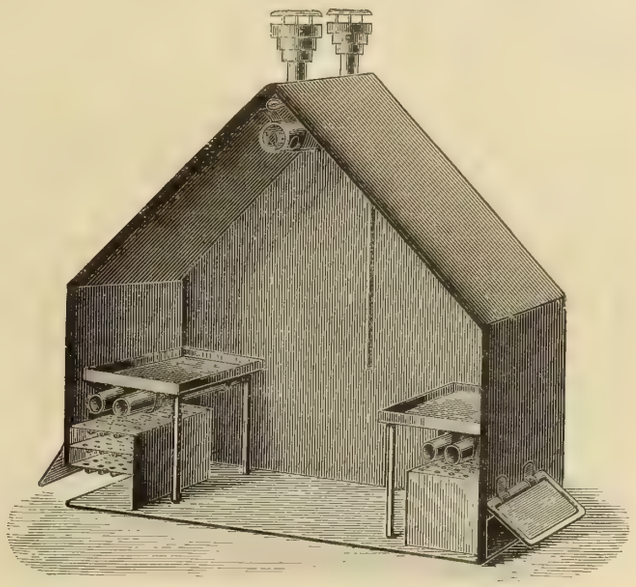
Another plant that is far better on its own roots is the Quince. As grown now, the new sorts of Quince are budded on the common sort, which, after a few years, send up suckers on every side, and these are very difficult to distinguish. Why not grow these choice sorts from layers or cuttings? The double and also the white Wistarias are now almost universally grafted on the common purple sort, and they are often ruined by the more vigorous suckers of the stock. Why do we graft such a plant at all, when by getting them on their own roots by layering we can then multiply them *ad infinitum*, by root cuttings, as easily as we can raise peas?

Much labour is applied to the grafting of such trees as the purple, cut-leaved and weeping beeches, which are very difficult to graft out of doors, when they might be far more cheaply and better multiplied by layers. I was greatly interested in a well-known huge beech in Kew Gardens, last season, which has rooted the tips of its immense horizontal branches into the soil, and produced, at each of these reinforced points, a large and finely formed tree, so that a ring of these now surrounds the plant. The perfect success of these layers showed what could be done by this method in multiplying these fine trees.

The evident truth is that we often take the worse and more expensive way of propagating many useful plants simply through habit.

PATENT FOG ANNIHILATOR FOR PLANT HOUSES.

Messrs. Toope and Son, of Stepney Square, London, have favoured us with the following circular:—Toope's patent system of ventilation by means of



purifying boxes and exhaust caps purifies the air admitted to plant houses, and entirely prevents the deleterious properties of fogs, smoky chimneys, and every bad property engendered in the atmosphere of cities from entering them, whilst it has the recommendation of being applicable to all plant houses at present in use. This is a perfect and safe system of admitting pure air to plant houses by night as well as by day, for, as the air becomes vitiated or useless to the plants, it passes away upwards through the roof ventilators, and this is accomplished without the slightest attention or trouble to the gardener or amateur in the matter of opening or shutting them, as no matter from what point of the compass the wind may blow, or indeed if it does not blow at all, a sweet and free current of air will always be found passing through the house, thus preserving a genial and growing atmosphere.

Air is as necessary to plant life during the night as during the day, for in a state of nature plants are not deprived of air when darkness sets in, and few people in this country realise the great fall in temperature which often occurs between sunset and sunrise in tropical countries. By this simple invention it is claimed that foul air of any and every description may be admitted into the purifying boxes with impunity, and without any ill effects being found in the house, whilst as these chambers or boxes are placed under the hot water pipes, the air becomes warmed before reaching the plants, and thus any injuries resulting from the admission of cold air is entirely obviated. By the adoption of this system a house of calanthes, phalænopsis, cattleyas, or indeed any other orchids may be enjoyed, as well in winter as in summer, and it in fact relieves London orchid growers from all the care and anxiety under which they have been suffering for years past. It maintains a constant supply of fresh pure air without the least danger of draught, no matter what may be the condition of the atmosphere outside, and enables the gardener to make a freer use of the syringe.

In very high and boisterous winds, some of the exhaust caps may require to be partially closed, for which dampers are provided.

MARKET GARDENING IN THE SCILLY ISLANDS.

It is a curious instance of the changes of agricultural conditions caused by foreign competition and the opening up of new sources of supply, that although the growth for export of early potatos is still an important industry of the Scilly Islands, it has now been superseded in the financial esteem of the farmers by the cultivation of flowers for Covent Garden Market. Last season no less than 200 tons of cut flowers were forwarded from the Islands to the various markets of England and Scotland, by the steamer which plies between Scilly and Penzance, and in a single week of February in this year 20 tons were despatched. Nearly 100 acres in the Islands are devoted to the culture of the narcissi, and the capital invested in this trade is reckoned at something like £250,000. The following details—collected during a recent visit—of the cultivation of the soil in the Islands, as at present conducted, will, it is hoped, prove of general interest.

General husbandry was never very successful in the Scilly Islands, for up to the time of Mr. Augustus Smith's proprietorship the farmers held their land on such precarious tenure that they refrained from all improvements, and contented themselves with growing a little corn and a few potatos, and breeding inferior cattle and sheep. Notwithstanding the introduction subsequently of improved cattle, securer tenures, and larger holdings, farming, strictly so called, failed of ultimate success. It was then that market gardening stepped in, and for a long time proved exceedingly remunerative. The cultivation of the early potato was one of the chief supports and occupations of the Scillonians, and every available space was planted with it.

It was while the growers were in the flood-tide of this prosperity that the Lord Proprietor, looking ahead, recommended the Scillonians to turn part of their attention to the cultivation of the flowers which grew on the Islands for Covent Garden Market. The majority were disinclined to give up potatos for flowers in ever so small a degree; but one farmer thought over Mr. Smith's suggestion, and collected some of the flowers growing on his ground. He sent the little lot to London, on which he cleared 2s. 6d.; and this was the beginning of the floriculture in Scilly, which has now reached giant proportions.

Just about the time that the last report of these Islands was printed in the Journal, the Scillonians were brought more into touch with the mainland by means of a steamer, which was started to run between the Islands and Penzance, and also by means of a telegraphic cable between the two. Thus the potatos found a quick market, and the growers were kept informed of the current prices. For the first fruits of the potato crop—generally in May—as much as 1s. 6d. a pound has been received. Gradually the inhabitants were encouraged and stimulated to grow various new vegetables, and asparagus, seakale, parsley, and tomatos were added to those sent to market.

The growers had their anxieties and troubles then, even as now—the exposed situation of the Islands, and the lack of woods and trees, to provide natural protection to their fields from the biting winds and heavy gales which sweep over the land, gave them many a night in "the open," keeping up fires round the fields to preserve the budding potatos.

It was this need of protection to their plants which caused them to supersede the loose stone divisions of land by planting laurel, escallonia, and other picturesque shrubs for hedges. This planting of hedges was, indeed, the foundation and preparation of the new development in the farming of the Islands. To-day the land is no longer given up solely to the growing of potatos, parsley, asparagus, and seakale, for a large proportion is devoted to floriculture—a combination which has answered well in every way. The result may be seen in the absence of poverty, in the quiet, unobtrusive independence of the people, in the improved outhouses on the farms, and in the possession of better farming implements. The people are neither so rich nor so poor as they have been (it was a proverb, "Either a feast or a famine in Scilly"), their life is freer of excitement than it used to be, and they seem to have fallen into the happy medium of comfort and content.

Last season the following supplies were sent from the Islands to the various markets on the mainland by the steamer plying between Scilly and Penzance:—

46,000 pads of fish (a pad is 50).
200 tons of flowers.
800 tons of potatos × 230 tons sent by boats and smacks.
150 tons of other vegetables.
3 tons of seakale, from St. Mary's alone.
5 tons of tomatos.

The expense of carriage is 11s. per cwt. to Scotland, and 7s. 6d. to Covent Garden. The salesman's charge is 10 per cent. if he supplies boxes, and 7½ if he does not.

It would be difficult to find land anywhere so bursting with life and growth as that of the Scilly Islands; and were it not for the occasional want of rain, and the too great prevalence of gales, there would be no limit to its productiveness. The temperature is never intensely hot in summer, nor intensely cold in winter.

The soil of the Islands is composed mostly of decomposed granite and peat; here and there it is as black as soot. The very rich land seems to run in veins, while other has good rich soil for some distance down, till it touches the cold white clay. The soil is very loose, and drinks greedily every drop of rain; it will not refuse "a shower every day, and two on Sundays." The rainfall is quite different here from the mainland; the average in Middlesex is 24 inches, in Scilly 31 inches, and in Cornwall it is 44 inches. The soil, good as it is, lacks phosphate of lime and ammonia, both of which can, fortunately, be supplied in a great measure by the seaweed manure.

The method here of making seaweed manure is to make a bottom, or foundation, of earth. On this the seaweed is spread, and covered with a layer of sand; after a month or two, the juices have penetrated the earth, which is then ready to be carted away, and laid on the soil. The people use a peculiar-looking instrument for cutting through the seaweed manure. It has a blade 8 inches long and 7 inches wide. If the seaweed be driven in when potatos are to be planted, it is put straight on the earth, and often worked in by the plough, and the potatos* planted in at once; then the soil and seaweed mixed are turned over on the potatos. In Scilly the potatos are planted much nearer the surface than on the mainland; if they were so planted on the "main," they would be destroyed by frost.

* Potatos planted in fresh seaweed are waxy.

Kelp-making was once an industry here to a large extent, but it has completely died out. Masses of seaweed were cut from the rocks, and dried. It was then cast into large pits, and burnt until it was reduced to a liquid state, when it was stirred with long iron prongs, and allowed to cool. The agent used to take it off the people's hands for rent, and ship it to the soap-boilers on the mainland at a considerable profit. After a time, however, it became adulterated with sand; and this, with the discovery of other alkalies, destroyed the sale altogether.

The surface is divided into farms, some large, some small.

	Population.	Acres.	Number of Farms.
St. Mary's, the largest island, contains ...	1,290	1,527	52
Tresco is farmed principally by Mr. Dorrien Smith, the Lord Proprietor. There are, beside, one or two small farms on it	325	823	3
Bryher contains	103	300	17
St. Martin's contains	175	520	22
St. Agnes contains	148	390	14
Total	2,041	3,560	108

Out of the 3,560* acres, which are the figures of the last Government survey, 2,242 are tillable or improveable.

Every farmer is, more or less, a flower-farmer; but the larger ones grow also potatos, seakale, asparagus, and tomatos, for the markets, as well as flowers. They keep a small number of cattle and sheep, and grow corn, but only sufficient for home use. They make their own butter, and keep poultry. But of all these last nothing is exported, they have sufficient only for home consumption. The butter is exquisite, and would be gladly bought on the mainland, if it could be spared, and the same may be said of the fruit, which is grown principally at Rockey Hill and Holy Vale; it is excellent, but only sufficient for home use, and, moreover, the apples are too mellow to bear packing.

St. Mary's has an area of 1,527 acres, most of which is under cultivation. The largest farmer owns 70 acres of cultivated land. Eight of these are devoted to flowers, and ten to potatos. He grows no other vegetable, but a large quantity of mangels. He owns 28 head of cattle, 3 horses, and 14 sheep.

The cultivation of flowers has not reduced the amount of potatos grown so much as one might think, and for this reason, every foot of land formerly waste, capable of cultivation, is laid under tribute for the flowers.

An average-sized farm is held by a gentleman, who farms 36 acres of tilled land, and 105 acres of common or waste land. Four or five acres are planted with flowers, and about seven with potatos. He has 20 horned cattle and 20 sheep. He grows enough corn to feed the cattle, and the grazing-ground is contained in the 36 acres. Seaweed is, he considers, by far the best manure for asparagus. Tomatos have so gone down in price that 9d. per pound is the price during December, January, and February. In planting he would use about 25 cwt. of seed potatos to an acre, and he would consider between 4 and 5 tons an acre a good return. His preparation of the ground for receiving potatos is to well press it and plough it, and dress it twice with seaweed and compost, the latter consisting of road-scrapings, earth, and "anything good." It is then ploughed down, scarified with a cultivator, and left to rest. Sometimes artificial manure is given, and a small quantity of guano is imported. On the waste lands an immense quantity of ferns grow, which, being cut, make excellent beds for the cattle, and when they have served this purpose they form a capital manure. May and June are the great months for sending potatos to market, though owing to the mildness of the winter, potatos planted in December are often drawn again in March, when there is a good sale for them. After potatos, he gets a fine crop of mangels.

Seakale is largely grown on the Islands, and sent to London, Birmingham, and Manchester markets. It is grown in the open air, and blanched in the same way as celery, with the exception that it is planted on the surface instead of in the trenches. Seakale would be by far the most remunerative crop, and if only they could ensure 3d. or 4d. a pound for it, the Scillonians would go into its cultivation very largely. It requires no manure, but wants a light soil. At Tresco a great quantity is grown; the cost per acre is £30 or £40, the return, £70 or £80.

The Island of Tresco, though only twenty minutes' distance by boat (in fine weather), is much warmer than St. Mary's, because of the sand all round it. Mr. Dorrien Smith's farm at Tresco is essentially a model farm. He spares neither expense nor trouble, and when a successful result is attained, he shares it with his tenants. He uses about 30 tons of seed potatos for planting. Twenty-five to thirty acres are planted with potatos; where possible, they are planted on slopes, so as to escape the wind, and the order of planting is "six rows, one miss." The "miss" is well manured, and later on is turned up and spread over the six rows. Three tons of seakale and five tons of tomatos were sent from here last year. From 17 to 20 acres are devoted to flowers. Mr. Smith is experimenting upon a parcel of land, dividing it into four—dressing one part with fish-manure, one with farmyard manure, the third with seaweed, and leaving the fourth unmanured. He has 20 Channel Islands cattle, and about 100 pigs. The food for the last is cut up, and cooked in a large boiler. The dried fern makes good litter for pigs and cattle.

All sorts of fences are tried on this farm, for the protection of flowers and vegetables. The rush fences are too opaque; the shrubs require great attention, and occupy valuable space; but the open palings of wood protect while they permit the sun to play through.

Of all the Islands, St. Martin's produces the most potatos, while some of the earliest come from Bryher.

On the whole Islands there are between 400 and 500 bullocks, 250 sheep, 100 milch cows, and 70 asses. There is no veterinary surgeon on the Islands, but one of the farmers is exceedingly clever in the treatment of animals, and all the farmers are more or less expert in this respect.

E. Brewer, in *Journal of Royal Agricultural Society.*

Professor Stewart, of the Royal College of Surgeons, has been elected president of the Linnean Society, in succession to Mr. W. Carruthers, whose term of office has expired.

* The surveys of 1851 and 1861 may be considered incorrect; every little barren rock must have been taken into calculation to have given 4,080 acres. That of 1883 seems the correct one. The sea, though ever making encroachments, would never have taken into itself 520 *acres* in so short a period.

New Plants, Flowers, and Fruits.

HELIAMPHORA NUTANS (*B.M.* 7,093).—A sub-tropical sarracenia should obtain attention, the present plant being a native of South America, and one of the findings in the new botanical gardens of Roraima, where it abounds in the marshy Savanna. But it is not a sarracenia, for the heliamphora has a perianth of four to six divisions, and a scape of three to five flowers, and is destitute of the great shield-shaped stigma that distinguishes the flower of the sarracenia. This plant produces leaf pitchers of moderate size, coloured green, with shadings of bronzy and orange red, the flowers being comparable to those of single tuberous begonias of a creamy white colour.

PLEUROTHALLIS ORNATA (*B.M.* 7,094).—An interesting little orchid, of no horticultural value.

PROTEA NANA (*B.M.* 7,095).—A beautiful representative of a class of plants that now obtains but scant attention. It is a cool greenhouse shrub, native of the Cape Town district, flowers deep red, with yellow centre.

ROSEA BERBERIDIFOLIA (*B.M.* 7,096).—One of the most interesting species of roses known, the leaves being simple and of a glaucous green colour, the flowers resembling those of a potentilla or geum, clear yellow.

IRIS (XIPHION) BOISSIERI (*B.M.* 7,097).—A new and beautiful iris, native of the Serra do Gerez, a mountain in the South of Portugal. It belongs to the group of so-called English and Spanish irises, and is therefore bulbous-rooted. The flowers are rich blue, with yellow stripe on the falls, the standards purplish.

PODOPHYLLUM PLEIANTHUM (*B.M.* 7,098).—A near ally of the North American Mandrake or May-apple. The leaves are peltate distinctly, and handsomely lobed, the flowers in large clusters from between the leaves, the colour lurid purple. They emit an unpleasant odour.

COTTONIA MACROSTACHYA (*B.M.* 7,099).—An interesting orchid, with but few attractions to recommend it for garden culture.

DROSERA CISTIFOLIA (*B.M.* 7,100).—A remarkably beautiful sundew, native of South Africa. The leaves are linear, with reddish glandular hairs; the flowers are large, conspicuous, the colour brilliant orange red or vermilion, with delicate veins of white.

CHIRONIA PALUSTRIS (*B.M.* 7,101).—A pretty gentianwort, native of South Africa. Flowers delicate mauvy pink.

CYPRIPEDIUM ROTHSCHILDIANUM (*B.M.* 7,102).—A respectable figure of this fine orchid.

GARDENERS' ORPHAN FUND.

A MEETING of the executive committee of the Gardeners' Orphan Fund was held at the Caledonian Hotel, Adelphi, on the 30th ult., Mr. John Laing in the chair.

The special receipts reported by the honorary secretary included £138 14s. 9d. from the committee of the Wildsmith Memorial Fund, £14 5s. 7d. from Mr. R. H. Robinson (the proceeds of a concert in aid of the fund at Milnthorpe), £6 15s. from Mr. F. Sanders, £5 from Lord Cawdor, £5 from Mr. W. Early, and £3 11s. collected at the Temple show. The bank book showed a balance of £724 8s. 11d., and it was decided that the sum of £500 be invested. The financial results of the Covent Garden fête were reported to have been satisfactory, but the extent to which the fund will benefit from the fête will not be known until the meeting of the joint committee to be held in a few days hence.

Mr. Barron reported as to what had been done by the dinner committee appointed at the previous meeting, and said that Mr. Shirley Hibberd had consented to preside at the anniversary festival, which, as previously announced, will be held at the Cannon Street Hotel, Friday, July 22. The arrangements for the dinner were advanced a stage by the appointment of the several sub-committees necessary for carrying out the various details. Collecting cards were issued, and it was announced that the voting papers were ready for issue. As these cannot be sent to members until their subscriptions have been paid, their distribution will be greatly facilitated by those who have not yet sent in their subscriptions doing so with as little delay as possible.

The proceedings terminated with the customary vote of thanks to the chairman.

Literature.

Glimpses of Nature's Secrets, or Strolls on Beach and Down. By EDWARD ALFRED MARTIN. (Elliot Stock.)—A nice "little go" on the natural history of the seaside and the downs that often rise above it, more especially on the south coast. The chapters are of the kind that may be called light reading, and they treat of the saltness of the sea, the weeds that grow on shells and rocks, the ways of oysters, pectens, the formation of crystals, the wonders of rock pools, the physiology of star fishes, the flowers and fossils of chalk pits, the London clay and the part it plays in the scenery and products of the southern counties, the formation of sand, the aspects of London in Cæsar's time, and the marks of time on the common things around us. The little book is turned out in the pleasing style that Mr. Elliot Stock so well understands, and a budget of elegant essays is adorned with illustrations that are altogether becoming.

Ladies' Treasury, edited by Mrs. WARREN, continues as various and useful as ever. The June number contains interesting papers on irrigation in Egypt, the ruins of Karnac, the old-fashioned street lamps, and an Indian ghost story to freeze the people who find the weather too warm. The fashions, of course, are freely illustrated.

The Fireside and other monthlies, edited by the Rev. C. BULLOCK, B D., cover a wide field of usefulness, and appeal chiefly to young readers. "The Fireside" is particularly attractive by reason of its entertaining papers and illustrations. Persons who are responsible for providing literature for young people may with advantage take note of this group of periodicals, which are published at 7, Paternoster Square.

Picturesque Wales. By GODFREY TURNER (Simpkin and Co.).—This is an "official" publication by the Cambrian Railways in the interests of their traffic, a fact which explains how a well-written, pleasingly illustrated, and admirably printed book of 110 pages, can be sold for sixpence. It is thoroughly readable, and, in a general way, far in advance, as a literary performance, of the average guide book. The maps are worth more than the cost of the book, and the engravings constitute quite a picture gallery.

BEAUTIFYING BARREN PLACES IN LONDON.

As our humorous friend *Punch* has made a jest upon the numerous barren places in London, and the future possibilities of their improvement, I venture as a lover of plants and flowers to refer to the matter, which has a more important bearing than may at first sight be apparent. After being in many rooms, both at the West End and in the City that have an outlook at the back of the buildings it has appeared to me that it is a great pity some of the money expended in cut flowers should not be devoted to the permanent improvement of the outlooks. Barren, uninteresting, and tasteless as these outlooks are, they might with a judicious expenditure be made to present a really beautiful appearance.

No one but those who have had some experience, can have an adequate idea of what can with taste and judgment be done with the numerous plants that will thrive in large towns. By selecting shade or sun-loving plants according to the aspect, and giving them careful attention good effects can be readily produced. As an example of what might be accomplished, I will refer to what is being done in St. Paul's Churchyard. This example is no doubt capable of improvement, but it is interesting as showing what will grow in the city. With reference to this it may be mentioned that plants and trees which thrive in St. Paul's Churchyard may be expected to make an even more satisfactory growth in open spaces westward. I am more especially induced to write these notes after having seen a garden on the leads well worthy of imitation.

There are bare spaces at Trafalgar Square and Hyde Park Corner, extending over many thousand square yards which may be converted into beautiful oases in the wilderness of bricks and mortar by which they are surrounded. In addition there are many other spaces of considerable extent that could be mentioned, were I not anxious to avoid trespassing upon your space. The plants employed in beautifying these spaces should not be grown in tubs, for when so grown they have an unsatisfactory appearance, as for example the long row of conifers and shrubs in front of St. Pancras Hotel. It is much to be desired that the square boxes in the front, and at the back of the Royal Exchange are only employed experimentally, for they are decidedly objectionable in appearance. I would have all the plants as far as possible planted out. When this is not practicable they should be put in pots proportionate to their size and the pots be then plunged to the rim in the soil. This would admit of a change of subjects being effected when necessary with the smallest possible trouble. If neither planting out or plunging the pots be practicable, tastefully designed jardinieres, flower boxes, baskets, vases, &c., that will hold plenty of soil should be provided. But planting out is the least expensive as the plants will require but little attention. Some of the forecourts of the halls of the city companies could be made more attractive than they are at the present time by judicious planting, and there are thousands of basement areas that could be rendered attractive by the judicious employment of the many plants suitable for their embellishment.

JAMES PULHAM.

PRESENTATION TO MR. J. S. JOHNSON.

THIS gentleman, who has been connected with the well-known firm of Messrs. Hurst and Son for the long period of thirty-seven years, and who is retiring solely through impaired health, had a very gratifying presentation made to him by the employés of the firm on the occasion of his taking farewell of them on the 24th of May. The ceremony took place in the office, 152, Houndsditch, Mr. Smith presiding in the unavoidable absence of Mr. N. Sherwood, the head of the firm. The presentation was made by Mr. Hugh Aiton, and the gift consisted of a handsome centre-piece and two companion candlesticks, the former bearing the following inscription: "Presented to Mr. J. S. Johnson by the staff of Messrs. Hurst and Son, on his retirement after thirty-seven years' connection with the firm, as a token of their regard and esteem."

In making the presentation, Mr. Aiton regretted the absence of Mr. Sherwood, and several members of the staff, through business engagements, all of whom would have been most happy to have been present. Mr. Sherwood especially desired him to convey to Mr. Johnson the assurance of the great pleasure it would have caused him to have been present. The occasion of their meeting was an almost unprecedented one, as it did not fall to the lot of many to attain to the thirty-seventh year of arduous service in one firm. They were losing an old friend in Mr. Johnson, and the present he had the great pleasure of handing him was a token of their esteem and regard for him, coupled with the earnest hope that he would enjoy the sweets of his well-earned rest for many years to come.

Mr. Johnson, in thanking his friends and business associates for their handsome gift, said his feelings almost prevented him from giving expression to his heartfelt thanks, and he felt that nothing but a true spirit of affection could have prompted them to make him such a handsome present. He hoped all his friends would think he had taken a proper step in husbanding his strength for the remainder of his life. He could but express his deep gratitude for the honour they had done him. Such a present under such circumstances was an occurrence almost unprecedented in the seed trade; he had never heard of one before. They could form no idea of the surprise and joy their gift would cause in his family, and it would be prized by him as a lasting memento of his old and valued friends for many years to come.

BORDER AURICULA.

I ENCLOSE blooms of a seedling border auricula which is very showy and effective. I took some blooms with me to the Auricula Show at the Aquarium, and a friend with me compared it with those staged of a similar colour. My border seedling in brilliancy surpassed every one exhibited.

The flowers are past their best now and not very large, but I think you will be able to see that as an ornamental flowering bed or border variety it is a rather telling one and well worth kindly attention. It is a seedling which I raised five or six years ago. I may tell you that the Auricula is a very old aquaintance as my mater used to grow a lot of them when I was but a wee thing.

I have four small beds of seedlings, and although the plants have been growing in the same beds for five or six years since they were transplanted as seedlings they have flowered this season grandly, having only a top-dressing of leaf-mould annually. GEORGE FRY.

[The flowers sent were in bold handsome trusses, the colour marone crimson. In the past few years we have seen many borders filled with auriculas, and in the time of their flowering they have given much delight.—ED.]

Replies to Queries.

Malay.—A look through our advertisements will suggest to you several names of persons who would be likely to transact such business as you have in view. Scarcely a week passes but we refer at length to such books as you appear to be in need of, such as the *Orchid Album*, published by Messrs. B. S. Williams and Son, Upper Holloway; and *Reichenbachia*, published by Messrs. Sander, of St. Albans.

Rating Greenhouses.—J. W. H., Hinckley: We have not been able to find a report of any case in which the decision as to the liability of greenhouses to be assessed to the local rates was given in the manner stated in your letter. There can be no doubt that they are so liable, and all that the owners of the structures can do in the matter is to take such steps as may be necessary to prevent their being assessed by the committee at too high a value.

Woodford.—It is a complicated case, and requires serious consideration. The eggs probably were in the compost; we doubt if they were in the boxes. The thrips were due no doubt to the excessive dryness of the air with too high a temperature. A more free ventilation and liberal use of the syringe will go far towards checking that pest. For trapping the other plague try slices of fresh potatos laid on the soil every night and to be removed in the morning.

Names of Plants.—Coniferous Trees in Box: 1, Sequoia sempervirens; 2, Libocedrus decurrens; 3, Biota orientalis; 4, Juniperus sabini; 5, Biota pendula; 6, Retinospora plumosa.—W. Harvest: 1, Arnebia echioides; 2, Delphinium leptostachyum; 3, Gladiolus elatus; 4, Hydrangea stellata.—H. R. P.: 1, Erica staminea; 2, Erica viridipurpurea; 3, Andromeda Japonica; 4, Glaucium arabicum; 5, Celastrus scandens; 6, Ceanothus dentatus.

Coniferous Trees in Border.—F.: Your case is that of hundreds of gardeners who see fine subjects crowded up and going to ruin, but refrain from thinning because the proceeding would not be approved of. We see almost daily examples of this mischief, and never fail, as opportunity offers, to impress on proprietors that it is impossible to have fine trees where many things are crowded and none have space in which to expand in a natural manner. If your trees are not quickly thinned all will be ruined.

Hortus.—You say you took the land "of a man" and "they have put up a board announcing the land for sale." We suppose, therefore, that the land was underlet to you, and if so, your claim, if you can establish one, clearly lies against the person from whom you rented the land. But the whole business turns upon the terms of the tenancy, and you will be very unwise to rest content with any advice save that of a respectable solicitor well informed on the properties and usages of the district. We much fear you have no claim whatever.

Balsams.—R. F.: It will be impossible to obtain good specimens unless you at once remove the plants from the fruit house to a pit, as light and a free circulation of air are alike necessary. To avoid injury to the foliage from the sun shade lightly during bright weather for about ten days, then fully expose them. Ventilate freely at all times, and syringe them overhead in the afternoon after the sun has ceased to shine upon the frame. After the pots are well filled with roots supply the plants with liquid manure of a moderate degree of strength alternately with clear water, or top dress with some suitable fertiliser. It is a mistake to suppose that the foliage of balsams will be infested with red spider unless the plants are shaded during bright weather, and you will find that by following the instructions here given, they will occasion but little trouble.

Repotting Tea Roses.—J. A.: The repotting of tea roses that have flowered during the spring under glass should be done some time during the summer to enable them to become well established by the autumn. It is a good practice to place them out of doors for two or three weeks, and then to repot. It will suffice for the majority of the examples to use pots one size larger than those now occupied, and it is in all cases advisable to keep them in pots as small as possible consistent with a vigorous growth. In repotting, remove a little of the old soil from round the sides of the ball, but avoid injury to the roots. The most suitable compost is one consisting of turfy loam and partly decayed manure from an old hotbed, the latter to be used in small proportions, as the plants can be readily assisted in the spring by liquid manure, or a top dressing of some suitable artificial manure. It is important to provide a thoroughly efficient drainage.

Disbudding Peach Trees.—K. M.: It is important to commence disbudding peach and nectarine trees at a comparatively early period, and to proceed with the work as opportunities offer until completed. The usual course followed by experienced cultivators is to first remove those shoots produced on side of the branches farthest from the wall, and then such of the others as may be necessary. When the work of disbudding established trees is completed, there should be two growths on each of the bearing shoots, one at the apex, and one at the base, the latter being required for taking the place of the bearing shoot when it is removed at the winter pruning. It is important that you should proceed with the disbudding at once, or the lower growths of the bearing branches will not have sufficient time to attain their full development and become well ripened by the autumn. On your light soil a mulch of stable manure will be highly beneficial to the trees. Liberal washings with the garden engine will help to keep the foliage free from the several pests that prey upon these fruits.

Pæony Flowers.—D. W.: Flowers of both the herbaceous and tree pæonies that have to be sent long distances by rail or through the post should be cut just as they are commencing to expand and be packed and sent to their destination with as little delay as possible. When cut at the stage here advised they can not only be packed in much less space in proportion to their numbers than fully expanded flowers, but they can be depended upon to reach the end of the journey in good condition provided no harm comes to the package in course of transit. Advise your friends that on the flowers being received they must at once be unpacked and be placed in suitable receptacles with their stalks in water. It will be an advantage then to cut off with a sharp knife about half an inch of stalk. In a day or two the flowers will attain their full development, and present a very different appearance to flowers that have been packed and made a journey after their expansion. Even when required for house decoration it is advisable to cut the flowers when just opening, and place them in a room with their stalks in water to expand, as they present a brighter appearance and retain their freshness for a longer period than do similar flowers that have been exposed to the weather.

London Purple.—Fruit Grower: There should be no difficulty in obtaining supplies of London Purple. The experiments in this country in the use of arsenical compounds have not been sufficient to admit of a definite opinion being expressed as to the relative merits of London Purple and Paris Green in English orchards. With reference to the first-named, Professor Riley writes: "It is even superior to Paris Green, as, owing to its more finely powdered condition, it can be more thoroughly mixed with other ingredients and used in smaller proportions. It is much easier kept suspended in water, and has this further advantage over other arsenical compounds. Its finely pulverized condition seems to give it such penetrating power that when used in liquid it tints the leaves so that it is readily distinguished at a distance, the general effect being quite marked as compared with any of the other poisons similarly applied. It seems also to be more effectually absorbed into the substance of the leaf, and is therefore more persistent. At the same time, experience shows that it does not injure the foliage more than Paris Green, and again, when intelligently used, it is in all ways preferable."

Raising Ferns from Spores.—W. S.: In raising a stock of ferns from spores you will have to exercise considerable care. Sow the spores, preferably, in a shallow pan about twelve inches in diameter, and in preparing the pan fill it to about one third of its depth with rather small crocks. Over these spread a layer of cocoa-nut-fibre refuse, or moss, and then fill the pan with a mixture of peat, loam, and silver sand and make it moderately firm and quite level on the surface. This having been done, lay a small piece of slate in the centre and pour upon it sufficient boiling water to thoroughly saturate the soil. Place the pan on one side for a few hours and then distribute the spores over the surface and cover with a sheet of glass. Select a frond well furnished with spores, and with one hand hold the frond over the pan, and with the other rub the underside of the frond to dislodge the spores. You may if you so desire, place the frond in a large sheet of white paper for two or three days, and then shake the spores in the paper over the surface of the soil. Place the pans in a warm shady corner of the stove and maintain the soil in a moist state. To avoid displacing the spores use a can to which a fine rose has been affixed. Should the spores germinate freely, the young plants will suffer severely from over-crowding unless some amount of thinning is done previous to the production of the fronds. Consequently as soon as the surface is covered with the prothalli, prepare two or three other pans in exactly the same manner as advised for that in which the spores are sown, and then with a piece of pointed stick lift small patches of the prothalli and prick them out in the fresh pans at a distance of about one inch apart each way. Sprinkle lightly with water and cover with glass until the young fronds begin to rise. You should proceed on exactly the same lines in raising stove, greenhouse, and hardy ferns from spores, for although the warmth of the stove is not absolutely necessary for the spores of the green-house, and hardy kinds, it is an immense advantage to be able to assist them with a brisk temperature.

Law.

SPITALFIELDS MARKET CASE.

THE case of Horner v. North Metropolitan Tramways Company submitted to arbitration was of considerable importance. Mr. Horner, leasehold owner of the Spitalfields Market estate and market rights, claimed to the extent of about £40,000 compensation for injury to his property by reason of the construction of the tramway company's connecting line and the establishment of the tramway traffic through Commercial-street, Spitalfields, which is the principal street adjoining the market, to which it affords the chief means of access, and over which, it has been decided, Mr. Horner possesses a right to levy market tolls, in accordance with the market charter granted in the reign of Charles II. Alderman Sir J. Whittaker Ellis, Bart., M.P., was arbitrator on behalf of the claimant; and Mr. Robert Vigers, of Frederick's Place, Old Jewry, arbitrator on behalf of the company; the umpire being Mr. Edward Ryde (of the firm of Messrs. Edward Ryde and Sons, surveyors).

The evidence submitted to the arbitrators was fully reported in the *City Press* in successive issues from November to March. For the claimant it was contended that great injury must necessarily be caused to his interest by the displacement of the market traffic along the hard and fast line of the tramway rails, and the annoyance alleged to be caused by the constant intervention of the police to prevent the market vans, &c., from standing upon that line; and it was suggested that compensation should be assessed upon a basis of the reinstatement, *i.e*, upon the assessment of a sum of money which would enable him to purchase additional property to be added to the market sufficient to replace that over which his rights were destroyed by the tramway company. On behalf of the company it was contended that the tramway would be rather beneficial than otherwise on account of the regulation which it afforded to the traffic, and the keeping open of a lane through the midst of the standing vehicles through which vans coming or leaving could readily pass.

The umpire has now issued his award for the sum of £6,000.

Obituary.

ON the 27th of May, at 108, Prado, Marseilles, THEODORE RALLI, aged 50, late Parkfield, Clapham Park, London.

ON the 3rd instant, at Bath, Mr. JOSIAH GOODWIN, formerly editor of the *Journal of the Bath and West of England Agricultural Society*, and for a brief period editor of the *Journal of the Royal Agricultural Society*, aged 70 years.

WE are deeply pained in having to announce the death, on the 4th inst., of Mr. JOHN RAWLINGS, of the firm of Rawlings Brothers, Old Church, Romford, an eminent dahlia grower, and occasional contributor to our columns on the flower he understood so well. In the year 1888 a great flood occurred at Romford, and Mr. John Rawlings, who had serious work to do in consequence, obtained a severe wetting, which brought on pleurisy, and has now terminated fatally. It is a consolation to learn, as we do from Mr. W. Rawlings, that his illness was not of a painful nature, and he passed away peacefully, fully reconciled to the fate he saw impending. His age was 35.

THE POTATO SHAWS have been much injured by frost in eastern and midland districts since Saturday last. Even so far west as Gloucester and Cheltenham we have seen the fields blackened by the frosting of the tender tops of the plant. Every such check is injurious, but we do not apprehend any very serious consequences in this case, because a free summer growth will effectually efface these marks.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower,		Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.			1890
15	S	**2nd Sunday after Trinity.**	3 44	—	8 16	2 41	6 25	0 12	0 36	9 37	10 1	60·7	Anguloa uniflora	Columbia.	166
16	M	John Wesley born, 1703.	3 44	0 24	8 16	3 8	7 35	1 0	1 22	10 25	10 47	60·9	Arpophyllum cardinale	Guatema.	167
17	Tu	*St. Alban.* ● New Moon.	3 44	0 37	8 16	3 41	8 36	1 44	2 4	11 9	11 29	61·1	Vanda Roxburghi	India.	168
18	W	Battle of Waterloo, 1815.	3 44	0 50	8 17	4 23	9 30	2 23	2 43	11 48	—	61·2	Vanda teres	Sylhet.	169
19	Th	C. H. Spurgeon born, 1834.	3 44	1 3	8 17	5 13	10 18	3 1	3 19	0 8	0 26	61·4	Sobralia macrantha	Guatema.	170
20	F	Accession of Queen Victoria, 1837.	3 44	1 16	8 18	6 12	10 47	3 37	3 55	0 44	1 2	61·5	Dendrobium calceolaria	India.	171
21	S	*Proclamation.*	3 44	1 29	8 18	7 16	11 14	4 13	4 31	1 20	1 38	61·6	Dendrobium cretaceum	India.	172

ROYAL BOTANIC SOCIETY. GARDENS, REGENT'S PARK.—FLORAL PARADE and FEAST of FLOWERS, THURSDAY, JUNE 26. Those wishing to take part in the Parade are requested to send their entries to the Secretary as soon as possible to ensure a good position in the Procession.

Schedules of Prizes. Entry papers and all information to be obtained at the Office in the Gardens.

CRYSTAL PALACE.—SATURDAY, JULY 5.—The NATIONAL ROSE SOCIETY'S GRAND EXHIBITION OF ROSES.

Intending exhibitors must give notice in writing of the classes in which they intend to exhibit to the Hon. Secretaries, National Rose Society, Crystal Palace, S.E., on or before Tuesday, July 1st.

ROYAL AQUARIUM, WESTMINSTER.
GREAT ROSE SHOW AND FETE;
ALSO
EXHIBITION NATIONAL PINK SOCIETY,
AND
CONFERENCE BRITISH FRUIT GROWERS' ASSOCIATION,
On JUNE 27 and 28.

Schedules and all particulars of
Mr. WILLIAM HOLMES, Frampton Park Nurseries, Hackney, London.

GRAND ROSE SHOW, BATH,
THURSDAY, JULY 3RD.

First Prizes, Nurserymen,	72 varieties	... ...	£8	8 0
,, ,,	36 ,,	... ...	£4	0 0
,, Amateurs	36 ,,	... ...	£5	0 0
,, ,,	24 ,,	... ...	£3	0 0

The Second and Third Prizes in proportion. Several other classes for Roses, Bouquets, Strawberries and Plants; 31 Classes in all. Entries close June 27th. For Prize Schedules, &c., apply to B. R. F. PEARSON, W. JEFFERY, } Secretaries, 2, Northumberland Buildings, Bath.

PORTSMOUTH FLOWER SHOW AND EXHIBITION OF HONEY, &c., JULY 15, 16, and 17, 1890.
Entries Close July 5. Schedules Free.
26, Queen Street, Portsea. F. POWER, Hon. Sec.

RICHMOND HORTICULTURAL SOCIETY.—The SUMMER SHOW will be held in the OLD DEER PARK, RICHMOND, on WEDNESDAY, JUNE 25, 1890. For schedules and all particulars please apply to J. H. FORD, Hon. Secretary, 22, George Street, Richmond.

THE TWENTY-THIRD ANNUAL EXHIBITION of the LEE, BLACKHEATH, and LEWISHAM HORTICULTURAL SOCIETY will be held at THE CEDARS, BELMONT HILL, LEE, on WEDNESDAY and THURSDAY, JULY 2nd and 3rd. Entries close June 26. All particulars to be obtained of the Secretary, Mr. C. HELMER, 5, Boones Road, Lee, S.E.

WOLVERHAMPTON HORTICULTURAL SHOW AND FLORAL FETE.
JULY 15, 16, and 17.

Open to all England. Classes for Plants, Roses, Bouquets, &c. Gentlemen's Gardeners' Classes open to Staffordshire, Shropshire, Warwickshire, and Worcestershire.

Portions of the Park are allotted for Exhibits of Horticultural Appliances.

Applications for space should be made at once to the Hon. Sec.,
Mr. W. A. GREEN, jun., Corporation Street, Wolverhampton.

Exhibitions and Meetings for the Ensuing Week.

WEDNESDAY, JUNE 18 TO FRIDAY, JUNE 20.—YORK.—Floral Fete.
THURSDAY, JUNE 19.—LINNEAN SOCIETY.—General Meeting.
THURSDAY, JUNE 19.—RYDE.—Rose Show.
FRIDAY, JUNE 20.—SCOTTISH PANSY SOCIETY.—Annual Exhibition at Edinburgh.

Auction Sales for the Ensuing Week.

WEDNESDAY, JUNE 18.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Japanese Maples, Ferns, Palms, &c.
FRIDAY, JUNE 20.—Messrs. Protheroe and Morris, at the Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, JUNE 14, 1890.

RHODODENDRONS ARE FLOWERING FREELY. The advance in quality of this class of plants is matter of familiar knowledge with a majority of our readers, to whom, therefore, we might as profitably say that Queen Anne is dead as that rhododendrons have been greatly improved by cultivation, and more especially by the crossing that has resulted in the establishment of a number of named varieties, exceeding in beauty the species from which they have been derived. An illustration of the advance is afforded by the display on the main walk in the Royal Gardens, Kew. The beds were originally planted with *Rhododendron Ponticum* in its original and unimproved form. They were thought much of in their early days as garden flowers, but they came to be poor and old-fashioned through the training of horticultural eyes to the finer qualities of other species, but more especially through the accession to the lists of a series of splendid varieties, many of which were raised at Bagshot, the first great home of this class of plants. Only half-a-dozen years since the Kew rhododendrons presented a poor appearance, although in truth the trees had grown well and flowered freely, and were actually in themselves better than they had ever been. Alas, the comparisons made a case against them: the comparisons, therefore, were odious! The late Mr. John Smith set about reforming the main walk rhododendrons under the sanction of Sir Joseph Hooker. This has been continued by Mr. Nicholson with the hearty assent of the present director, Mr. Thiselton-Dyer, and, as a result, we have now a grand garden of rhododendrons, a few of the old Ponticums remaining to heighten by the contrast the splendour of the newer kinds that have in great part displaced the fathers of the family. Consistently with this development of an important decorative feature, Kew has produced the grandest hybrid rhododendron of recent years in the one named *Rhododendron Kewensis*, the result of a cross between R. Aucklandi (syn. Griffithianum) and R. Hookeri. This beauty will be hardy enough for southern and western counties, but is not likely to endure, except under some peculiarly favourable circumstances, the trials of a London winter. But apart from this consideration, the newcomer is not less a surprise than a delight, and it pleasantly suggests that the improvement of the rhododendron has not reached the limits of possibility.

Although Bagshot, with its peats and sands, has had somewhat of a monopoly of the so-called "American plants," that are more often recruited from Asia than from any other part of the world, the monopoly is more apparent than real. The question of the soil, however, is the great question; but a subsidiary subject of not small importance is the relative rainfall, for in common with nine-tenths of all known trees and shrubs, the rhododendron, up to a certain point, prospers in proportion to the degree of atmospheric humidity prevailing in the place of its growth. Our western counties suit it better than our eastern, by reason of the more liberal moisture they afford it, and this irrespective of the character of the soil. But the question of soil is one of some seriousness; for to make an artificial soil, either by mixtures and preparations on the spot, or by carting in material from elsewhere, is a serious matter, and unless well done is best left undone, for a handful of peat may keep a plant alive for a year or two, but for prolonged prosperity, a great body of suitable soil is necessary, and this is but rarely provided when every handful has to be paid for. It is customary to excavate to a depth of eighteen inches or two feet, and to fill in with peat, and on this the plants are established. They may or they may not succeed; and the truth must be told that very often they do not succeed, and the reason will be found to be that they have exhausted the soil provided for them, and cannot extend beyond the limits of the original preparation, because the soil of the place is not to their liking. A notable proportion of calcareous matter in the soil, or a decided taint of lime in the water supplied to them, whether by nature or by art, will tell in time as a poison, and healthy growth will cease. When the vigour that marks the first growth in new soil has declined, and the trees want more root room than is allowed them, they become gaunt and lanky, they make a lean growth and flower poorly, and become discreditable occupants of the garden they should have enriched with massive leafage and splendid flowers. Often the peat

purchased for rhododendron beds is of the wrong sort, and might with propriety be termed sour bog soil; for although for a time they may appear to succeed in black, pasty, boggy stuff, they soon put on a woeful appearance, and at this time of year become conspicuous, not for what they do, but what they fail of doing. Every observant traveller who moves amongst gardens sees examples of this waste of means and opportunities, and the lesson is the same, probably to all; and it is to the effect that it is better to develop the natural capabilities of a place, than to force upon it features alien to the prevailing conditions, unless there is command of suitable directing talent, and any expenditure the proposals may demand. There is any amount of suitable soil in the country for any and every horticultural purpose, and the great point is to obtain it, for at that point we may stick sometimes, and be tempted to try what are called "make-shift" methods, as the prelude to failure scarcely undeserved. But when the thing can be done there is no finer subject in our gardens to justify the doing than this hardy, evergreen, free-flowering shrub, the full splendour of which is now apparent on every hand, and may be properly regarded as the first great triumph of the summer. The roses will follow to make the second triumph; and the lilies, perhaps, will make a third.

The question of soil for rhododendrons is a formidable one when regarded with haste and in a superficial manner. Those who move about the world see rhododendrons thriving in soils that are unlike peat, and, in fact, may be regarded as commonplace loams and clays of no particular character. The common forms of R. Ponticum are the most accommodating, and hybrids in which the blood of this hardy species predominates take after it in free rooting in almost any soil that is not decidedly calcareous. But there is probably no more interesting evidence of the wide range of conditions in which rhododendrons may thrive than is afforded by the plantations of Messrs. Lane and Son on the Common at Berkhampstead. These eminent nurserymen have endeavoured to encourage planters of rhododendrons by announcing that they grow them in loam. But they do themselves and their plants an injustice, for theirs is a striking example of an extreme case, as will be admitted when we say that the soil in which they are grown might with perfect propriety be described as a mixture of clay and stones. Such in truth it is, and the growth is not only all that can be desired, but is far more satisfactory than many growths we see in peat and in mixtures. We call to mind the time when we obtained at great cost a fine quality of silky, yellow turfy loam from Wanstead for rhododendrons; but that source of material was sealed up by the Corporation of London some years ago, and now, reflecting on the example at Berkhampstead, we sadly conclude that when we sent to Wanstead for loam it was only to take the place of clay and stones that probably would have answered perfectly for rhododendrons. There must be any amount of soil adapted for rhododendrons in the country to bring the cost of growing these beautiful shrubs into the category of inexpensive luxuries, and wherever they are cared for and a loam of good texture is available they should be tried in it for a few years as a matter of experiment. In thousands of gardens where these plants are needed, but are excluded simply because of the possible extravagance of planting them, they might be planted without extravagance, because the soil of the place, so far from being unfit for them, would suit them perfectly. To determine the point is an easy matter for practical purposes.

MR. JOHN COLLYER has been engaged as head gardener at Brookdean, Pulborough, Sussex, the residence of Captain Barttelot.

MR. A. PARRY has been engaged as head gardener to G. Courtald, Esq., Cut Hedge, Halstead, Essex.

MR. J. MILLS has been engaged as head gardener to Commander Phillpots, Chelston Cross, Torquay.

Mr. THOMAS PRICKETT has been engaged as head gardener at Camilla Lacy, Dorking, the residence of J. L. Wylie, Esq.

BURY AND WEST SUFFOLK HORTICULTURAL SOCIETY will hold its annual exhibition, July 3.

A NATIONAL ORCHID SOCIETY is proposed by certain orchidists. We hope they will consider all the interests such a society will touch before they proceed.

YORK FLORAL FETE will commence on Wednesday next, and continue until Friday. It promises to be extensive and brilliant as representing Northern horticulture.

MR. JOHN CHEAL, senior partner in the firm of Cheal and Sons, Crawley, Sussex, was on Saturday last presented by the staff with a testimonial and an address, in recognition of his attaining his ninetieth year.

PEACHES AND NECTARINES from Great Gearies made an impression at the "Park" show on Wednesday. And they stood not alone, for the show of fruit was excellent for the season, and seasonably illustrated our recent observation of the frequency this season of fruit crops in gardens as contrasted with their infrequency in larger and more open spaces. The fact justifies the criticism that in this country at least, fruit culture is one of the fine arts, demanding higher skill than the babblers on universal fruit culture have any proper idea of.

PLYMOUTH SHOW OF ROYAL AGRICULTURAL SOCIETY is fully organized and the programme has been published. The implement yard will be open to members on Saturday, June 21, and the entire show will be open to the public on the Monday following and will close on the Friday.

SHARPE'S VICTOR POTATO was on sale on Saturday, May 31, in the market at Horncastle, Lincolnshire. The potatos were grown by Mr. T. Kime, at Mareham-le Fen, and all were quickly sold at sixpence per pound. This, by the commercial test, places Sharpe's Victor where we ventured long since to place it, at the very head of the early potatos for quickness and profit.

CARTER'S PEACOCK PANSY should attract attention to a class of flowers now sadly neglected, and might indeed revive a taste for these once delightful favourites. Peacock Pansy is a neat, stout, well-formed fancy flower, with petals edged with a thin white line, within which is a space of purplish crimson, passing into a rich central blotch of deep blue, shading to black. The colouring is truly delicious.

THE 15TH RULE OF THE GARDENERS' BENEVOLENT INSTITUTION was referred to by Mr. Dickson at the festival on Thursday, as requiring to be reconsidered. This rule renders ineligible for a pension any person in receipt of parochial relief. Mr. Dickson cited a case in which the rule appeared to operate prejudicially to the purposes of the charity.

STRAWBERRIES have been doing well thus far; but whether the freezing temperature now prevailing will permit of well-doing any further is almost doubtful. *Auguste Nicaise* has made a good mark for early ripening, as also for size and beauty. *A. F. Barron* makes a fine show for an early fruit, and is of excellent quality. *Crescent Seedling*, of rather poor quality, takes a decided lead for early ripening, *Noble* following, and quite justifying its name.

CAMDEN PLACE, CHISLEHURST, once occupied by Camden the antiquary, who was succeeded by many eminent men, and finally by the Emperor Napoleon III, is in the market for building purposes. The estate is 124 acres in extent, and is in so pleasing a situation, that we must perforce join in the lamentations of those who look upon the builder as the destroyer of all true rurality. Lamentation does not come to much in face of the ever growing population.

THE RETURN OF MR. WILLIAM RICHARDS to the scenes of activity in connexion with the business department of the *Gardeners' Chronicle* affords satisfaction to a large circle of horticulturists who have been aided by his co operation in good works, and have valued his opinions and advice in social and philanthropic endeavours as of a man well versed in the ways of the world and imbued with the spirit of well-doing. Our compliments and congratulations are due to Mr. Richards on his recovery of health and return to those activities in which he has ever commanded the respect and esteem of all observers.

THE FREE EXHIBITION OF PICTURES IN THE GUILDHALL OF THE CITY OF LONDON is of great interest for the important works contributed by wealthy owners from their several galleries. It comprehends a selection of the finest old masters with modern works of high renown. Pictures by Van Eyck, Ruysdael, Murillo, Mabuse, Van Dyck, Sir Joshua Reynolds and Hogarth are conspicuous, and amongst modern pictures Millais' "Chill October," Leighton's "Herakles and Death," Rossetti's "Beloved," and Burton's "Cavalier and Puritan," may be named as indicative of the high quality prevailing in this beautiful display.

INCURVED CHRYSANTHEMUMS IN JUNE, WHAT NEXT? Possibly the proper answer to the question is that we may henceforth expect incurved and all other kinds any day in the year. We pen this note with a perfect exhibition bloom of Mrs. Dixon before us, sent up from Mr. D. Donald, of Leyton, who reports that it was cut from a plant that was made from a cutting in December, 1889, and is, therefore, at this time scarcely six months' old. Our friend informs us that if he had refrained from stopping his plants he might have had, in the month of May, from plants of the same age as the one that supplied the flower sent us, blooms of Mrs. G. Rundle, Madame Bertier Rendatler, and many others.

ROYAL HORTICULTURAL SOCIETY AND HER MAJESTY'S COMMISSIONERS OF 1851. In a paper circulated at the great Temple Show are these words:—"With the Prince President seems to have passed away gradually also, as far as our Society is concerned, the Commissioners' friendliness." This is unjust to the memory of my old friend General Scott, who was one of the truest friends the Society has ever had, and as he was at one time both Secretary to H. M. Commissioners and also to the Society an influential one. It is too long a question to be gone into now. In 1874 I published a pamphlet on "the Royal Horticultural Society as it is and as it might be." If I ever get time to continue the story it will be seen that something can be said on H. M. Commissioner's side of the question.

GEORGE F. WILSON.

THE MANAGEMENT OF EPPING FOREST was the subject of a discourse by Mr. Percy Lindley, at a meeting in South Place Institute, Finsbury Square, on the 3rd inst. Much that the speaker said was wise and good, but a little was highly flavoured with abuse of the Corporation and the general management of the forest, of which Mr. Percy Lindley is as ignorant as he is bumptious. He mildly suggested that the public should take care of Epping Forest. Well, we saw on Whit Monday how the public would do it, for on that day thousands of cartloads of branches of trees—hawthorns chiefly—were ruthlessly torn from their parent stems and carried away. The public, if left free to its own sweet will would cause Birnam wood to move to Dunsinane at express speed. On an occasion some of the great public can call to mind, Birnam wood travelled at a foot pace. Mr. Percy Lindley would, by his serious proposal, promote the removal to a donkey-cart pace, and any way the end must be the absolute destruction of the forest by the sovereign people.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

FIFTY-FIRST ANNIVERSARY, JUNE 12.

THE fifty-first anniversary festival of this admirable institution took place at the Albion, Aldersgate Street, on Thursday evening last, under the presidency of Harry J. Veitch, Esq., treasurer of the institute, and generous friend of all such undertakings. It is gratifying to observe that, not only does this institution keep its place and accomplish its work, but that it is ever expanding in its operations, appealing to an ever-widening range of supporters, and that it steadily gains on the sympathy of gardeners, who for many years appeared indifferent to its welfare. That, however, as events have proved, was in appearance only, for recent events have disclosed the fact that gardeners can combine for a good work, and can enter into such good work with a spirit and simplicity of purpose altogether exemplary, and in some respects unique. Since it has been made clear by facts, rather than by arguments, that in respect of this fund subscribers have some claims, and the elective system is systematically superseded by admitting subscribers to participation in the fund by the veto of the governing council alone, gardeners have taken an increased interest in its affairs, and every year sees an increase of their numbers in the list of subscribers. On the present occasion, with a horticulturist of the highest eminence in the chair, we had what may be termed a truly horticultural festival, for on every hand in the great party that filled the hall were the faces of men equally respected for their steadfastness in this cause as for their achievements in practical horticulture.

Amongst those present were :

Canon Cromwell, C. Czarnikow, Esq., Dr. Hogg, G. F. Wilson, Esq., E. H. Sewell, Esq., H. J. Adams, Esq., G. J. Braikenridge, Esq., W. Robinson, Esq., G. Dickson, Esq., G. Anderson Esq., N. Sherwood, Esq., Shirley Hibberd, Esq., D. Smith, Esq., T. Drew, Esq., Dr. Bennett, Rev. W. Wilkes, Dr. Masters, Thiselton Dyer, Esq., John Lee, Esq., W. Lee, Esq., and Messrs. H. J. Pearson, Sanders, Johnson, Ridal, Osman, Sharp, Holmes, Hubbuck, Laing, Corry, Cox, Ballantine, Profit, Brush, Cypher, Hudson, Lane, Bunyard, Thomson, Cutbush, Laing, Osman, Williams, Turner, Sanders, Fryer, Cathie, Peacock, Meston, Protheroe, Baker, Wythes, D'Haene, H. L. Veitch, Iceton, Coleman, A. W. G. Weeks, Cheal, Fletcher, Winssett, Weeks, Glen, Cannell, Perkins, Hilton, Bause, Bartlett, Elphinstone, Douglas, Walker, Blair, Rust, Osborn, Woodgate, Roberts, Barter, Wills, De Graaf, Peter Veitch, Spae, A. Veitch, J. Laing, Baker, White, Baker, Manning, Gwyther, Moss, Turner, G. Paul, Johnson, Ritchie, Faulkner, Dunn, T. A. Dickson, Milady, Segar, Watkins, Monro, Richards, Morgan, Webber, May, Johnson, Cavendish, Geiselbrecht, Pearson, Tichener, Cox, Tite, Swift, Wynne and Nutting.

The dining room was very beautifully decorated with cut flowers and plants, and the table was spread with the choicest fruits for dessert. The usual loyal toasts having been duly proposed and honoured

The Chairman gave the toast of the evening, "Continued Success and Prosperity to the Gardeners' Royal Benevolent Institution, now in its fifty-first year." (Applause). He said that if oratory failed him in proposing the toast, he would yield to none of his predecessors in a desire to see the Gardeners' Royal Benevolent Institution progress and flourish. (Applause.) The institution was founded in the year 1839, and they were now celebrating its fifty-first anniversary. Those to whom the honour of founding the institution had fallen had since passed away, but the names of Henderson, Noble, Lane, Dickson, Osborn, and Webber must ever remain green in the memories of all who had the institution at heart. (Cheers.) The good names those gentlemen had left behind them were almost as noble a memorial as this institution, and although those worthies were no longer with us, he was sure those present would join with him in acknowledging how glad they were to see still amongst them one who, if not actually a founder, had been one of the friends of the institution from the time of its foundation to the present moment. And he was sure they would all join with him in offering their warmest congratulations to their worthy old friend Mr. John Lee—(cheers)—rightly called the father of the institution,—that he was with them and in offering the earnest hope that he might yet be spared to be with them on many future similar occasions. (Applause.) The institution was founded in 1839. It had but a very small beginning. In the year 1840 its income was £126, on the strength of which the first pensioner was elected. In 1841 it had advanced so far that it was enabled to put on a second pensioner. In 1842 two more were added, and since then matters had advanced so rapidly that at the present moment there were 154 pensioners on the lists—(cheers)—these being drawn from all parts of the United Kingdom. Their oldest pensioner at the present time was 102 years of age. (Laughter and applause.) He had subscribed £18 18s. to the institution, and up to the present he had received £490—(laughter and cheers) —not a very bad investment. (Renewed laughter.) Since the commencement of the institution there had been on the books 547 pensioners, and there had been expended in pensions and in office expenses about £53,000. When first the institution was founded the pensions for men were fixed at £16 and for women at £12, but thanks to the liberality of the supporters of the institution it had been possible a few years since to increase those of the men to £20 and of the women to £16 —(cheers)—and in the year of Her Majesty's Jubilee the committee were able to make a present to every pensioner, and to every unsuccessful candidate the sum of £5, that they also might share in the enjoyment of the Jubilee. (Hear, hear.) The benefits of the institution were intended for those who carried on a most important industry, in which a large capital was sunk, and which gave occupation to a large army of workers. It was the unfortunate amongst that army of workers for whom he was asking help to-night. (Hear, hear.) As regarded the cand dates, they were not admitted to the benefits of the institution indiscriminately. They had to pass the scrutiny of a committee, headed by the honoured friend of the institution, Mr. Lee—(hear, hear)—and they had also to produce testimonials of good conduct, showing that they had conducted themselves in every way as people should do who applied for a pension such as that offered by the institution. It was argued by some that many of these poor people had brought distress upon themselves. He had been told it often, and that if only people in the prime of life would take the necessary precautions they should be able to save sufficient for old age or a rainy day. There were some, no doubt, who did bring trouble on themselves, but he would venture to ask his hearers to believe that these were a very small minority. (Hear, hear.) There were some who had very properly, as a great many who heard him had done, endeavoured to increase their little savings by what they believed to be fair and safe speculation. They had not always succeeded, and he asked those present if they had always succeeded. (Laughter.) And if they in risking their little had lost that little, he appealed to those present that they out of what they had saved and earned besides, would help those who had been unfortunate—(hear, hear)—and he asked them to remember, out of the goodness of their heart, those who had been less fortunate than themselves. He maintained that the greater number of those who applied for pensions were the men who had been unfortunate. The occupation of the gardener was in many cases a very precarious one. When bad times set in it was the gardener who first felt the pinch. Was it not at the garden that reductions began? Was the gardener not called upon to accept a lower rate of wages or to make room for a man falsely called cheaper? (Hear, hear.) If they considered the wages of gardeners, he believed they might take £70 a-year to be a high average—(hear, hear)—though he was thankful to say there were many exceptional cases; but taking the average he would ask his hearers if they would like to have to keep themselves respectable, after having paid a premium, probably to learn their business, out of that £70 a-year? and perhaps have to leave their situation after a few years, and to be out of a situation for months and perhaps years. Would they like to have to try what they could do on £70 a-year. The case of the gardeners was a hard case in many instances, and upon that ground he appealed to their liberality, that they might help those candidates who were obliged to come to the institution in their old age. (Hear, hear.) He knew of no more deserving set of men than gardeners—men who were obliged to be scientific as well as practical. That they were anxious to help themselves he asked his hearers to take his word. In the position he occupied as chairman of the dinner, he had had a great many letters from gardeners in all parts of the country sending subscriptions, which proved that those who sent them were doing their utmost. (Applause.) With regard to the cost of management, the principal expenses were the office, the secretary, and his clerk, and there were also the incidental expenses of postage, which naturally were heavy, because the constituency was all over the country. But as the institution had progressed, the expenses of management had decreased. In 1850 £493 was paid in pensions, in 1860, £733; in 1870, £787; in 1880, £1,074; and in 1889, £2,348. (Applause.) The annual subscriptions in 1850 were £542, and last year £1,328. The donations in 1850 were £206, and last year £3,400. (Applause.) The invested capital in 1850 was £2,250, and last year £23,000. (Hear, hear.) The expenses of management in 1850 were 20 per cent.; in 1860, 21 per cent.; in 1880, 18 per cent.; and last year, 12 per cent. (Applause.) Again he asked their liberality for an institution so economically managed, and he was sorry to have to say that however large their income, and they gave away between £2,000 and £3,000 a-year, it was not nearly sufficient. In January last there was an election, when they were only able to add nine pensioners, and sixteen were still waiting until the institution could afford to have another election, and there were others anxious to become candidates. Those present could imagine what hope deferred meant when these had nothing to wait for but the workhouse if they could not get upon the institution. He begged them to cheer his heart by being liberal, and, above all, to think of those poor people who were waiting, and to enable the institution to give them that comfort for the few years left to them which it alone could give. (Loud applause.)

Mr. Sherwood (vice-president and trustee) responded. During the existence of the institution it had made most rapid progress. It had expended £23,000, and had over 1,200 yearly subscribers, which said a great deal for it. He attributed its progress to the growing love of horticulture, and also to the fact that the excellence of the institution was having the effect of causing gardeners to find out that it was one of the best investments they could put their money into—(hear, hear)—and should they not require it, there was the satisfaction of knowing that they were aiding their less fortunate brethren. It had one of the most excellent of secretaries—(hear, hear)—and Mr. Cutler's exertions in a very great measure had brought the society to its present position. (Cheers.)

Mr. Thiselton Dyer (director of the Royal Gardens, Kew), gave "The Health of the Chairman," speaking of him in eulogistic terms. He greatly admired the qualities of self-reliance which the institution fostered, and spoke of the intelligent skill which the best kind of English gardeners possessed.

The health was drunk with great enthusiasm and musical honours.

The Chairman, in returning thanks, spoke of the curious letters he had sometimes received in answer to the appeals he had made, reading one which declined to assist upon all sorts of grounds. Against this he read one from a large banker, who said, "Gardens and gardeners contribute so much to my happiness that I enclose a cheque for £10 10s. with very much pleasure." (Applause.) He took the opportunity of thanking those who had acted as stewards. The present was, he believed, the largest body of stewards which had ever acted at any of the institution dinners. (Applause.) He would like to see many more practical gardeners subscribing. Small as their wages were, with a little self-denial they would be able to put away 4½d. a-week, which would make the annual guinea necessary as a subscription to the institution. (Hear, hear.) In concluding, he expressed his pleasure that Mr. Edmund Yates would take the chair at the next festival. (Applause.)

Mr. Shirley Hibberd proposed "The Health of the President and Vice-President of the Institution.' The Duke of Westminster, the president of the charity, was a good promoter of horticulture, and he had promised £1,000 towards the Horticultural Hall. (Applause.) Mr. H. J. Adams, the vice-president, was a patron and friend of horticulture. (Hear, hear.)

Mr. H. J. Adams having acknowledged the compliment,

The Chairman proposed "The Health of the Secretary"—(applause)—who, he said, was the best secretary of any charitable institution in London. (Cheers.) Whatever share he (the Chairman) had taken it was Mr. Cutler who had done the main part of the work, and he tendered him many thanks for the help he had given him and all he had done for the benefit of their excellent institution. (Cheers.)

The Secretary (Mr. E. R. Cutler), who was greeted with long continued cheering, in returning thanks said that the success of the institution was due to three things, the goodness of the cause, the good management of the committee, and as some people said, the incomparable cheek of the secretary. (Laughter and cheers.) The subscriptions and donations he had to announce reached nearly £3,000—(cheers)—and ranged from the Prince of Wales—(applause)—to many working gardeners who were only able to send 5s. or 2s. 6d. (Cheers.) The Chairman's list amounted to £1,230, and the gardeners had contributed £770. (Applause.)

The Chairman then gave "The Health of Our Provincial and Forenig Friends," Mr. Dickson (Chester), Mr. De Graaf (Leyden), and Mr. D'Haene (Ghent), acknowledging the compliment. Mr. Parkinson gave "The Health of the Committee of Management and Stewards," Mr. Munro and Mr. Webber (a member of the committee) returning thanks; and the final toast, "To Our Next Merry Meeting," was given from the chair.

THE CARNATION AND PICOTEE.

By JAMES DOUGLAS.

WHAT are the prospects for a good bloom this year is a question anxiously put by exhibitors? It was not easy to reply early in May. Now we are well into June, and in a month or six weeks the general collection will be in full beauty. The prospects are better than usual I fancy, and if the weather continues as it is now, that is gradually getting warmer, it is easy to see that the bloom will be in at the usual time, about the 20th of July for the neighbourhood of London. All the members of the Carnation and Picotee Society are naturally anxious that the exhibition to be held at the gardens of the Royal Horticultural Society at Chiswick will be a success; and with anything like seasonable weather it will certainly be so.

The trial of Carnations and Picotees in the gardens will be an additional attraction, and as they will be seen in growth, visitors can note the habit of the plants and other characteristics, as well as the colour, form, and markings of the flowers. This does not matter so much for those who grow plants to produce flowers merely for exhibition, but the exhibitors are not in the proportion of one to twenty of those who value the carnation for its sweetness and beauty merely, and care for it more especially as a beautiful garden plant. In the latter case the habit and constitution are of more moment than the width of a flake or form of a petal.

The numerous selfs now in cultivation seem to be the best adapted for border culture. Their value consists, in the first place, in their having a more vigorous constitution, for the colour of a flower has certainly a good deal to do with its constitutional vigour. As an instance of this, we may take, as an example, the first carnation on almost every alphabetical list, viz.: Admiral Curzon. It has been the longest in cultivation of any scarlet bizarre, and, as a consequence of this, the plants are of a rather feeble constitution when in their best state. But when one or two of the plants produce what the florists term "run flowers"—that is flowers from which the white has disappeared, leaving only the two colours, scarlet and marone—the result is, that those plants at once display greater vigour, producing leaves of a darker green colour, and a more vigorous growth. This proves conclusively how much the growth of the plant is influenced by colour, or the colour may simply be the consequence of an accession of vigour.

As a general rule, yellow colours have most influence on, or are more closely connected with, the colour of the foliage, and consequent vigour of the carnation and picotee. The yellow ground picotees decline more rapidly than the white ground varieties, but there is always considerable variation in this respect. Individual opinion must also settle the vexed question of the relative merits of flakes, bizarres, picotees, selfs, and fancies. On this subject we must ever agree to differ. If I prefer bizarre and flaked carnations, I must not denounce my neighbour because he admires varieties with white, rose, pink, purple, crimson, or scarlet flowers. We observe the distinctive tastes of the individual in his selections of flowers, as in everthing else. The works of Nature are varied enough for all.

Under these circumstances, I will not venture to say more than this, that the entire range of carnations can be cultivated out of doors, in the open border if the soil is moderately dry in winter, wet being fatal to the free development of the roots. A skilled cultivator is careful to place his plants where the roots have ample freedom to ramble a considerable distance, and the soil is in such a condition that wet in winter or drought in summer will not injure them in the least. Many amateurs have this knowledge, but others think if they can bury the roots of a carnation, or any other plant in the soil, regardless of its adaptability to the particular plants they are dealing with, they have done enough. Deeply trenched and rich porous soil is best for the carnation and picotee, and a clay subsoil is better than gravel.

Referring to the plants grown to produce cut flowers for exhibition, we find it answers best to grow a large number of the best varieties in pots. The plants are thus more under the care of the cultivator, and can be moved under glass, or a light canvas protection, as may be thought best. If the season is wet and cold, as may be the case, the flowers open badly either out of doors or under canvas, but in a glass house they open freely and well, however wet and cold the weather may be. Moreover, the glass houses must be filled with some kinds of flowering plants in July. Some people ring the changes between scarlet geraniums and begonias. Others think the carnation and picotee more beautiful, and also much more useful to produce flowers to cut for a period of a month in July and August.

The plants do not require much attention at present, beyond seeing that the stems are not injured by being tied too close to the sticks. The rapid growth of the flower stems cause some to snap through if their upward growth is checked.

We have had to destroy greenfly with tobacco powder, and it is also desirable to give a surface dressing of good, rich soil. I use equal portions of loam, leaf-mould, and decayed manure. This dressing aids the development of the flowers, but the anxious cultivator will be constantly amongst them, and will soon find out what they most need almost instinctively. The out-of-doors plants, especially those in beds, are better with a surface dressing as soon after the flower buds are formed as may be convenient.

We have a lot of seedlings in boxes ready to be planted out as soon as the tulips are dug up. The bed for tulips is always trenched up and well manured, so that no more is required to fit it for the carnation seedlings than merely to dig it over. The seedlings are raised in frames from seeds sown early in April, and whenever carnations of any kind are grown under glass greenfly will attack them sooner or later. Examine the small seedlings, and if they are not free from fly it must be removed by placing the boxes in a house where the pest can be removed by fumigation.

LONDON PARKS AND GARDENS.

IN meeting of London County Council on Tuesday last, the Parks and Open Spaces Committee submitted the following recommendations:—

"(*a*) That a separate Parks and Open Spaces Sub-department be formed, consisting of all persons employed exclusively in connexion with the parks and open spaces, subject to the reservation of such work as properly devolves on the Clerk of the Council.

"(*b*) That the head of the new sub-department be a professional landscape gardener of a high class, thoroughly versed in the management of parks, gardens, and open spaces, and possessed of business capacity and experience in the control and direction of men.

"(*c*) That the head of the new sub-department be designated 'Superintendent of Parks and Open Spaces,' and that his salary bo £600 a-year.

"(*d*) That such superintendent do supervise and be responsible for the whole of the sub-department, and do control all the officers and servants employed therein.

"(*e*) That in consideration of Mr. Nairn, of the clerk's department, being deprived of his position as superintendent of common keepers, and of the allowance of £53 a-year which he has received (in addition to his salary of £300) by way of payment for extra work and travelling expenses in connexion with that position, his salary as an assistant in the clerk's department be in future £350 a-year."

After a series of amendments had been proposed and negatived, Mr. Dickinson moved to add to recommendation (*c*), in lieu of the words "and that his salary be £600 a-year," "and that the standing committee be requested to report on the question of salary." This was agreed to.

Mr. Fardell moved that the Council do disagree with recommendation (*e*), as he did not approve increasing the salary of an officer while his duties were reduced. Mr. Æneas Smith seconded the amendment, which was agreed to.

The report as amended was then agreed to.

COMPRESSED TEA reported on in the June number of *Kew Bulletin* is a quite distinct article from the Brick tea used in Russian Siberia, Mongolia, and Tibet. This brick tea contains the whole of the leaf, with stalks and a large proportion of dirt that would defy analysis. To the European who has had experience of good leaf tea, the brick tea is about as nasty a dose as he can expect to swallow, even amongst the many nasty things he must make room for inside when travelling in Siberia and Mongolia. But Compressed tea is a cleanly article made of good tea dust, the object of compressing it being to reduce it to a much smaller compass than leaf tea. It is pressed in steel moulds by steam machinery, and a given quantity of tea is represented by the compressed article in one-sixth of its bulk. All the stages of the process are conducted with cleanliness and care.

BRITISH ASSOCIATION.—The programme for the Leeds meeting of the British Association has been issued. It commences on Wednesday, September 3, 1890. The president-elect is Sir Frederick Augustus Abel, C.B., D.L.C., F.R.S. The presidents of the various sections are as follows:—A.—Mathematical and physical science, Mr. J. W. L. Glaisher, Sc.D., F.R.S., V.P.R.A.S. B.—Chemical science, Professor T. E. Thorpe, B.Sc., Ph.D., F.R.S. C.—Geology, Professor A. H. Green, M.A., F.R.S., F.G.S. D.—Biology, Professor A. Milnes Marshall, M.A., M.D., D.Sc., F.R.S. E.—Geography, Lieutenant-Colonel Sir R. Lambert Playfair, K.C.M.G., F.R.G.S. F.—Economic science and statistics, Professor Alfred Marshall, M.A., F.S.S. G.—Mechanical science, Captain A. Noble, C.B., F.R.S., F.R.A.S., F.C.S., Mem. Inst. C.E. H.—Anthropology, Mr. John Evans, D.C.L., LL.D., V.P.R.S., Pres. S.A., F.L.S., F.G.S. The first general meeting will be held on Wednesday, September 3, at 8 p.m., when Professor W. H. Flower will resign the chair and Sir Frederick Abel, president-elect, will assume the presidency and deliver an address.

FRUIT PROSPECTS.—In visiting gardens in the last few weeks we have had the good fortune to see some fair shows of wall fruits, moderate shows of cherries, occasionally a very promising set of apples; but everywhere few plums and pears. In a general review there is no prospect of what would be termed an average fruit crop. In orchards and large plantations the outlook is even less cheerful than in closed gardens, but these, like the gardens, are not universally barren. Occasionally an exception occurs, due apparently much more to escape from frost than from caterpillar; for the insect plagues have been far less injurious than current reports represent, although undoubtedly there is reason for spirited scientific action to subdue the enemy. Messrs. W. N. White and Co., of Covent Garden, report on the fruit crops of Europe, and in reference to those of England they say:—

PLUMS (damsons, plums, and greengages).—The prospect is very bad; not one-tenth of a crop. In many places there are absolutely none.

PEARS.—Although all kinds, except "hazels," blossomed well, very few have properly set; and there are not many in England of either early or late kinds.

BLACK AND RED CURRANTS promised well; even as late as a week ago it was thought that crops would be good, but since then in some districts they have been attacked by the "honeydew," and the crop now cannot be more than one-half, even if that.

CHERRIES promised well, but early kinds were destroyed the second week in May. Since then the later sorts have suffered; taking reports all round they cannot be reckoned at one-third of a crop.

STRAWBERRIES AND RASPBERRIES promise well, but it is feared that unless warm weather soon sets in the fruit will be small, and the bulk reduced one-half.

GOOSEBERRIES at one time were believed to be an exceptionally fine crop, but since then many districts have been attacked by vermin, and the morning frosts in exposed situations have done great damage; so much so that they can only be reckoned at a good half crop.

APPLES blossomed well in some districts, in others not so well. Where growers have washed their trees they will, no doubt, save the bulk of the crop; but in many districts where they have not washed them the trees are attacked by vermin, and the crop, if any, must be a very poor one. On the whole, we think the crop can be reckoned at barely one-half.

STRAWBERRY PLANTATIONS.

By EDWIN MOLYNEUX, The Gardens, Swanmore.

ALTHOUGH it may appear early to write about forming new plantations of this fruit, it is necessary to set about preparing suitable plants for the next year's supply of fruit. In strawberry growing, as in other work in the garden, the cultivator who looks ahead will ensure much better results than he who waits until the work presses beyond the means of doing it in proper time. The result in the last case is a diminished return the following June. The time which strawberry plantations continue to give satisfactory returns differs much in various localities, according to the constituent parts of the soil and the mode of treating the plants. In some places three years is long enough to allow the plants to occupy the same ground, while in another garden even not ten miles distant, seven years is not too long to expect the same roots to give adequate returns. In this case, then, it would not be wise to incur extra labour and space to plant afresh while the old beds are in good heart. Some people never think of looking out for plants to form new strawberry quarters until the old ones are removed, then selecting rooted runners from these. Perhaps this method reduces the amount of labour required to make a new plantation, and it certainly also lessens the quantity of fruit the first year of picking by considerably over one half.

From experience I am able to say that by securing the first runners the plants make early in June, a much better result is obtained than from later runners. Even in procuring a stock of strawberry runners there are good and bad methods of operation. An objectionable method consists in depending upon the fruit bearing plants to supply the runners. This is inconvenient, for the reason that they are almost sure to be bruised and spoilt if much gathering of the fruit has to be done, and if layering in pots is practised, the runners then are almost sure to be torn out of the pots by constant passing to and fro in picking the fruit. Where one person only does this part of it, of course he remembers where the runners are. In dry weather the trouble of watering the soil in which the runners are laid entails much labour. A better method of securing a stock of plants is by planting a few extra runners every year in any out-of-the-way place where, of course, they will obtain sufficient light and so forth to grow and give the best results, retaining these plants only for the production of runners for the supply of next year's plants.

Where space in the open quarters or borders in the kitchen garden cannot be given, a row alongside the paths just within the box edging and at the margin of bush fruit borders in the kitchen garden where the arrangements of the quarters are after this style answers well. Here we plant some runners every year that are spared from the numbers required for pot culture or new plantations. The bloom trusses are picked off as soon as formed, the energy of the plants is then devoted entirely to the production of runners, and being situated close to the paths are handy to get amongst at all times and in all kinds of weather. About the middle of June, as a rule, the first runners are ready for layering, which is done by filling a sufficient number of three-inch pots with a compost of loam and decayed horse manure, two parts of the former to one of the latter. Instead of drainage being placed at the bottom of the pot we put in a rough piece of turf which affords a good rooting medium for the runners, the soil is pressed down firmly in the pot allowing space for water at the top of the pot. The runners are laid on the soil, one to each pot, securing them by laying a small stone on the layer or by fixing them firmly with a short wood peg. They are kept regularly watered as circumstances require. Instead of pinching out the point of the runner after layering in the pot it is allowed to extend, and will quickly produce other runners which are also layered. As soon as the second or even the third on the same runner from the original base is rooted the first runner is severed from the parent plant, and as progress is made in the rooting of the rest they are all in turn cut off from each other, still keeping the pots plunged in the soil as when the runners were first layered. This prevents the soil drying so quickly in the pots, and as the runners are allowed as much space from each other as the length of stem will allow, the plants do not become crowded so as to injure each other for want of space. Here they stay until the position they are to occupy permanently is ready.

By the early part of August the plants will be quite ready to go into their new quarters of usefulness. Strenuous efforts should be made to have the ground in readiness, as after the pots are well filled the roots become matted closely together, which is not what is required. When the runners are ready it is not too early to plant them, as there is a greater gain the following year from early planting than the reverse, as shown by the extra size of the plants, and, of course, in the number and quality of the fruit. Not only the first year is this the case, but also in the succeeding years. We have here at the present time plants from last year's runners standing two feet apart each way, which measure seventeen inches across, and are well laden with fruit, whereas in some other gardens close at hand where planting was deferred until October, and then with ordinary runners dug up at the time from the beds, when cleaning them off, they have only three or four leaves to each plant, and in some cases one solitary truss of bloom. It would be much better for the plants afterwards if that were cut off, to allow them to make growth more freely without the strain of carrying a crop of fruit, which must be of poor quality. When early planting is practised and the best plants employed in the manner advised, a good crop of fruit may be had the first year and a full one the next, owing to the free growth made the first season.

The preparation of the ground for a strawberry plantation needs some care, especially if it be naturally unsuitable for their growth. The worst kind of soil to grow strawberries in is one which is heavy in character and consequently of a close, retentive nature, and which is naturally cold in the spring. In such a soil as this the growth in the spring is but meagre. Where soil of this class has to be dealt with, some consideration should be paid to its position, avoiding always one that is exposed to easterly winds. I have seen many crops of fruit spoilt by strong winds during the early part of May, when the plants were in flower. The cold wind from that quarter so "whipped" the leaves about that the tender stems were completely blackened, which, of course, prevented their supporting the plants, as the tissues of both leaves and stems were injured.

In such localities as this where easterly winds are prevalent at that time shelter should be provided by hedges, or even rows of tall early peas may be utilised at wide intervals amongst the strawberries, sticking them early so that the force of the wind is broken. I have proved by bitter experience the advantage of shelter even of a temporary character in wind swept districts, therefore wish to impress strongly upon those who do not know the result of such adverse winds the necessity and wisdom of this precaution.

The ground should be deeply trenched, retaining the top soil still for the surface. Cow manure is about the worst kind that can be employed in land of this kind, for the reason that it is close and heavy in nature. On the other hand, horse manure is the best that can be had. At the bottom of the trench a layer of strawy litter should be laid, or a good thickness of decayed vegetable refuse. In fact, anything of that kind that will assist in making the soil porous, so that the water from heavy rains will percolate through it freely. Under the top spit of soil a dressing of horse manure, not quite so long, but more decayed, should be given, as into this the roots will find their way, if not laid too deep; six inches is not too far down under the surface.

For the general list of varieties a distance of two feet apart for the rows and eighteen inches from plant to plant will suffice; a little less or the reverse may be necessary in some localities, which can easily be ascertained. Choose, if possible, showery weather to put out the plants, first well soaking the soil in the pots. Use a trowel for planting; press the soil about the roots firmly, and if the weather be dry and continue so for some time afterwards, give an abundant supply of water to the roots. Remove all runners from the plants as fast as they form; keep the ground well stirred between the plants to keep down the growth of weeds. In soils of a cold, retentive nature, which, I think, is the worst possible for strawberry culture, it is not a wise plan to mulch the surface with manure during the winter months, for that only augments its coldness and humidity. What we do with satisfactory results is, in the early spring, when the plants are starting into growth—say about the end of March or early in April—when we mulch the surface with manure from a spent mushroom bed, and over this, just before the plants burst into bloom, we spread long litter from the stable yard. By putting it on thus early the flowers and fruit afterwards are not interfered with, neither does the latter get splashed with soil. The straw or litter has ample time to get washed and cleaned.

The early "bedding," as it is called, allows ample time for the leaves and flower trusses to extend over the straw, which gives a neater appearance to the whole than when the straw is only laid a short time before the fruit needs it to keep it clean. During the middle of May, and onwards, we sometimes experience a good deal of drought; the early mulching of the soil is then an advantage, as it retains what moisture there is in the soil much longer, and does away with the necessity of supplying water to the roots of the strawberries, as is sometimes necessary to induce the fruit to swell at all. The addition of the mushroom bed manure at the stage named is also useful in this respect; moreover, the dressing feeds the surface roots, which adhere to it as the straw above maintains it in a moist condition quite favourable to root production.

Many persons may think it is not necessary to go to the trouble that I have detailed to obtain crops of strawberries outside. Well, it may not be so in some districts, where the soil is more congenial to vegetation, and strawberries in particular; but having to deal with a soil distinctly unsuited in its natural state, I know the advantage of good preparation, and I venture to believe there are many others similarly circumstanced. I find, to obtain the best results, it is absolutely necessary to take much trouble, hence the excuse, if any is needed, for the length of this article.

A note of this sort on so important a subject as strawberry growing would not be complete without a reference to varieties. But as most people have their favourites, owing to the manner in which the varieties succeed in certain localities, my list will be a short one.

Noble certainly is the earliest kind we grow here, beating all others. At the present time (May 31) from last year's runners there are lots of fruit of large size, while such as *Sir Joseph Paxton*, commonly known in this part as "Joes," have only their fruit now nicely formed. Noble certainly is a good cropper and of free growth, and for early supply is sure to be much sought after.

The Captain is our next early variety. Although not very free in cropping the fruit is of extra size; but the quality is not of the highest class, being somewhat acid to the taste. It is a vigorous-growing kind.

King of the Earlies we grow, but this will be its last year. The results are but poor, both in number and quality of its fruit.

Viscountess Hericart de Thury is an excellent sort for outdoor uses. The plant grows freely, is hardy, and the fruit, produced in abundance, is of capital quality, ripening fully a week before the general kinds. For preserving, the dark red colour of the fruit is much liked.

Sir Joseph Paxton is the great favourite in this locality, where hundreds of tons of fruit are picked during the season. This variety grows freely, is hardy, and the fruit produced are of large size, very firm and of excellent flavour.

President is another capital sort, too well known to need description. Here it is good in every respect.

British Queen, where it succeeds, is much approved for its grand flavour. And where it thrives it is liberally fruitful.

Alice Maud is another good sort for early use, especially where the soil is light in character. This variety is sometimes taken for Keen's Seedling, so much does it resemble that variety.

Waterloo promises to be an acquisition where late supplies of fruit are valued. The fruit is large, dark in colour, and of a peculiar yet pleasing flavour.

With the exception of growing enough kinds to afford a succession of fruit to prolong the season, it is not wise to cultivate many sorts. Much better it is to depend upon those kinds which give the best results in certain districts, because it is not all which will grow and succeed in the same manner in one place.

A FEW MORE WORDS ABOUT ASPARAGUS.

By Mr. J. H. JEWELL,

Read before the Westerham Gardeners' and Amateurs' Mutual Improvement Society.

I THINK it was Carlyle who said "All men, even fools, have each their hobbies," and it is somewhat astonishing how many men, probably some of both classes, have a hobby for gardening, but in this hobby of gardening we have all of us our peculiar idiosyncrasies. Our president, for instance, leans strongly towards that lovely tribe of plants, the primulas; our senior vice-president would almost barter the greatest treasure he possesses for a rare chrysanthemum; and for myself I must say I have a penchant for that delicious esculent, asparagus.

I have been somewhat interested in an account a friend gave me of the wonderful quantity of asparagus grown in Germany, and I have occasionally noticed paragraphs in the daily papers of the immense quantities imported. It has been said that in no part of the world has this vegetable been grown to the perfection it has attained in Germany. This, perhaps the most delicious of all the gifts of the soil, is not grown in this country to the extent it should be. Here and there a few acres are devoted to its culture, but it has been considered too costly in its production to tempt the market gardeners to cultivate more, and perhaps one reason for this laxity may be that we cannot cut satisfactorily from the same beds for a period longer than six weeks, and new beds are unproductive for a period of some three or four years. But, on the other hand, it is always a marketable production, and the prices rule sufficiently high to ensure a fair profit.

The mode of culture in Germany differs widely from our own, and they pride themselves that in no place in the wide world is it brought to the perfection to which they bring it. But we may be allowed to differ. They are far in advance of us for the quantity grown, many hundreds of acres being devoted to this object especially in the town of Barvenswhig, from which place an enormous quantity is sent to England and to most parts of the civilized world, for here are some three and twenty canning establishments, in which green vegetables are canned, and this industry employs many men, women, and children.

The soil there is exactly suited for its cultivation, being two-thirds sand and one-third clay, and we may note the more suited to it the soil the deeper it will root, the usual length being six feet, but it has been known under specially favourable conditions to grow to a depth of eighteen feet. Give it the soil it loves, and the care it needs, and it will flourish for many years.

As I have previously remarked, the mode of culture differs materially from our own. The roots are planted about two feet deep in a layer of manure, in straight rows, barely a foot apart.

At first the young plants are only lightly covered with a little earth, but when they are growing well the soil, which was dug out for their reception, is filled in again.

In June, after the cutting season is over, the plants are allowed to grow, and soon assume the appearance of a miniature forest of light, feathery, graceful greenery.

This in autumn is cut and packed down upon the beds as a defence to the asparagus against the coming cold. As the winter advances the utmost care is taken to see that no little head appears above the earth, but that all the young plants should be snug and warm under the protection of the soil. The beds are the very picture of neatness and order, being the pride and delight of the cultivators. Nor is this care and toil wasted. Year by year the returns are greater, and what the beds of asparagus produced last May and June, as the reward to the proprietors and workers, is almost incredible. It is reported that among a number of giant specimens produced last season one was shown as long and thick as a woman's forearm, and weighed eight-tenths of a pound. This, like all other reports of the kind, should be taken *cum grano salis*.

By the mode of culture they adopt, the grass (to use the vulgar term) is blanched perfectly white from end to tip, and it is said to be tender, sweet, and juicy, but I have never met with this quality in the white specimens which have come under my notice. Nor do I believe they would suit the refined taste of the epicure, though they might be fit food for the gourmand. Nor can I think by this method that the flavour can be improved, but must rather be deteriorated. We know that blanching is useful for some vegetables, celery for instance, because in its green state there is a rankness which by this method makes it more refined and palatable, but the flavour of asparagus by its means cannot be improved.

I am informed that the quantity grown is so abundant and so plentiful and cheap that it forms a daily adjunct to the dinner table of rich and poor, and is classified in three degrees. A high-class first quality is mostly canned, but when required fresh is sold at from sixpence to ninepence per pound. A medium quality, about as thick as a man's second finger, realizes from fourpence to sixpence; and a third or minor quality, mostly used for soups or flavouring, at from twopence to threepence.

It is a grand thing to have asparagus all the year round, and for this the Germans may be said to bear the palm for the way in which they preserve fresh vegetables. Some canned asparagus was lately opened and eaten that had been in tins for ten years.

What we may call our national or home-grown asparagus is always in demand at our best markets, and the largest supplies are furnished from Evesham, where a great surface is devoted to its culture. From this place it is sent out in bundles containing six score or what is called the long hundred. These bundles will realize from thirty to forty shillings a dozen in the market and will retail from 4s. 6d. to 6s. a bundle retail.

I noticed recently in one of the gardening periodicals that asparagus beds would remain productive from twelve to twenty years. My own have been traditionally in existence for over fifty years and are still productive, as you may note from the specimens I have here this evening. My two beds occupy a space each thirty-four feet long by four feet wide, or about a quarter of a rod of ground. The produce during the last decade has been, commencing in the year 1880—1,710, 2,035, 2,000, 2,825, 3,050, 1,601, 2,300, 2,980, 2,920, 2,930. You will clearly understand that much of this is small or what is called sprue, such as may be used for soup. I always cut close during the growing season, preferring to leave off cutting by the 17th of June.

Perhaps it may not be out of place if I say a word or two about cooking. The quality of all vegetables is either improved or impaired by the mode in which they are prepared for the table, and it will specially apply to this vegetable, which should be dressed as soon as possible after it is cut to retain all its essential qualities. It cannot be cooked too fresh. Such has been the opinion of some *chefs de cuisine* with whom I have had acquaintance, notably, the late celebrated Alexis Soyer, Monsieur Quolotti, and others.

TO PREPARE ASPARAGUS FOR COOKING.

Scrape off the scales from the stem, beginning from the tip or budding part of the head. Throw them into cold water, then tie them into bundles of about twelve heads, cut them into equal lengths, have ready your pot of boiling water placing them upright in the water, boil gently for about twenty minutes. Have ready a slice of toasted bread, which dip into the water in which the asparagus is cooked. Place on a dish, remove the vegetable carefully from the water and serve on the toast.

Note.—If the water for cooking is hard, to about every three quarts add one tablespoonful of salt and half a teaspoonful of carbonate of soda.

Asparagus Peas.—Dish known as *Asperges en Petits Pois*. This is a recipe to use up the small or sprue asparagus.

Take, say about a hundred heads of asparagus, two ounces of butter, a small bunch of parsley, two or three green onions, flour, a lump of sugar, the yolks of two eggs, a tablespoonful of cream, a little salt. Carefully scrape the asparagus, cut it into pieces about a third of an inch in length, avoiding all that is the least hard or tough, throw them into cold water, then boil the asparagus in salt and water till three parts done; take it out, drain, and place it in a cloth to dry the moisture away from it. Put it into a stew pan with the butter, parsley, and onions, shake over a brisk fire for ten minutes, dredge in a little flour, add the sugar, and moisten with boiling water. When boiled a short time and reduced, take out the parsley and onions, thicken with the yolks of two eggs beaten with the cream, add a seasoning of salt, and when the whole is on the point of simmering, serve. Make the sauce sufficiently thick to adhere to the vegetables. The onions may be omitted if objected to.

Dr. Strauss, better known at all the best clubs in London under his *nom de plume* as the Old Bohemian, a grand authority for a *bonne bouche*, says "all green vegetables should be cooked in soft water; a small lump of soda will preserve the fresh green colour. Always boil your fresh vegetables uncovered and do not get them done before they are required, as exposure to the air tends to impair their flavour. The advice to have your vegetables always only just done when they are required on the table may seem useless reiteration; but it is of the highest importance, and especially to asparagus." He says also "I have tried a large variety of asparagus in tins and glasses, but I have found most of them lamentably wanting, making an exception in favour of the so-called Oyster Bay asparagus imported from America. This is his recipe for sauce.

A drachm of salt, two tablespoonfuls of vinegar, three of oil, and a dash of Worcester; this makes an excellent sauce for asparagus, no matter whether fresh or preserved.

A recipe for a salad of asparagus I will place before you. "Large white asparagus, boil till quite done, cut in half-inch lengths, throwing away any part not absolutely tender. Place in the bowl, cover with good sauce, then sprinkle over with grated ham or add tiny strips of smoked sausage.

THE SUNDAY OPENING of R.H.S. garden at Chiswick appears still to be comparatively unknown to the Fellows, for the Sunday visitants are few in number. The gates are open from ten in the forenoon of Sunday all through the summer, and, as a matter of course, only Fellows and their friends are admitted. On weekdays anyone may enter on payment of sixpence, and the Fellows are admitted without payment as usual. Should the apparent indifference of the Fellows to the Sunday opening continue the Council will be justified in terminating the arrangement with the close of the present season, but we hope this will not be the end of what in the first instance appeared an admirable expansion of the privileges of the Fellows.

Notes of Observation.

LABURNUMS.

The varieties of Laburnums are flowering so freely this season as to surprise the "oldest inhabitant." The best of them all is the Scotch variety *Cytisus alpinus*. The growth of this sort is much more vigorous than any other, more especially the common type *Cytisus Laburnum*. Owing to the manner in which the growth is made there is more space to show off the racemes, they not appearing so clustered together as in the case of the common Laburnum; the flowers, too, are larger, drooping more gracefully than any other sort; added to this the foliage is larger and of a deeper green in colour, which helps to relieve the mass of golden flowers more effectually than is the case with any other variety. Waterer's variety of Laburnum named *Watereri* is an improvement on the type, insomuch that the racemes are longer and the colour a brighter yellow. In fact, it becomes a handsome-looking tree in a short time, the growth being rapid.

C. Adami is more remarkable for the peculiar manner in which it flowers, having the two colours on the same tree. In some cases it is reversed, the yellow among the purple. The colour of this variety is a dull purple, the racemes are long, quite pendulous. The variety named *Autumnalis* is useful to prolong the season of this flower. The racemes are thinly disposed as compared with other sorts, showing more of the foliage—a point in its favour. All the sorts pay for good culture by the free growth made and profusion of flowers they present in their season. E. M.

DOUBLE-FEATHERED PYRETHRUM.

The double form of Pyrethrum parthenium is admirably adapted for growing in pots for flowering in a small state. Small examples are indeed very useful for the front stages of the conservatory or greenhouse and in other positions where dwarf bushy plants are required. If the seed is sown in April and placed where it will have the assistance of a brisk temperature the seedlings will soon make their appearance and be ready for pricking off. They should be pricked off into a pan filled with a light and moderately rich compost, and when nicely established be removed to an unheated frame. They are in due course to be put singly into four-inch pots, and when they are commencing to root freely to be removed to an open position out of doors. When the plants are about four inches in height nip out the growing point to promote the production of side shoots and thus ensure bushy examples. If desired one portion of the stock may be allowed to grow unchecked, as healthy examples present a pleasing appearance grown in either way. E. M.

MARECHAL NIEL ROSE OUT-OF-DOORS.

On the 24th of May we were enabled to cut our first fully developed blooms of this rose from the plant growing at the base and trained up a south wall. In a nook well sheltered from easterly winds is where this plant has grown for the last nine years. It has never failed yet to produce a crop of substantial blooms. The heat experienced here at the time when the blooms were expanding, which registered eighty-two degrees in the shade, had the effect of making the petals much paler in colour than they are generally, or should be when unfolded in cooler weather. S.

FUCHSIA PROCUMBENS.

This is an interesting plant suitable for window boxes, over the front of which it trails gracefully and is not particular as to position, growing very well in a northern aspect. As a basket plant this fuchsia is useful and certainly very attractive when laden with its peculiarly coloured flowers, which are green, yellow, and blue, and very pretty. The berries which are freely produced are oval in shape, magenta-crimson in colour, and remain on for a long time—some months in fact. For draping over the front of the stages in the greenhouse or conservatory this plant is useful, as in a short time as much as three feet of growth will have been made, and as this plant succeeds in small pots it is all the more valuable for growing where large pots are too much seen. Cuttings are taken off with a partly ripened joint, inserted in sandy soil, plunging the pot in a gentle bottom heat, when roots are quickly made and nice plants produced in one year. The wonder to me is, that so few cultivate this fuchsia, the usefulness of which cannot be questioned. E. M.

RHODODENDRON SEED PODS.

Where a large collection of these plants are grown it becomes a work entailing much time, as the trees increase, to relieve them of the extra strain of supporting the seed pods which so quickly show after the flowers fade. To the prompt removal of the seed pods I attribute much of the success in the growth of these shrubs here. It is surprising the difference that can be seen in the growth of those plants which have their pods cut off at once after flowering as compared to those that are not so relieved; and it should be borne in mind that the manner in which growth is made after the flowers have faded has all to do with the success of the following season as to the manner in which they will then blossom. I am speaking, of course, of hybrid kinds, which altogether are not so free in their growth as the common forms of R. Ponticum. If the removal of the seed pods is delayed for several weeks after the blooms have past their best, the base of the seed-bearing part becomes quite firm, and cannot be so easily removed as though it were done at once. It is a simple matter, best carried out in the following manner: With the left hand hold the shoot firmly just below the point which carried the flower-head, and with the right hand bend sharply on one side the truss of seed pods, which will snap off clean. It should not be cut with a knife. S.

THE GERMAN CATCHFLY.

Lychnis viscaria flore plena is one of the most charming hardy plants in existence, flowering as it does during the month of June. Its bright, rose-coloured flower-spikes are so freely produced as to cause a glowing mass of colour. In a sunny spot on the rockery is where this Lychnis excels in appearance, although it is much valued as a border plant at this time of the year. A stock of plants is easily raised by dividing some old clumps early in October, dibbling into a cold frame in sandy soil every piece that has roots attached. Here they should remain until the following early part of April, when they will be well rooted and in a condition to plant where required with an assurance that some flower will be produced the first year of the plants. E. M.

DOUBLE CAMPION.

The double form of *Lychnis dioica* is a good old-fashioned border plant, flowering abundantly several months, not growing more than one foot six inches high. The colour is brilliant crimson, a colour of which there is but little in the borders at this time of the year. By dividing the roots either in early autumn or the spring a large stock of plants may quickly be secured. E. M.

HOME OF NEPENTHES RAJAH.

In a recent contribution to the *Garden and Forest* of Mr. Watson endeavoured to show that horticulture is essentially an empirical art, and that the cultivator must not look to science for assistance in carrying on his work, or hope to derive much benefit from an acquaintance with the conditions under which plants grow in their native habitats. In support of his views he instances *Nepenthes Rajah*, and writes:—

"Take as an example any plant newly introduced, whose cultural requirements are unknown. *Nepenthes Rajah* was introduced by Messrs. Veitch about six years ago. They knew where it came from, and no doubt were well acquainted with the conditions under which it grew when wild. The plants of *N. Rajah* were distributed, and many were lost through wrong treatment, even by those who grow Nepenthes well. It looked as if this grand Pitcher Plant would prove incapable of cultivation, when lo, the information came from Glasnevin, the garden of many important horticultural achievements, that the cool conditions afforded by the Masdevallia house suited exactly this Nepenthes. Physiology would not have been of the slightest avail if called in here, nor would anything have equalled the empirical act of Mr. Moore when he removed a Nepenthes from the hottest to the coldest house and watched the result. It often proves the case that some outsider, working in utter ignorance of the conditions provided by Nature for a particular plant, has discovered the best method of culture by accident, some would say, but, at any rate, by purely empirical means."

This communication brought a rejoinder from Mr. F. W. Burbidge which is interesting, as proving that a knowledge of the conditions under which plants are found growing in a wild state is of value to the cultivator, and for the information it gives of the home of the magnificent pitcher plant referred to. Mr. Burbidge says:—

My friend Mr. Moore, of Glasnevin, was better informed as to the native climate and surroundings of these pitcher plants than Mr. Watson has inferred. When I presented the plant of *Nepenthes Rajah* to Mr. Moore I also told him of the native conditions, and it is a proof of his intelligence and skill that he has so far cultivated this plant when scores of other good plant-growers have failed. These native climatic conditions are so peculiar that I may here state them in a brief way. The four most interesting nepenthes found wild on Kina Balu are *N. Lowii*, *N. Edwardsiana*, *N. Rajah*, and *N. villosa (vera)*. They are found on the southern spur in the order named, commencing with *N. Lowii*, at 5,000 feet, and ending with *N. Rajah* and *N. villosa*, at 9,000 to 10,000 feet. This enormous mountain range is about sixty miles from the sea-coast, and the intervening country consists of low ranges of coast-hills and rich alluvial plains and marshes. The topmost peak above the great southern spur is 13,700 feet high. It naturally follows that this mountain affords an enormous range of climate and temperature. The thermometer descends to freezing point at the top, and there is sleet, but no snow has been seen. The day temperature of the sea-coast and plains is generally from 80 to 90 deg. in the shade, and perhaps 10 deg. lower only on the coldest nights. The great granite peaks of this mountain, even at the distance stated, are cold enough and massive enough to attract a current of hot, moisture-laden air from the sea, and this current sets in every day about four or five o'clock.

Every night in the year there is a deluge of rain in what I have called the Nepenthes zone of this mountain, that is, from 5,000 to 10,000 feet in altitude, and even if not raining in the daytime there is a constant state of what has been called "Scotch mist," or air-clouds condensing into small rain, which wets one to the skin most thoroughly in half an hour. All the time I was up this mountain (I was there on two occasions in what below were the wet and dry seasons) I never had a dry thread to my back except at night in the cave, with a great bonfire blazing outside. The native guides from the last village on the road, Kiau (altitude 3,000 feet), found the wet and cold (49 to 55 deg. Fahrenheit) on this mountain too much for them, and they became quite paralyzed, and finally left for their homes rather than endure the chilly dampness of this Pitcher-plant paradise. At 9,000 to 10,000 feet altitude the trees are low and scrubby, and covered with long moss, filmy ferns (here I saw the trees draped with the rare *Trichomanes pluma*, only seen alive previously by the veteran plant hunter, Tom Lobb), and Lichens or Usnea, and creeping, monkey fashion, amongst this vegetation, was only another name for a perpetual shower bath from the branches overhead.

From what I have said, I think that my friend Mr. Watson will perceive that when Mr. Moore transferred *Nepenthes Rajah* from a hot and dry temperature to a comparatively cool and moist one, he approached the natural conditions under which this noble plant was found growing by me, and hence, no doubt, his superior measure of success. All these upland or mountain Nepenthes are more or less difficult of culture, and extremely difficult to import, owing to the heat of the plains and the sea voyage. On the other hand, the species found in marshy forests at or near sea level are comparatively easy, requiring heat and moisture only, with a moderate amount of shade. One Nepenthes, viz., the well-known *N. Rafflesiana*, is the first weed to appear after forest or jungle fires in Borneo and Labuan.

THE QUEEN OF THE PEA-FLOWER FAMILY.

Camoensia maxima.

THE "English" name adopted here for the finest climber of the leguminous order is not of our invention, but that of Mr. Walter H. Fitch, who figured and described the plant in "Nature and Art," Vol. II. p. 59. It has a place in Mr. George Bentham's list of tropical leguminosæ in "Linnean Transactions," Vol. XXV. p. 301, and is figured, life-size, in plate 36 of the same volume, also by Mr. W. H. Fitch.

The genus Camoensia (Welw.) stands alone in the order as combining the lofty climbing woody stem of the Dalbergia with the trifoliate leaves of Genista, whilst the flowers place it amongst the Sophoras. Two species are known, C. maxima, here figured half life-size, and C. brevicalyx.

The plant before us is one of the most magnificent climbers known. It is found in the elevated forests of Golungo Alto, in Angola, where, according to Dr. Welwitsch, it adorns the loftiest trees on the margins of the forest, causing the traveller to pause in amazement on beholding its massive display of gorgeous flowers, which, strange to say, are not highly coloured. It is a tall, smooth, climbing shrub, with drooping branches, leaflets about four inches long and one broad; and flowers in pendulous racemes six to twelve flowered, ten inches to a foot in length, which are followed by pods the size of a broad bean, but with a thicker and harder shell. Though superb in style of growth and leafage, it of necessity attains to its highest glory, when in flower, when the colouring, though not such as would be described as "showy," is nevertheless beautiful. The petals are white, brilliantly bordered with gold, giving emphasis to their frilled edges, and the pedicels and calyces are of a rich cinnamon colour, forming at once a curious and most effective combination.



CAMOENSIA MAXIMA (Flowers white, tinged with gold on the edges).

We are indebted to Mr. William Bull, of King's Road, Chelsea, for directing our attention to this noble climber as one much to be desired for a roomy conservatory or tropical house; a companion, indeed, for such as the Beaumontia, the Bougainvillea, the imperial Hoya, or the tropical Aristolochias, Allamandas, and Ipomæa Leari. It is named after Luis de Camoens, and were that poet to creep out of his grave to see it in flower, he would assuredly feel proud of his vegetable namesake.

THE PROTECTION OF ALLIGATORS by the authorities of Louisiana illustrates, remotely, perhaps, but significantly, the case of bird protection that is so much debated in Great Britain. The killing of an alligator at Plaquemine, on the Mississippi, is prohibited under a penalty of twenty-five dollars, and the reason is that these reptiles are great destroyers of rats. Now that alligators are becoming scarce the rats are destroying the plantations.

ORCHID NOTES—ODONTOGLOTS.

Odontoglossum crispum is probably the most popular of orchids, and one of the easiest to cultivate. What are termed ordinary varieties are really in their way quite as beautiful as the more expensive varieties, which are dear because they are more densely spotted, or are in some way differently marked on the sepals and petals. The cut spikes of these odontoglossums, either the white or rosy-tinted varieties, spotted or not, form charming objects as cut flowers. There is much confusion in the correct naming of this fine orchid. Carl T. Hartwig first discovered O. crispum near Pacho, in the province of Bogota, in the years 1841-2. The plant was named by Dr. Lindley O. crispum. About 1863 Mr. Weir and Mr. Blunt sent plants from another district, Fusagasuga, about fifty miles from the Pacho district. These have broader petals and larger flowers; the spikes are seldom branched; whereas the plant named by Lindley produced longer spikes, with smaller flowers having narrower petals.

Mr. Bateman named the white variety with broad petals, more or less spotted, *O. Alexandræ*. The variety with rosy-tinted petals, spotted and blotched, was named *O. Bluntii*. Some of the leading growers say that the whole of them should be included under the specific name of O. crispum. Others maintain that the three are specifically distinct. It may not be of much consequence to the practical horticulturist. The Alexandræ and Bluntii forms have the most massive flowers. Dr. Reichenbach, writing in *Reichenbachia*, says,—"As to myself, when I published O. Bluntii, I most distinctly compared it with O. crispum, Lindl., which I knew perfectly well. As a fact, I never had any difficulty in recognizing what is Mr. J. Bateman's O. Alexandræ and what is my Bluntii." The collection in Messrs. Sander's nursery at St. Albans comprises tens of thousands of plants, and amongst so many are numerous distinct and fine forms. Some of them are heavily marked like Veitch's variety; others are like Rucker's form; one or two pure white, as in *Virginalis*. A group of distinct varieties and forms had been arranged at the entrance to the largest odontoglossum house, comprising about half a hundred plants. They formed an interesting study, and had an excellent pictorial effect. One densely spotted and altogether distinct in character had been named *O. Wendlandianum*.

Some of the most distinct and beautiful of the yellow odontoglossums were placed in juxtaposition with them; they also in their way are as handsome as the others, and the experts have also managed to get the nomenclature into some confusion, especially in regard to the species *O. luteo purpureum*. It is found in the O. crispum district, and imported with that species, as most large purchasers of imported plants can testify. It is a most variable plant. I noticed a form of it

(*sceptrum*) in Messrs. Sander's collection with five spikes, containing in the aggregate fifty-five blooms. *O. Halli* had long, handsome spikes; *O. polyxanthum* had handsome yellow flowers, with distinct brown blotches. *O. excellens* is also a rare yellow form, and is supposed to be a cross between *O. Pescatorei* and *O. triumphans*. *O. Wilckianum* was also in grand form, and seems to be a natural hybrid between O. crispum and O. luteo purpureum.

The houses where these plants are growing seem to be kept constantly moist; pipes running the entire length of the house are perforated with small holes, which squirt the water the entire length of the house as soon as it is turned on. The culture of all the best and most useful for decorative purposes is as simple as the culture of any plant can be—musk for instance. No artificial heat is needed in summer; ventilation must be ample, but the plants should not be exposed to draughts of cold air. The potting compound is good brown fibrous peat; this must be kept of an uniform degree of moisture, not too wet and seldom very dry. The sphagnum ought to be growing freely on the surface. In winter and early spring the minimum temperature should be from 45 deg. to 50 deg. In summer and autumn it will average about 55 deg. as a minimum. Many gardeners are driven in the summer months to grow odontoglossums and masdevallias in cold frames. I have done so, and find they succeed very well up to the middle of September.

One important point in the culture of these plants is keeping them quite free from insect pests. Green fly attacks the flower spikes as soon as they begin to push from the base of the pseudo-bulbs; they must be brushed off and a vigilant eye kept in case they should again appear. Dipping the entire plant in diluted tobacco water kills the fly and thrips at the same time; but the leaves of the plants should be sponged over again with clear rain water. Strong soft-soapy water is injurious to the young leaves and flower buds, but a small quantity may be used in the water with advantage.

J. Douglas.

The Collection of Herbaceous Pæonies in the Royal Horticultural Society's garden at Chiswick is now in exhibition condition, a large proportion of the varieties being in flower, and a very gay lot they are.

THE IVIES, WINCHMORE HILL.

The accompanying plate shows the front of the above residence facing due south, completely covered with various kinds of ivy, which render an otherwise unattractive building an object of considerable interest. The plants have been some eight years in their present position, and at first great care was taken in training them and keeping each variety separate. This produced a charming effect, but, having since covered the space allotted to them, they have become intermingled, and, as a natural result, the stronger varieties have overrun the weaker, which are mostly lost. Those used are Maculata, Maculata aurea, Sulphurea, Marginata major, Crenata, Cænwoodiana, Cinerea, Hibberd's Emerald, and others, a few out of the large and varied collection to be seen here, the forming of which has been the pleasurable work of a dozen years or more.

The house, though near the road, is screened from it by a thick laurel hedge and rampant growth of climbing roses, beneath the combined shade of which many choice hardy ferns enjoy their sheltered situation. The basis of this fernery, as also of another near b , is composed of a mound of rough peat and turfy loam three or four feet in depth. In this large blocks of Snettisham sandstone are partially buried here and there, with a rough margin of the same material for a finish. Sandstone is eminently suitable for this purpose on account of its great porosity, and consequently the short time required for it to become moss-covered. Athyriums, aspleniums, blechnums, lastreas, and polystichums are well represented; allosorus, ceterachs, cystopteris, onocleas, struthiopteris, woodsias, woodwardias, and scolopendriums are in variety.



THE IVIES, WINCHMORE HILL, LATELY THE RESIDENCE OF H. K. MAYOR, ESQ.

The window-boxes, nineteen in number, are in summer bright with zonal and ivy-leaved pelargoniums, tropæolum, mina lobata, agathæa cœlestis, fuchsias, calceolarias, &c., a pleasing contrast to the rich ivy background. In spring various flowering bulbs, primroses, &c., take the place of these.

The borders under the windows are filled with various hardy and half-hardy plants, including the elegant Japanese maples, hibiscus, hydrangeas, yellow jasmine, &c.

Our esteemed friend, H. K. Mayor, Esq., for some years occup

The Ivies, and formed the garden to his taste, the collections of ivies, coniferous trees, ferns, &c., being especially attractive as at once embellishments of a beautiful scene, and a source of much interest to lovers of plants. In the formation and enrichment of this beautiful residence Mr. Mayor was fortunate in the constant and able assistance of his gardener, Mr. Duffield, whose work is somewhat of a monument of his skill and industry, while it is essentially so of the generous employer's rare judgment and taste. An announcement of Mr. Mayor's intention to leave the place appeared in the issue of G.M. for the 1st of March last.

CHATTER AND CHIPS.

Nectarines Cracking.

I called upon a young gardening friend a few days ago and found him in great trouble because some of the fruit on his nectarine trees were cracking, and he was unable to account for it. I was glad, therefore, to be of some use to him and to put him in the way of preventing such an occurrence in the future. As there may be some readers of the Magazine to whom the same information may be useful, I will describe what I have always found to be the principal cause of nectarines cracking. In the first place I may mention, that some sorts crack more than others; even the old and well known Elruge will do so if the treatment is not right, but the worst of all in this respect is Lord Napier, which is unfortunate, as it is otherwise a very desirable sort to grow, the fruit being large and handsome and the flavour first-rate. I may now mention that the principal cause of the fruit cracking is an excess of moisture either at the roots or by over-head syringing. Generally speaking, the fruit will not crack if the trees are not syringed after they commence their second swelling. It is not usual for them to do so before the stoning process is completed, but if they should the cultivator may conclude that an excess of moisture in one or both of the forms I have illustrated is the cause. A reduction in the supply will prevent or check it. In my own practice I have found it necessary to discontinue syringing Lord Napier altogether after the fruit is about half grown. In the case of other sorts of nectarines I have found it desirable to be cautious in supplying the roots with water, for if the soil gets too wet the fruit is liable to crack. On the other hand the border must not be allowed to get too dry or the fruit will be small.

Rust on Grapes.

It is pretty generally supposed that rust on grapes is caused through handling or bruising the skin in some way when thinning out the berries or tying up the shoulders. I do not wish to dispute this, as rough handling will I know cause a kind of rust to come on the skin. What I want to point out is, that there is another cause of rust which is not so well known. I allude to the use of the syringe amongst the bunches, which causes rust more frequently than has yet been recognised. Many a cultivator will apply the syringe vigorously after the thinning out is completed, and in doing so will knock the berries against each other with such force that the tender skin is more or less injured, a kind of rust afterwards forming on the injured parts. But a more frequent cause of rust resulting from the use of the syringe, is when the syringing is done in the morning and the sun allowed to reach the house before the berries are dry. It is not necessary for the sun to reach the berries when in that condition to cause the disfigurement of which I speak, for a high internal temperature will do it. The heat, acting on the moisture resting on the berries, causes a kind of scald on the tender skin, which results in rust forming and disfiguring the external covering of the berry.

There are two ways of avoiding rust from such a cause—one is to discontinue the use of the syringe altogether in the morning,; the other plan is to open the top ventilators earlier so that the berries can have time to get dry before the temperature rises high enough to do harm.

Placing Greenhouse Plants in the Open Air.

There are many greenhouse plants that are benefited by being placed in the open air for a few weeks during the summer, providing always they are in a proper condition to bear it, and are put out at the right time. Young and inexperienced hands sometimes have a general clear out of the greenhouse as soon as they have done bedding out. They do this, too, regardless of the condition the plants are in, and of the weather prevailing, which is but a careless way of doing things. No plants of this class should be placed in the open air until they have, for the most part, completed their growth. Then a few weeks' exposure in summer weather will do them good by hardening the growth. Nor should any plant that has been recently potted be placed out of doors, or any that is in bad health. Plants in the above condition should be kept under glass and be shaded from bright sun until they are in a fit condition to bear exposure. The kind of plants that suffer most at the hands of amateurs are azaleas and camellias. These are often removed to the open air before growth is completed under the pretence of making more room for other things. The result is, they do not flower satisfactorily the following year. The proper way of treating these plants is to keep them under glass until they have finished new growth and formed their flower buds. Not until then is it safe to take them out of doors. It is unfortunate, perhaps, that I cannot fix a time when these and other hard-wooded subjects may be taken out of the house, but it is impossible to do so, owing to the varying conditions the stock may be in. As an example, I may mention that when azaleas are forced into flower early they make their growth in a corresponding manner, and are fit to go out a month or six weeks before those which did not bloom until the end of April or beginning of May. The same thing occurs amongst other subjects. Some will be ready to go out before others owing to difference in treatment. I may, however, say that, as a rule, the end of June is quite soon enough to begin placing the stock out of doors. Besides the azaleas and camellias that are benefited by this treatment, I may mention cassia corymbosa, pimelias, habrothamnus, genista, cytisus, chorozemas, and many other hard-wooded plants of similar character. A partially shady position is better for them than in the full eye of the sun.

Grass Lawns in Summer.

A well kept lawn is a capital feature in a garden at any time, and more so in the summer, perhaps, than in winter. There is no difficulty in keeping a lawn in order where the soil is good and deep and the grass of the right sort to make a good sward; therefore I do not wish to take such cases into consideration in what I have to say here. My wish is to be of some use to those who have lawns to manage where the soil is poor and the grass thin and weedy. I am well aware that at this season of the year it is not possible to do much to permanently improve such lawns; at the same time, something may be done, both to improve the present appearance as well as for the future. In the first place, all big weeds should be dug out with a strong knife, as they choke the grass as well as rob it of the moisture it so much requires. Such weeds as thistles and dandelions should have a little petroleum run into the holes after the plants are dug out; it will kill every root that it reaches. The holes should then be filled up with fine soil.

Lawns that are not in a satisfactory condition now ought not to be mown so closely as others where there is a good close sward; as a matter of fact, it is this constant close shaving with the lawn mower that keeps such lawns in a bad condition. The grass has no possible chance to get established in the soil, as the oftener it is machined over and the closer it is cut the weaker it gets, because the sun has greater power upon it to burn it up, and the plant is robbed of necessary leaf influence. If the owners of such lawns could be persuaded to discontinue the use of the lawn mower for one season, and have the grass cut with a scythe instead, they would find that the grass would be immensely benefited. It would gain strength, and consequently get a better hold of the soil, and in a year or two form a better sward.

In many cases the grass which forms the lawn suffers for the want of root moisture, and although some may laugh at the idea of watering lawns in summer, I may tell them that, as an old hand, I have done so many times, and been well rewarded for my trouble. As a temporary measure, a little guano mixed with the water will do a great deal of good. Let the soil have a good soaking of clear water first, then with the last application mix one ounce of guano to every gallon of water. In a few days after a great improvement will be seen in the colour of the grass. Although this improvement will not last, it will help to tide over the summer until a measure of a more permanent character can be used.

Mulching Newly-planted Fruit Trees.

I ought, perhaps, to have left out the word "fruit" in the heading of this note, as all newly-planted trees will be benefited by the process I propose. But I have principally in my mind now the subject of fruit; perhaps that is because I have, within the past week, been engaged in attending to a lot of fruit trees in the way I suggest. I do not agree with mulching any newly-planted tree in the winter, except with a very light material to keep frost away from the roots, as I believe that mulching with wet manure at that time keeps the ground too cold and damp. I like to wait until the sun has warmed the soil in early summer before I lay on the mulch. The condition of the trees I have to manage I think proves that I am right, as although only planted last January, they are now making excellent growth. I have given the roots a good soaking of water, and placed on the surface soil a layer of rotten manure three inches thick. I do not anticipate that these trees will require any more attention in that way all the summer.

Chatterbox.

The Peacock Throne of Delhi, now at Teheran, is placed in the hall of the first court, is nearly of the form and size of our camp beds; that is to say it is about 6 feet long and 4 wide. Upon the four feet, which are very massive, and from 20 to 35 inches in length, are fixed the four bars of the throne, and upon these bars are raised twelve columns, which sustain the canopy on three sides, there not being any on that which faces the court. Both the feet and the bars, which are more than 18 inches long, are covered with gold, inlaid and enriched with numerous diamonds, rubies, and emeralds. In the middle of each bar there is a large *balass* ruby cut *en cabuchon*, with four emeralds round it, which form a square cross. Next in succession, from one side to the other along the length of the bars there are similar crosses, arranged so that in one the ruby is in the middle of four emeralds, and in another the emerald is in the middle and four *balass* rubies surround it . . . I counted the large *balass* on the great throne, and there are about 108, all *cabuchons*, the least of which weighs 100 carats, but there are some which weigh, apparently, 200 or more. As for the emeralds there are plenty of good colour, but they have many flaws; the largest may weigh 60 and the least 30 carats. I counted about 116 . . . The underside of the canopy is covered with diamonds and pearls. with a fringe of pearls all round; and above the canopy, which is a quadrangular shaped dome, there is to be seen a peacock, with elevated tail, made of blue sapphires, and other coloured stones, the body being of gold, inlaid with precious stones, having a large ruby in front of the breast, from whence hangs a pear-shaped pearl of 50 carats or thereabouts, and of a somewhat yellow water. On both sides of the peacock is a large bouquet of the same height as the bird, and consisting of many kinds of flowers made of gold inlaid with precious stones. On the side of the throne which is opposite the court there is to be seen a jewel consisting of a diamond of from 80 to 90 carats weight, with rubies and emeralds round it . . . But that which, in my opinion, is the most costly thing about this magnificent throne, is that the twelve columns supporting the canopy are surrounded with beautiful rows of pearls, which are round and of fine water, and weigh from 6 to 8 carats each.—Tavernier's "Travels in India," translated by Dr. Bull, (Macmillan.)

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Stove Plants in Bloom.—Achimenes; Allamanda Chelsoni, A. nobilis; Clerodendron Balfourianum; Franciscea Lindeniana; Gloxinias; Hoya bella; Ixora coccinea superba, I. javanica superba, I. Williamsi; Rondeletia speciosa; Stephanotis floribunda.

THE HOUSE.

Fern cases must have frequent attention at this season of the year, and the ferns be supplied rather liberally with water and receive occasional sprinklings overhead. The latter must not be overdone, or some of the young fronds of the more delicate kinds will be injured. Cases occupying positions in rooms with a south, west, or east aspect should be removed some distance from the windows when the sun is shining into the rooms, or the blinds be drawn down sufficiently to screen the ferns from the sunlight. If exposed, through neglect, to the action of the sun, as those grown in rooms frequently are, the fronds will be more or less browned and the appearance of the plants be much impaired.

CONSERVATORY AND GREENHOUSE PLANTS.

Cinerarias in seed pans to be potted off as soon as large enough, and have separate thumb-pots, with light rich compost, and be put in a frame to grow on. Those who have not sown seed yet must do so at once, or it will be too late.

Fuchsias that are being grown on must be syringed twice a day, and have moderate shade. Large plants in comparatively small pots will be greatly benefited with weak liquid manure every three or four days.

Hard-Wooded Plants requiring a shift this season must have it at once, or the time will pass for them to derive full benefit from the operation. The most important matter of all is to secure good drainage, and to use the compost in as rough a state as possible consistent with the size and nature of the plant.

STOVE AND ORCHID HOUSE.

Orchids.—The general collection may be kept in perfect health now without fire-heat by shutting up early and sprinkling the floor of the house to cause a humid atmosphere. Do not shade overmuch—generally from ten to three will be quite sufficient from this time till shading is dispensed with altogether.

Stove must be ventilated moderately when the weather is favourable to air giving, and the floor have water poured over it once or twice a day excepting in dull weather. Crotons which require full exposure to ensure the full development of their leaf tints should be placed in a light position and as near the glass as possible.

FORCING AND FRUIT HOUSES.

Melons swelling fruit to have plenty of weak liquid manure; those ripening their fruit to be kept tolerably dry, but if kept too dry will be infested with red spider; so endeavour to keep them in good health on the smallest possible supplies, and give plenty of air.

Peach and Nectarine Trees must have a free circulation of air about them as soon as the fruit is gathered. Where the fruit is approaching maturity give plenty of air, and every morning a light skiff with the syringe over the leaves. Stop the strongest shoots a few at a time, to swell the ripe buds. Trained trees are generally loaded with superfluous wood, through the prevalence of a delusion in favour of plenty to choose from at the winter pruning. Choose now, and remove all that will not be wanted, and what is left will ripen properly.

Pines in the fruiting pit will require careful attention. Where the fruit is swelling nicely sprinkle the surface of the paths and bed frequently; but where the fruit is changing colour discontinue the sprinkling, and give only just enough moisture to keep the plants in health. After cutting fruit, earth up the stools, and give a brisk bottom heat, and plenty of moisture to strengthen the suckers. Beds over hot water pipes in which pines are plunged must be kept constantly moist, as the heat will not rise through dry material.

Figs producing a second crop to be liberally supplied with liquid manure and have a top dressing of quite rotten dung. The top growth must be pinched back.

FLOWER GARDEN AND PLEASURE GROUNDS.

Chrysanthemums must be made to grow freely now, or it is impossible they should bloom well. Give abundance of water.

Dahlias to be staked at once, if not already attended to, and the forwardest shoots to be carefully tied.

Liliums in pots to have abundance of water.

Tall growing Herbaceous Plants need a little care now to protect them from high winds. A very effectual and expeditious method is to insert strong stakes, and run a few lengths of stout tarred string amongst them, so as to form a support to the back and front of every row. Small forked branches will serve the same purpose where the plants are not sufficiently regular to be supported with string.

KITCHEN GARDEN AND FRAME GROUND.

Runner Beans sown now will give supplies late in autumn, when the peas and early-sown beans are gone.

Broccoli.—Any plants remaining in seed beds must be planted out at once where they are to remain.

Cabbage.—If there are any vacant plots of ground not required for other crops, sow good breadths of Rosette Colewort and Early York cabbage. They will come into use in advance of the ordinary winter greens, and will be very acceptable.

Endive to be sown on rich soil, and early-sown to be planted out.

Lettuce.—Sow some quick-hearting kinds where they are to remain, as the operation of transplanting tends to cause them to "bolt." Dig and manure the ground, and sow them in drills a foot apart. As soon as large enough to handle, thin them to six inches apart. Lettuces to be transplanted from seed beds now should have a very rich soil, and, if possible, a shady position and abundance of water. The best preventive of bolting is to keep them growing fast, and manure, moisture, and shade are favourable agencies.

Leeks to be planted out from seed beds on deep rich soil. A convenient mode for earthing up is to plant them in four-feet beds, six rows in a bed, the plants six inches apart.

Peas for late crops to be sown in well-manured trenches six inches below the general level, as in case of drought the trenches can be filled with water quickly, and will keep all that is given them. Watering peas, as a rule, is objectionable, and if they are on ground deeply dug and liberally manured—and it is mere vexation to attempt to grow peas on poor ground, or ground badly prepared—they will not want water.

Turnips must be sown now, as there will be a demand for them soon. Use abundance of manure; sow, if possible, just before rain occurs, or between flying showers.

VILLA FARM.

The throwing of casts in the apiary should as far as practicable be prevented, because of the weakening it necessarily has upon the stocks, and the most efficient means of accomplishing the desired end is to examine the combs at intervals and remove all the queen cells but one. The combs of frame hives filled with new swarms should also be examined two or three times, and be regulated if found necessary, for it is essential that the combs should be built tolerably straight; for if allowed to project beyond the width allotted each bar it will be practically impossible to move the bars or frames about freely either for purpose of examination or for taking the honey. All the more experienced apiarians fix guides of some kind along each bar, and those considered the best are of wax modelled from worker combs, as the bees form the cells of the same size as those of the guide, and continue to do so until the formation of the comb is completed. A thin strip of wood tacked along the centre of the top bar of the frame was for some years considered the most suitable, but guides of wood are now seldom used, and those who are unable to make or do not care to incur the expense of purchasing the comb foundation fix a thin strip of wax along the centre of the bar, which, by the way, is readily accomplished by those who have a fair amount of patience. To fix these simple guides, take a piece of wood about three-quarters of an inch in thickness and with a perfectly straight edge, and after well soaking it in water place it so that it covers one half of the top bar along its whole length, and this can be the most readily accomplished by driving small brads into the strip near each end, half the width of the bar from the edge, to serve as a guide, for the bar and the strip must not be fastened together in any way. When the strip and the bar are in position melted wax is painted along the bar in the angle formed, and then a thin coat of wax is formed with the aid of a brush on the strip to about half an inch from the bar, and when this has been done the strip of wood is taken away, and the wax is found adhering to the bar in the form of a ridge, the soaking which the strip had undergone having effectually prevented the wax adhering to it. The strips of embossed comb already alluded to are fixed to the bars with the aid of melted wax.

ORCHIDS IN FLOWER.

Aerides are now flowering freely and their elegant racemes of delicately tinted flowers present such an attractive appearance that as we enjoy their beauty, it is difficult to realize the fact that fashion should be able to so far influence orchidists as to practically exclude these plants from many collections. Not so many years since they were regarded with much favour, and large well-flowered specimens were frequently presented to public notice. Now we hear but little of them, and it is a rare occurrence to meet with either of the kinds in a competitive group, although they are all well able to do good service when upon the exhibition stage. They are well represented in the Kew collection where at the present time some nine or ten species and varieties are in bloom. Specially deserving of notice are *Aerides affine*, a dwarf-growing species bearing short racemes of rose-coloured flowers; it is comparatively slow in growth and we find it to succeed with less moisture at the roots than is required by the other kinds. *A. crassifolium* is robust in growth and produces long racemes of flowers, richly coloured amethyst purple and delightfully fragrant. *A. expansum Leoniæ* is a beautiful form, the flowers marked with purple on a white ground, and the growth more lax than in the case of the species. *A. Leeanum*, usually described as a species, comes so closely to the variety immediately preceding it, that it is probably a variety of A. expansum with very highly coloured flowers. *A. Fieldingi*, commonly known as the Fox brush orchid, fully asserts its claims to consideration, the racemes of flowers ranging from two feet to thirty inches in length being especially attractive. *A. Houlletianum* is at once remarkable for its distinctness and beauty; the racemes are of large size, the flowers comparatively large, the sepals and petals pale buff, and the labellum ivory white painted with magenta purple. *A. Lobbi* is distinguished for the freedom with which it blooms; the flowers are white with rose-purple markings, and the racemes of considerable length, Aerides may be successfully grown in either baskets or pots, but they appear to the best advantage when occupying baskets suspended from the roof, and they bloom with greater freedom when they have a position within a short distance of the glass.

Cattleyas contribute liberally to the attractions of the Mexican house at the present time and produce a rich display of colour. They constitute an important feature in the collection of A. H. Smee, Esq., which is especially rich in varieties of *Cattleya Mossiæ* and *C. Mendeli*. Amongst other varieties of the first-named species in bloom the other day in the cattleya house in the Grange gardens were *C. Mossiæ Arnoldiana*, a beautiful form, the flowers about nine inches across, the sepals and petals of great breadth, blush white shaded rose in the centre and the labellum well expanded, white, beautifully pencilled with magenta and suffused golden yellow. *C. Mossiæ Mrs. Smee*, a superb variety, the flowers very large, the petals and sepals of great breadth and of a deep rose-pink colour; the labellum very large, elegantly fringed, and richly painted with magenta and suffused with golden yellow; the specimen has about a dozen fully expanded blooms and is so conspicuous as to at once arrest attention. *C. Mossiæ Reineckiana*, an exquisitely beautiful form with flowers considerably above the average size, the sepals and petals pure white and the labellum rose-mauve, painted with crimson purple and yellow and elegantly fringed. *C. Mossiæ Rothschildiana*, a handsome form remarkable alike for the large size and rich colouring of the flowers, the sepals and petals blush, the labellum painted purple and orange, and margined with white. *C. Mossiæ Horsmanni*, a distinct and beautiful form with long finely frilled labellum, and *C. Mossiæ Londinensis*, a superb variety which created so much interest at the Temple show in 1888 when exhibited by Messrs. Sander. The forms of *C. Mendeli* included a handsome variety closely approaching the rare *C. Morganiæ* in character and colour, and *C. Mendeli Hacklbridgensis*, an exquisitely beautiful variety with flowers of average size, the sepals and petals pure white with triangular shaped blotch of rich rose at the apex, the labellum rich purple crimson. There are many other splendid forms of these two species in Mr. Smee's collection, but sufficient has been mentioned to indicate the unique character of the display in the cattleya house at The Grange. Although

plentiful in collections in which cattleyas are well represented, *C. Skinneri* must be referred to for the purpose of mentioning the huge splendidly flowered specimen of this fine old species that has for some time past formed such a conspicuous object in the cattleya house at The Dell. Baron Schroder has also had in excellent condition the chaste and comparatively rare pure white variety of this species, and *C. Lawrenceana delicata*, a beautiful variety in which the flowers are uniformly coloured lilac-rose. *C. Mendeli, Prince of Wales*, which recently flowered in Messrs. Sander's collection, and was certificated at the Temple show is a valuable addition, the flowers being of exceptionally large size and remarkably brilliant in colour. *C. Schroderiana*, a comparatively rare form has flowered remarkably well in the Burford Lodge collection, and was conspicuous in the collection presented by Sir Trevor Lawrence at the Temple show. The plant is of dwarf growth, with slender pseudo bulbs, and the flowers are similar in size and form to those of Lælia majalis and of a rich purplish mauve hue. Very attractive also has been *C. gigas*, of which an excellent form is now flowering in the collection of T. B. Haywood, Esq., Woodhatch Lodge, Reigate.

Cœlogyne ochracea, although of less importance than some of the other cœlogynes in cultivation is by no means wanting in beauty. It is dwarf in growth, and the flowers are pure white, marked on the labellum with deep yellow and delightfully fragrant. Large well-bloomed specimens are eminently attractive as shown by the excellent example in the Kew collection.

CYPRIPEDIUMS in bloom are very plentiful and a mere enumeration of the many fine kinds that now contribute to the attractions of the orchid house would occupy considerable space. *Cypripedium Stonei* is now at its best, and an excellent form is to be found in the Kew collection. Still more interesting is the fact that the rare and valuable *C. Stonei platytænium* has been in bloom for some time past in the Burford Lodge collection. The specimen carrying some dozen flowers and buds was a conspicuous object in the collection exhibited by Sir Trevor Lawrence in the Temple gardens, but it was not then sufficiently advanced to show the great beauty and distinct character of the variety. *C. barbatum majus* has figured conspicuously in the Syon House collection for some time past, the specimens being numerous and admirably flowered. *C. Lawrenceanum* is plentiful on all sides, and chief amongst the varietal forms is *C. Lawrenceanum Hackbridgensis*, now conspicuous in Mr. Smee's collection. The flowers are considerably larger and brighter in colour than those of the type, but the chief point of difference is the remarkable development of the dorsal sepal, this being of immense size and exceedingly rich in colour. *C. Hyeanum* is a near ally of C. Lawrenceanum, and although the flowers are deep green they are very attractive. Other kinds that must be mentioned are *C. Parishi*, an extremely handsome species with large greenish flowers having long twisted petals; *C. Elliottianum*, *C. Rothschildianum*, *C. præstans*, *C. Swannianum*, *C. selligerum majus*, and *C. bellatulum*, all of which are distinct in character and remarkable for their beauty.

DENDROBIUMS are in such strong force as to form an important feature, *Dendrobium nobile* is practically over for the season, and the plants are now making their new growth with the assistance of an abundance of moisture and a brisk temperature. That *D. Farmeri, D. thyrsiflorum, D. suavissimum, D. Brymerianum*, *D. densiflorum*, and *D. Dalhousianum* are now flowering freely will be well known to the general body of cultivators, and these species are so highly appreciated as to render detailed reference to them unnecessary. *D. Bensoniæ album* is a chaste variety of this beautiful species and well deserves attention. The flowers are of the same size and form as those of the type, and the petals and sepals are pure white, and the labellum white with yellow blotch, and free from the marone markings characteristic of the species. *D. Falconeri delicata* is a welcome addition although wanting in the rich colouring for which the flowers of the type are remarkable. *D. Devonianum*, now in perfection, must be alluded to, not so much for the purpose of directing attention to its charming flowers as to urge cultivators to allow it to grow naturally, as when the pseudo-bulbs are trained erect to stakes, as is done in many instances, it loses much of its beauty. *D. Dearei* has been flowering freely for some time past, and its pure white flowers have proved of immense value in a cut state for hand bouquets and other arrangements in which choice flowers were alone admissible. *D. McCarthiæ* or "Rainy-Month flower" although introduced to cultivation half a century ago, is by no means generally known to the present generation of orchidists. It must, therefore, be stated that it is one of the finest of the many excellent species now in bloom, and especially desirable for its distinctness. The difficulty experienced in its cultivation has proved a great hindrance to its distribution and it may be useful to state that the best results are obtained by growing it in a comparatively small basket with sphagnum moss and suspending it from the roof within a short distance of the glass. The growth is slender and the flowers are very large, the sepals and petals lilac rose and the long spoon shaped labellum is lilac-rose with a large purple blotch at the base surrounded by a pure white zone.

LÆLIAS in flower consist chiefly of the varieties of *L. purpurata* now in perfection. *L. purpurata Empress*, which has recently flowered in Mr. Cypher's collection is remarkable for the large size of the flowers and the rich colouring of the labellum. *L. majalis*, one of the most beautiful of the many good lælias, has flowered remarkably well in Mr. Wigan's collection at East Sheen, and amongst the forms was one of surprising beauty, the flowers much above the average in size and very rich in colour. The principal points in the cultivation of this species are to place it near the glass with but little shade and to keep it rather dry during the season of rest and to supply rather liberally with water during the summer.

MASDEVALLIAS of special importance at the present time are *Masdevallia Harryana*, *M. Lindeni*, and *M. Veitchiana*, of which there are numerous forms more or less distinct and beautiful. Such sombre coloured species as *M. senilis* also well deserve attention.

ODONTOGLOSSUMS contribute liberally to the attractions of the cool and intermediate houses. Chief amongst the many kinds flowering in the cool house is *O. Halli magnificum*, the finest of all the forms of this handsome species. The spikes attain a length of between twenty-four and thirty inches, the flowers are of large size, and the yellow ground and chestnut coloured markings are very bright. *O. Bleui splendens*, a hybrid of great beauty, and *O. vexillarium Fairy Queen*, which have been flowering in Messrs. Sander's collection and were described in the report of the Temple show, are two valuable additions to the kinds requiring the warmth of the intermediate house.

ONCIDIUMS are well represented by flowering specimens and their light and elegant panicles present a pleasing contrast to the massive spikes of the cattleyas and lælias. *Oncidium caniniophorum* is a little known species well deserving attention, the flowers of medium size and pale yellow, the petals spotted with brown. *O. Roraimensis*, which has recently flowered in Messrs. Sander's collection, is an attractive species, the spikes rising to a height of two or three feet and the flowers large, bright lemon yellow, the petals and sepals blotched with light brown.

PHALÆNOPSIS contribute liberally to the attractions of the collections in which their culture is well understood, for amongst those in flower are *Phalænopsis amabilis*, *P. grandiflora*, and *P. gloriosa*, three forms differing chiefly in the colour of the markings on the labellum; *P. Sanderiana*, a well known form with pink flowers, and *P. speciosa*, a handsome species with medium-sized white and purple flowers, the last-named being particularly good in Mr. Smee's collection.

Zygopetalum citrinum, now flowering in the collection in the Royal Gardens, Kew, is remarkable for its distinct character, and although not so showy as some of the other species is extremely beautiful. The plant is between two and three inches in height, the short pseudo-bulbs are flat, the foliage greyish green with the veins showing through in much the same manner as in some of the bromeliads; the flowers are about two inches in diameter, the sepals and petals bright yellow and the labellum yellow with marone crimson markings. In common with the majority of the zygopetalums it is a native of Brazil.

EDUCATION IN AGRICULTURE.

SOME time since a joint committee of the Central Chambers of Agriculture and the Farmers' Club was appointed for the consideration of the necessity for an organised system of Technical Education in Agriculture. This committee having prepared a report embodying various recommendations, it was presented at a meeting held in the hall of the Society of Arts, Tuesday, June 3. Lord Vernon presiding.

Sir R. H. Paget, M.P., then presented the report of the joint committee. This gave a history of the movement from 1859, showing that the attention of farmers had been directed to the necessity of providing adequate facilities for instruction in the theory and practice of agriculture, and it was pointed out that the Royal Commission on Agriculture pronounced the "subject well worthy of consideration." It was shown that, compared with some foreign countries, the facilities for obtaining technical education in Great Britain were very limited, although several country schools had been established for the education of the sons of farmers. Institutions such as Cirencester College practically limited to those who, intending to adopt the career of estate agents, to farm, or to emigrate, were able to afford an expense beyond the reach of the ordinary farmer. Some impulse had been given to scientific agricultural education by the scholarships and bursaries founded by the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland, and other steps were detailed; but, it was said, putting aside the higher agricultural colleges of Cirencester, Downton, and Hollesley Hall—in all of which the fees charged were far above the capacity of tenant-farmers—a boys' school at Aspatria, a dairy school for adults in Cheshire, and a certain provision for the teaching of dairy processes in the south-west of Scotland, there did not exist in Great Britain any provision for technical agricultural education. The committee had come to the conclusion that the more immediate technical training was required for the class of farmers whose holdings were under 300 acres, and the committee had come to the conclusion that the easiest way of providing the necessary teaching would be to utilize a certain number of the endowed and county schools to be found scattered about the country. By the offer of liberal Government grants to provide the necessary equipment of the school—of annual payments for the use of land, for salaries of special teaching staff, or other expenses—and, if possible, by the establishment of exhibitions, scholarships, or free places, the governing bodies of many of these schools would readily agree to establish an agricultural side and accept Government inspection, which would be naturally demanded to secure that the instruction given was sufficiently thorough and effective to justify the receipt of State aid. The committee were strongly of opinion that whilst more scientific knowledge was absolutely required for the management of a farm, it was equally necessary that the labourer of the farm should certainly be afforded opportunities of improvement in skill, intelligence, and knowledge. They urged on the Government that every facility should be given in rural elementary schools to enable those likely to become agricultural labourers to acquire the special knowledge which would induce them to take an active and intelligent interest in their future work. The committee contended that a central normal school of agriculture should be established and fully equipped with land, buildings, and staff. This school should act as a training college for teachers, but should take other pupils whose means admitted of an annual payment of, say, £50 to £60 per annum. In the opinion of the committee it was not easy to exaggerate or overstate the difficulties which beset the grand national industry of agriculture. The very general and prolonged depression had had the effect of directing public attention to the necessity of providing scientific and practical agricultural education, in order to enable the farmers of the United Kingdom to meet the pressure of the present active competition with the markets of the world. Old methods might have to be abandoned—new methods might have to be introduced—in every nation of Europe, provision, more or less complete, had been made to meet existing difficulties. In this country alone up to the present time but little had been done. Universal experience clearly showed that without State aid it was practically impossible to establish any satisfactory system of agricultural teaching, and the committee strongly urged that this assistance should no longer be denied to the farmers of the United Kingdom.

Sir Richard Paget moved the adoption of the report, and commented upon a minority report signed by Mr. C. W. Gray, M.P., Mr. Mansfield, and Mr. Nethersole, and urged that the majority report was supported by the practical men throughout the country.

Mr. Ramsden seconded the motion for the adoption of the report.

Mr. C. W. Gray, M.P., supported the report so far as it recommended that increased aid should be given by the State for the provision of technical agricultural education; but he did not concur in the recommendation that money should be granted to endowed or other schools primarily existing for the purpose of general education, because, as the majority report stated, a thorough knowledge of farming must be obtained upon a farm, and could not be acquired elsewhere, and, moreover, the number of schools which it would be necessary under such a scheme to aid, if the grants from the State were to be of any appreciable benefit to the agricultural interest, would be so large that any sum which Parliament could reasonably be asked to vote would be utterly inadequate. Mr. Gray enlarged upon the subject generally.

There was a very long discussion, in which Lord Fortescue, Lord Winchilsea, and Major Craigie took part. It was ultimately resolved by two to one that the Chambers approved the report signed by Sir R. Paget and the majority, and disapproved the minority report.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, JUNE 10.

FLORAL COMMITTEE.

PRESENT: William Marshall, Esq., in the chair; Rev. H. Dombrain, and Messrs. H. Herbst, T. Baines, R. Dean, J. Walker, T. W. Girdlestone, H. B. May, H. Cannell, B. Wynne, H. Turner, C. Noble, J. Fraser, G. Paul, W. Holmes, G. Nicholson, and F. Ross.

Herbaceous pæonies, pyrethrums, iris, and hardy flowers generally were staged in large quantities, and in conjunction with the orchids and miscellaneous objects, sufficed to fill the hall and produce a bright display of colour. At the afternoon meeting papers were read on herbaceous pæonies by Mr. G. Paul and Mr. J. R. Lynch. Mr. Paul dealt with the history and cultivation of the varieties that now have a place in the garden, and Mr. Lynch discussed the classification and characteristics of the specific forms.

From Messrs. Kelway and Son, Langport, came a large and highly attractive collection of cut flowers, comprising herbaceous pæonies, pyrethrums, and delphiniums. They also had a large collection of hardy amaryllis, and were awarded the silver Banksian medal. The single pæonies of special merit in the collection comprised Anolani, Stanley, Ambrosia, Abus, Nico, Quinetus, Julia Kelway, and Duchess of Fife. Conspicuous amongst the double pæonies were Edulis superba, Elegans, Nectar, Parc d'Enghein, Sainfoin, Marie Stuart, Lady Carrington, Duchess of Teck, Madame Furtado, Ceres, Lady L. Bramwell, and Bernice. Chief amongst the double pyrethrums were Ernest Kelway, Rupert Kelway, Figaro, Florentine, Pericles, Pericles' sport, which differs from the type in having a bright yellow anemone centre; and Aphrodite. The single pyrethrums, which are especially useful for decorative purposes in a cut state, included Mary Kelway, James Kelway, Princess Irene, and Albert Victor. Messrs. Barr and Son, 12, King Street, Covent Garden, had a beautiful collection of iris, and were awarded the silver Banksian medal. The forms represented were chiefly varieties of Iris pallida, I. variegata, and I. squalens. Mr. R. Dean, Ealing, sent examples of Snowflake and White Perfection violas, two white varieties of great excellence, and cut flowers of Gaillardia aristata, a showy North American species, bearing large bright yellow flowers, with brownish red disc.

Messrs. Paul and Son, Cheshunt, exhibited a large collection of cut flowers, in which the herbaceous pæonies were strongly represented, and were awarded the silver Banksian medal. Especially good amongst the pæonies were Grandiflora nivea, Van Dyck, La Fraicheur, Festiva maxima, and Noemie. Messrs. J. Veitch and Sons, King's Road, Chelsea, contributed a small but attractive collection of hardy flowers, comprising iris, pæonies, and aquilegias. The firm also sent a box of cut flowers of Hemerocallis flava, one of the most beautiful of the Day lilies, the flowers being comparatively large and of a bright lemon-yellow hue. The firm also sent examples of Rodgersia podophylla, a beautiful hardy shrub, for which they received a first-class certificate; and also of the undermentioned hydrangeas, namely, Hydrangea rosea, a form similar in character to the well-known H. hortensis, but less vigorous in growth, and with flowers of a brilliant rose-pink hue; H. otaksa and H. hortensis mandschuria, two handsome forms, producing huge heads of pale pink flowers; H. Thomas Hogg, a white-flowered form, now generally grown where the hydrangeas receive attention for decorative purposes; and H. stellata, fl., pl., a dwarf form, bearing neat heads of double pink flowers. Mr. O. T. Hodges, Lachine, Chislehurst, sent excellent examples of Saxifraga cristata, S. longifolia, and good specimens of Ionoposidium acaule and its charming white variety I. acaule album.

A large and thoroughly representative collection of ivies was contributed by Messrs. W. Cutbush and Son, Highgate, to whom the award of the bronze Banksian medal was made. Messrs. Clibran and Son, Altrincham, exhibited a gymnogramma, evidently a seedling from Gymnogramma chrysophylla, from which it differs chiefly in its more lax habit, and in the pinnæ being long and pendulous. They also had a crested form of Pteris cretica albo lineata, and a pteris having much the appearance of a small form of P. umbrosa.

Mr. Baskett, gardener to Lord Penzance, Easting Park, Godalming, exhibited a box of seedling roses, representing crosses between the sweetbrier and varieties belonging to the hybrid perpetual and other sections, and one was selected for the award of a first-class certificate. Mr. G. Prince, Oxford, contributed several boxes of finely developed blooms of tea-scented roses; Princess of Wales being especially well represented.

Messrs. H. Cannell and Sons, Swanley, exhibited a large collection of decorative pelargoniums, in which were represented the finest varieties at present in cultivation, several extremely beautiful new double begonias, and were awarded the bronze Banksian medal. A medal of similar value was awarded to Samuel Barlow, Esq, Stakehill House, Middleton, for a collection of show tulips. Messrs. J. Laing and Sons, Forest Hill, exhibited several new double begonias, and Mr. Davis, Yeovil, sent a tuberous variety with variegated leafage.

Sarracenias were represented by a large and remarkably well-grown collection from Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, who were awarded the bronze Banksian medal. Of special excellence were the examples of Sarracenia Wilsoni, S. Swanniana, S. Chelsoni, S. decora (a new and very beautiful hybrid introduced by the firm), S. Williamsi, and S. purpurea, which, as now well known, is perfectly hardy. Messrs. Williams and Son also exhibited several orchids, a new bertolonia, and a well-developed specimen of Arismea filiforme, a singular aroid with green spathes. From the Royal Gardens, Kew, came an interesting collection of flowers and plants, including the Zanzibar water lily (Nymphæa Zanzibarensis), a magnificent species, having large brilliant blue flowers, and Solanum Wendlandi, a very handsome species, with large lavender-blue flowers.

ORCHID COMMITTEE.

Present: Sir Trevor Lawrence, Bart., M.P., in the chair; and Messrs. D. B. Crawshay, H. M. Pollett, H. Ballantine, J. Dominy, C. Piloher, E. Hill, F. Sander, L. Castle, A. H. Smee, H. J. Veitch, and J. O'Brien.

Sufficient orchids were shown to form a very pleasing feature, and amongst them were several important novelties. Mr. T. Bond, gardener to C. N. Ingram, Esq., Elstead Hall, Godalming, submitted Cattleya Elsteadiana, a handsome bloom supposed to have originated as the result of a cross between C. Mossiæ and Lælia purpurata, Mr. G. W. Cummins, gardener to H. A. Smee, Esq., The Grange, Hackbridge, contributed a beautiful group consisting chiefly of cattleyas. Prominent, amongst others, were Cattleya Mossiæ, Mrs. Smee, C. Mendeli Hackbridgensis, and C. Mendeli Alfred Smee, a remarkably fine variety, distinguished by an award of merit. Mr. G. Wythes, Syon House, sent several fine sprays of the old and elegant Oncidium sphacelatum.

From Mr. D. Cullimore, gardener to Malcolm S. Cooke, Esq., Kingston Hill, came well-flowered specimens of Cattleya Mossiæ, C. gigas Sanderiana, C. Warneri, C. intricata maculata, and Epidendrum vitellinum majus. Sir Trevor Lawrence staged a small but interesting group, in which Dendrobium Macarthiæ, D. thyrsiflorum, and several forms of Odontoglossum vexillarium were represented. Messrs. J. Veitch and Son a new dendrobium, remarkable for its distinct character. Sir W. H. G. Marriott, Bart., Down House, Blandford, submitted Lælio-Cattleya Marriotti, a beautiful hybrid between Lælia purpurata and Cattleya Mossiæ, the flowers of rather large size, the sepals pale rose, the petals deep rose, and the labellum rich purple. Messrs. B. S. Williams and Sons presented well-flowered specimens of Cattleya Mossiæ decora, superb form, remarkable for the large size and rich colour of the flowers, and a beautifully-spotted form of Odontoglossum crispum.

A challenge cup was on this occasion offered for a collection of herbaceous pæonies, but the only competitor was the Rev. W. Wilks, Shirley Vicarage, Croydon, who had an excellent collection, and was awarded the cup. The varieties included Coralina, Madame Cabrol, Reine des Roses, Officinalis fl. pl. still unsurpassed in its colour; Alba Maxima, and Victoria Modeste, a rose-coloured flower with anemone centre.

FRUIT COMMITTEE.

Present: Sir Charles Strickland, Bart., and Messrs. T. F. Rivers, John Lee, P. Crowley, R. D. Blackmore, G. W. Cummins, G. Bunyard, A. H. Pearson, J. Hudson, H. Balderson, F. Q. Lane, and J. Cheal.

The contributions to the committee were limited in number, and included but few objects of importance. Messrs. T. Rivers and Son, Sawbridgeworth, exhibited good dishes of Belle d'Orleans and Early Rivers cherries, two varieties of great excellence. Several dishes of Tasmanian apples were shown, but the fruit, although of good appearance, was poor in quality. Mr. J. Smith, Mentmore, exhibited remarkably fine fruit of A. F. Barron strawberry, a large and handsome variety of good quality. From the Society's Gardens came plants from the open beds of Crescent seedling, Noble, and King of the Earlies to show their relative earliness. A considerable proportion of the fruit of Crescent seedling was quite ripe, a few of the fruits of Noble were showing colour, and the fruit of King of the Earlies was quite green. Messrs. J. Veitch and Son exhibited a dish of Pingo de Mel fig, an early variety, the fruit rather small and very sweet, and good fruit of North End Pippin apple, a late keeping culinary variety, evidently of considerable value. Several so-called new melons were exhibited, but they failed to find favour with the committee.

NOVELTIES.

First class certificates were granted as under:—

To Messrs. B. S. Williams and Son for

Bertolonia Souvenir de Gand.—An exquisitely beautiful variety; the leaves comparatively large and of a rich bronze-green, the veins marked by broad bands of brilliant magenta rose, and the intervening spaces marked with spots of the same colour.

To Mr. J. Smith, Mentmore, for

Crinum brachynema.—A distinct species introduced from India in 1840. It is neat in growth, has comparatively short bright green leaves, and produces medium sized heads of pure white flowers, the individual blooms about two and a-half inches in diameter. The species is generally considered to be difficult of cultivation.

To Mr. Baskett, Easting Park, Godalming, for

Sweet Brier A. Q.—A variety raised from a cross between the Sweet Brier and Harrisoni, and interesting. The foliage is larger than that of the sweet brier and somewhat fragrant; the flowers are single, about two inches in diameter, suffused pale salmon, with yellow centre.

To Baron Schroder, The Dell, Egham, for

Phaius Humbloti albus.—A beautiful variety of this fine species; the flowers rather above the average in size, the sepals and petals pure white, the labellum blush, marked with rose, suffused chestnut brown and with yellow blotch.

To Messrs. F. Sander and Co., St. Albans, for

Batemannia Wallisi.—A distinct and handsome species; the growth neat, the flowers about three inches in diameter, the sepals and petals bright chestnut marbled with yellow and white at the base, the labellum white with narrow sharply defined purple margin.

To Mr. Ayling, gardener to A. J. Hollington, Esq., Forty Hill, Enfield, for

Cypripedium Aylingi.—A very distinct and exceptionally beautiful hybrid raised from a cross between C. ciliolare and C. niveum. The foliage is bright green marbled with darker green, the flowers of medium size, the dorsal sepal large, pure white veined with rose purple, the posterior sepal also of large size and white lightly painted with rose purple, petals about two and a half inches in length and an inch in width at the base tapering to a point. The committee suppressed the name given as above by the exhibitor, and made the award to "Cypripedium seedling C. niveum," whatever that may mean.

To Mr. G. Cypher, gardener to Mrs. Studd, Bath, for

Sobralia macrantha rosea.—A pale coloured form, with flowers of average size, the sepals light rose, the petals and labellum deep rose.

To Sir Trevor Lawrence for

Cattleya intermedia Parthenia.—A form of this well-known species with flowers.

Awards of merit were made as under:—

To Messrs. Paul and Son, Cheshunt, for

Xerophyllum asphodeloides.—An interesting hardy herbaceous plant, with grass-like leafage, and bearing spikes of creamy-white flowers, which rise to a height of about three feet, and have an elegant appearance. It was introduced in 1765, and figured in *Botanical Magazine*, t. 748.

Achillea mongolica.—A beautiful species introduced from Tartary in 1823. It is of neat growth, and produces a profusion of rather large pure white flowers.

To Mr. J. Witney, Turvey, Beds., for

Lobelia Reine Blanche.—An excellent pure white variety of the speciosa type. The growth is free and compact, and the large pure white flowers are produced in great abundance.

To Messrs. H. Cannell and Sons, Swanley, for

Begonia Golden.—A valuable double variety, the growth neat, the flowers of medium size, and a rich yellow colour.

Gloxinia Agnes Cook.—An extremely beautiful erect variety, the habit neat, and the flowers large, of superb form, and profusely spotted with violet-blue on a pure white ground.

To Messrs. J. Laing and Sons, Forest Hill, for

Begonia Black Douglas.—A superb double variety, the habit neat and compact, the flowers of large size and superb form, the colour rich crimson.

B. Madame Pfitzer.—A double variety, introduced from the Continent, with medium-sized pale yellow flowers. Not equal to many of the double yellow varieties raised in this country.

To Messrs. Kelway and Son, Langport, for

Pæony Stanley.—A fine single variety; the flowers large and of good form, the colour marone-crimson.

P. Princess Mary.—A beautiful double variety, the flowers large, of fine form, and a pleasing cream colour.

P. Duchess of Teck.—An excellent double variety, the flowers large, of good form, and attractively coloured creamy-white and bright pink.

P. Sainfoin.—A handsome double variety, with large well-formed flowers of a deep rose colour.

Delphinium Alfred Kelway.—A distinct variety, the spikes tall and massive, the flowers single, large, and of good shape; the colour bright violet-blue.

To Mr. R. Young, gardener to J. H. Nix, Esq., Tilgate, Crawley, for

Odontoglossum Pescatorei, Tilgate Variety.—An exquisitely beautiful variety; the flowers of average size, and produced in large dense panicles; the colour blush rose, blotched and spotted with purple.

To Mr. Malcolm S. Cook, Kingston Hill, for

Cattleya Warneri.—A good form of this well-known species; the flowers of average size, the sepals and petals deep rose-pink, the labellum rich amethyst.

To Mr. T. Statter, Stand Hall, Whitefield, for

Odontoglossum Galeottianum.—A dwarf-growing species, with medium-sized white flowers marked on the labellum with lemon yellow.

Mr. Cummins, gardener to A. H. Smee, Esq., The Grange, Hackbridge, for

Cattleya Mendeli Alfred Smee.—An exquisitely beautiful variety of high quality; the flowers above the average in size, the sepals bright pink, the petals deep rose, the labellum bright pink, with large rich amethyst blotch.

ROYAL BOTANIC SOCIETY, SECOND SUMMER EXHIBITION, JUNE 11.

The second summer exhibition of the Royal Botanic Society was held on Wednesday, and in extent and the quality of the productions was about equal to that held in May. The miscellaneous groups were as usual remarkably good, and additional interest was imparted to the show by the contributions to the fruit classes. The weather was decidedly unfavourable, and necessarily had an adverse influence upon the attendance of visitors.

ORCHIDS were more strongly represented than at the May show, and constituted an important and attractive feature. The only competitor in the amateurs' class for twelve was Mr. Whillans, gardener to the Duke of Marlborough, Blenheim, Woodstock, who staged a collection of such exceptional excellence that he was awarded the silver-gilt medal, in addition to the first prize offered in the schedule. The whole of the specimens were of immense size, superbly flowered, and perfect in finish, and judiciously arranged they presented a striking effect. The species and varieties represented were Cattleya Mossiæ, C. gigas Sanderiana, C. Mendeli, C. Warneri, Epidendrum prismatocarpum, with about twenty-five superbly-developed spikes; E. vitellinum majus, Dendrobium Deari, Anguloa Clowesi, Cypripedium roseum, Lælia purpurata, especially good; Disa grandiflora, having about twenty-five of its brightly coloured flowers, and Cypripedium barbatum. In the corresponding class for trade growers Mr. H. James, Castle Nursery, West Norwood, was first with nicely flowered examples of medium size. In competition for the prizes for groups Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, was first with a collection in which the forms of Cattleya Mendeli and C Mossiæ were prominent. Mr. Howard, orchid grower to H. Little, Esq., Baronshalt, Twickenham, was a very close second, his plants being arranged with much taste. A magnificent collection was exhibited in the miscellaneous class by Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, who were awarded the silver gilt medal. The group was equally remarkable for the great excellence of the numerous specimens and the taste evinced in the arrangements. Messrs. F. Sander and Co., St. Albans, exhibited a large group comprising many fine forms of Odontoglossum crispum, O. vexillarium, Cattleya Mossiæ, C. Mendeli, and Masdevallia Harryana. The award of the silver gilt medal was made to the firm. Messrs. H. Low and Co., Upper Clapton, were awarded the silver medal for a large and beautiful group of Cattleyas, in which the beautiful C. Reineckiana was well represented. Mr. G. T. White, Winchmore Hill, had an attractive group of Cattleyas, and was awarded the silver medal.

STOVE AND GREENHOUSE PLANTS were on the whole below the average and some of the collections were very poor. In the amateurs' class for six, Mr. A. Offer, gardener to John Warren, Esq., Handcross Park, Crawley, was first with a collection consisting of specimens of medium size and well flowered, the most noteworthy being those of Erica magnifica, E. Cavendishi, and Franciscea calycina major. In the open class for twelve Mr. J. F. Mould, Pewsey, and Mr. H. James, were first and second with collections differing but little in relative merit. Mr. Mould was first also in the trade class for six, staging amongst others finely flowered specimens of Erica aristata, E. ventricosa Rothschidiana, and Stephanotis floribunda.

ORNAMENTAL LEAVED PLANTS were well represented. For six plants with variagated leafage, Mr. Offer obtained premier honours with medium-sized and well-finished specimens, those of Croton Morti and C. picturatus being particularly good. Mr. H. James second with a group in which Dracæna Lindeni was especially well represented. The first-named exhibitor was first also for six fine foliage plants with a good collection comprising Cycas circinalis, C. revoluta, Dasylirion acrotrichum, Croton angustifolium, and C. Warreni. Mr. J. Ford, gardener to Sir Charles Piggott, Wexham Park, Slough, was second with a collection in which Alocasia Lowi was at its best, and Croton Evansianam was remarkably good. Mr. R. Butler, gardener to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, was third with an excellent collection. The class for six palms was well filled, and Mr. Offer occupied the post of honour with a group in which the specimens were of large size and in capital condition. Amongst other kinds represented were Kentia Australis, Pritchardia pacifica, and Thrinax elegans. Mr. H. James followed closely for second place, and Mr. Butler was a good third.

FERNS formed an excellent feature, for the chief class was well filled, and the whole of the collections were presented in a condition that did much credit to the cultural skill of the exhibitors. Mr. Offer was first for six exotic kinds with splendidly developed specimens of Alsophila Australis, Cyathea medullaris, Cibotium Schiedei, and other good arborescent kinds. Mr. J. Ford was a capital second, and Mr. J. Douglas third, with specimens of medium size, but characterized by freshness. European ferns, for which a class was provided, were represented by a collection from Mr. R. Butler, to whom the first prize was awarded.

CALADIUMS, for which on this occasion special provisions were made, were represented by a group of large splendidly developed specimens from Messrs. John Laing and Sons, Forest Hill, the varieties being chiefly the same as those shown by the firm at exhibitions previously held this season.

PITCHER PLANTS were admirably shown in the competitive class by Messrs. J. Peed and Son, Roupell Park Nurseries, Streatham, the sarracenias being particularly good. To the miscellaneous class Messrs. B. S. Williams and Son contributed a large and very attractive group of sarracenias.

SOFTWOODED PLANTS in bloom formed a bright and highly attractive feature. Zonal pelargoniums were represented by several excellent collections, and the first and second prizes were awarded to Mr. D. Phillips, Langley Broom, Slough, and Mr. G. Watts, gardener to Henry Little, Esq., Baronshalt, Twickenham. In competition for the prizes offered in the trade class for six show pelargoniums, Mr. C. Turner, Slough, was first with medium-sized and superbly flowered examples of Illuminator, Sister of Mercy, Gold Mine, Outlaw, Kingston Beauty, and Prince Leopold. In the corresponding class for fancy pelargoniums, Mr. Turner was first with excellent examples of Ellen Beck, The Shah, Princess of Teck, Roi des Fantaisies, Mrs. G. Hanbury, and Lady Carrington, all of which were extremely beautiful, and admirably adapted for specimen culture. In the amateurs' classes for six show and six fancy pelargoniums Mr. D. Phillips was first with collections consisting of admirably flowered specimens. The premier award in the amateurs' class for twelve tuberous begonias was made in favour of Mr. G. Watts, who had an exceptionally good collection, the specimens large and densely flowered, and remarkable for their freshness. Messrs. H. Cannell and Sons, Swanley, contributed to the miscellaneous class a large and extremely beautiful collection of tuberous begonias, consisting exclusively of varieties raised by the firm. Tuberous begonias were also strongly represented in the magnificent group of miscellaneous plants contributed by Messrs. J. Laing and Sons.

FRUIT was staged in sufficient quantities to constitute an attractive feature. In the class for collections Mr. J. Edmonds, Bestwood Lodge, Nottingham, was a capital first, especially good being the Black Hamburgh and Madresfield Court grapes, Hales' Early peaches, and Violette Hative nectarines. Mr. W. Robins, gardener to Colonel E. Dyke, Hartwell House, Aylesbury, followed closely for second place, with a collection in which the peaches and nectarines were of special excellence.

The classes for grapes were exceptionally well filled. In competition for the prizes for baskets of black grapes, Mr. T. Osman, gardener to L. Baker, Esq., Ottershaw Park, Chertsey, was first with Black Hamburgh, large in berry and superb in finish. Mr. G. Clinging, gardener to W. Greenwell, Esq., Marden Park, and Mr. Edmonds, were second and third with the same variety. In the corresponding class for white grapes, Mr. P. Feist, gardener to R. J. Ashton, Esq., Bishopsgate Park, Staines, was first with well-ripened Muscat of Alexandria; and Mr. A. Smith, Warren Hill, Loughton, and Mr. Clinging were second and third with Foster's Seedling. The class for a dish of Black Hamburgh was well filled, and Mr. T. Osman was first with superbly-finished clusters. In competition for the prizes for three bunches of black grapes other than the variety named, Mr. G. Thomson, gardener to W. and E. Wells, Hattonhurst, Hounslow, was first with Madresfield Court, the clusters rather small, but the berries large and the colour good. Mr. Clinging and Mr. Feist were second and third with the same variety. Mr. Clinging obtained premier honours in the class for three bunches of white grapes with Foster's Seedling in good condition; and Mr. G. Aslett, Hatfield, was a good second with the same variety. Peaches were represented by four dishes, and Mr. J. Douglas was first with good fruit but unnamed. Mr. T. Hare, Wellingore Gardens, Grantham, was an uncomfortably close second with excellent examples of Early Louise and Alexander. The competition was more spirited in the class for two dishes of nectarines, and the awards were made in favour of Mr. J. Douglas, Mr. J. Nash, and Mr. T. Hare.

Strawberries were fairly plentiful, and Mr. W. H. Divers, Ketton Hall, was first with exceptionally fine fruit of Noble and Auguste Nicaise. Mr. G. Thomson was second with Sir Charles Napier and President. Mr. Hare was first also for two dishes of cherries, with excellent fruit of Elton and Black Tartarian. Mr. E. Little, gardener to Alderman Phillips, Ball's Park, Hertford, was first, and Mr. Whillans was second in the class for two melons; the varieties shown being Victory of Bath, Blenheim Orange, and Hero of Lockinge. Messrs. T. Rivers and Son, Sawbridgeworth, exhibited a large collection of fruit trees in pots, comprising cherries, pears, plums, peaches, and nectarines, carrying good crops. The award of the large silver medal was made to the firm. Good dishes of Belle d'Orleans and Early Rivers cherries also came from Sawbridgeworth.

CUT FLOWERS had liberal provisions made for them, but in a few instances only was the competition at all keen. Roses were fairly good for so early in the season, and in the class for twelve varieties, three trusses of each, Mr. W. Robins was first with finely-developed blooms, and Colonel Pitt, Turkey Court, Maidstone, was a capital second. For twelve yellow roses, Mr. W. Robins was again first, staging a fine box of blooms of Marechal Niel; Mr. G. Mount, Canterbury, was second with Marie Van Houtte, and Mr. G. Dyke was third with Gloire de Dijon. For six varieties remarkable for their fragrance, Mr. G. Mount was first with Duke of Wellington, The Bride, Charles Lefevre, Catherine Mermet, Fisher Holmes, and Dupuy Jamain. In the class for twelve bunches of flowers of stove and greenhouse plants, Mr. James was first; in that for twelve orchids Mr. J. Douglas obtained premier honours, and the first prize for collections of show pelargoniums was awarded to Mr. C. Turner. Excellent collections of iris were staged, and Messrs. Barr and Son and Messrs. Paul and Son were first and second respectively.

MISCELLANEOUS CONTRIBUTIONS formed a large and important feature. Messrs. W. Paul and Son, Waltham Cross, exhibited an effective group comprising pyramidal ivies and cut rhododendrons and roses, and were awarded the silver-gilt medal. Messrs. J. Laing and Sons, Forest Hill, were awarded a medal of similar value for a beautiful group of flowering and ornamental-leaved plants. A large and attractive collection of hardy cut flowers was contributed by Messrs. Kelway and Son, who were awarded the silver-gilt medal. Highly attractive collections of cut flowers were shown by Messrs. Paul and Son and Mr. T. S. Ware, and the award of the bronze medal was made in each case. A medal of similar value was awarded to Messrs. Cutbush and Son for a collection of ivies.

NOVELTIES were numerous, and no less than forty-seven were certificated! Botanical certificates were granted to Messrs. Sander and Co. for *Aerides Sanderiana, Epidendrum Randi, Cypripedium Volonteanum, Oncidium Roraimense, Phaius Humbloti, P. Humbloti albus, Odontoglossum Blaei splendens, O. crispum Rothschildianum, Batemannia Wallisi, Cattleya Mossiæ Measureana, C. Brymeriana, Phœnix Robelini.* To Mr. Howe for *Xerophyllum*

asphodeloides. To Mr. Statter for *Odontoglossum Galeotteanum*. To Messrs. B. S. Williams and Son for *Cattleya Mossiæ decora*, *Arisæma filiforme*, *Bertolonia Souvenir de Gand*. To Messrs. John Laing and Sons for *Saxifraga McNabiana*. To A. H. Smee, Esq., The Grange, Hackbridge, for *Cattleya Mendeli Alfred Smee*, *C. Mendeli Hackbridgensis*. To Mr. Ware for *Cypripedium californicum*. To Messrs. H. Low and Co. for *Cattleya Reineckiana pallida*. To Mr. E. Ayling, Enfield, for *Cypripedium Aylingi*. Floricultural certificates were granted to Mr. Ware for *Royal Scarlet*, *Prince of Orange*, and *Brilliant* poppies. To Mr. R. Davis, Yeovil, for *Begonia Davis's Variegated*. To Messrs. Paul and Son for *Canna Madame Crozy*. To Messrs. Barr and Son for *Iris Bridesmaid*, *I. Darius*, *Campanula persicifolia grandiflora alba*. To Messrs. Kelway and Son for *Duke of Clarence*, *Sainfoin*, *Duchess of Teck*, *Stanley*, *Emily Kelway*, *Duchess of Teck* pæonies, and for *Alfred Kelway*, *Evelyn Kelway*, and *Horace Kelway* delphiniums. To Messrs. J. Laing and Sons for *Viscount Wolseley*, *Sunset*, *Marchioness of Headfort*, and *Miss French* begonias. To Messrs. Cannell and Sons for *Golden Queen*, *Hon. Francis Boscawen*, and *Mrs. Streatfield* begonias.

BRUSSELS AMATEUR ORCHID SOCIETY.

The last meeting of the above society was held on the 8th inst. at the establishment L'Horticulture Internationale (Linden) in Brussels. A large number of exhibits of excellent quality were shown.

The jury, under the presidency of the Count de Boussies, comprised Messrs. Rodigas, Kegeljan, Massange de Louvrex, Van Imschoot, Miteau, and J. Hye-Leysen.

M. G. Warocque, from his famous collection at Mariemont, contributed a large group, in which were noticeable Vanda suavis Rollisoni, a well-flowered specimen; Cypripedium Lowi; superb varieties of Odontoglossum crispum, O. luteo-purpureum, O. nævium majus, O. Lucienianum, and others.

Mr. J. Hye-Leysen staged a number of choice orchids, among which we noticed a very fine variety of Cypripedium Fraseri, the remarkable Cypripedium Lawrenceanum Hyeanum, several hybrid Odontoglossums of great merit, Cattleya Reineckiana, and a large-flowered form of Cattleya Mossiæ of a rich rose colour.

Dr. van Camvelaert staged a small group of Odontoglossums, among which were several fine forms of O. Pescatorei, citrosmum, and Alexandræ.

M. Van Imschoot exhibited Phaius Henryi, a superb variety of Cattleya Mossiæ, various good forms of Odontoglossum crispum, and others.

In the collection of M. Miteau we noticed some splendid varieties of Odontoglossum vexillarium, finely spotted forms of Odontoglossum crispum, well-flowered specimens of Cattleya Warneri and Miltonia flavescens.

From the collection of M. Wallaert came, amongst others, a grand specimen of Lælia purpurata alba, several fine forms of Cattleya Mossiæ, Cypripedium callosum and C. barbatum, &c.

Count de Boussies exhibited the rare Cypripedium Argus Moensi, and a superb variety of Cattleya Mendeli.

M. Linden staged several large groups of choice orchids, of which a number of superb varieties of Odontoglossum crispum were especially noticeable; also a new Catasetum Rodigasianum, which is a beautiful as well as interesting addition to those already known; a well-flowered specimen of the rare Nanodes Medusæ; we also noted a number of choice varieties of Cattleya Mossiæ, large, well-flowered specimens of Anguloa Ruckeri, and other.

M. Peeters also contributed a large group, the gem of which was a fine specimen of Cattleya Mossiæ alba; a splendid variety of Cattleya Reineckiana; Cattleya Mossiæ Germinyanum, the flowers of which are of a dark rose colour, mottled with a darker hue; a large specimen of Odontoglossum vexillarium; Cypripedium leucorrhodon; several grand varieties of Cattleya Mendeli and Mossiæ. Madame Black exhibited a superb form of Cattleya Mossiæ alba and Vanda Parishi. A collection of cut blooms was sent by Madame Gibez.

The following awards were made: First-class Diploma of Honour, to

Cypripedium Fraseri,	from M. J. Hye-Leysen.
Catasetum Rodigasianum,	from M. Linden.
Odontoglossum species,	from M. J. Hye-Leysen.
Odontoglossum species,	from M. J. Hye-Leysen.

First-class Certificate of Merit, to

Cattleya Reineckiana,	from M. J. Hye-Leysen.
Cattleya Reineckiana,	from M. Peeters.
Cattleya Mossiæ,	from M. Van Imschoot.
Cattleya Mossiæ,	from M. J. Hye-Leysen.
Cypripedium Lawrenceanum Hyeanum,	from M. J. Hye-Leysen.
Phaius Henryi,	from M. Van Imschoot.
Cattleya Mossiæ alba,	from M. Peeters.
Odontoglossum crispum album,	from M. Warocque.
Odontoglossum crispum Leopoldi,	from M. Warocque.
Odontoglossum crispum rotundiflorum,	from M. Linden.
Odontoglossum crispum fastuosum,	from M. Linden.
Cypripedium Argus Moensi,	from Count de Boussies.

Second-class Certificate of Merit, to

Cattleya Mendeli,	from Count de Boussies.
Odontoglossum crispum cordatum,	from M. Linden.
Broughtonia sanguinea,	from M. Van Imschoot.
Cypripedium leucorrhodon,	from M. Peeters.

First-class Cultural Certificates, to

Lælia purpurata alba,	from M. Wallaert.
Odontoglossum luteo-purpureum,	from M. Warocque.
Vanda suavis Rollisoni,	from M. Warocque.
Cypripedium Lowi,	from M. Warocque.
Odontoglossum vexillarium,	from M. Peeters.

Second-class Cultural Certificates, to

Cattleya Mossiæ,	from M. Peeters.

DUTCH HORTICULTURAL SOCIETY.

At the May meeting of this society the committee awarded first class certificates to Mr. W. J. Van Lansberge, Brummen, for Odontoglossum vexillarium, O. Cervantesi lilacina, and Cattleya Schroderiana, and to Messrs. E. H. Krelage and Son, Haarlem, for a collection of Tulipa Billietiana. Honourable mentions were made to the exhibitors last named for collections of Narcissi, early flowering iris, comprising about forty distinct species and varieties, and a collection of Darwin tulips. To Mr. J. T. W. Neeb, Nykerk, for a good specimen of Vanda tricolor formosa, and to Messrs. Ant. Roozen and Son, Overveen, for a group of Lilium Thomsonianum.

Replies to Queries.

W. B.—We see no trace of spider; probably the sun has caught a few leaves through insufficient ventilation.

Asters.—J. R.: Plant them out as quickly as possible, and when you have made all tidy, put on a mulch of half-rotten stable manure two or three inches deep. In places where slugs and snails abound, it is customary to sow lettuce in the ground intended for asters, for while the vermin can get these they care for little else. The lettuce should be sown ten days in advance of the planting.

Books.—T. H.: "Horticultural Buildings," by F. A. Fawkes, published by B. T. Batsford, 52, High Holborn. There is no such book as you require on the other subject mentioned. F. Harper, Watson's "Cactus Culture," published by Upcott Gill, F.R.S. Hibberd's "Amateur's Rose Book" and "Amateur's Kitchen Garden," both published by Groombridge, price 6s. each.

Names of Plants.—E. D.: 1, Equisetum arvense; 2, Sedum Sieboldi; 3, Jasminum revolutum; 4, Cratægus crus-galli; 5, Cupressus Lawsoniana; 6, Centaurea montana; 7, Syringa Emodi.—H. Farrow: 1, Ornithogalum thyrsoideum; 2, Saxifraga pyramidalis; 3, Hemerocallis falva; 4, Babiana atrocyanea; 5, Ixia viridiflora; 6, Iris Florentina.—R. G. J.: 1, Lælia purpurata; 2, Anthurium Scherzerianum; 3, Send a specimen when in flower.

Diseased Tomatos.—N. L., Maldon: The sample sent is badly diseased, the enemy being peronospora. You must give more air, and remove and burn every diseased leaf, and keep the house as airy and clean as possible. Tomatos in bearing may be assisted with liquid manure, and there is nothing better than the drainings from a dung-heap diluted to the colour of pale ale. Nitrate of soda is of little use to tomatos, as it tends to make leaves rather than fruit. A good mixture is required, but guano answers well. When young tomato plants require but little water, and liquid manure is like poison to them. Excess of moisture and deficiency of air are the principal causes of disease. Air should be given even if extra firing is required to keep up the temperature.

Hardy Flowers.—R. H. B.: The ground planted with potatos will answer perfectly for herbaceous plants, but in its present form it is quite unsuitable for displaying them. Rockeries are not simply matters of taste, as you suppose; they are matters of utility, for many plants thrive in a good rockery that would not thrive in a good border. There should be some taste shown in the construction of a rockery, certainly, but the first point is to ensure a good body of soil of the right kind, such as sandy loam, for example, that the plants may have something to root into. Whether you should grow this or that you must determine for yourself; we cannot determine for you.

Orange Trees.—H. N.: It is very probable that the roots of the trees are in an unhealthy state in consequence of the soil having become sour and exhausted. The proper course would perhaps be to take them out of the tubs, and after removing a considerable proportion of the old soil from about the roots, re-tub them, using as a matter of course a fresh compost. The dead and decaying roots must be cut away, and an efficient drainage provided. As it is important they should commence to make new growth as quickly as possible, it will be an advantage to place them in a structure in which they can have the assistance of a brisk temperature and a liberal degree of atmospheric humidity.

Bedding Plants.—F: In dry, hot weather bedding plants may have occasional liberal supplies of water with advantage, but as a rule they will do better without it than with it. As regards watering, calceolarias, tuberous begonias, petunias, and verbenas will not endure prolonged drought, and therefore should have aid in time. But zonal pelargoniums will generally endure heat and drought without harm unless on very dry, hot soils. As a rule amateurs give their bedding plants too much water, and consequently have more leaves than flowers. The soil should always be well prepared for bedding plants to ensure deep-rooting and a vigorous but short-jointed growth. With much shade and much water, the growth becomes long-jointed, and a poor show is made by long-legged plants.

Thrips on Cucumber.—As a regular subscriber to the Gardeners' Magazine, I should like to ask through its pages whether anyone can give an efficient remedy for the yellow thrips. A friend of mine who is a grower of cucumbers for market, and has six houses which were planted in March is much troubled with this pest and would be very pleased to know how he could eradicate it. The cucumbers, I would mention, were planted in orange boxes filled to about one half their depth with a compost consisting of loam and fresh cow dung. Two plants were put in each box, and they grew very satisfactorily until the beginning of May. They were, in fact, in the best possible state of health, and loaded with fruit, when suddenly they began to flag. On examining the the roots it was found that all the young fleshy parts had been eaten away close to the stem, and when the soil was removed for the purpose of discovering the cause of the mischief, we found hundreds of little yellow insects about double the size of a flea and not unlike them in character, for when touched they jumped about in the most lively manner. These insects have long proboscis which they fix on the young fibrous roots and gradually eat them away. My friend at once took steps to stop their ravages. First he covered the soil with unslaked lime, and as that did not have the desired effect soot was used but with unsatisfactory results. This application was followed by a watering with lime water and then the plants and soil were watered with [diluted?] carbolic acid, but nothing appeared to destroy the insects. Then the yellow thrips appeared and I think almost everything has been tried to destroy the pests but without success, as nothing appears to affect it. The houses have been fumigated with tobacco paper time after time, and three times with cayenne. Five or six insecticides have been tried but they appear to have done but little good. I would mention that the plants have been top dressed and that they have begun to make new roots, but as fast as they are produced they are eaten off. My friend is now at his wits' end what to do next in destroying both the insects at the roots and leaves, and he would be grateful for any information those who have had experience with either of the two pests can give. The only artificial manure used has been Jensen's Fish Potash Guano.

F. London,

The Gardens, The Grove, Woodford.

"Kew Bulletin" for June contains reports on Compressed or Tablet Tea, Timber Trees of Straits Settlements, with index of native and scientific names; Cotton in West Africa.

EXCURSION OF MESSRS. SUTTON AND SONS' EMPLOYES.

THE annual excursion of the employés of Messrs. Sutton and Sons, Reading, took place on Tuesday last to Bournemouth. A special train was engaged by the firm to convey the party numbering upwards of five hundred, and in consequence of the excellent arrangements, the journey both ways was accomplished in remarkably good time. Each employé received a free railway ticket and a liberal sum of money for refreshments, boating trips, &c., and in addition each married man was allowed a railway ticket for his wife. Mr. Martin Hope Sutton, Mr. Martin J. Sutton, Mr. Herbert Sutton, Mr. A. W. Sutton, with several members of their respective families, accompanied the party, and everything was done to ensure the comfort and enjoyment of the many hundreds who took part in the outing.

Literature.

New Holidays in Essex, by PERCY LINDLEY, will be serviceable to tourists in general, and especially Londoners who must make short journies, and yet desire a taste of real country. The places Mr. Lindley guides us to and through comprise Billericay, Maldon, Burnham, South Weald, the Blackwater river, the Chelmar river, Layermarney and Tiptree, Danbury, Chelmsford, Southminster, Canewdon, with Rochford and Southend for a finish. The pictures enhance the value of the book considerably.

Ladies' Gazette of Fashion increases in attractiveness and interest, recent issues being liberally illustrated with examples and suggestions for artistic work suitable to ladies, with criticisms and essays tending to practical ends.

Orchids, their Culture and Management.—By W. WATSON AND W. BEAN. (Upcott Gill). This part twelve completes the admirable manual of Messrs. Watson and Bean, and the complete book will prove the most useful of its kind, not simply because it is the latest, but by reason of its fulness, accuracy, convenient arrangement, and abundant illustrations. It is satisfactory to observe that an excellent index is supplied, for this constitutes a list of orchids that might often prove useful, apart from the book as the basis for a note book. The parts are worthy of a substantial binding and a good place on the library shelves.

Hints on Vegetable and Fruit Farming. By CHARLES WHITEHEAD, F.L.S., F.G.S. (Murray). This is a revised and enlarged version of the admirable paper on "Vegetable and Fruit Farming," that was contributed by Mr. Whitehead to the *Journal of the Royal Agricultural Society*, 1882. That should be praise enough for it. All persons who collect, distribute, and read the current essays that are intended to promote the profitable culture of small farms, gardens, and allotments should secure this neat six pennyworth.

Vick's Illustrated Monthly opens with a coloured plate of carnations, and has a good muster of horticultural articles, with some light sketches for the family circle. It is published by James Vick, Rochester, N.Y.

Lippincott's Magazine appears to find a large public in this country, and is well worthy to lead amongst the monthlies. In the last issue we have a story by Bret Harte, and a series of sketches, essays, criticisms, and fictions of the most varied interest and excellent quality. The agents for London are Messrs. Ward and Lock.

Obituary.

ON the 5th, at Christchurch, Hants, Mr. JAMES CLARKE, the well-known raiser of a number of valuable varieties of potatos, one of which was the far-famed Magnum Bonum. Mr. Clarke had been in a poor state of health for fully twenty years, and his last illness, which he endured with patience, extended through several weeks. His age was sixty-four years.

Markets.

COVENT GARDEN.

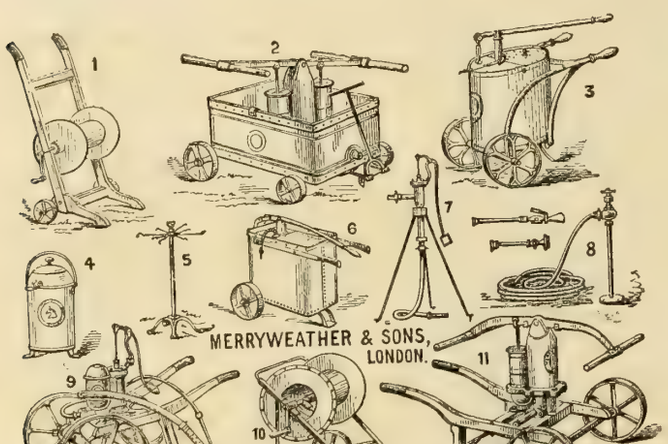
FRUIT.			
Apples.....per ½-sieve	1s. 6d.	to	7s. 6d.
App's, Tasmanian, p. case	12s. 0d.	,,	20s. 0d.
Grapes.....per lb.	5s. 0d.	,,	7s. 0d.
Lemons .....per case	10s. 0d.	,,	15s. 0d.
Melons .....each	1s. 6d.	,,	3s. 6d.
Peaches .....per doz.	3s. 0d.	,,	18s. 0d.
Pine-apples, St. Michael's each.....	2s. 6d.	,,	6s. 0d.
Strawberries.....per lb.	0s. 8d.	,,	4s. 0d.
VEGETABLES.			
Asparagus, English, pr bun.	4s. 6d.	to	7s. 6d.
Asparagus, Sprue, per bun.	1s. 0d.	,,	1s. 6d.
Beans, French .....per lb.	0s. 6d.	,,	1s. 0d.
Beet .....per doz.	1s. 6d.	,,	2s. 0d.
Cabbages.....per doz.	1s. 0d.	,,	2s. 0d.
Carrots .....per bun.	0s. 4d.	,,	0s. 6d.
Canliflowers .....per doz.	2s. 0d.	,,	3s. 0d.
Cucumbers .....each	0s. 4d.	,,	0s. 8d.
Endive.....per doz.	1s. 6d.	,,	2s. 0d.
Herbs .....per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish.....per bun.	3s. 0d.	,,	4s. 0d.
Leeks .....per bunch	0s. 2d.	,,	0s. 4d.
Lettuces .....per doz.	0s. 6d.	,,	1s. 0d.
Mushrooms ...per basket	1s. 0d.	,,	1s. 6d.
Onions .....per bunch	0s. 3d.	,,	0s. 4d.
Parsley .....per bun.	0s. 4d.	,,	0s. 6d.
Radishes ...per doz. bun.	0s. 6d.	,,	1s. 0d.
Rhubarb .....per bun.	0s. 3d.	,,	0s. 4d.
Shallots .....per bun.	0s. 4d.	,,	0s. 6d.
Small Salading...per pun.	0s. 3d.	,,	0s. 4d.
Spinach .....per bushel	2s. 0d.	,,	3s. 0d.
Tomatos.....per lb.	0s. 8d.	,,	1s. 0d.
Turnips .....per bunch	0s. 3d.	,,	0s. 4d.
CUT FLOWERS.			
Abutilons ...per doz. bun.	2s. 0d.	to	4s. 0d.
Azaleas, per doz. sprays	0s. 6d.	,,	1s. 6d.
Bouvardias.....per bunch	0s. 8d.	,,	1s. 0d.

CUT FLOWERS.—*Continued.*

Callas .....per doz.	3s. 0d.	to	4s. 0d.
Carnations, per doz. blms.	1s. 0d.	,,	1s. 6d.
Cornflower, per doz. bun.	2s. 0d.	,,	4s. 0d.
Eucharis ...per doz. blms.	3s. 0d.	,,	4s. 6d.
Gardenias, per doz. blms.	1s. 6d.	,,	3s. 0d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Iris .....per doz. bun.	4s. 0d.	,,	12s. 0d.
Ixia.....per doz. bun.	2s. 6d.	,,	5s. 0d.
Liliums, per doz. blooms	0s. 6d.	,,	2s. 6d.
Maidenhair Fern, per doz. bun.....	3s. 0d.	,,	6s. 0d.
Marguerites, pr doz. bun.	2s. 0d.	,,	4s. 0d.
Mignonette, per doz. bun.	2s. 0d.	,,	3s. 0d.
Pæonies.....per doz. bun.	5s. 0d.	,,	15s. 0d.
Pelargoniums, per doz. trusses.....	0s. 4d.	,,	1s. 0d.
Poppies .....per doz. bun.	1s. 0d.	,,	5s. 0d.
Pyrethrums, doz. per bun.	2s. 0d.	,,	4s. 0d.
Roses, Coloured, per doz.	2s. 0d.	,,	3s. 6d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	1s. 6d.
Roses .....per doz. bun.	3s. 0d.	,,	9s. 0d.
Stephanotis, pr. dz. sprays	1s. 6d.	,,	3s. 0d.
Tuberoses, per doz. blms.	0s. 6d.	,,	1s. 0d.

BOROUGH AND SPITALFIELDS.

POTATOS.			
Regents .....per ton	30s.	to	70s.
Magnum Bonum .....per ton	30s.	,,	70s.
Beauty of Hebron .....per ton	30s.	,,	40s.
Imperator .....per ton	40s.	,,	70s.
Scotch Champions .....per ton	40s.	,,	50s.
Jersey Rounds .....per cwt.	5s.	,,	6s.
St. Malo Rounds .....per cwt.	5s.	,,	6s.
Lisbon Rounds .....per cwt.	4s.	,,	6s.
Jersey Kidneys .....per cwt.	7s.	,,	8s.
St. Malo Kidneys .....per cwt.	7s.	,,	8s.
Jersey Flukes .....per cwt.	8s.	,,	9s.



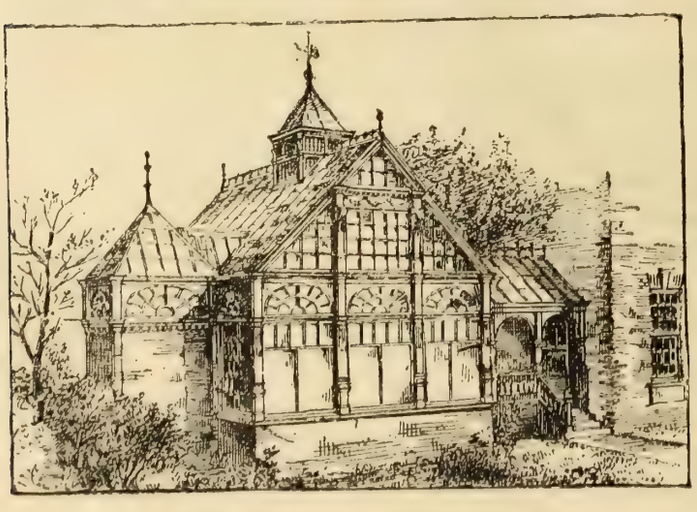
NOVELTIES FOR 1890.

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2. Fire Engine, and for General Pumping Purposes.
3. Alexandra Garden Pump.
4. London Brigade Fire Pump.
5. Lawn Sprinkler.
6. Combined Fire and Garden Engine (a Specialty).
7. Liquid Manure Pump,
8. Garden Hydrant, Hose, and Branch Pipes.
9. Inexpensive Barrow Pump.
10. Strong Wrought Iron Hose Reel.
11. Two-Man Fire and Farmer's Engine.

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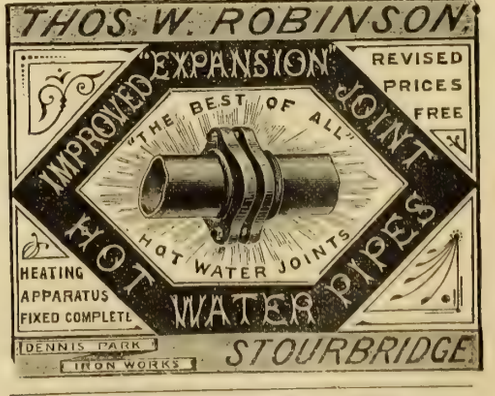
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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.
1890			H. M.	M. S.	H. M.	H. M.	H. M.
22	S	**3rd Sunday after Trinity.**	3 44	1 42	8 18	8 23	11 37
23	M	Lord Campbell died, 1861.	3 45	1 55	8 19	9 31	11 56
24	Tu	Midsummer Day. Camb. Easter Term ends.	3 46	2 8	8 19	10 39	Morn.
25	W	☽ First Quarter.	3 46	2 21	8 19	11 49	0 12
26	Th	George IV. died, 1830.	3 46	2 33	8 18	After.	0 30
27	F	Earl of Clarendon died, 1870.	3 46	2 46	8 18	2 13	0 46
28	S	Queen Victoria crowned, 1838.	3 46	2 58	8 18	3 31	1 3

High Water at London Bridge. Morn.	After.	Liverpool Dock. Morn.	After.	M. tmp. avrg. of 40 yrs. Chiswk.	Day of Yr.
H. M.	H. M.	H. M.	H. M.	DEG.	
4 50	5 8	1 56	2 15	61·7	1890
5 27	5 47	2 33	2 52	61·8	173
6 7	6 30	3 12	3 32	62·0	174
6 53	7 18	3 55	4 18	62·1	175
7 44	8 12	4 43	5 9	62·2	176
8 41	9 14	5 37	6 6	62·3	177
9 48	10 18	6 39	7 13	62·4	178

Orchids in Flower.

Dendrobium tortile	Java.	179
Barkeria melanocaulon	Costa Rica.	
Barkeria spectabilis	Guatemala.	
Brassia Lawrenciana	Demerara.	
Brassia Wrayæ	Guatemala.	
Broughtonia sanguinea	Jamaica.	
Calanthe furcata	India.	

ROYAL BOTANIC SOCIETY. GARDENS, REGENT'S PARK.—FLORAL PARADE and FEAST of FLOWERS, THURSDAY, JUNE 26. Those wishing to take part in the Parade of Flower-dressed Carriages, &c., are requested to send their entries to the Secretary as soon as possible to ensure a good position in the Procession. Schedules of Prizes, Entry Papers, and all information to be obtained at the Office in the Gardens.

CRYSTAL PALACE.—SATURDAY, JULY 5.—The NATIONAL ROSE SOCIETY'S GRAND EXHIBITION OF ROSES. Intending exhibitors must give notice in writing of the classes in which they intend to exhibit to the Hon. Secretaries, National Rose Society, Crystal Palace, S.E., on or before Tuesday, July 1st.

ROYAL AQUARIUM, WESTMINSTER. GREAT ROSE SHOW AND FETE; ALSO EXHIBITION NATIONAL PINK SOCIETY, AND CONFERENCE BRITISH FRUIT GROWERS' ASSOCIATION, On JUNE 27 and 28. Schedules and all particulars of Mr. WILLIAM HOLMES, Frampton Park Nurseries, Hackney, London.

CROYDON ROSE SHOW, JULY 2.—Challenge Cup, value 25 guineas, and N.R.S. Gold Medal for Amateurs and Gardeners. N.R.S. Gold Medal and good prizes for Nurserymen. A. C. ROFFEY, Secretary, 55, Church Road, Croydon.

GRAND ROSE SHOW, BATH, THURSDAY, JULY 3RD.

First Prizes, Nurserymen,	72 varieties	... ...	£8	8 0
,, ,,	36 ,,	... ...	£4	0 0
,, Amateurs	36 ,,	... ...	£5	0 0
,, ,,	24 ,,	... ...	£3	0 0

The Second and Third Prizes in proportion. Several other classes for Roses, Bouquets, Strawberries and Plants; 31 Classes in all. Entries close June 27th. For Prize Schedules, &c., apply to B. R. F. PEARSON, W. JEFFERY, } Secretaries, 2, Northumberland Buildings, Bath.

PORTSMOUTH FLOWER SHOW AND EXHIBITION OF HONEY, &c., JULY 15, 16, and 17, 1890. Entries Close July 5. Schedules Free. 26, Queen Street, Portsea. F. POWER, Hon. Sec.

THE WELLS CHRYSANTHEMUM, FRUIT, and FLOWER SHOW Will be held on WEDNESDAY and THURSDAY, the 5th and 6th NOVEMBER, 1890. £50 in Prizes offered and the Centenary Medal of the National Chrysanthemum Society. For Schedules apply HON. SECRETARY, Wells, Somerset.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, JUNE 24.—OXFORDSHIRE HORTICULTURAL SOCIETY.—Commemoration Show.
TUESDAY, JUNE 24.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral, Fruit, and Scientific Committees and Rose Show.
TUESDAY, JUNE 24.—NATIONAL ROSE SOCIETY.—Annual Dinner.
WEDNESDAY, JUNE 25.—ROYAL HORTICULTURAL SOCIETY OF JERSEY.—Summer Exhibition.
WEDNESDAY, JUNE 25.—RICHMOND HORTICULTURAL SOCIETY.—Summer Exhibition.
THURSDAY, JUNE 26.—ROYAL BOTANIC SOCIETY.—Feast of Flowers.
FRIDAY, JUNE 27.—BRITISH FRUIT GROWERS' ASSOCIATION.—Conference on Strawberries at Royal Aquarium.
FRIDAY, JUNE 27, AND SATURDAY, JUNE 28.—ROYAL AQUARIUM.—Rose Show.
SATURDAY, JUNE 28.—REIGATE ROSE SOCIETY.—Annual Exhibition.
SATURDAY, JUNE 28.—ROYAL BOTANIC SOCIETY.—General Meeting.
SATURDAY, JUNE 28.—ELTHAM.—Rose Show.

Auction Sales for the Ensuing Week.

TUESDAY AND WEDNESDAY, JUNE 24 AND 25.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.
THURSDAY, JUNE 26.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids.
FRIDAY, JUNE 27.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

TERMS OF SUBSCRIPTION.—Post free from the Office, 4, Ave Maria Lane, London, E.C. to any part of the United Kingdom, One Copy, 2½d.; 3 Months, 3s.; 6 Months, 6s. One Year, 11s. 6d. (including the Christmas Number). To America, Australia, Belgium, Canada, Denmark, France, Germany, Holland, India, Italy, Spain, Sweden, and Switzerland, 14s. per annum.

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No. 1,312, NEW SERIES.—VOL. XXXIII.

The Gardeners' Magazine.

SATURDAY, JUNE 21, 1890.

THE WEATHER AND THE CROPS will occupy a large place in the public mind for fully three months from the present time, and at this moment the interest of the subject is hastening towards the culminating point, which may be said to be coincident with the flowering of the wheat. The probable date of harvest, and somewhat of its character, are among the inferences sought by observers of the "signs of the times" in the vegetation of the season.

To be wise in words is perhaps an easy matter; at all events, it is a wisdom that may be acquired, and is of quite limited use in the end. When we said in January last that the delightful weather we were then favoured with would "have to be paid for," we could not foresee in what form the payment would be made. That, however, is no longer a mystery. We are paying for June in January by having January in June, and there is an end of that bit of verbal wisdom. Nor was the unseasonable winter warmth wholly beneficial to humanity, for while the aged and the afflicted were enabled to enjoy the rare advantage of outdoor exercise even in London and places farther north, the ranks of the able-bodied were assailed with the disease that became endemic under the name of influenza. The vegetable world was not the less disturbed by the unwonted warmth, and when a short, sharp frost occurred soon afterwards, the damage to vegetation was extensive, and some few subjects still make known to us that they have not yet recovered from the shock.

The beauty of the month of May was the more enjoyable to many because accompanied with much needed rain, followed by a sudden and liberal growth of grass and other herbage. But, as May ended and June began, a fall of temperature gave a check to all growth; frost made black marks on the potato fields, and the cereals of all kinds were so far retarded as to render improbable the occurrence of an early harvest. Before the season closes an immensity of produce will be secured in the east and the west, and there is certainly at the present time no prospect of famine, or even of severe distress, but great harvests are not to be looked for, and it is well that the true state of the case should have timely consideration, not only with business men, but with prudent people of all classes.

There is an abundance of grass, and the hay crop will be worth the gathering should the weather prove favourable. Many breadths of wheat that were yellow a month ago now look green and healthy, and may better their poor promise. The earliest potatos have lifted well, and the check the subsequent plantings have received from frost will scarcely affect the crop in the end should the weather prove favourable from this time forth. For roots generally there is time, and they begin with a fairly good plant with moisture sufficient to start well, and a great root crop may in some part compensate for thin wheat and light barley. The scheme of nature is full of strange compensations, and every day's experience teaches us how far reaching and profound is the philosophy of the conditional.

A SCARCITY OF FRUIT may tend to quicken inquiry and endeavour for means to obviate its worst consequences. There may be something done now, or, as the season advances, to lessen the depth of the void that is in part made apparent. In families where jam pots are matters of great importance, the homely rhubarb stands ready to help. But this is not the time of year for making rhubarb jam, for the plant though presenting many temptations to people who can "pull" had best be left alone to mature the growth it has made, and in August or September it may be stripped with little harm, for the crowns will then be formed, and the summer's work completed, and the stalks will be in the best state for jam making. At any time, however late, will be soon enough for this business, provided only that the plant has not been touched by frost. One frosting may destroy the crop and so it is necessary to secure it in time, but to touch it before the end of August is to be in too great haste, and as to any further delay it must be matter for judgment on the spot.

Rhubarb jam is not in high repute with householders generally, and some fastidious palates will not touch it. But you have to make it

properly and the young people at least will signify their approval in the usual emphatic manner. Proper making consists in keeping the stalks in a dry place for at least a week after gathering them to become wilted. Rhubarb for use any time, even in the spring, is better stale than fresh, as will be proved to the satisfaction of all who will allow it to lay on a dry shelf exposed to light and air for a few days or even a week before using it. Two sources of failure are to be guarded against in making jam. One is, the use of an excess of sugar, for the rule is to weigh sugar and stalks to a fair balance, say a pound of each all through; but owing to the large bulk of water in rhubarb, three-quarters of a pound of sugar is enough for every pound of fruit. The other cause of failure is insufficient cooking. A watery sample soon becomes filled with mildew and is offensively useless. A well-cooked sample will keep any length of time, even if not tied down. But the tying down should be done while it is still hot, for you are to protect your jam from the air, and from flies and from dust. A well-made sample, sweet enough, but retaining a certain piquant reminder of spring rhubarb will be found agreeable to many, even of those learned palates that have been turned from the simplicity of youthful tastes by experiences of a cuisine divine.

Bees in Gardens usually pay their way in their own contribution to the general harvest of sweets. We are always to suppose that the management is reasonable when we speak of the profits of bee-keeping, for bad management entails loss, and the best management will not convert any beehive into a gold mine. But reasonably good management pays fairly well in a run of seasons, and the best management, of course, pays the best one season with another. These matters have had our particular attention, and our esteemed coadjutor who keeps us going with papers on the subject, has not failed to indicate the points where the best management begins and ends. From time to time we have discoursed on the indirect profit of bees in the fertilization of fruit trees, and this point has thus far not obtained any such extensive consideration as it is entitled to. Lately we have reported that we have seen some promising crops of fruit in gardens, in districts where orchards are barren. It is but proper to add to the general statement that in *every instance* occurring in recent observations, the most promising fruit crops have had the direct aid of bees or—to avoid implying anything from the fact—where we found a good fruit crop we also found an apiary. The prejudice against bees is apparently passing away. Many gardeners now take an interest in the useful creatures, and we see evidences of the practical value of the teachings of our excellent adviser "Apiarist."

Strawberries should make amends in some degree for the scarcity of fruits in general. The weather has been cold for the earliest outdoor crops, but the liberal rainfall has done all that the main crop can require in that way, and sunshine is all that is now needed to make what is called a strawberry season. It may not be amiss to advise the lovers of the fruit to get their appetites ready and materfamilias may look to the preserving pan and the jam pots betimes, for an abundance of strawberries will mitigate the scarcity of plums in due time.

Taunton Chrysanthemum Show, Nov. 13.

Wirral Rose Show, July 16.

Croydon Horticultural Society.—The annual summer show, July 2.

Highgate Horticultural Society.—The 31st annual exhibition will be held in North Road, Highgate, July 17.

National Pink Society will make its first corporate demonstration in connection with the rose and strawberry show at Royal Aquarium, on Friday and Saturday next.

National Rose Society.—The annual dinner, which has heretofore been held in December, will take place on Tuesday next, June 24, in the rooms of the Horticultural Club, Hotel Windsor, at 6 p.m. The Very Reverend the Dean of Rochester will preside.

Early Potatos.—Mr. B. Grist, gardener to Lady Hamond Græme, Norlands, Great Yarmouth, dug Sutton's Ringleader potato on May 7th in the open border. He considers this variety to be the earliest in cultivation, and many other authorities have expressed a like opinion.

Hall and Fraser Fund. It will be in the recollection of our readers that a fund was opened some time since for the benefit of the widows and families of Mr. Hall and Mr. Fraser, who, by a most unfortunate accident, were drowned in the Clyde in September last. The total amount collected was £460 17s. 6d.; the expenses for printing appeals, postage, &c., amounted to £6 17s. 6d., thence leaving a balance of £454, which has been equally divided between the two families and the amounts invested in Grand Trunk Railway of Canada 4 per cent. Debenture Stock. Mr. William Thomson, junior, of Clovenfords, N.B., has kindly consented to act as joint trustee with Mrs. Fraser for the sum invested for her benefit.

Lilium Davuricum is conspicuous now in various parts of the Royal Gardens, Kew, where lilies generally are liberally cultivated, and very effectively displayed amongst shrubs and other suitable surroundings.

Small Holdings Committee has reported to the House of Commons. The report contains much important information on the distribution of land in Great Britain, and it recommends an advance of five millions to local authorities by way of loan, to facilitate the increase of small holdings on a system akin to that of the Scotch fen.

A Pansy Show was recently held in Leicester, and as it was the first exhibition of its kind that has been held in the town it created much interest amongst those who devote attention to florists' flowers. Mr. W. Sydenham, Water Orton, Birmingham, and Messrs. Biddles and Co., Loughborough, contributed excellent collections of pansies not for competition. As the outcome of the show, a pansy society will probably be formed at Leicester.

British Fruit Growers' Association will hold a meeting at the Royal Aquarium on Friday next, in connection with the fruit and flower show announced for that date. The chair will be taken by F. T. Rivers, Esq., at 5 p.m. Papers will then be read on The Origin of the Cultivated Strawberry, by Mr. Shirley Hibberd; the Culture of Garden Strawberries, by Mr. J. Wright; the Culture of Strawberries for Market. by Mr. G. Bunyard; and Seedling Strawberries, by Mr. Thomas Laxton.

Cardiff Horticultural Society.—The second annual exhibition of this society takes place on August 13. The Glamorganshire Horticultural Society which held an exhibition at Cardiff for many years ceased to exist two or three years ago, and a new society was started under the above title. The exhibition will take place in the Sophia Gardens, Cardiff, and good prizes are offered for stove and greenhouse and foliage plants, ferns, fuchsias, and zonal pelargoniums, open to all comers.

British Investors in Lands in the United States will be seriously affected in the event of a Bill passing that is now in its first stage in the House of Representatives. The object of the Bill is to prohibit aliens from holding lands in the States. The report presented with it mentions that certain European noblemen, principally Englishmen, are now the owners of about 21,000,000 acres of land, while the quantity owned by untitled aliens is unknown. It cites several cases in which British subjects residing in England hold vast tracts of land from which they receive rents from the tenants. The Bill is a declaration against absentee landlordism.

Proposed Fruit Show in the City of London.—The Fruiterers' Company, following up recent endeavours in aid of the extension of fruit culture, have in view to hold an exhibition of home-grown fruit in the City—probably the Guildhall—in October next. At a meeting on Monday last of members of the Court of the Company, Sir James Whitehead, Bart., Master of the Company presiding, the matter was considered and referred to the Company in the form of a recommendation. On the part of the Fruiterers' Company there were present Dr. Fotherby, R. S. Mason, Esq., and H. R. Williams, Esq. There were present by invitation at this meeting Messrs. G. Bunyard, George Paul, J. Cheal, A. F. Barron, J. Wright, H. Turner, F. T. Rivers, J. Laing, A. H. Smee, Shirley Hibberd, J. Emerson, Faunce de Laune, and others.

Heligoland for Zanzibar.—The terms proposed for a settlement of affairs between Great Britain and the German Empire in the matter of "spheres of influence" in Africa include the cession to England of Zanzibar, and the handing over to Germany of the little island of Heligoland. The political part of the proposal does not here concern us, but we must refer to the matter in the interests of natural history, the islet at the mouth of the Elbe having obtained considerable importance as a post for observations on the migrations of birds. It is an agreeable scene for summer holidays, having an area of five square miles, consisting of rugged rocks and inviting sands. It may be reached by steamers from London, Hull, Newcastle, and Leith to Hamburg in a run of about forty hours. For Londoners a convenient route is by L. C. and D. from Victoria by Flushing or Calais.

CELERY.

It is very gratifying, as one moves about amongst the gardeners, to find how much attention is paid by them in securing a crop of celery. The importance of this crop is pretty generally recognized, therefore all sorts of contrivances are resorted to to secure it in the best condition possible. It is all very well for those who have plenty of manure and a good water supply, as well as all suitable appliances, and sufficient labour power to do all their work at the right moment, to underrate the makeshift systems that their less fortunate neighbours resort to; but I never pay any attention to the not very flattering remarks that some such men indulge in when criticising the work of others. My sympathy is entirely with those who have to struggle along against all sorts of adverse conditions, because they have to bear the same weight of responsibility. Such men—and there are many of them—deserve a word of encouragement and commendation for the interest they take and the ingenuity they display in conducting their everyday work. They bring it to bear on the production of such a crop as celery, and in a way that does them credit. I have lately been in a garden where, for the want of a cold frame in which to prick out the plants to afford them shade and shelter, the gardener had marked out a space about six feet square. The soil had been thrown out on the sides and ends to form a bank all round, the depth being about nine inches; a layer of manure was then placed in the bottom, which

was covered with about two inches of the best earth taken out of the same space. In this the plants were pricked out, while a few sticks laid across and resting on the raised sides served as shelter and shade for the tender plants. That they appreciated the treatment, the dark colour of the leaves and the progress they were making gave evidence. The gardener told me that he had followed the same plan for many years and found it to answer admirably, as the raised sides sheltered the young plants from drying wind, while the surface of the bed being so much lower than the surrounding level quite half the labour was saved in watering; at the same time the plants made greater progress because the soil was nearly always moist. Directly the sun begins to shine the mats are put on, and the same treatment is followed in windy weather, whether it may be night or day.

In another instance I found the plants pricked out in a rather long bed about four feet wide. In this case the bed was on a level with the ground around it; a temporary frame—or skeleton—had been erected with rough poles, over which were stretched tightly some ordinary mats, which remained over the plants both night and day, sufficient air reaching them through the mats. I understood that the mats would not be removed until a fortnight before the time came to place them in the trenches, when they would be gradually uncovered. In no instance have I seen a better lot of plants than these are. The mats being about three feet above the ground, the plants had evidently all the light and air they wanted, as they were not drawn and the colour all that one could wish.

It will be noticed that in both the cases I have referred to, the requirements of celery plants were thoroughly understood. In its early stages of growth the plants like both shade and moisture, which is just what they get under the treatment I have described. I am aware that what I have written will only appear as trifling matters in the view of some people. Nevertheless, as an old hand in the garden, I know enough about growing celery to appreciate attention to the small matters that lead to success. In all stages of growth celery will thrive better in hot, dry weather if shaded from the sun, even if but little water is given the roots, than when exposed to its influence, although abundantly supplied with root moisture. The growers to whom I have referred evidently well understood this, and being obliged to curtail the labour of watering in every way they could, they very sensibly adopted the means I have described. But a saving in labour was not all that was accomplished, as one of the men remarked to me, for he said, "If I keep the full force of the sun as well as the drying wind from reaching the plants, I get them with more roots and altogether a stronger growth than when they have to bear the force of both without any protection." J. C. C.

ASPARAGUS CULTIVATION AT ARGENTEUIL.

ALTHOUGH many English readers are doubtless aware in a general way that Argenteuil is as celebrated for its asparagus as Montreuil for its peaches, Montmorency for its cherries, or Fontenay-aux-Roses for its strawberries, few of them, probably, have any adequate idea of the extent to which this cultivation is carried. Some account, therefore, of the process may prove interesting, especially at a time of year when asparagus is still in season. Let me premise that Argenteuil is only a few miles outside Paris, rather further down the Seine, and it is accessible in less than half-an-hour by train either from the Gare St. Lazaire or the Gare du Nord. It is a large, straggling village, with nothing of any interest except some relics in the parish church—including what is supposed to be a remnant of the garment which Christ wore upon the cross—which are displayed in great pomp at Whitsuntide, and but for being a favourite rendezvous for rowing men during the summer it would be almost unknown to the great majority of Parisians. But the gardens in which fruit and vegetables other than asparagus are grown for the Paris market are themselves very extensive, though nothing to compare with the asparagus cultivation, which, as I am informed, occupies about 1,000 acres, and brings in an annual average income of £40,000. The growing of asparagus at Argenteuil has been going on ever since the vegetable was known, but at first it was merely planted among the vines, of which there are so many in this village, and it was only when the latter failed that occupiers of land applied themselves to its methodical cultivation. This was soon found to be very profitable, and from 1850 to 1870 a great deal of land was planted in asparagus. Unfortunately, the outskirts of the village were made a camping-ground for the German forces during the siege of Paris, and nearly the whole of the asparagus beds were destroyed. But they were almost at once reconstituted, and soon covered a greater area than before.

Going out to Argenteuil one day last week I had the good fortune to arrive there just when the students of the horticultural school attached to the Luxembourg gardens in Paris were visiting the nurseries and asparagus beds of M. Louis Lhérault, who is, together with the brothers Gagnon, Chevalier, and Dreux, the largest grower in the place. M. Lhérault has about fifty acres of vines in which asparagus is grown, besides ten acres of asparagus beds pure and simple, and I gather from him that there is a tendency to decrease rather than increase, as land is rising in value, and the soil, which is a mixture of chalk and clay, shows signs in places of exhaustion. Before endeavouring to give some idea of the mode of cultivation and of the varieties cultivated, I may observe that asparagus of good quality is now grown both in Algeria and the South of France, M. Lhérault having a son who has fifty acres of asparagus near the town of Algiers. The Algerian asparagus comes to hand in March, that from the south follows in April, while the Argenteuil beds and those in other places around Paris may be regarded as ready by the beginning of May. It is calculated that one stock will yield about ten heads in the course of a month or six weeks during which the gathering or cutting goes on, and the *modus operandi* is as follows: The asparagus is gathered in the early morning, while the dew is still on it. It is then bundled and kept in the growers' sheds till the late afternoon, when it is sent into the Paris central markets, where it is sold by auction to greengrocers, hotelkeepers, and others buying upon a large scale. There are bundles of different sizes, so that it is impossible to give any idea of the prices paid, especially as these vary very much according to the time at which the asparagus is put into the market. Some of the growers have a standing contract with one large dealer to take all they send, and with regard to the length of time asparagus will keep, I am assured that, though it is naturally best when freshly gathered, it will be good at the expiration of three days if put into a cool place.

There are four kinds of asparagus grown at Argenteuil, one being the asperge d'Argenteuil hative, the second the asperge d'Argenteuil tardive violette, the third the asperge d'Argenteuil tardive rose, and the fourth the asperge d'Argenteuil intermédiaire. The first, of a rosy shade and very big, being from six inches to seven inches in circumference, is very delicate in flavour, very early, and extremely productive, being well adapted for forcing. The second is large, but the heads are irregular in shape, especially at the points; the third being of much the same type as the second, except that it is of a rosy rather than a violet shade. Some of the heads belonging to these two varieties weigh as much as a pound each, but the fourth variety, the intermediate asparagus of Argenteuil, is the one most cultivated. The heads vary from four inches to five inches in circumference, it is of a reddish tint, and is from eight to twelve days later than the early variety. In planting asparagus it is considered desirable that the ground should be neither very dry nor very wet, and that it should be free of all roots, stones, or other obstacles to the vegetation of the plants. With regard to the time of sowing, February and March are to be preferred to June and July, or to October and November, the mode of operation being much the same as in England. The autumn preceding the plantation the land is well turned over and manured with cowdung, the lees of grapes, or Paris sewage, applied at the rate of about twenty tons an acre. The formation of the trenches or beds in which the plantations are made is the next step. There is a width of about twenty-four inches between each, and the intervening space is utilised for the first year or two to grow early potatos, or beans, and for the same period it is necessary, in addition to frequent weeding and pruning in order to get rid of noxious growths, that a strict watch be kept upon the young plants, in order that they may be protected from the voracity of the insect known as the crioceris asparagi, which eats the stems, and swarms at times in such extraordinary numbers that the plants actually bend beneath the weight. The mode adopted for getting rid of these insects is to go round with a tin can and place it under the plants, which are then shaken. The insects fall down into the can and are put into boiling water, the great thing being to do this before they lay their eggs. In the third and fourth year, if the plantation has done well, a few heads will probably be gathered, for I should have said that French growers do not speak of "cutting" asparagus, but of "gathering," it, the knife being only used when the action of the hand is not sufficient. It is not, however, till the fifth, or even the sixth year, that an asparagus bed is in full growth, when the crop may be expected to last from six weeks to two months, and an asparagus bed will go on for fifteen to twenty years when properly cultivated and looked after, the annual yield being at the rate of nearly four tons per acre. The cultivation of asparagus gives, of course, a return which varies with the seasons and with the attention bestowed, but a large grower at Argenteuil, M. Lebœuf, has calculated that the cost of planting, keeping in order, gathering and packing a hectare (two and a-half acres) is about £86, and that the crop will be worth about £342. This would leave a clear profit of £254, but then it must be remembered that for four years there will not be a penny of return for the original outlay, and no account appears to have been taken of bad years.

I questioned several people at Argenteuil with regard to the flavour of the asparagus, and told them that it was the very general impression—in England, at all events—that the largest heads were coarser in taste than the smaller or the medium ones, but I am assured that all this is a mistake, and that size has nothing to do with flavour as long as the asparagus is gathered when just mature and before it has got at all fibrous. This comparison only applies to varieties of equal maturity, for it would be impossible to draw a parallel between the early and the late asparagus, the latter always being superior to the former. A good many of the Argenteuil growers also cultivate forced asparagus, so as to have it ready for the Paris market in the months from November to February; but there is nothing in this which differs materially from forcing as practised elsewhere. There are other extensive nurseries at Argenteuil, where the fig tree seems to thrive remarkably well, and M. Lhérault, in his lecture to the Luxembourg students, said that it was supposed to have grown here in the time of Julian the Apostate—the Argenteuil white fig being accorded the preference over some eighty other known varieties.

It must not be supposed that Argenteuil and the other villages around Paris are the only places where the cultivation of asparagus is carried on upon an extensive scale, for there are many farmers who find it worth while to grow large quantities of this profitable vegetable, but it is a common mistake to suppose that the neighbourhood of Compiègne has extensive asparagus-beds, there being only one place near there—a village called Montmacq—where any quantity is grown. It is in the Burgundy district that asparagus is cultivated as an agricultural rather than as a garden product, the centre of this cultivation being Auxonne, a small town about half way between Dijon and Dôle. So much asparagus is grown around Auxonne that several truck-loads are sent off daily during the season to Paris, Germany, and other places, and the business done is so great that, though I am not able to obtain any definite figures, several million francs are paid for each year's crop. The system of cultivation, whether the asparagus be grown in small beds or in the open field, must of necessity be much the same, and although a mistaken notion seems to be current that the cultivation is "by the plough," this, is, of course, not the case, for it is obvious that even a shallow plough would injure the roots of the asparagus; all that is done, where the asparagus beds are large, being to use a horse-hoe between the trenches. The asparagus sent from Burgundy and other parts of France comes in about the same time as that grown around Paris, but none of it commands so high a price in the market as that which is supposed to come from Argenteuil.—*Times*.

ROSE SHOW FIXTURES, 1890.

June 19, Ryde; 24, Drill Hall, Westminster (N.R.S.); 25, Richmond (Surrey); 27, Royal Aquarium, Westminster; 28, Eltham, Reigate.

July 1, Canterbury, Colchester, Hereford, Sutton; 2, Bagshot, Brockham, Croydon, Dursley, Hitchin; 3, Bath, Farningham, Norwich; 5, Crystal Palace (N.R.S.); 8, Gloucester, Ipswich, *Winchester; 9, *Brighton, Diss, Ealing, Tunbridge Wells; 10, Birkenhead, Woodbridge, Worksop; 11, Ulverston; 12, New Brighton; 15, Christleton; 17, Birmingham (N.R.S.), Bedford, Helensburgh; 22, Tibshelf; 24, Salterhebble (Halifax).

August 2, Ripley.

* In the case of Brighton and Winchester, where the exhibitions extend over more than one day, the date of the first day's show only is given.

Rosebank, Berkhamsted, Herts. EDWARD MAWLEY.

Notes of Observation.

A RIVAL TO IRIS SUSIANA.

THE somewhat singular Iris Susiana has at last found a formidable rival in I. Gatesi, which can hardly fail to find much favour amongst those who take an interest in the beautiful group of plants to which it belongs. This new-comer was discovered by Mr. Sintenis in the mountains of Southern Kurdistan, and was introduced to Europe by Max Leichtlin two years since. The flowers are in most cases nearly double the size of those of I. Susiana, and are borne on stout stalks rising to a height of about two feet. The colouring is bright and effective, the falls and large standards are creamy white, and with the falls are spotted and reticulated with silvery grey. The beard is golden yellow, and the immense flowers present a very effective appearance when seen from a distance, whilst the soft colouring is extremely beautiful when immediately under the eye. It is one of the most interesting additions that has been made to the list of hardy flowers for many years past. Very distinct from this rarity is I. pseudacorus, or Common Water Flag, and I allude to it for the purpose of saying that it is one of the most attractive objects we have at the present time in the garden. Three or four years since we planted some clumps of this iris along the side of a large pond in the pleasure grounds, and they bloom annually in the most satisfactory manner, and at the present time their elegant leafage and rich golden yellow flowers present an extremely beautiful appearance. Half-a-dozen roots were put in each clump, and so low down that the soil is constantly saturated with moisture. R. M.

GEUMS.

The geums are now conspicuous in the herbaceous border, and a few of the kinds are so free and continuous in blooming that where the conditions are favourable there will be a succession of their flowers until the autumn. One of the most useful of the several kinds is unquestionably the semi-double form of Geum coccineum, which is vigorous in growth, and produces large, brilliant scarlet flowers. It is superior to the type, inasmuch as the second row of petals render the flowers more effective both in the border and when cut, and associated with other flowers. The petals are also more persistent than are those of the single form, an advantage of considerable importance, as the flowers remain in good condition for a much longer period. In few places is the double scarlet geum so largely grown as in the gardens of The Grange, Hackbridge, for in the borders are some thousands of plants, and all flowering so freely that it is not difficult to understand why it is so highly appreciated by Mr. Smee. It is one of the most easily grown of the hardy herbaceous plants, for it readily adapts itself to the conditions under which it is placed, and can be readily multiplied by means of seed or division, seedlings being in some respects preferable because of their more vigorous habit. Surprisingly effective also is G. miniatum, a beautiful form resembling the first-named in general character, but attaining a greater height, and having more ample leafage. The flowers are single, and the colour rich orange. G. montanum is quite distinct in character from the foregoing, and not, perhaps, so generally useful, but it is very beautiful and well entitled to a place in a border of limited dimensions. The growth is compact, and the flowers are bright yellow and produced on stems rising to a height of about ten inches. A well-drained border is an essential condition in the cultivation of the Mountain avens, and it does remarkably well on the lower ledges in the rock garden.

G.

FIG ST. JOHN.

The fig contributed by Messrs. J. Veitch and Sons to the recent exhibition of the Royal Horticultural Society in the Temple Gardens under the designation of St. John can hardly fail to prove a valuable addition to the comparatively short list of these delicious fruits. It is neat in growth, has medium-sized leaves, and in general habit is widely different from the varieties in general cultivation. Of still greater importance is the fact that it is a prodigious cropper, and free from the fault of shedding the fruit produced on the growth of the previous season, so characteristic of some of the varieties. Its fruitfulness and neat habit render it especially useful for pot culture, more particularly where the trees in pots are grown for the purpose of producing supplies in advance of the crop from trees planted in houses devoted exclusively to them. The fruit is of average size, and rich and luscious in flavour. G.

A PERFECT BROCCOLI.

When visiting Eydon Hall Gardens, Byfield, the latter end of last month I saw growing a batch of what might well be termed a "perfect broccoli." It is a new variety raised by Mr. Hughes, gardener at the above-named place. Its characteristics are great hardiness, every plant having withstood the severest winter; extraordinary protecting properties, the leaves are, and remain, tightly folded over the flower until it is too far expanded for table purposes. This, as will be seen, is a great advantage, there being no danger of the flower becoming discoloured through exposure; the habit, too, is extremely dwarf, there being only four inches of stem above ground (without having been earthed up, as the plants were too dwarf to allow of this being done), while the entire height to the tip of the longest leaf is only twenty-seven inches. Last, but not least, the flavour is very delicate (which I can vouch for, as I had the pleasure of tasting it at dinner the day of my visit), being entirely free from that "strongness" so objectionable in many broccoli.

I think most readers of your valuable paper will agree with me that the subject of this note is a perfect variety, as I fail to see where any improvement could come in. VISITOR.

MOUNTAIN CLEMATIS.

Whilst the matter is fresh in my mind I would like to suggest that Clematis montana might with advantage be more generally employed for clothing walls and rustic and other screens out of doors than is now the case. I have long been acquainted with the beauty of this old species, and I have been recently reminded of its usefulness by some examples employed in clothing a portion of the walls of two old-fashioned residences occupied by friends of mine. The practice adopted in both cases has been to train the growth up the walls until they were completely covered, and then to allow the secondary growth to hang down in a natural manner. Under these conditions the long wreaths of small white flowers present a singularly beautiful appearance, and the plant appears to the best advantage. It is of course necessary that the old wood should be thinned out annually, to prevent the growth extending any considerable distance from the wall, and become so heavy as to impose a severe strain upon the supports.

ENTERPRISING AMATEUR.

SEEDLING CARNATIONS.

Some of my seedling Carnations (I only grow a few), are now rewarding me for all the care that I have bestowed upon them; fragrant flowers are the primary object which I have in view. With considerable pleasure I submit to you one which I think for its fragrance has not its equal, save in the old crimson clove, so familiar to us in our early days. However, I must leave you to be the best judge as to the merits or demerits of this my crimson-purple border seedling.

GEORGE FRY.

[Mr. Fry has sent us a few plants from his last batch of seedlings, as examples of his system of raising stock of these favourites. Those examples would do credit to any system, and they fully justify the pains Mr. Fry has taken to keep our readers informed on the subject. The flowers now sent are large, full, smooth, stout in substance, sweetly fragrant, and the colour is a rich rosy purple.—ED.]

PURPLE ROCKET.

This is *Hesperis matronalis* of the modern books, but anciently known as a Dame's Violet. Although this old-fashioned Dame's Violet may be looked upon as a common plant, I know of nothing flowering in the herbaceous border which gives forth a more pleasing perfume in the evening than this rocket. The mass of flower which it produces, and the easy way in which it succeeds from cuttings inserted in a cold frame at the end of September, renders it a useful and deserving subject in a collection of hardy flowers. For cutting and massing in a tall vase it is valuable, as it lasts well a long time in water. E. M.

THE "PERFECT" WEED KILLER.

A WEED-KILLER, certain in action, low in price, and easily applied has been a constant and often a very serious want in all large gardens and parks from "time immemorial." Several preparations have been introduced with more or less success, but have failed to obtain general favour because costly or inconvenient, or accompanied with some other objection, the result being that after being used once or twice they have been abandoned as not meeting the requirement exactly. An illustration of the difficulty of finding a suitable substance is afforded by common salt, which is a certain weed killer under some circumstances, but, like many panaceas that help one through a difficulty, only to renew it in an aggravated form, salt is as certain a weed promoter as any substance thought of for the purpose. When applied dry in dry, hot weather, salt will kill every weed. But on the return of rain the growth of weeds is usually more rampant than before, the salt being now a stimulant and manure, and a particular friend to the weeds, by maintaining a condition of dampness in the roads it has been applied to.

Observations in several quarters in the past two years have convinced us that the "Perfect" Weed Killer of the Horticultural and Agricultural Chemical Company, 97, Milton Street, Glasgow, is the very thing that has long been wanted. This is at once simple, cheap, and effective, and requires only reasonable care to ensure perfect action and *lasting results*, for it certainly does not become a stimulant to a new growth after having accomplished its purpose in the first instance. It is, in fact, bound always to kill and never to cure the vegetation it is applied to, having a basis that cannot, by any action of the elements, be converted into a manure. The preparation requires to be watered down to the extent of twenty-five times its bulk of water and applied to the roads and walks with an ordinary watering-can, and the weeds are settled for the season. The application is best made in dry weather, and care must be taken that box-edgings, and indeed any and every live edging, is untouched by it, a very easy matter, and a precaution any careful operator would take without need of a special warning. The cleanliness of the walks in the beautiful grounds of the Royal Gardens, Kew, the R.H.S. Gardens at Chiswick, and other public places near London that might be named, are among the features that give satisfaction and bring credit to their several managers. In the important places named the "Perfect" weed killer is trusted for making a clean sweep of road weeds, and therefore plays an important part in the keeping of the roads. The preparation, being poisonous, requires careful handling, but commonplace care is enough, for garden stores are usually separate from domestic stores, and the weed killer is not likely to kill any animal, because no bird or four-footed beast would touch it.

The Horticultural and Agricultural Chemical Company offer a number of preparations for farm and garden use in the reduction of insect pests, mildew, and earthworms, and for summer shading of plant houses. All these are severally denominated "Perfect," to distinguish them from preparations bearing similar names, but they appear to us to deserve the qualification, for from many quarters we hear of their efficacy and cheapness, and it appears that the manufacturing chemist has discovered how directly and energetically he may assist the farmer and the gardener in the cultivation of the ground.

MR. EDWARD BENNETT, of Potter's Bar, has taken the management of Harefield Grove, Uxbridge, which contains, perhaps, the largest extent of glass of any place in England.

COOL CULTURE OF STEPHANOTIS FLORIBUNDA.

THE delightfully fragrant flowers of Stephanotis floribunda are held in such high estimation that it is a matter of considerable importance to determine the lowest temperature with which the plant can be successfully grown and flowered. It is not sufficient to know that examples having the assistance of a tropical heat will grow vigorously and bloom profusely. There are many anxious to attempt the culture of the stephanotis who have structures in which are maintained temperatures less than that of the ordinary plant stove, but before they can be expected to make a beginning it must be shown that they have some prospect of success. This, it is believed, can be done; but before entering into details I would say that I have nothing to urge against the practice which generally obtains. We know that the stephanotis will produce an abundance of flowers when occupying a position in a structure in which a brisk temperature and a liberal degree of humidity are maintained, and those who are able to place it under those conditions will do well to continue to take advantage of the means at their command. Those, on the other hand, who have simply an intermediate house or a warm greenhouse at command may engage in the culture of this climber with the assurance of successful results, provided the several details are intelligently carried out.

The late Mr. Robert Oubridge, of Stoke Newington, was, perhaps, the first to point out the practicability of growing the stephanotis with less heat than was some twenty years ago considered necessary. His contribution will be found at page 389 of the GARDENERS' MAGAZINE for 1869, and although his views were much discussed by plant growers at the time, his advice has borne good fruit. After showing that a roasting temperature is by no means necessary, or indeed desirable, Mr. Oubridge proceeded to recommend the purchase of thrifty plants early in March, as they then have plenty of time in which to make their growth before the end of the autumn. These were to be shifted into eight-inch pots as soon as they came to hand, then placed in one corner of the house and have their growth trained over the roof. As soon as the pots were nicely filled with roots they were to be transferred to eleven-inch pots. The time of repotting was to be regulated by the progress made, and if they were not sufficiently advanced by the end of July to require shifting, Mr. Oubridge recommended their remaining in the eight-inch pots until the following year. The regulation of the temperature is, however, of the most importance, and with reference to this it was advised that during the winter a temperature of 50 deg. be maintained. After the second week of February the heat was to be increased to 60 deg., and after the young shoots had begun to run a further rise of 5 deg. was to be allowed. This brought the temperature to 65 deg., and Mr. Oubridge proceeded, "By the middle of April there will be no difficulty in maintaining this temperature with the aid of solar warmth alone during the day and a little fire heat in the evening to warm the house for the night. My plants, from which I have been cutting an immense quantity of flowers for some time past, have not tasted fire heat during the past three months, and nothing could possibly be in better health or flower with greater freedom." As I had frequent opportunities of seeing the plants then under cool culture in the Church Walk nurseries, I am in a position to say that the case was under rather than over-stated.

Mr. B. W. Knight, the well-known nurseryman of Battle, Sussex, has carried his experiments in the cool culture of the stephanotis farther than did Mr. Oubridge, and has successfully flowered it in the greenhouse. With reference to this matter Mr. Knight says, "The stephanotis is far more hardy than most people believe. I can speak in the highest terms of its hardiness, having grown it last year in a house thrown open, with all air possible on, where it grew and flowered well; but the most remarkable thing was it threw out fine bunches of its fragrant bloom from every joint made. From the latter end of June till December this plant was in bloom, the air only being taken off the house when it got too cold for bedding pelargoniums. I believe the plant would grow and bloom freely out in the border during the summer months." It would be interesting to determine by experiment how far there is justification for this belief, and those who have spare plants and suitable positions have here an opportunity for doing a good service. It is not, however, probable that very satisfactory results, even under the most favourable conditions, will be obtained from outdoor culture. Nevertheless, the experiment would be interesting and useful.

That the stephanotis may be placed out-of-doors for a considerable period during the summer months has been recorded in the pages of the GARDENERS' MAGAZINE by Mr. T. Trussler, but the plant in question was placed out-of-doors for the purpose of ripening the new wood, and not for the production of flowers. The note appears in the GARDENERS' MAGAZINE of Sept. 28, 1872 (page 555). Mr. Trussler, then head gardener at Knighton, Buckhurst Hill, and now a successful nurseryman at Enfield, states that in visiting the nurseries of Mr. Walker at Waltham Abbey he was much struck with an immense specimen trained to the back wall of a pine stove. Further, that as the specimen was in such splendid health and bloomed so freely each year, he thought a few particulars of the practice adopted would be useful. There can be no question as to their utility, and for the information of those unable to refer to the note I will briefly summarize the particulars given. Some time in the first or second week in June, according to the state of the weather, the shoots were carefully removed from the wall and tied rather loosely in a bundle. This having been done the plant was taken out-of-doors and placed at the foot of a fence or in a frame which, in the early part of the year, had been devoted to bedding plants, as was most convenient. In either case the shoots were spread out in such a manner that each one enjoyed a full share of light and air. When placed in the frame the lights were withdrawn, to ensure the full exposure of the wood. After being placed out-of-doors the supply of water to the roots was materially reduced, and towards the end of August it was repotted. This was done by turning the plant out of the pot, removing as much of the old soil from the ball as could be taken away without injury to the roots. It was then returned to the same pot and taken to the pine stove, its growth being then trained over the wall. As the specimen in question produced annually clusters of flowers at nearly every joint of the numerous shoots, and was, moreover, free from mealy bug, it is evident that it derived considerable benefit from the exposure to which it was subjected when placed out-of-doors.

The question of the relative hardiness of the stephanotis is of much importance to a large body of cultivators, and it would be interesting to know what further light can be thrown upon it.

WORK FOR THE BEE-KEEPER IN JUNE.

THE month of June is a busy month with the bee-keeper. Some colonies have made rapid advances during the past ten days, and new honey is being put into the market in excellent form. Swarming has been exceptionally early this year, and among many cottagers who follow the old method, many of their hives had turned out their second and third swarm by the middle of May. But under the bar-frame method swarms are usually later, for the simple reason that there is more space to be filled by the bees and in most instances this room is added to by giving extra chambers, such as crates of sections; and it is when these become nearly filled that swarms usually turn out.

A neighbouring bee-keeper who is very adverse to swarming, and who is fully alive to the necessity of having young queens at the head of colonies, carries out a system which cannot be described as any other than a bold and risky stroke, but so far he has met with success. Each year when the hive has reached swarming point he searches for the old queen and removes her, and she is destroyed; or, a little more than a week later, he examines the hive again and cuts out all but one of the queen cells that are then formed. This is risky, for in the event of this cell not hatching or the young queen being lost on her wedding tour, all power of the bees raising another queen is taken away, as there would then be no eggs in the hive from which to raise a queen. But in the event of all going well with the hatching and mating, the disposition to swarm will be brought to an end for the season.

As I have before stated, this method is decidedly risky, and unless one is particularly anxious that his bees should not swarm at all I should not recommend its adoption, although the plan is carried out with considerable success by the party referred to.

Much has been written on raising and re-queening hives of bees, as though one had nothing else to do but to turn bees from their natural course by preventing swarming, and to buy what queens are wanted for re-queening in the autumn. The latter is an expensive process, and if carried out to any great extent would swallow up the whole of the profits for the year's work. As I have before remarked, it is a good plan where high trees do not abound near the apiary to allow the bees to swarm, or at least some part of them, for if one would take notice of any colony that has swarmed during the following spring and early summer, it will be seen how much more progressive is such a colony than one that has been prevented from swarming and has not a young queen for its encouragement. It is a quite easy matter to get a number of young queens raised under normal condition by keeping one of the colonies, and it should be one of the best, without adding to the space so as to cause them to swarm. When this takes place it can be either hived separately or the old queen may be searched for and removed, when all the bees will go back to the hive from which they issued. In a little more than a week the hive may be examined, and in all probability there will be found queen cells set on several of the combs. Those frames containing queen cells may be divided, using one frame with queen cells and two others to each of the colonies to be made up. If those are set on a new stand and carefully wrapped up warm and snug the queens will soon hatch out and form a separate stock. A good colony may easily be made into three that would be in the best possible condition for another year, but of course one lot is to be left on the old stand. There is also something a little artificial about the foregoing, and where this is not cared for the safest plan is to allow one or two colonies to swarm and to hive them separately. In making up artificial swarms or dividing, all the old bees will fly back to the stand from which they have been taken, so that to ensure sufficient bees being left in each of the other two lots removed some of the bees should be shaken from the combs left, but not those containing the queen cells, into the other two lots, as the young bees will stop and the old ones fly back.

Close watch should now be kept on all hives over which crates of sections are placed, and as soon as they become properly finished they may be removed and their places filled up with other sections, for where dividers are used there is not the danger of the bees building out their combs beyond the edges of the sections. The best place to keep the sections when filled is in some close-fitting box where it is impossible for wasps or bees to reach them. No fear need be apprehended at present of its granulating, but as autumn and winter approach cold and damp affect the combs very much, the damp making them bleed and otherwise disfiguring the combs. As autumn comes on this should be taken into account. I have had old honey more than two years old, and as clean and dry on the surface of the comb as it was the day it was taken off and not granulated. This honey occupied a position near the flue of the men's mess-room, in which a fire was burning little or much most of the daytime in winter.

Care should also be taken with extracted honey not to allow it to stand in a damp place until it is corked and made secure from damp.

With hives for extracting from, it is a good plan to give them plenty of room to store their nectar, and twenty full-sized bars are none too many, and the time to extract is just before the cells are completely sealed over. Where any uncapping is necessary it is well to have two knives, and to keep one in heated water while the other is in use, for when this is done the combs do not get broken about so much.

APIARIST.

SEEDLING TULIPS.

IF I had the convenience for growing a collection of florist's tulips, I should like to have a good selection of breeders among them. As compared with many of the flamed and feathered bizarres and roses, the floral dress of many breeders shows the same wide difference as between a quaker's suit of drab and a brilliant hussar uniform; yet they are very handsome, and many, singularly winsome. It is a melancholy reflection that one may have a lovely rose-breeder tulip of a beautiful shade, say of rosy scarlet, and yet when it breaks into a rectified flower, a flamed or a feathered one, or some mixed attempt at both, it may, and frequently does, become quite worthless and fit only for the rubbish heap. A broken flower may hark back to the breeder form; but it is of very rare occurrence, and a thousand to one against its doing so.

Breeder Tulips are seedlings in the first stage of their floral existence. Almost invariably a seedling tulip when it first flowers, takes on a self-coloured form. They are not always strictly self-coloured but have a delicate shading, yet they are technically termed breeders, and spoken of as self coloured. He, therefore, who sets about the important work of raising seedling tulips should so proceed as that he may hope to reap some substantial reward. He should remember that it is of the first importance that the class ground colours be as pure and intense as possible; also he should strive for the best shape in the flowers and the most desired substance in the petals. Should he attempt to fertilize for the purpose of obtaining seed, he must go about it in the proper way and with due regard to results. "A white ground flower must never be crossed with a yellow ground one, for a number of whitey yellows and yellowy whites are sure to occur among the seedlings which result. In like manner among the white classes themselves, those with scarlet markings should not be crossed with those of violet and black, or the intensity and distinction of the two will be mingled and weakened." The flowers to be employed for seed purposes should be guarded from their first opening from the intrusion of bees and other insects. This can be managed by placing a piece of light fluffy cotton wool inside the flower. If an insect has already been there, it will be clearly shown by the pistil having become discoloured through being stained by pollen. Such a flower is practically useless, having to all appearance been previously impregnated. Seed from such a flower would be very likely to yield a progeny of an utterly mixed and worthless character; and seeing that it requires a good slice out of the average duration of a human life in which to raise and flower seedling tulips—at least from five to seven years—the labour of the seedling raiser should be expended only upon what is likely to add value and beauty to his collection.

But seed from the very finest flowers will not necessarily produce fine tulips. The seedling raiser has done all he could do towards securing success, but there may be ninety out of every hundred good for nothing. By August the seed is ripe, and the usual rule is to sow it about October following the gathering. Some have recommended to sow in January, February, or March. It is generally sown in pans of suitable compost. The seeds are thin and flat, but however much so they may be, it is a vital seed wherever a slight mere streak of a germ can be seen extending under the skin, from the narrow end of the seed towards the other. The seeds usually take a long time to germinate, from six weeks to two months and longer. Something depends upon the character of the weather. The pans of seed are usually placed in a cold frame when sown. By March growth will become active. The first year but one single blade of leaf will appear, and the seed sends down a fibre at the end of which a tiny bulb is formed, the first green leaf much resembling the first produced by the seed of an onion. But the seedling plants are not disturbed, they die down, remain in the pans, the raiser taking care at all times to keep them from the effects of frost. In the second year there will be still one narrow blade, and the third year the same, but a broader one, and so the seedling goes on producing a single leaf until it is strong enough to flower, and then it produces more than one leaf.

There is one single peculiarity about seedling tulips, they make two and three and four bulbs in one year, instead of one only upon which the full strength of the plant is concentrated. The bulb of the previous year throws down a kind of fleshy tube, which the tulip men term a "dropper," and when three and four of these are produced, one variety appears to be needlessly increased. This is very tedious for the raiser, who can only select the slightly larger one produced by each seedling in order to avoid growing vast reduplications of what may prove worthless when they bloom. The difficulty is added to from the fact that these "droppers" are found, not where the parent bulblet was planted, but at the end of the underground pipes or fleshy tubes, and when they are sought for in the soil care must be taken that none of them are missed, for the largest among the droppers is usually found the deepest down.

It is usual to leave the seedlings in the pans until the third year, keeping them watered, free from weeds, and giving such surfacings of soil as they require. When getting large enough to flower they cease to throw down the "droppers" and form bulbs in the usual fashion. These are then planted out in beds to flower at the end of the fifth, sixth, seventh, &c., years. The process of raising tulips from seeds is one requiring patience, careful attention, and a large amount of hopeful anticipation.

R. DEAN.

HERBACEOUS PÆONIES.

ALTHOUGH the exhibition of pæonies at the Drill Hall, Westminster, on the 10th inst., fell considerably short of expectation, sufficient blooms were staged to produce a rich display of colour, and to show how substantial is the aid these plants are able to render in furnishing the herbaceous border. The flowers contributed by the several exhibitors did something beyond brightening up the dingy hall, and indicating their usefulness in the flower garden. They proved to demonstration that much has yet to be learnt as to the way they should be presented at the public exhibitions. As is invariably the case, the greater proportion of the blooms staged were too old, and instead of their presenting the delightful freshness characteristic of flowers in process of expansion, they were in most cases so far advanced that they were developed to the fullest extent, and consequently lost much of their charm. Speaking generally, the flowers of pæonies should, when cut, not be so old by a day as the stage which is now considered the most suitable, and some allowance be made for the fact that the process of development goes on after they are cut from the plant. To arrange them differently is assuredly not less necessary than to cut them at an earlier stage. Packing the flowers rather close together in oblong boxes may be convenient, especially when they have to be brought long distances, but it fails to show the flowers to advantage. In no way do they present a more tasteful appearance than when arranged in vases or large tubes, three in each and just far enough apart for the blooms to stand quite clear of each other. Tubes, such as those employed by Messrs. Paul and Son in staging their collection of hardy flowers at the exhibition of the Royal Botanic Society on the 11th inst., can be strongly recommended. But it would be an advantage to have them of different heights and painted or enamelled an invisible green. That the foliage of the plants should be associated with the flowers is of the utmost importance, and when the blooms have such long stalks that they cannot be conveniently cut with foliage attached, the leaves from a lower part of the stem should be added. This should be permissible when the flowers are staged in competition for prizes. It may appear hopeless to expect any reform in the direction indicated, but I do not so regard it. I well remember the staging of pyrethrums without a scrap of stalk, and I know also that by a little persistency in advocating a change, I was successful in persuading exhibitors that to stage them with six inches or so of stalk would be an advantage. It is to be regretted that no time was left at the afternoon meeting of the R.H.S. on the 10th for full discussion of the papers read by Mr. George Paul and Mr. R. Irwin Lynch, as much might be said on the qualities of pæonies, as well as on the manner of staging them at exhibitions.

The paper read by Mr. Paul on the development and culture of the herbaceous pæony contained, as might have been expected, much valuable information on the several points touched. It was highly satisfactory in other respects, for avoiding generalities, Mr. Paul commenced at once to deal with the history of the flower, and then proceeded to sketch its cultivation, and was therefore able to fully utilize the time at his disposal. Mr. Lynch dealt with the botanical aspect of the flowers, and, as was expected by those who are acquainted with the extent of his knowledge of the pæonies, he did so with considerable ability. He, however, hardly did himself justice, for his introduction occupied so much of the short time at his disposal as to render it necessary to deal somewhat hurriedly with the classification and characters of the species. In consequence, he was not so distinctly heard by the whole of the audience as could have been desired. Mr. Lynch, however, made himself heard much better than have some of the readers of papers at the Drill Hall meetings.

In passing under review the history of the herbaceous pæony, Mr. Paul stated that it first began to receive attention about the year 1840, and that from ten to fifteen years later it obtained a high degree of popularity, which was soon overshadowed by the bedding system. Amongst others who had taken a leading position during the past fifty years in collecting and hybridising pæonies were Mr. John Salter, of the Versailles Nurseries, Hammersmith; Mr. R. Parker, of Tooting; Messrs. Osborne, of Fulham; M. Keteleer, Mr. Van Houtte, M. Lemoine, Mr. Van Geert, and Messrs. Kelway and Son, Langport. In a letter read by Mr. Paul, the last-named firm stated that they had their attention directed to the pæonies a few years since by seeing some extremely beautiful flowers at a wake in one of the Devonshire villages. As the result of their inquiries, they had been able to hunt up a considerable number of excellent varieties, and these had been fully utilized in the raising the varieties they had exhibited from time to time. Messrs. Kelway also stated that they regarded the pæonies as one of the most useful classes of hardy plants, for they grew freely and bloomed profusely under the most diverse conditions, and that they did not suffer from either diseases or plant pests.

With reference to the cultivation Mr. Paul said that they were not very particular as to soil, provided it is of a moderately good depth. If not naturally deep, the soil should be made so, either by trenching, or bastard trenching. He preferred trenching when the soil was deep enough to allow it to be done. A liberal application of manure should be made, and the best course was to bury it just below the top spit. On light, and indeed on all soils not particularly favourable to deep rooting, a moderate addition of turfy loam would be an advantage. The best time for planting is, he considered, between November and February, and examples with from two to three crowns each are the best. All the dead and decaying roots, if any, should be cut away, and all the old soil removed from the roots previous to their being planted in their new quarters. In planting they should be put just deep enough for the crowns to be buried three inches below the surface. When planted, they should be mulched with partly decayed manure, sufficient being applied to prevent the roots penetrating to a

sufficient depth to reach the crowns. There will be no occasion to remove the manure, as the new growths will readily push through the covering. Liberal mulchings of manure will be highly beneficial in subsequent years, and I would here mention that Mr. Kelway informed me that at Langport cow manure is considered the best of fertilizers for the herbaceous pæonies, which are such gross feeders, that there is not much risk of overdoing them with manurial matter. Mr. Paul informed his audience that those who engaged in pæony culture would have a light tax imposed upon their patience, for few, if any flowers would be produced the first season after planting. The second year the number would be small, but in the third year they would bloom freely, and from that time they would continue to increase in effectiveness for many years provided they are maintained in a vigorous state of health by a liberal application of manure. It may also be added that plentiful supplies of liquid manure during the season of growth are of great assistance in promoting a vigorous growth.

Mr. Lynch, in his classification, proposed to divide the genus into two sub-genera, the first sub-genus being Moutan; the second Onæpia, to include P. Browni and P. Californica; and the third Pæon, to include the herbaceous species and varieties. The kinds forming the the last-named subgenus, he proposes to arrange in five groups, the first to comprise P. tenuifolia, P. hybrida, and P. anomala; the second group to include those having entire leaves, as P. corallina, P. Wittemanni, P. Broteri, P. coriacea, and P. Russi; the third group to include P. albiflora section and P. Emodi; the fourth group to include P. officinalis and its varieties, and the fifth group to include P. arietina, P. peregrina, P. decora, and others more or less pubescent. The classification proposed by Mr. Lynch is original and remarkable for its simplicity, and can hardly fail to prove useful to those who devote any considerable share of their attention to pæonies. G. G.

TOMATO DISEASE.

The subject of disease in the tomato plant is so frequently brought before the notice of horticulturists, both through the medium of the press and by actual experience in the cultivation of this popular fruit, and the statement as frequently made that there is no cure for it induces me to offer the following list of actual experience acquired this season in the hope that it may be of some use to my fellow-cultivators. I have on many occasions, both through the press and by word of mouth, expressed the confirmed opinion that growers have little or nothing to fear from this pest, if they will only tackle it in time, and pick off every affected leaf in the incipient stage of the disease, or before the spores are fully developed. My experience teaches me that when this is persisted in for some weeks by a daily careful inspection of the houses the disease entirely disappears without any injury to the plants or fruit whatever. All other forms of cure, I veture to think, are prohibitory on the ground of expense, while this one recommends itself on account of its simplicity and absence of cost. How frequently does one see houses of tomatos pulled up and thrown to the rubbish heap on account of this disease, at a time when they should be yielding their maximum of fruit, without any attempt on the part of the grower to check, far less to cure, the scourge.

Of course I do not for a moment mean to contend that picking off the diseased leaves is everything. Disease will make its appearance to some extent even when the system of cultivation is perfect, then how much more so when the cultivation is faulty. You may remove the diseased leaves as much as you like, but if the ventilation of the house is bad and the air stagnant, the plants will perish all the same. Give as much food in the shape of liquid manure as you like, when the plants are in full bearing, that will do good, but air is the sheet anchor to keep them in health.

Some time ago I happened to call on an old friend, a very successful grower of outdoor produce for market, and who, during the last winter, had two span-roofed houses put up for the purpose of growing tomatos. Having no pretensions whatever himself to any knowledge of the proper system to adopt in the cultivation of the plant, and considering the extent of glass not sufficient to justify him in the employment of a man to look after it, he simply depended upon his own outdoor labourers, who, of course, were as ignorant of the plants' requirements as himself, and the occasional help in the work of pruning, &c., in the evenings from one or two practical gardeners in the neighbourhood. On the occasion of my visit my friend did not at first seem inclined to allow me to inspect his tomato houses, which raised my curiosity, and induced me to press the point somewhat. After a little time he led the way to the glass-houses, but before entering he turned round and remarked: "My plants, I am afraid, have got a little of the spot, but of course there is no cure for that."

On entering the first house the "spot," sure enough, was plainly visible. The plants had reached an average height of eight feet, and for two-thirds of that height the leaves were one mass of disease, mangy in appearance to the last degree, and at once impressing upon one's mind the almost imperative necessity of having them all pulled up instantly and thrown to the rubbish heap and a fresh lot planted. I shook my head, but said nothing for some time. I saw my friend watching me keenly. I was once or twice on the point of advising him to show the whole batch the door without delay, but happily restrained myself. The stems of nearly all the plants in the house were for half their length carrying a heavy crop of medium-sized fruit, some changing colour, but mostly green. Here, then, was one inducement to allow the plants to remain for some time longer. I put the question, "Have you any young plants fit for planting out?" The reply was, "I have plenty of seedlings in boxes, but not potted off yet." Here was another reason for staying one's hand. Yet another question, "Did the private gardeners you have been employing in the evenings not point out the serious aspect of affairs, nor suggest any remedy?" "No; they only said there was no cure for the disease, and not knowing anything about it myself, I took their word. At the same time, I could not help thinking that something might be done to prevent at least such a rapid destruction of my whole crop." In the end, I induced my friend to leave the matter to me to do as I thought fit in attempting a cure.

I must say I had great doubts about success, as I had never taken in hand a house so far gone before. In my own case, I never have any difficulty in keeping down the disease, but then I begin picking off the leaflets the moment the disease makes its appearance, and continue this daily till it disappears altogether, and in reality the pest causes me little or no anxiety at all.

I found, from inquiries, that my friend had been in the habit of keeping his houses too close, which, perhaps more than anything else, was the cause of the rapid spread of the disease. I began then by throwing the sashes both top and bottom wide open on every available occasion, and in fine calm weather the doors of the houses also. I then had two men in from the garden to assist me in removing every scrap of diseased foliage from the plants. If part of a leaf only was affected, I had that part removed with the knife, letting the healthy portion remain. But when the whole leaf was diseased, which was the case all over for at least half-way up the stems, I had the whole removed, taking care to leave about an inch of the footstalk attached to the stem. I also pinched out the points of the main shoots at the last truss of blossom showing. This I did to induce the plants to throw out laterals below. On the completion of the work each evening I had all the leaves cut off carefully swept up, removed from the house, and burned. When the work of removing all the diseased leaves was finished, the house looked a "sight," stems with clusters of fruit, but without a leaf to protect them, and on the tops bunches of leaves standing out like as many brooms with very long handles. It soon appeared that on most of the plants the terminal trusses of blossom were inclined to drop instead of set, owing no doubt to the weakness of the plants caused by the disease and the heavy crop of fruit they were bearing. I concluded, therefore, that if the plants were, in the future, to become profitable at all, there must be an endeavour to encourage lateral growth on the lower portion of the stems for the after production of fruit, and to prevent, by pinching, the plants from attaining any greater length of stem.

The work of clearing out every scrap of diseased foliage completed, I had the seedlings potted off into 60-size, and placed in frames in a warm situation in case they should be required. I then had all the pipes painted with a mixture of sulphur and cow dung, kept a constant and gentle heat in the pipes day and night, shutting up the house quite close an hour before sunset every evening, and opening in favourable weather very early every morning.

In order to relieve the plants as much as possible, and to foster the growth of new wood, I had all fruit cut when showing signs of colouring, finishing them off in boxes exposed to the sun under glass.

I arranged with my friend to procure the contents of several cesspools in the near neighbourhood. This I diluted with water to a certain extent, and gave the house a complete drenching of the mixture, choosing a bright, sunny day for the operation, with instructions to my friend to keep abundance of air on the house during favourable weather, and to pick off every scrap of diseased foliage as it appeared. I left him with a promise to revisit him again in the course of eight or ten days. On the expiration of that time, I went again, expecting, I must say, to find the bunches of leaves left on the tops of the stems gone, but I was agreeably disappointed. The disease had made little or no further advance towards the top of the stems, and laterals had made their appearance at the axil of nearly every leaf that had been amputated, bidding fair to replenish the plants with an abundance of foliage at no distant date. I ordered another dose of liquid manure, moderate quantity this time, and to continue a gentle warmth in the pipes, plenty of ventilation, and the picking of diseased leaves whenever detected.

On my last visit I found the plants quite free from disease, with most of the old fruit gathered, and the stems clothed with a healthy crop of lateral shoots showing their first trusses of blossom, and promising extremely well for a continuation of crop till the end of the season. The second house on the occasion of my first visit was only in a young stage, having just begun to swell their first bunches of fruit. I detected some spots of the disease, consequently gave directions for daily examination and picking, which have been very rigidly adhered to, with the result that the plants have kept in good health, have retained their due amount of leafage, and are yielding an abundant crop.

Fresh soil and little manure is very frequently recommended in the cultivation of the tomato. In the earlier stages of its growth this may be all that is required, but depend upon it when the plants reach, say, the height of from seven to eight feet, and are covered with fruit like strings of onions, the plants must have support if we wish the fruit to develop into a large size and rich colour, and expect them to yield abundantly for many months together. For my own part, I have always found a plentiful supply of liquid, with a heavy mulching of dung, or soil and dung mixed, combined with a free circulation of air and a uniform temperature, of the greatest benefit in the production of large crops of first-class fruits. Fresh soil may ripen the first flush of fruit, but if no help be given afterwards the tomatos will be small and of poor quality.

In conclusion, if any of the readers of the Gardeners' Magazine who are tomato growers and suffer from the effects of the disease, and doubt the utility of my system of checking it, let me urge them to try it. It is inexpensive, and I am confident of the result. At least I can, in all truth, say that the disease has no terrors for me.

J. Lowrie.

FORKED TREE FERNS IN THE BOTANIC GARDEN, GLASGOW.

By C. T. DRUERY, ESQ., F.L.S.

THE fact that every frond of a fern springs directly from the root-stock and has its own particular complement of root-fibres, which it sends downwards from its base to the soil on its own account to serve as feeders, would seem at first sight to render a veritable tree fern with a trunk many feet in height an impossibility. In point of fact, it is so far an impossibility that only in specially favoured spots here and there on the varied surface of the earth does nature step in with special climatal conditions and perform the miracle. The one essential is a persistently humid atmosphere, for no matter what height the trunk may have attained, each new crown of fronds nevertheless sends down, as we have said, a creeping mass of fresh root-fibres from its base, which at once strengthen the trunk and act during their downward growth as aerial roots and eventually as roots proper when they reach the soil. It is manifest that any lengthened exposure to dry air during their progress would seriously cripple such development. Although in this country we have no indigenous tree ferns, it has been found that several of our native species, the common hard Male Fern (*Lastrea pseudo-mas*) for instance, is capable of forming a trunk a foot or two in height, if the side buds, one of which is latent or patent at the base of every frond, be persistently suppressed. Ordinarily, these being close to the soil root into it, and developing, cause the plant to become a bunch or bush of comparatively small stature, consisting of numerous centres of growth amidst which no single one has a chance of predominating and forming a trunk. If one, however, be kept single by constant removal of the offsets, in a few years the crown becomes so far lifted from the ground that the buds cease to develop, the result being the concentration of all the root energy to one centre, and a consequent great increase in size and vigour of the fronds. The process of trunk formation and strengthening can then be easily seen, each new season's growth rises at a slightly higher level than the last, a new shuttlecock, as it were, being formed within the old one; fresh root-fibres spring from the bases of the new fronds and creep down the sides of the incipient trunk until they penetrate the soil. Presently, the sap being diverted, the stems of the old fronds become hollow, and eventually, their weight being too much for their weakened supports, they topple over, and are either removed or decay naturally, leaving a short projection consisting of the extreme base of the frond bearing a dormant bud. These bases maintain their vitality for many years, and with the root-fibres old and new, form the substance of the trunk, which, it will be noticed, is not strengthened as in trees by any internal growth, but solely by external accretion of root-fibres. In large Tree Ferns these fibres ramify as they approach the soil, and hence give a tapering upward sweep to the stem productive of strength as well as grace.



A FORKED TREE FERN, *Alsophila excelsa* (Height 12 feet).

It will be seen from the foregoing that the trunk of a tree fern is an erect prolongation of the root stock, due to extra congenial conditions of growth coupled with normal non-development of lateral buds. Tree ferns are generally found in shady secluded situations at high elevations, where coolness and humidity are constant climatal factors.

From the description given of the natural habitats of some species, *Dicksonia antarctica*, in the mountains of New Zealand, for instance, there seems no reason why they should not flourish in the open in many of the sequestered glens of the west of England and Scotland, where our native ferns assume their greatest development. As this species is often subjected to snow-falls, a few degrees of frost are not necessarily detrimental.

It occasionally happens, as will be seen by the two specimens figured, that Tree Ferns not only ape trees proper by the formation of trunks, but occasionally go a step farther and produce branches. This is brought about by two different causes. In the case of the *Alsophila excelsa*, a native of Norfolk Island, Queensland, roughly figured from a plant in the Botanic Gardens at Glasgow, three branches have been produced, while the centre or main stem has perished. This is really a case of cause and effect. The primary centre of growth having been weakened, injured, or killed by some means, three of the latent basal buds to which we have alluded have developed, each forming its individual separate trunk. In this case, the fern was grown in a greenhouse the roof of which interfered with its growth, and so checked the development of the original single trunk that some time subsequent to the formation of the side shoots it died outright, a result due probably partly to overgrowth by their fronds, as it only perished some six years after the removal of the fern to its present congenial quarters. The other case figured from same source is a *Cyathea dealbata*, native of New Zealand. This is simply forked into a sort of twin growth which is doubtless due to the same sort of simple fission of the crown, of which we see constant examples in our *Athyrium filix fœmina*, or common Lady Fern and other British species. In these cases the ordinary shuttlecock form of growth may persist for years, and then for no obvious reason, though probably due to some slight check acting in conjunction with vigorous growth, a double axis of development is formed, and in time two quite independent crowns appear side by side. It is clearly only necessary to add the trunk forming capacity, and change the species to Cyathea, and our second specimen is accounted for.



A FORKED TREE FERN, *Cyathea dealbata* (Height 15 feet).

CHRYSANTHEMUMS IN JUNE appear to be by no means uncommon. But the case is certainly exceptional. To what may we attribute the hasty flowering of incurved and Japanese varieties within six months from the cutting pans? Casting about for an explanation, we fall upon the fact that the unseasonable warmth of January last is the cause of their precocity; but we turn over the question to the glorious company of mummers, who are far better judges of the case than we can pretend to be.

A WATER SCENE.

The subjoined sketch of a water scene from the Ivies, Winchmore Hill, lately the residence of H. K. Mayor, Esq., illustrates the possibilities of art in a suburban garden of quite moderate extent. This small pond-garden forms quite a distinct feature, being comparatively isolated by hedges of evergreens. The pond itself was the work of Messrs. Pulham and Son, of Broxbourne, who undertook it with considerable diffidence on account of the very limited space at command. The main pool is fed from three smaller basins, in their turn supplied with water from the New River Company. Growing in these pools are many choice aquatic plants, such as various water lilies, rushes, and aponogetons, while around and among the nooks and crannies small masses of low-growing shrubs and plants impart a delightfully natural and wild appearance. Prominent are yuccas, Japanese honeysuckle, double gorse, monthly roses, vincas, agapanthus umbellatus, large osmundas of various kinds, ivies, irises, grasses, and miscellanies innumerable. Here, again, sandstone is largely and efficiently used, and assists greatly in preventing a stiff, formal appearance otherwise unavoidable. The stone has acquired abundant weather-colouring, and the harmony is complete.



WATER SCENE IN THE GARDEN OF "THE IVIES," WINCHMORE HILL.

On the adjacent grassy mounds various conifers and other ornamental trees add their charms to the view; weeping willows and birches, elms, limes, copper beeches, and coniferous trees of many kinds diversify the scene and add features that are not less interesting than beautiful.

Liverpool Horticultural Association will hold its summer exhibition on August 2 and 4, instead of the dates previously arranged.

The Collection of Gloxinias in the Chelsea Nurseries of Messrs. J. Veitch and Sons is now in its full dress, and is especially interesting as showing the high degree of perfection to which these flowers have been brought and their usefulness for the embellishment of the conservatory at this season of the year. The collection comprises nearly three thousand plants, and includes between eighty and ninety varieties.

FANCY PELARGONIUMS.

By W. Bradbury.

Although several of the most successful of the cultivators of fancy pelargoniums have disappeared from the scene of their numerous triumphs, pelargoniums continue to be presented at the leading exhibitions in a manner that can hardly fail to impress those who see them with the exquisite beauty of their delicately-coloured flowers. We no longer have in competition such immense specimens as those exhibited a quarter of a century ago by the late Mr. T. Bailey, so long the able chief at Shardaloes. Neither do we have an opportunity of meeting with such large examples as those more recently staged by Mr. James and a few other cultivators. But if less in size than those formerly shown, the specimens exhibited at the present time are large enough to produce a striking effect in association with other subjects, and so well flowered as to prove that we have still some skilful cultivators of these pelargoniums amongst us. I mention these facts because of the satisfaction I feel in knowing that visitors to the public exhibitions have frequent opportunities of seeing them in excellent condition, and not because I am specially interested in their culture for competitive purposes. Their usefulness in the conservatory far surpasses their value in the exhibition tent, and in no way do they appear to greater advantage, or present a more beautiful appearance, than when grown in the form of neat bushes ranging from twelve to twenty-four inches in diameter. They have not the strong colouring characteristic of the show and regal varieties, but this is an advantage rather than otherwise, as the soft shades they afford produce a charming contrast.

More susceptible to adverse influences than are the show and regal varieties, the fancies are by no means difficult of cultivation. It is necessary to devote special attention to the drainage of the pots, and to provide a rather lighter compost than is advisable for the large-flowered sections. In other respects there is but little difference in the cultural details to be observed in handling the several classes. The cultivation of the fancy, as of the show and regal varieties, may be said to commence immediately after the flowering season, for then it is that the work of raising a new stock should be commenced. The usual method of propagation is by means of cuttings, and when the plants

are to be grown simply for the conservatory that mode of increase should be resorted to. In the case of exhibition specimens grafting has its advantages, for when the fancies have the assistance of a vigorous stock they not only make more rapid progress at first, but they can be kept in a robust state of health until a much greater age. To graft them is a very simple matter. All the strong-growing varieties belonging to the large flowered sections make excellent stocks, but I greatly prefer seedlings about two years old, and having stems rather stouter than a black-lead pencil. The operation is performed in the spring; whip grafting is adopted and the scions are inserted about four inches above the surface of the soil. The scions are made secure with a strip of bast, and then a little moss is bound round them and kept moderately moist by an occasional skiff from the syringe. The stocks are placed in one of the fruit houses in which a temperature rather higher than that of the greenhouse is maintained, as more warmth than is afforded by the last-named structure is required to ensure a speedy junction. In due course the moss must be removed, and the bast be loosened, but the latter must not be wholly removed until the scion is so firmly joined to the stock that there is but little risk of its being detached. The safest course is to remove the bast and then replace it with another strip less tightly fastened. Subsequently the grafted plants must have the same attention as those obtained from cuttings, the precaution being, as a matter of course, taken to suppress any growths that may proceed from the stock.

The cuttings should be struck as soon after the flowering season as practicable, it being of considerable importance that they should be well established by the autumn in the pots in which they are to remain over the winter. Immediately the freshness and beauty of the flowers are past they should, in accordance with the practice which obtains in gardens where their culture is well understood, be removed from the conservatory to a position out of doors. They ought not to be put in the shade, nor is it advisable to fully expose them to the rays of the sun, as the leaves are then tender and liable to injury during periods of brilliant sunshine. We place them in one of the cradles we have, and shade with tiffany during the hottest part of the day until the leaves are sufficiently hardened to bear the exposure. Immediately the wood has become moderately firm the plants are pruned, the rule being to cut the shoots back to just above the second bud from the base. From the shoots thus cut away there will be no difficulty in obtaining an abundance of cuttings. These when prepared should have a growing point, and from one to two inches of firm stem. It is not of much consequence whether three or five inch pots are employed, but the larger of the two sizes is the best where more than three or four cuttings of each variety are to be struck. In the preparation of the pots fill them to nearly half their depth with crocks, and cover with some loose material. Then fill to within about half an inch of the rim with light sandy soil and cover the surface with dry sand. I prefer to use the sand in a dry state, as immediately the dibble is withdrawn sufficient sand runs into the hole to form a foundation on which to rest the base of the cuttings. The cuttings should be inserted round the sides of the pots at a distance of about one and a-half inches apart. As the pots are filled place them in an unheated pit, and keep rather close and shaded for a short time. The watering must not be overdone nor must the frame be kept too close, for with an excess of moisture or an insufficiency of air there is a risk of a considerable proportion damping off.

The potting off will of course depend upon the progress made by the cuttings, but it will in all cases be well to be smart about the work. The proper time to perform this operation is immediately the cuttings are struck as they then receive but little if any check. Our practice is to put them singly in large sixties, in which they remain until the end of February or the beginning of March, when they are shifted into pots five inches in diameter, in which they remain until after they have bloomed. Care is taken to have the pots efficiently drained, and the compost used consists of light fibrous loam eight parts, and leaf-mould, well rotted manure, and sharp silver sand one part each. During the winter they have a light position at the warmest end of the greenhouse. Once stopping will generally suffice, and that should be done by nipping out the point of the principal shoot when they are established in the three-inch pots. If they are stopped a second time, it should be done a fortnight or so before they receive their final shift. The water supply must be carefully regulated, more especially during the winter months, and care taken to keep the foliage free from green fly, tobacco smoke being an effectual remedy for that pest.

A large number of varieties is not required, and as there is a great similarity in many of those in cultivation it is necessary to exercise some discretion in making selections. The varieties that should have first attention are: *Atlantic*, an effective variety, with bushy habit and bright, rosy crimson flowers; *Cloth of Silver*, white, with rose-pink blotch on each petal, an old but beautiful variety; *Delicatum*, also an old variety of great excellence, the flowers white, blotched with rose, very fine and effective; *Ellen Beck*, rose-carmine and white, very pleasing; *Fanny Gair*, rose-lake, margined with white; *Lady Carington*, peach-pink and white; *Lucy*, crimson-lake, robust in growth and showy; *Mrs. Alfred Wigan*, pink, with white margin; *Mrs. Hart*, rose-crimson, with white margin and centre; *Princess of Teck*, white, blotched with carmine, very fine and extremely beautiful; *Roi des Fantaisies*, bright crimson, with white centre, distinct and very showy; and *Vivandiere*, bright crimson, very effective.

AGRI-HORTICULTURAL SOCIETY OF MADRAS celebrated its forty-fifth anniversary by holding a moonlight fête which proved so great a success, that there is a remarkable concurrence of opinion amongst the members as to the desirability of repeating the experiment next year.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

ORCHIDS now blooming include Aerides crispum, A. odoratum, A. roseum; Anguloa Clowesi; Barkeria spectabilis; Brassia Lawrenciana; Broughtonia sanguinea; Calanthe furcata, C. masuca; Cattleya Aclandiæ; Dendrobium calceolare, D. tortile; Lælia Schilleriana, L. xanthina; Oncidium ampliatum majus, O. bifolium; Sobralia macrantha; Trichopilia coccinea; Vanda Roxburghi, V. teres.

THE HOUSE.

WINDOW BOXES, baskets, and vases will require rather close attention for some time hence. The principal point will be to keep the plants well supplied with water, and the occupants of boxes that are fully exposed to sunshine throughout the day will require watering daily. This is best done in the evening, but if it is not convenienc to supply with water at that time the watering should be done as early in the morning as practicable. Immediately the plants show signs of exhaustion top-dress without delay. Apply it by sprinking enough over the surface to just cover it, and then prick over the soil with a pointed stick.

CONSERVATORY AND GREENHOUSE.

AZALEAS AND CAMELIAS, if still under glass, must have air night and day, and the floors kept damp. Use the syringe regularly till the flower buds show at the points of the shoots, and then discontinue its use.

CONSERVATORY plants require abundance of water and a free circulation of air amongst them. Climbers must never be neglected, or the growth will become so confused that to restore anything like order much of it must be cut away. Moisten all walls, borders, and stone work the last thing in the evening to create a humid atmosphere.

FUCHSIAS should be propagated now in quantity. Specimen plants will require abundance of water, and once a week liquid manure.

HARD-WOODED PLANTS that have flowered will be require to be pruned in and set in a shady place to rest awhile, and repotted if needful when they have started into a new growth.

SOFT-WOODED PLANTS, such as cinerarias, herbaceous calceolarias, Chinese primulas, pansies, pyrethrums, &c., should be raised from seed now in quantity. If primulas were sown in April for early bloom, it will be as well to sow again for a successional batch. Soft-wooded plants rarely do any good if grown slowly; they need abundant nourishment, and if kept stout and strong rarely suffer from vermin.

STOVE AND ORCHID HOUSE.

ORCHID HOUSE.—Care must be taken to avoid subjecting the odontoglossums and masdevallias to a temperature in excess of their requirements. A moist atmosphere will be beneficial to the species that are out of bloom.

STOVE.—Achimenes need help from liquid manure to prolong their beauty and develop the foliage and flowers fully. Ixoras cannot be kept in order as specimens without careful treatment. As soon as the bloom is nearly past cut them back moderately, and put them in a good heat to start again. When freely in growth, shift any that require it; or if not remove a portion of the soil and replace it with fresh.

FORCING AND FRUIT HOUSE.

ORCHARD HOUSE TREES require very little attention now beyond abundant watering, and the use of strong liquid manure. No more pinching to be done. Shoots badly placed may be removed now without fear of causing the buds at the base to break.

PINES must have air pretty freely, and abundance of water both to the roots of the plants and to all parts of the pit, to promote a humid atmosphere.

VINES that have ripened their fruit must be carefully brought into a resting condition by gradually withholding water, and exposing the wood to the weather night and day, except during rain. Crops ripening to have the help of fire heat in case of a prolonged term of cloudy or cold weather, as any check will bring on mildew.

FLOWER GARDEN AND PLEASURE GROUNDS.

CARNATIONS AND PICOTEES must have their buds thinned, and all other needful preparations should be made to prepare for a good bloom.

DAHLIAS must be safely staked, or the first gale will lay them low.

ROSES will require more or less attention. Examine the stock of briers intended for budding, and cut away all superfluous shoots to the base, and slightly shorten those that are so placed as to be suitable for budding. By the time the general budding season arrives the shoots thus shortened will be in full growth again, and will take the buds more readily. In some places budding has already commenced, and if the work can be well done the early doing it is a great advantage, because of the growth that can be got during the present season. Therefore we say make ready to work the strongest briers at once, and as soon as plump buds can be obtained of the choicest varieties. Buds that remain dormant till the next spring do not generally make such good plants as buds that start away soon after being entered, and make ripe hard shoots before winter. We have found that when the shoots from the buds of the season were very sappy a gentle lift of the stock by means of a four-tined fork, early in October, gave a check that hastened the ripening and prevented loss in winter. We mention this now because some propagators prefer dormant buds, on account of the risk in winter, whereas pushing buds can be used with equal safety if means are resorted to to check the growth in time. Another matter worthy of mention is that the wild wood should not be cut away severely before entering the buds, as a loss of it checks the flow of sap, and defers the complete junction of the two barks.

KITCHEN GARDEN.

BROCCOLI from late sowings to be pricked out, and young plants in a forward state to be planted out where they are to remain, in soil deeply dug and liberally manured.

BRUSSELS SPROUTS to be planted out as fast as possible. The soil must be in good condition for these, for if they are not fine they are scarcely worth having.

COLLARDS should be planted in quantity as ground can be obtained for them. Plant them rather thick.

CELERY to be planted at every opportunity. Deep trenches may be used now, but in another few weeks it will be advisable to make the trenches shallow, because the late-planted crops will have to stand out the winter. Any remaining in seed pans or boxes now may be pricked out in beds in the open ground.

SPINACH.—If requisite to sow now, give the preference to the prickly seeded variety, which is used for winter spinach, as it is less likely to bolt in case of hot dry weather.

TOMATOS to be trained and stopped. If not frequently stopped a good crop cannot be expected.

ROOT CROPS, such as parsnip and beet, require now a final thinning; there is no gain from crowded beds.

VILLA FARM.

LAND intended for swedes should have been well broken up in the course the past winter with the cultivator or plough, and enriched by the addition of either farmyard manure, at the rate of fifteen cartloads per acre, or dissolved bones at the rate of five cwt.; but the first mentioned is preferable, and if made by animals that have been fed with cake so much the better. In preparing the ground now it should not be disturbed more than is really necessary for breaking down the surface to secure a good tilth, more especially if the weather happens to be at all dry, and in ordinary seasons the moisture in the soil is no more than is sufficient to ensure the satisfactory germination of the seed. A moderate dressing of artificials, applied just previous to sowing or drilled with the seed, will be most beneficial, and for applying now there is no better mixture than one prepared at the rate of 1½ cwt. of guano, to 2 cwt. of superphosphate, and 3½ cwt. applied per acre. The time of sowing depends very much upon the district, but throughout the midland and southern counties the middle of June will be early enough. It is, however, a capital plan to follow the practice of the district, both as regards the time and the manner of sowing, until it has been proved by careful experiment that the practice is capable of improvement. More especially must the character of the soil and the district be taken into consideration when determining whether to sow the seed on ridges or on the flat; and, to assist cultivators to the fullest extent possible, we would state that in the north and on deep and heavy soils the best results will be ensured with ridges, and that in the south, more particularly on light thin soils, the seed should invariably be drilled on the flat. In any case, the drills should be from twenty-four to twenty-eight inches apart, and the plants in the rows must be thinned out to a distance of from ten to eighteen inches apart, the lesser distance being for light soils and the greater for those of a deeper and more tenacious character. The horse hoe must be kept well at work from the time it is required for making an end of the first crop of weeds until the spread of the leaves prevents its further use; but after the crop has made considerable progress the hoe must not go too near the rows nor too deep.

GARDEN FLOWERS.

Delphinium nudicaule is making a great show now of its smallish fiery flowers. This is one of a hundred or more good things for which we are indebted to the enterprise of Mr. W. Thompson, of Ipswich, whose seed catalogue we have been accustomed to hail every year as though it brought with it the key of a new gold-mine. From the rarity of the occurrence of this plant in gardens, one might imagine a difficulty in the cultivation, but there is really none. Probably it is often regarded as a perennial, and therefore is allowed to abolish itself. It produces abundance of seed, and a certain amount should be saved and sown as soon as ripe every year to keep up a succession of clumps, and the plants should be put out in autumn to become well established for flowering in May and June.

Anemone polyanthes is a fine Himalayan species figured in B.M., 6,840. The growth is robust, the leaves long-petioled, the blade orbicular and geranium-like. The flowers are in a loose umbel, they are bold in outline, pearly white, the centre beautifully filled with yellow stamens, surrounding a central stigmatic disk. The plant is hardy, grows freely, and loves a deep strong moist soil.

Anemone Virginiana is a good species now flowering freely, forming a rather stout herbaceous bush. The leaves are cut down in finger-like divisions, the flowers are white, the general character respectable and pleasing.

Anemone trifoliata is also in flower with us, and invites us daily to admire it. It is an old plant known to Gerard; quite hardy; the leaves ternate, the flowers white; the expression elegant and satisfactory; a capital plant for a moist sheltered nook.

Clematis montana is the best hardy climber flowering now, and one of the best for any season or any place where a hardy wall plant is needed. Sun it must have, but the soil appears to be a matter of no consequence. It is commonly referred to as a native of New Zealand, but we are indebted to India for this beauty. It will run twenty feet in a season, and the less it is pruned or regulated the better; but support it must have, and a little spreading out is certainly desirable. It is one of the wonders of May and June.

Cerastium arvense is excluded from gardens, because too weedy and "common." But when seen on rockery slopes in the full light with no rank herbage to stifle it, the mass of snow-white flowers it presents in May and June will astonish the unaccustomed mountaineer. Even Phlox Nelsoni, one of the gems of the garden rockery, does not surpass it, and the same bank will suit both, for a bit of dry sandy soil is all it requires. A form known as *C. laricifolia* passes for a species, but is only a variety of C. arvense. A common variety is named *oblongifolium*, with oblong leaves, the margins of which are ciliated. *C. frigidum* is a good rockery plant, growing six inches high. It is now covered with white flowers.

Linum perenne is the same as *L. Anglicum* and *L. Sibiricum* of the books. It is a good border plant, at this time serviceable for its handsome blue flowers. It represents a group in which are *L. usatissimum* (figured in "Hibberd's Familiar Garden Flowers," Vol. 3), *L. Narbonense*, and *L. Austriacum*. All these are hardy, and thrive in the common border, but are so nearly alike that they are not all needful, except for some special purposes, that we can have nothing to do with in these notes. Plants of this kind are best raised from seed, and the business is so simple that we need not here describe it.

Geranium Richardsoni is so little known that it will be proper to note that it is at this time one of the showiest of its class. The plant of neat habit, freely branching; the flowers large, the colour lively purple-rose.

Geranium armenum is well-known as one of the best, perhaps *the* best, of the herbaceous geraniums, but if that be not allowed, we will say that it ranks equal with *G. Ibericum*, which is also now in flower. G. armenum is of robust habit, the leaves large and handsome, the flowers rich glowing purple-rose.

Cistus longifolius forms a compact, neat-habited, leafy shrub, now quite covered with purplish flower buds, which expand into most beautiful white flowers. There is not a cistus that can surpass it in beauty as a rock plant; for profusion of flowers it is a wonder.

Cistus corbariensis is No. 8 of Sweet's "Cistineæ," a free-growing hardy shrub, with rugose leaves and large white flowers, which are produced in profusion during fully two months. It is the same as *C. populifolius* of gardens. A dry, sunny position must be found for all such plants, and usually a sandy loam is the best soil for them.

Helianthemum formosum is well known as a favourite for sunny borders and rockeries, but, unfortunately, is not everywhere hardy. But it makes amends by proving itself a fine greenhouse plant. Being hardy with us, we have full enjoyment of its splendid flowers with the least imaginable trouble, taking care to plant it in a sandy, rather stony, soil, in a dry, sunny spot. Other and inferior sun-roses are labelled H. formosum. This has larger flowers than any other species. They are a clear rich yellow with a rich brown spot on the base of each petal. Sweet's figure 50 should be consulted when there is a doubt about the labelling.

Aubrietia Leichtlini is now in full splendour, the colour brilliant purplish rose. It is a variety of A. deltoidea. Another fine variety of the same species is *A. gracilis*, with flowers slaty blue.

Ionopsidium acaule may be called a perennial, though strictly an annual, for it sows a lot of seed and springs up from year to year on the same spot as though possessed of perennial roots. It is now a very precious bit of vegetable jewelry, and those who have it not may be deemed singularly unfortunate.

Ramondia pyrenaica appears to meet with good treatment everywhere, for wherever we see it, prosperity marks it for her own. It is true we do not see the plants that are killed, as probably many are, but certainly we see much of it, and generally find the plants in fine condition. Shade and moisture with perfect drainage are the main conditions of success. Drought is death to it in summer, and stagnant damp is equally fatal in winter. The white variety is a rare beauty that every grower of alpine plants should secure.

Pæonia Chinensis stands apart from all its kindred by its magnificent form and intensely rich crimson colour. The growth is less robust than that of commoner kinds, but is free enough, and the flowers differ from the lumpy doubles of the border group that are so much prized now, though for many, many years sadly neglected. The Chinese flower is a perfect cup richly filled with petaloid pieces that form a neat rosette within a guard, making a lot of work for one who would draw the flower correctly.

Rodgersia podophylla is now in flower, and though the crowning glory is not in the "floral sense" particularly glorious, it completes one of the grandest herbaceous plants known to our gardens. A peat soil, a moist and shady situation, with shelter from wind, are the conditions to ensure a free and characteristic growth of this noble native of Japan. It is easily increased by divisions of the root, and no amateur of hardy plants should be without it.

Lilium longiflorum Formosanum, now in flower on the ravine rockery at Kew, is a remarkable lily for beauty, and the plants (half a-dozen in number) are examples of first-class cultivation. It appears to combine the characters of L. longiflorum and L. Browni, the purple stripe on the outside being very significant.

Asphodelus ramosus is one of the noblest of this stately race, and has flowered finely, the racemes reaching from four and a half to five feet, and in their highest state of beauty when the flowers are just beginning to expand, on account of the rich brown colour of the bracts. It is an old friend of the herbaceous border, and an artist's plant anywhere. The asphodels of classic story are doubtless those with yellow flowers, which are now classed as Asphodeline, having leaves on their stems, the stems of true asphodels being leafless.

Achillea Beibersteini was in great favour in the bedding days for silvery ground work and marginal lines. Now that the stretching of the plant to long "ribbons," and flattening it into pancakes, and hearts, and triangles has ceased, it has a chance to flower, and once more we find it a nice rockery plant, that only needs to be left alone to pay its rent in golden coin, punctually as June comes round.

AMERICAN LETTER.

THE WORLD'S FAIR, AT CHICAGO.

THOSE of your readers who keep track of the "Foreign News" in the daily papers have long since learned something of the great exhibition which is to be held in this country during 1892 or 1893. The year has not yet been definitely fixed, but it will probably be the latter one, as considerable time will be required for the preparations. The idea is to commemorate the discovery of America in 1492 by Christopher Columbus, and the proposals relating to the "World's Fair" certainly indicated a fitting sequel to the great event of four centuries ago. Everything worth showing will find a place there, and no doubt horticulture, with its kindred arts and sciences, will be strongly represented. In view of this, British nurserymen, seedsmen, &c., who are inclined to compete, would in the meantime do well to neglect nothing that would then enhance their chances of success. It is truly a long time to look forward to, but the years appear to roll past with surprising velocity when one has a great work to accomplish, and considerable time is always required for important duties. Horticulture and floriculture have progressed with leaps and bounds in this country during the past fifteen years, and foreign competitors in those sections will find the prizes much more difficult to win at the forthcoming affair than they were at the centennial exhibition, held at Philadelphia in 1876. Some are inclined to regard the location of the exhibition at Chicago with disfavour, but the Chicagoans are a very enterprising people, and may be depended upon for doing all in their power to make the thing a gigantic success. Their go-aheadism extends to gardening, though it appears to their disadvantage in the too fantastic designs that characterise the portions of their parks and gardens devoted to flower-gardening. There was much difference of opinion among Americans with regard to the city in which the exhibition should be held. New York, Chicago, St. Louis, and Washington all appeared as candidates for the prize, and at an early stage of the agitation I was much amused at what an English merchant in this city said regarding it. "This," said he "is always the way with Americans in a thing of this sort; they argue and they quarrel about it among themselves until it becomes the subject of general conversation from one end of the country to the other. An outsider would think they would never agree about it, but that is only one of their numerous ways of advertising. That exhibition will be held, but there will always be some big difficulty in the way until every man, woman, and child in the country knows, thinks and talks about it—then the barrier falls." New York would perhaps have been a more convenient place for European exhibitors and visitors, but Chicago is a much better railway centre for the United States.

Still another great idea attracts the attention of many level-headed Americans, and this time it is proposed to make a considerable addition to the "National Park" at Washington. The promoters of this scheme, including many prominent members of Congress, propose to influence the Government in the direction of devoting one thousand acres of land to the formation of enlarged zoological, piscatorial, and botanical establishments—something in the form of a combination of Kew and Regent's Park. A central institution of this kind would be of immense benefit in a country like this, where the various small collections lose much of their utility through being scattered over such a wide extent of territory. Those who are at the head of the movement feel confident of early success, and they deserve every encouragement. The "National Park" already in existence contains about 131 acres, and the above-mentioned branches of natural history are there represented in some measure at present; but, as a recent writer pointed out, this extent of ground would be none too large to admit of a proper development of the zoological department alone. A Washington correspondent, enthusiastic in his devotion to this affair, writes as follows:—"The 'National Park,' from this enlarged point of view, is to be not only the greatest place in the world of assemblage for beasts, fowls, and fishes, but a paradise in the broadest attainable sense, resembling as nearly as possible the Eden of Mesopotamia seven thousand years ago. It will a miracle of landscape art, equipped with everything that contributes to the beautiful in Nature."

Spring Flower Shows.

The spring shows come upon us as the first dazzling rays of sunshine after the long dark night of winter, and from contrast with its retreating shadows they appear much brighter than they are in reality. Spring would lose much of its striking brilliance amid the bloom of summer. An American spring show has much in common with its prototype in England; and a gardener generally finds something at such displays that imparts fresh interest and pleasure to the work of his life. The sameness of flower shows appears only in the mind of the ordinary sightseeing individual, who at the same time sees much and little of everything. To the gardener, keenly critical, things seem different; he sees new points of importance even in the same plants shown year after year, and discovers impelling force in the enthusiasm of exhibitors. The spring show of the Massachusetts Horticultural Society was a most successful exhibition. Bulbs and orchids formed the chief attractions, but the miscellaneous exhibits included some good things not often seen at shows. The bulbs, principally hyacinths, tulips, and narcissi, were of good quality; the orchids of ordinary character. Cinerarias and primulas (excepting *P. obconica*) were poor. There was one large and well-flowered pyramidal plant of *Chorozema ilicifolia*, which fully demonstrated the great utility of members of its genus as greenhouse plants. A batch of boronias, representing the fine pink-flowered *B. heterophylla* and *B. megastigma* with its deliciously fragrant chocolate-coloured blossoms, was the best that has ever come under my notice. A plant of *Streptosolen* (formerly known as *Browallia Jamesonii*, was well worthy of notice. It was an old plant in a ten-inch pot, and had been cut back to within three or four inches of the soil. The old stump sent forth a large number of branches which had attained a length of about three feet, and assumed a graceful arching position with the weight of the terminal clusters of showy orange flowers. This beautiful old plant is more frequently seen in this country than in the gardens of Great Britain. It is easily cultivated, and may be readily propagated from cuttings. A warm greenhouse and soil of rather poor quality appears to suit it best. It was interesting to notice flowering plants of the common dandelion (*Taraxacum Dens leonis*) and the European primrose (*Primula vulgaris*) in a collection of hardy and half-hardy perennials in pots. The latter plant is regarded as half-hardy, but the former is as much of a weed here as it is in Europe. Roses, carnations, and pansies were the principal exhibits in the cut-flower classes; the roses as usual being of very superior quality.

Primula obconica.

Growers in this country frequently refer to the peculiar, irritating propensities of *Primula obconica*, and from recent inquiries it appears that a considerable number (about fifty per cent.) of those who freely handle any large number of plants are more or less affected by them. Competent authorities assert that the hairs which appear so freely on the leaves and flower-stalks enter the skin, and when securely fixed these break off and thus cause the irritation. The opinion that some part, or parts, of the plant are poisonous has also been expressed. Whatever the cause may be, it is at least certain that injury does result from handling in many cases; and some florists now refuse to grow the plants or buy the flowers on account of their peculiar properties. It is much to be regretted that such is the case, for the plant is one of the most useful and beautiful in cultivation. After extensive observation of its effects on myself and various others I feel certain, however, that there is no occasion for any serious alarm. and hope it will not be neglected or boycotted on account of what is at most a trifling matter. European gardeners do not appear to be injured by it so frequently, that is if an opinion may be formed on the matter from the scarcity of comment on it in your horticultural journals. This may be accounted for in part by its largely increased popularity and cultivation in this country during the past two or three years. As far as my observations have gone it would appear that plants raised from seed every year are not so injurious as those propagated season after season by division of the old plants. It would be interesting to hear from your readers on this or any other point connected with the irritation of the skin caused by contact with *P. obconica*. And let it be understood that to handle two or three plants, thus bringing their leaves and flower-stalks in contact with the hands and arms for a few minutes only, would hardly be a sufficient test. Try the effect of picking decayed leaves and flowers from fifty full-grown plants that have been neglected in that particular for about a fortnight.

Dr. Parry.

The influenza epidemic did not quit these shores until it had carried off another of those men that the world can ill afford to lose, in the person of Dr. Charles C. Parry, whose death occurred at his home in Davenport, Iowa, on February 19 last. Dr. Parry rendered many conspicuous services to botanical science in this country. His frequent prolonged visits to outlying parts of North America always resulted in valuable discoveries. He introduced many new plants, and from his observations corrected many erroneous impressions with relation to American botany. Dr. Parry was born at Admington, Worcestershire, England, August 28, 1823, and nine years later came to this country with his parents, who settled in the State of New York. After the necessary preparation Dr. (then young) Parry entered Union College, Schenectedy, N.Y., and graduated honourably. He afterwards studied medicine and was duly admitted to practice, but, having always been an ardent student of natural history, that profession was speedily abandoned for the more congenial though less lucrative pursuit of botany. The family removed to Iowa in 1846, and Dr. Parry settled at Davenport, in the same State. That city was the field of his brief medical career, and also the scene of his first marriage. He was married twice, his last wife, likewise a brother and sister, surviving him. I will conclude this all too brief notice of a good and great man with the following from the *Davenport Democrat*:—"Among the many men whose names are famous in the circle of the sciences with whom Dr. Parry was on terms of intimate friendship was Dr. Asa Gray, whose fame as a botanist is likewise deathless. Back of Denver, one of the greatest peaks of the famous snowy range, stands Gray's peak; a monument of nature's own rearing to the memory of this renowned man. The name was given it by Dr. Parry. Farther back among the Rockies, further removed from the haunts of men and the all-devouring, ever present tourist, stands Mt. Parry. The name tells its own story."

Floral Decorations.

Extravagance in American Floral Decorations is a fact now fully recognised. Perhaps the most elaborate thing yet seen in this way was the display at an Easter Sunday breakfast, given at Washington by a prominent member of the United States Government. The description staggers one a little. I give it in the words of my reliable informant:—"The decorations were elaborate and original, Mrs. Noble having spent much time in planning them. The floral designs were all symbols. The lyre symbolized the divine harmony of the church. A huge lyre was placed in one corner of the breakfast room composed of yellow flowers and hung with a garland of roses. Upon one wall placed a peacock, the Hindoo symbol of a glorious immortality. The grape vine, which is a symbol of the gods' wisdom, occupied the place of honour upon the west wall. The vine was worked into a large square mat of flowers, those in the centre being white lilies. Across the large mirror flashed a rainbow, the bow of promise, which was made in prismatical hued flowers. This completed the mural decorations. The breakfast was served at four small tables, each seating six guests, and having a handsome centre-piece. Upon one was a huge butterfly made of pansies, signifying the resurrection. The second table had for a centre-piece an octagon and circle, the circle symbolizing the world and the church and the octagon, being a union of the square and circle, symbolizing the dual nature of Christ. This was made of tri-coloured carnations. The third table had a large circle of white carnations, upon which appeared in red the Christian monogram. The fourth table had an oval mound of spring flowers, including white and purple lilacs, jonquils, violets and mignonette. One side of the room was filled in with palms and late Easter lilies, and a portiere of similar swung at the door."

The Fire at the Agricultural College, Michigan.

The incalculable amount of damage that a fire may do in a botanical establishment, and the stern necessity of always having fullsupplies of hose, water, &c., in readiness for such emergencies, were forcibly illustrated by a recent catastrophe at the famed agricultural college of Michigan. The botanical laboratory, including herbarium and museum, was almost completely destroyed by fire on the 23rd ult. The place was equipped with every modern convenience save those already mentioned. The wooden building alone cost seven thousand dollars, and it was the first of the kind erected in this country. The Wheeler herbarium comprised seven thousand specimens, the greater number of which, however, were saved by the students. An important collection of woods (that which took first prize at the centennial exhibition) occupied part of the museum, and was totally destroyed. The authorities were fortunate in saving the library, manuscripts, and valuable instruments. The conduct of the Michigan students on this occasion affords a striking contrast to that of undergraduates at other colleges (European and American) under similar circumstances, and cannot be too highly commended. Several instances came to my mind in which the latter treated such events as huge practical jokes. It may be that the sound practical economy resulting from sound agricultural teaching makes itself felt beyond the normal channel. That common sense and quiet worth of the former is perhaps more valuable than it seems to the average glory-seeker.

The parts of the McKinley Tariff Bill (now before Congress) that refer to the wares and productions of seedsmen, nurserymen, florists, market gardeners, &c., are now being warmly discussed by members of those professions. Mr. McKinley proposes to levy taxes as follows:—Plants, trees, shrubs, and vines of all kinds, commonly known as nursery stock, not specially provided for in this Act, twenty per cent. *ad valorem*. Garden seeds, agricultural seeds, and other seeds not specially provided for in this Act, forty per cent. *ad valorem*. Vegetables in their natural state, not specially provided for in this Act, twenty-five per cent. *ad valorem*. Grapes, plums, and prunes, two cents per pound. Figs two and a-half cents per pound. Oranges, lemons, or berries, in packages of one and one-fourth cubic feet or less, twenty-five cents per package. Raisins two and a-half cents per pound. Baskets and all other articles composed of grass, osier, palm leaf, whalebone, or willow, or straw, not specially provided for in this Act, forty-five per cent. *ad valorem*. The free list would still include fruit plants, tropical and semi-tropical, for the purpose of propagation or cultivation. Bulbs, bulbous roots that are not edible, and hop roots for cultivation. Seeds—anise, canary, caraway, cardamon, coriander, cotton, cummin, fennel, fenugreek, hemp, hoarhound, mustard, rape, St. John's bread or bean, sugar beet, and all flower and grass seeds not otherwise specially provided for in this Act. Some favour the propositions, many favour them partially, but by far the greatest number favour free trade, and this latter view appears to be most consistent with the democratic spirit of the American people. If this Bill becomes law without amendment on the points referred to, it will, needless to say, seriously affect the commercial dealings of nurserymen and seed merchants in the United Kingdom with their customers in the United States, and it would, perhaps, be well to consider it as passed in its entirety, with regard to the increase and accumulation of stock for American trade, until some definite step has been taken. It is interesting to note in connection with this tariff question that, in the Dominion Parliament, a recent motion to place plants, shrubs, and nursery stock on the free list was lost on division.

Boston, Mass., U.S.A. UNCLE SAM.

Carnation and Picotee Union Exhibition will be held August 5 in Mr. Dodwell's garden, Stanley Road, Oxford. In addition to the ordinary prizes, special prizes are offered for decorative groups of cut blooms, to be shown on a space not exceeding seven and a-half square feet without cards and with any foliage, for six buttonhole bouquets, and for a hand bouquet.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE, JUNE 10.

PRESENT: Mr. Morris in the chair; Mr. Pascoe, Prof. M. Ward, Mr. Sanford, Prof. Church, Dr. Müller, Mr. McLachlan, and Rev. G. Henslow (Hon. Sec.)

Delphinium, Injured Foliage of.—Prof. M. Ward reported upon the specimens sent to the last meeting. The damage appeared to have occurred in the bud, and was probably due to the low temperature of the night of May 31. There was no fungus, and he had met with a similar case elsewhere. With regard to the lowness of temperature, it was remarked by Prof. Church that at Twickenham 10 per cent. of tomatos were destroyed on that night, Mr. Morris observing that the thermometer on the grass at Kew registered 27 deg. F., or five degrees of frost.

Boring Beetles.—On a further examination of the caterpillars of boring beetles, brought to the last meeting by the Rev. G. Henslow from Malta, Mr. McLachlan noticed three specimens of the cerambyx, and two of a lamellicorn, or stag-beetle, as well as one of the wood-leopard moth, which had perforated the stem of a cassia (though it was usually found in pear trees) from Mr. Harry's garden at St. Julian's, Malta. Another remedy, in addition to that of "spearing," was suggested by Mr. Sandford, viz., to blow tobacco-smoke down the hole, when the beetle would attempt to escape, and could be easily caught. It is very important to observe where the beetles lay their eggs, and to catch them on the wing at the time.

The Fog Report.—Mr. Morris called attention to the fact that the Royal Society has assigned £100 "on the recommendation of the Government Grant Committee, for an inquiry into the composition of London fog, with special regard to the constituents of fog injurious to plant life." An informal conversation followed with reference to chemical investigations to be undertaken at the laboratory of University College, under the superintendence of Dr. Oliver.

Cynomorium coccineum.—Mr. Henslow exhibited specimens of this parasitic flowering plant from Malta. It was formerly supposed to grow only in "The Generals' Rock," a small island close to Gozo; but is now found at Mnaidra, on the south side of Malta, and in Sicily and Algiers. It is popularly known as Fungus melitensis, and formerly in great repute as a styptic remedy for hæmorrhage, &c. It is parasitic upon Inula crithmoides, a shrubby yellow-flowered composite, which abounds on the rocks of Malta giving the appearance of furze bushes at a distance.

Lemon Seeds Germinating.—Mr. Henslow showed specimens of embryos which had begun to germinate while within the fruit.

YORK FLORAL FETE, JUNE 18 TO 20.

The annual floral fête at York was held on Wednesday and the two following days, and in extent, in the excellence of the productions, and in the ability brought to bear upon the general arrangements, it was fully equal to the most successful of the great horticultural gatherings that have taken place in the city during the past thirty years. Stove and greenhouse plants grown for their flowers and remarkable for the beauty of their foliage were especially well represented; pelargoniums were staged in immense numbers and in magnificent condition; roses were so largely shown as to form an important feature; orchids were considerably above the average; and of fruit there was an excellent display. The general arrangements were remarkable for their completeness, and reflected much credit upon the administrative ability of Mr. Simmons, the courteous secretary, and the other members of the executive.

STOVE AND GREENHOUSE PLANTS in bloom were splendidly shown, the collections being numerous and the specimens large, densely flowered, and remarkable for their freshness. In the great class for sixteen plants, ten to be in bloom and six to have ornamental leafage, Mr. G. H. Letts, gardener to the Earl of Zetland, Aske Hall, Richmond, Yorkshire, was first with a collection comprising large, finely-flowered specimens of Anthurium Scherzerianum, Statice profusa, Azalea Criterion, A. cedo nulli, Aphelexis macrantha rosea, Erica Cavendishi, Clerodendron Balfourianum, Dipladenia amabilis, Erica ventricosa coccinea minor, and Hedaroma tulipifera; the fine foliage plants comprised Cycas circinalis, Croton Queen Victoria, C. angustifolium, Kentia Australis, and an encephalartos, all of which were in a high state of development. Mr. J. Cypher, Cheltenham, was a capital second with a collection in which Erica tricolor Wilsoni, Aphelexis spectabilis, and Croton angustifolium were especially well represented. The premier award in the class for six plants in bloom was made in favour of Mr. Nicholas, gardener to the Earl of Zetland, Upleatham, Saltburn, who had well flowered examples of Ixora Williamsi, Dipladenia amabilis, Aphelexis macrantha rosea, and A. macrantha purpurea. There was a spirited competition in the class for three, and the post of honour was occupied by Mr. H. Johnson, gardener to J. B. Hodgkin, Esq., Elm Ridge, Darlington, who had Dracophyllum gracile, Phænocoma prolifera Barnesi, and Anthurium Scherzerianum in capital condition. Mr. Leadbetter, gardener to A. Wilson, Esq., Tranby Croft, Hull, was a close second, his collection including a superbly-flowered example of Bougainvillea glabra. Mr. Letts obtained first place in the class for a specimen stove plant with Allamanda Hendersoni. Mr. Johnson was second with Ixora Pilgrimi, and Mr. Leadbetter was third with Aristolochia elegans. In the class for a specimen greenhouse plant Mr. Letts was first with an aphelexis, and Mr. Johnson second with a heath. Ericas were numerous and good, the most successful competitors being Mr. H. Johnson, Mr. Letts, and Mr. J. Cypher.

PELARGONIUMS were staged in immense numbers and superb condition, and produced a brilliant display. Mr. Eastwood, gardener to Mrs. Tetley, Foxhill, Westwood, Leeds, occupied the post of honour in the great class for twelve show varieties, with specimens ranging from five to six feet in diameter, and quite solid with bloom. The varieties were Mary Hoyle, Queen Bess, Atalanta, Madame St. Hilaire, Comte de Choiseul, Goliath, Kingston Beauty, Prince Leopold, Albina, Triomphe de St. Mande, Lovely Bird, and Lady Isabel. Mr. McIntosh, gardener to J.T. Hingston, Esq., Clifton, York, followed closely for second place, his specimens being of large size, fresh, and well bloomed, the varieties chiefly the same as in the first prize collection. Mr. J. Vear, gardener to Miss Steward, York, was third, with excellent examples. In competition for the prizes for six show varieties Mr. McIntosh was first with large, densely-flowered specimens of Queen Bess, Clarissa, Salmonia, Triomphe de St. Mande, and Royalty. Mr. Eastwood was second with an excellent collection. Mr. McIntosh was first also for three varieties, staging Mary Hoyle, F. A. Dixon, and Miss Bradshaw. Mr. Eastwood was a close second, and Mr. J. Vear a good third.

The competition was very keen in the classes for zonals, and the ivy-leaf varieties were of exceptional excellence. For twelve zonals, Mr. Eastwood was first, with specimens about five feet in diameter, nearly solid with bloom, and perfect in finish. The varieties were Mrs. Gordon, The Shah, Lucy, Rev. J. Atkinson, Mrs. W. Paul, Mrs. Leavers, John Watson, Dr. Orton, Princess of Wales, Masterpiece, and Florence Durand; Mr. H. Pybus, Monkton Moor, Ripon, was a capital second, with a collection that did much credit to his cultural skill. Mr. Eastwood was first, also, for six and for three zonals, the specimens being similar in size and finish to those forming his first prize twelve; Mr. J. Vear was a good second in each class with well-grown specimens. Double zonals were especially well represented; and Mr. G. Cottam, jun., Cottingham, Yorkshire, was first in the class for eight, with superb examples of Lord Mayor, Guillaume Mangelli, Grand Chancellor Faidherbe, Roi des Violettes, and other well-known varieties; Mr. Eastwood was an uncomfortably close second, and in the class for four he obtained premier honours, Mr. McIntosh being second and Mr. Vear third. Ivy-leaf varieties constituted a pleasing feature, and for six Mr. Pybus was first, with densely-flowered dwarf specimens of Madame Thibaut, Louis Thibaut, Souvenir de C. Turner, Eurydice, and Ondine; Mr. McIntosh was a capital second, with large pyramids; and Mr. G. Cottam was a good third. Mr. Eastwood was first for three ivy-leaf varieties; and Mr. Vear was second with nicely flowered examples.

ORCHIDS were in strong force, and proved highly attractive to the general body of visitors. There was a brisk contest in the class for ten, and Mr. J. Cypher was first with a collection in which Cattleya Sanderiana, C. Mossiæ, C. Mendeli, Odontoglossum vexillarium, O. citrosmum roseum, Dendrobium suavissimum, D. infundibulum, and Cypripedium barbatum were admirably represented. Mr. Blair, gardener to the Duke of Sutherland, Trentham, Stoke-upon-Trent, was a capital second, staging, amongst others, a fine specimen of Dendrobium transparens. For six, the exhibitor last named was first with well flowered specimens of Cattleya Sanderiana, C. Mendeli, Odontoglossum crispum, Masdevallia Lindeni, Lælia purpurata, and Oncidium macranthum. Mr. J. Cypher followed closely for second place with a collection containing good specimens of Lælia purpurata, Cattleya Mendeli, C. Sanderiana, and Dendrobium thyrsiflorum. Mr. Rollisson, gardener to W. Bateman, Esq., The Ridge, Pannal, near Leeds, was third. Mr. Cypher occupied the first place in the class for three; and Mr. Nicholas was first for a single specimen, with an example of Calanthe veratrifolia bearing twenty-five spikes. Mr. Blair obtained premier honours in the class for four, with excellent examples.

ORNAMENTAL-LEAVED PLANTS were contributed in considerable numbers, and generally speaking in a condition that did credit to the cultural skill of the several exhibitors. Mr. Letts was successful in occupying the post of honour in the class for six, with Kentia Fosteriana, Croton Montfontainensis, C. Johannis, Cycas circinalis, C. revoluta, and Encephalartos villosus. Mr. J. McIntyre, gardener to Mrs. Gurney Pease, Darlington, was second with a good collection, in which the crotons and palms were the most noteworthy, and Mr. J. R. Dawe, gardener to Dr. Baker, The Retreat, York, was third. Mr. Nicholas and Mr. Leadbetter were first and second respectively for three, the first-named having an exceptionally fine specimen of Gleichenia rupestris glaucescens. In the class for a single specimen, Mr. Letts was first with a noble example of Encephalartos Vroomi, one of the most stately of the cycads. Mr. McIntyre followed for second place with Phœnix rupicola. Dracænas were well represented, the principal awards being made in favour of Mr. McIntyre, Mr. Johnson, and Mr. Leadbetter. Especially good also were the crotons, and Mr. Nicholas occupied the first place with brilliantly-coloured examples of Thomsoni, Angustifolium, and Johannis; Mr. McIntyre and Mr. J. Dawe were second and third respectively.

GROUPS ARRANGED FOR EFFECT constituted, as for several years past, a great and remarkably attractive feature, and fully justified the important position they occupied in the schedule. In the competition for the prizes in the open class for collections occupying a space not exceeding two hundred and fifty square feet, Mr. McIntyre was first with an arrangement in which he surpassed himself, and obtained unqualified praise from the large body of experts present. The collection was arranged to form a series of mounds of flowering and fine foliage plants, with a background of palms and other plants of graceful habit, and a belt of dwarf-growing, flowering, and fine foliage plants at either end and along the front, the intervening spaces being carpeted with moss. Mr. P. Blair was a very close second with an arrangement somewhat similar in style, in which orchids were employed with much taste. Mr. W. H. Simpson was third with a bright and effective group. Mr. McIntyre was also successful in occupying the post of honour in the amateurs' class for collections occupying a space not exceeding one hundred and fifty square feet. In this group the plants were set in a groundwork of Adiantum cuneatum, and if not equal to the arrangement in the preceding class, it was extremely beautiful. Mr. P. Kendal, gardener to F. M. Weddall, Esq., was second with an arrangement evincing much taste, and Mr. J. R. Dawe was third.

ROSES were presented in sufficient numbers to nearly fill one of the largest of the tents, and in quality were somewhat above the average. The plant classes were well filled, and in that for twelve Messrs. W. Jackson and Co., Bedale, Yorkshire, were first with medium-sized and superbly-flowered examples of Countess of Oxford, Abel Grand, Madame Nachury, Madame Lacharme, Comtesse de Serenye, Centifolia rosea, Ulrich Brunner, Dr. Andry, La France, and Annie Laxton; Mr. Pybus and Mr. H. May, Leeming Lane, Bedale, were second and third with good collections. The post of honour was also occupied by Messrs. W. Jackson and Co. in the class for six, the varieties being La France, Ulrich Brunner, Madame Lambard, Star of Waltham, and Duchesse de Valombrosa. Tea-scented varieties had a special class provided for them, and the premier award was made in favour of Mr. Pybus, who had good examples of Madame Welche, Madame Willermoz, Madame Margottin, President, Souvenir d'un Ami, and Niphetos.

The classes for cut roses were especially well filled for so early in the season, and there was an extremely keen contest in the great class for seventy-two. Here Mr. B. R. Cant, Colchester, was first with large, well finished blooms; Mr. Frank Cant, Colchester, was a capital second; Messrs. Paul and Son, were third, with an excellent collection of blooms; and Messrs. G. Cooling and Son, Bath, were fourth. Mr. B. Cant and Mr. F. Cant were first and second also for four forty-eight; and Messrs. D. Prior and Son, Colchester, and Messrs. Paul and Son were third and fourth. In the competition for the prizes for twenty-four Mr. George Prince, Oxford, obtained premier honours with a collection particularly strong in teas, amongst other varieties being Anna Olivier, Jean Ducher, Jean Pernet, Niphetos, Princess of Wales, The Bride, Souvenir de G. Drevet, Mrs. James Wilson, Souvenir de S. A. Prince, and Madame Cusin; Mr. B. Cant and Mr. F. Cant, were second and third respectively. In competition for the prizes for twelve teas Mr. G. Prince was first, with superb blooms; and Mr. B. Cant

and Messrs. Paul and Son shared the remaining honours. For twelve blooms of any one hybrid perpetual Mr. B. Cant was first with Ulrich Brunner; and Messrs. D. Prior and Son were second with Lady Mary Fitzwilliam. In the corresponding class for teas Mr. G. Prince was first, staging Comtesse de Nadaillac; and Mr. B. Cant was second with Souvenir d'un Ami. The amateurs' classes for cut roses were also well filled.

FERNS were more plentiful than they have been at York for some years past, and the whole of the collections were more or less good. There was a brisk competition for the prizes for six exotic ferns, and Mr. Nicholas occupied the first place with immense examples of Lomaria zamiæfolia, Pteris scaberula, Gleichenia rupestris glaucescens, Neottopteris Australasica, Leucostegia immersa, and Sadleria cycathioides; Mr. Johnson was a capital second. Mr. Nicholas was first also for three exotics, his principal specimen being Davallia fijiensis plumosa, which was about eight feet in diameter, and perfect in finish; Mr. Leadbetter was a capital second. Mr. McIntyre and Mr. Eastwood were first and second for single specimen ferns, and the most successful of the exhibitors of tree ferns were Mr. Kilder and Mr. W. H. Simpson.

Hardy ferns were shown in much better condition than for several years past. Mr. J. Nicholson had the finest collection of twelve hardy kinds, and in this group were immense specimens of Polystichum angulare proliferum, P. angulare densum, Athyrium filix-fœmina cristata, Osmunda interrupta, O. regalis cristata, Lastrea filix-mas cristata, L. filix-mas grandiceps, Struthiopteris Pennsylvanicum, and Scolopendrium vulgare crispum. Mr. Johnson was second with a collection in which occurred a fine specimen of the Killarney fern; Mr. J. Rodwell, third. The exhibitor last-named was first in the class for six hardy kinds, with immense specimens of Scolopendrium vulgare crispum, Lastrea filix-mas cristata, L. filix-mas grandiceps, Athyrium filix fœmina tortile, Osmunda regalis cristata, and Polystichum angulare cristatum. Mr. J. Jackson and Mr. J. Nicholson were second and third with excellent collections. Mr. J. Stabler, York, occupied the first place in the class for a single specimen fern with a large example of Lastrea filix-mas Mapplebecki, a remarkably fine form of the grandiceps type.

Messrs. W. and J. Birkenhead, Sale, near Manchester, exhibited, not for competition, a large representative collection of British and exotic ferns, which added immensely to the interest of this section of the exhibition, and afforded an excellent example of the resources of this firm. The collection comprised upwards of five hundred plants of various sizes, and in the most thrifty condition, and included between three and four hundred species and varieties. Amongst others conspicuous in the collection were Davallia tenuifolia Veitchiana, Lastrea fragrans, remarkable for the odour of the fronds, Adiantum Fergusoni, Todea superba, Selaginella gracilis, Polystichum xiphoides, an elegant species with long narrow fronds, Scolopendrium vulgare cristatum, one of the best of the crested hart's tongues, and Nephrolepsis rufescens tripinnatifida.

FRUIT had liberal provisions made for it, and the display produced was remarkably good for so early in the season. The collections were of great excellence, and in that for ten kinds Mr. J. McIndoe, gardener to Sir Joseph Pease, Bart., M.P., Hutton Hall, Guisborough, was well in advance of the other exhibitors. The collection comprised Black Hamburgh and Muscat of Alexandria grapes, Scarlet Premier and Best of All melons, Magdala and Grosse Mignonne peaches, Stanwick Elruge nectarine, Brown Turkey fig, and Smooth Cayenne and Queen pines. Mr. R. Dawes, gardener to Hon. Mrs. Meynell Ingram, Temple Newsham, Leeds, was a close second with a collection in which Abec and Bellegarde peaches, Elruge and Lord Napier nectarines were particularly good. Mr. R. Parker, gardener to J. Corbett, Esq., Impney Hall, Droitwich, and Mr. J. Edmonds, Bestwood Lodge, Nottingham, also successfully competed in the class. Mr. McIndoe was first also for six and four kinds, the varieties being chiefly the same as in the large collection. Other successful competitors in these two classes were Mr. P. Blair, Mr. R. Parker, Mr. H. J. Clayton, gardener to J. Fielden, Esq., Grimston Park, Tadcaster, and Mr. Leadbetter. In competition for the prizes for a dish of peaches, Mr. W. H. Divers, gardener to J. T. Hopwood, Esq., Ketton Hall, was first with Royal Albert; Mr. G. Taylor, gardener to Sir J. Ramsden, Bart., Ferrybridge, second with Royal George, and Mr. McIntyre, third with Grosse Mignonne. In the corresponding class for nectarines, Mr. P. Blair was first, and Mr. R. Dawes second with Lord Napier, and Mr. T. Hare, Wellingore, Grantham, was third with Murray. The exhibitor last-mentioned had a fine dish of Black Tartarian cherries. The same variety was well-shown by Mr. Blair. Mr. J. Alsopp, gardener to Lord Hotham, Dalton Hall, Yorkshire, was first in each of the two classes for grapes, staging in the black class Black Hamburgh, and in the white class Buckland Sweetwater. Other successful exhibitors in the grape classes were Mr. W. Wallis, gardener to Sir H. Thompson, Kirkby Hall; Mr. J. Johnson, Boston Spa; and Mr. McIndoe. Strawberries were not very plentiful, but the whole of the fruit was good. Mr. Divers obtained the premier award for Auguste Nicaise, a large richly-flavoured fruit, somewhat pale in colour; Mr. McIndoe was second with Sir Harry. In the melon classes Mr. Nicholas, Mr. J. Edmonds, Mr. McIndoe, and Mr. T. Hare were the principal exhibitors.

HARDY FLOWERS were strongly represented and proved highly attractive. There was a sharp contest in the class for twenty alpine or herbaceous plants, and in the result the awards were made in favour of Mr. S. Hardcastle, Mr. G. Holmes, and Messrs. Paul and Son. In the class for a collection of cut flowers Messrs. Harkness was a capital first, with well-known subjects staged in large bunches. The same firm also occupied the first place in the class for twenty-four bunches of hardy flowers. Two classes were provided for pyrethrums, one for twenty-four bunches of singles and the other for the same number of bunches of doubles. In each class the premier award was made in favour of Messrs. Cocker and Son, Aberdeen, who had flowers remarkable for their quality and the taste with which they were arranged.

MISCELLANEOUS CONTRIBUTIONS added materially both to the interest and attractiveness of the exhibition. Messrs. H. Cannell and Sons, Swanley, exhibited a large collection of cut flowers of decorative and house pelargoniums and several boxes of blooms of double and single begonias; Messrs. Backhouse and Son, York, staged a beautiful collection of hardy perennials. Messrs. Paul and Son contributed an effective collection of hardy flowers. Messrs. Kent and Brydon also had a gathering of flowers from the open borders. Messrs. Ryder and Son sent begonias and cucumbers, and Messrs. Charlesworth, Shuttleworth, and Co., Heaton, Bradford, exhibited a large and extremely beautiful group of orchids.

VEGETABLES had two classes set apart for them and in one the prizes were provided by Messrs. Webb and Sons, and in the other by Messrs. Sutton and Sons. In each class the first place was occupied by Mr. Crawford, with produce of excellent quality.

GARDENERS' ORPHAN FUND.

A special meeting of the executive committee was held at the Caledonian Hotel, Adelphi, on the 13th inst., Mr. John Laing in the chair. The minutes having been duly read and signed, the report as to the result of the recent fête in the wholesale flower market, Covent Garden, was presented, and the arrangements for the annual dinner on Friday, July 18, were considered.

The Honorary Secretary reported that the net receipts of the Covent Garden fête was a trifle over £170, or about £30 less than last year. He also read a letter from the Lord Mayor expressing the pleasure he had derived from seeing the beautiful display produced by the market growers, and from taking part in the opening ceremony. It was subsequently unanimously resolved that a letter be sent to the stand holders in the market thanking them for the extremely beautiful display they had produced. It was further resolved to place at the disposal of the joint committee in accordance with Rule 12, thirty-four life votes for allotment, amongst the stand holders.

The arrangements for the annual meeting and dinner were considered, and these briefly stated are as follows: the meeting and festival will be held at the Cannon Street Hotel, Friday, July 18. The annual general meeting for the reception of the report and balance-sheet will take place at two p.m. The ballot for the election of ten children to the benefits of the fund will close at four p.m., when the names of the successful candidates will be announced. At five o'clock the annual dinner will take place under the presidency of Mr. Shirley Hibberd. In order to properly arrange for the seating of those friends and supporters of the institution who intend to be present, the executive committee have decided that dinner tickets (5s. each) must be applied for by Tuesday, July 15. Application may be made to Mr. A. F. Barron, R.H.S. Gardens, Chiswick, or to any member of committee.

On the same evening a meeting of the joint committee was held, Mr. Assbee in the chair, when the accounts were passed, and votes of thanks accorded to those who had taken an active part in carrying out the various details. It was decided to allot the thirty-four life votes by ballot, and the ballot was taken in the course of the evening in the presence of the members of committee.

New Plants, Flowers, and Fruits.

ZAMIA WALLISII (*B.M.* 7,103).—A fine cycad, with broad palm-like leaves, native of New Grenada.

SATYRIUM MEMBRANACEUM (*B.M.* 7,104).—The handsomest plant of this genus, and one quite worthy of a place in a cool house. The flowers are lively rose red, with shades of carmine.

ARISÆMA WRAYI (*B.M.* 7,105).—A peculiar aroid, of some interest for cultivators. It is native of the Malayan Archipelago and the Himalayas.

LATHRÆA CLANDESTINA (*B.M.* 7,106).—This is the plant that attracted special attention as an adornment of the water near the Museum No. 1 in the Royal Gardens, Kew, last year. It was there established on the roots of a willow, being, like our native broomrape, a parasite. The curious flowers are of a pleasing purple colour, with an admixture of pale yellow stems and bracts.

PAPAVER RUPIFRAGUM V. ATLANTICUM (*B.M.* 7,107).—A handsome poppy with leaves copiously hairy, and flowers of average size, and probably variously coloured. The example figured is orange red.

PRESTOEA CARDERI (*B.M.* 7,108).—An elegant palm, introduced by Mr. William Bull in 1876, and sold as *Geonoma Carderi*. It flowered in the Royal Gardens in the year 1889, and is now referred to the genus Prestoea. As it has not yet fruited its present place may eventually prove not to be suitable to its character.

SICANA SPHERICA (*B.M.* 7,109).—An interesting cucurbit found in a ravine in the Blue Mountains, Jamaica. The cucumber-like fruit is used in America to prevent the attacks of injurious insects on persons and garments.

PELIOSANTHES ALBIDA (*B.M.* 7,110).—A herb of the Malay Peninsula, allied to Ophiopogon. It has an elegant leafage, and a raceme of inconspicuous pale yellow flowers.

IRIS ORCHIOIDES (*B.M.* 7,111).—A bold habited iris from Turkestan. It is nearly allied to *I. caucasica*. The flowers are orange yellow.

VANDA KIMBALLIANA (*B.M.* 7,112).—A fine orchid, allied to *V. Amesiana*; the leaves very narrow, the flowers white with purple lip.

EREMURUS AURANTIACUS (*B.M.* 7,113).—A grand asphodel from Afghanistan; the flowers are yellow.

ABIES BRACHYPHYLLA (*B.M.* 7,114).—A handsome Japan silver fir that proves perfectly hardy, having stood the winters of Denmark. It has been cultivated under the name of *A. Veitchi* and *P. pinnosa*.

PASSIFLORA MIERSII (*B.M.* 7,115).—A neat little passion flower, with undivided elliptic-ovate leaves, and small white purple-rayed flowers. The corona is more conspicuous than the outer divisions.

BERBERIS VIRESCENS (*B.M.* 7,116).—A Himalayan barbery, allied to *B. aristata*; flowers greenish, fruit red.

PRIMULINA SINENSIS (*B.M.* 7,117).—A pretty herb, combining the characters of a primula and a geranium. The leaves are almost orbicular on winged petioles; the flowers are salver shaped, purple and white.

ATMOSPHERE OF LARGE TOWNS IN RELATION TO PLANT LIFE formed the subject of a report submitted by Dr. G. H. Bailey of Owen's College to a recent meeting of the committee of the Manchester Field Naturalists' Society. Pure air, he said, pure water, and good nourishing food were as necessary to the plant as to the animal. The gases which occurred in the air of manufacturing towns, and which were known to have a poisonous effect on plants, were sulphurous acid, nitrous acid, hydrochloric acid, and sulphuretted hydrogen. Sulphurous and hydrochloric acids were the most frequent sources of injury. He computed that something like 350 tons of sulphuric acid were generated in Manchester and Salford every day and for the most part, especially in foggy weather, left here, and this by the combustion of coal alone. In comparison with this, the escape of gas from works was as nothing in this discrict. A rough estimate of the average amount of sulphurous acid in the air of any Manchester fog was that it constituted one part in 20,000. Of course in the more central parts of the town the proportion would be higher. As matters were at present it was doubtful whether any but the class of trees and shrubs least sensative to sulphurous acid vapours could grow at all in the less favourable situations in the city, and these only by renewal of the soil at intervals, and possibly also an occasional change of air.

Literature.

Studies of Evolution and Biology.—By ALICE BODINGTON (Elliot Stock).—These studies may be said to have been pursued at the feet of Charles Darwin, and the author, having obtained a firm grasp of the principles that underlie the great teacher's deductions, has sought for illustrations and enlargements of those principles in various fields of observation. The result is a series of readable essays of an instructive nature, and of the kind known to bookish people as "suggestive," which we take to mean that, being full of thought, they set one thinking. The position of the doubter in Darwinism may very well be assumed by one in search of scientific amusement, and such an one may properly ask if the Ascidian learnt the art of self-improvement how did it set about acquiring the faculty of vision, for assuredly the creature, as we know it, is as blind as a cat's-eye pebble. The author of this pleasant work leads off with a paper on the evolution of the eye, and finds an exemplification of the rudimental form of it in certain of the cirripedes and a quite advanced form of peepers in the larval stage of a parasitical crab. With a beginning established there is something to be done, but in many instances the great difficulty is to know where to begin, and the evolutionists are not yet fully agreed as to whether to begin with the first nucleus of a cell or of the actual link between the organic and inorganic, whether in the amœba or what else. Pleasant chapters following that on the eye are devoted to the beginnings of mammals and the multiplication and diffusion of organized existences, both vegetable and animal on this "breathing world," the flora of the past, the puzzles of palæontology, the air bladder of fishes considered as a degenerate lung, and the "origin of the fittest." The "Flora of the Past" is a good paper, and it indicates how vast is the region for speculation as well as for serious inquiry into the beginnings of vegetable life and the genealogy of the families of plants. The vegetable evolutions that are traceable are far more wonderful in their way, and reach through far greater periods of time than those that have been heretofore studied in the animal world. The narwhal has one horn and the ox has two, and the explanation is so simple that a beginner in natural history studies can explain it. But corresponding anomalies—or apparent anomalies—in the vegetable kingdom are less amenable to explanation, and we know but little about the plants and the products of plants that are bound up with our daily life and are the subjects of our constant attention. A study of vegetable fossils takes us into the heart of the subject of the relations of our planet to the solar system and the history of its climatal changes, while the existing vegetation comes in aid of generalizations to confirm or refute conclusions drawn from the nature and distribution of the fossils. The author of these "studies" handles the subject admirably, and here is a passage that will interest our readers on the production of coal:—

The trees, which above others, seem to have been the most valuable in the production of coal were the Sigillariæ and the Calamites; the former related to the Lepidodendra of the Erian and the modern club-mosses, and the latter to our horse-tails. The Sigillariæ exhibit the enormous variety of species in carboniferous times, more than eighty species having already been counted. So much do they "grade" towards other forms, that they seem to make even Sir J. W. Dawson's anti-evolutionary convictions totter. He goes so far as to say that he believes there were three lines of connection between the higher Cryptogams and the Phænogams (flowering plants), one leading from the Lycopods by the Sigillariæ, another leading by the Cordaites, and the third leading from the Equisetums by the Calamites. Still further back the Rhizocarps united the characters afterwards separated into club-mosses, horse-tails, and ferns. He hastens to say that he does not make these remarks in a Darwinian sense; but methinks I see the last stronghold of "special creation" tottering to its fall.

The Sigillariæ have tall pillar-like trunks, often several feet in diameter, ribbed like fluted columns, and spreading at the top into a few thick branches clothed with long scale-like leaves. They resemble the Lepidodendra of the Erian age, but are more massive, with ribbed instead of scaly trunks, and longer leaves. These giant Lycopods derived their distinguishing name from the rows of scars of fallen leaves making seal-like impressions on their stems. The wood is of a very low type of structure, although the trunks are sometimes five feet in diameter, and consist "principally of cellular and bast fibres with very little true woody matter." To support a thick trunk of so primitive a character very complicated roots were necessary; and these, under the name of Stigmaria, were long considered as the stems of some aquatic plant. They usually start from the trunk in four main branches, then regularly bifurcate several times, and then run out into cylindrical cables running for a long distance, evidently intended to anchor the plant firmly in a soft and oozy soil. They had long cylindrical rootlets so articulated that when they dropped off they left regular rounded scars. Under every bed of coal is found a bed of clay filled with these singular roots, showing that the first step towards the accumulation of a bed of coal was the growth of a forest of sigillariæ, mixed with débris of all kinds, from the undergrowth of ferns and other plants which grew beneath their shade, and often vast quantities of lepidodendroid spores. These forests gradually sunk down in the marshy soil, some of the trees still remaining erect; other forests grew above them, so that in the course of ages as many as seven or eight forests grew one above the other, and all sank at last and were buried. This growth of successive forests took place in the Lignite Tertiary as well as in the Carboniferous period, and gives us the impression of a vast lapse of time.

Sir J. W. Dawson believes that amongst the eighty species of sigillariæ a great range of organization must have been found, some of which will eventually be classed with the lepidodendra as lycopods, while others will be found to be naked-seeded phænogams, like the pines and cycads. This statement must also doubtless be received not in a Darwinian but, so to speak, in a "Pickwickian sense."

We now come to the calamites; these are tall, cylindrical, branchless stems, with whorls of branchlets bearing needle-like leaves, which form dense thickets, like cane-brakes. The lycopods and calamites have been familiar to us from our childhood, there being something in their resemblance to our familiar club mosses and horsetails which impressed them on the memory. But the strange family of cordaites are by no means so well known; they are unlike anything we are accustomed to, and belong to one of those intermediate groups or connecting links which remind a zoologist strongly of those generalized forms of mammals of the eocene, where the characteristics or orders now distinct are inextricably combined. The cordaites approach closely on the one hand to the broader-leaved yews, like the Gingko of China, and on the other hand have affinities with cycads, and even with the sigillariæ. In the formation of their wood they show transitions from the imperfectly formed stems of sigillariæ to the more highly organized trunks of modern conifers, and in the young twigs of the balsam-fir the ordinary cordaite formation of wood may still be seen. This consists of a large cellular pith, divided by horizontal partitions into flat chambers; this pith was surrounded by a thick ring of barred or scalariform tissue like that of pines. They were beautiful trees, with their leaves, in some species, growing in thickly-set spikes, but perhaps oftener developed on each set of the branches in a manner very unlike any modern plant that I am acquainted with. These many-nerved leaves had rows of stomata or breathing pores, and attached by somewhat broad bases to the leaves and branches; the fruit consisted of clusters of nutlets, often provided with broad lateral wings for flotation in the air, sometimes covered only with a pulpy envelope. These trees had great reproductive powers, producing numerous seeds in long spikes or catkins.

Many conifers are found in the carboniferous period, none as yet bearing cones, but all apparently related to the modern yews and spruces. Some slightly resembled the modern Araucarias, others had broad fern-like leaves like those of the Ginko. Probably they were, in the main, inland and upland trees, mostly known to us by drifted trunks borne by river inundations into the seas and estuaries.

Last and not least, where beauty is concerned, there was a wealth of exquisite ferns in these old coal forests, and noble tree-ferns such as tropical forests alone possess now. Of the eight families into which modern ferns are divided, four at least go back to the coal period. Their spore cases show the usual series of transitional forms, from a low to a high type; and those with the simplest spore cases, without a jointed elastic ring, are most commonly found in the Devonian and lower carboniferous.

MEXICO FOR GARDENERS.

Mr. ARCHIBALD J. DUNN, in his excellent little pamphlet on "Mexico and her Resources,"* now in a second edition, has rendered an important service not only to intending emigrants, but also to those who study physiography for its own sake. There is no country in the world so absolutely unknown to the majority of English people as Mexico. This fact is more than passing remarkable, for no other part of the American continent affords so many inducements, or possesses such an array of advantages, to the agricultural and also to the horticultural emigrant. Mexico should prove a sort of happy hunting ground. The downfall of the empire was unquestionably the commencement of a new and brighter era in the annals of Mexico, and to the President (General Porfirio Diaz) Mexicans are indebted not only for the formation of a constitution on the most enlightened basis, but also for his untiring energies in introducing European capital and the results of European civilization with the most successful results into Mexico. Without the aid of foreign capital and renewed vigour, the country would have long since sunk into a hopeless condition. The Government has done and continues to do everything in its power to foster and encourage the public spirit and enterprise manifested during the past few years.

The area of the Republic covers 739,700 square miles. From a number of causes a large quantity of this space has not yet been subjected to the skill of the scientific or modern agriculturist, but very much of it is, in natural floral wealth, beautiful beyond description, and without a rival. An American (Mr. Benjamin F. Taylor), after a visit to the lands on the Gulf of California, described a cultivated district which he had traversed in the following words: "Where the golden lime hedges border it; where the flowers catch fire with beauty; among the orange groves; beside the olive trees, where its pomegranates wear calyx crowns; where the figs of Smyrna are twining; where the bananas of Honolulu are blossoming, where the chestnuts of Italy are dropping; where Sicilian lemons are ripening; where the almond trees are shining; through an Alameda of walnuts and apricots; through an avenue of willows and poplars; in vineyards six Sabbath days' journey across them." But an opinion of much more importance and weight is that of Professor Agassiz, who visited Mexico in 1872 as a member of the Hassler scientific expedition. He was much impressed with the beauty of the climate, and made the following remarks at a meeting of colonists:—"I have seen many parts of the world, and have made some study of this subject. It is the question of climate I refer to. You are here in the 32nd parallel, beyond the reach of the severe winters of the northern latitudes. You have a great capital in your climate; it will be worth millions to you. This is one of the favoured spots of the earth, and people will come to you from all quarters to live in your genial and healthful atmosphere."

The agricultural wealth and importance of Mexico alone concern us in this place. And careful inquiries lead us to the conclusion that Mexico offers unparalleled attractions and inducements to gardeners, who, after a certain amount of personal observation, might with their catholic skill and resources greatly develop the agriculture of that beautiful country. The principal crops are cereals and coffee, whilst vineyards occupy a considerable space. Maize, or Indian corn, being the staple food of the country at all times, finds a ready market for home consumption or for export. It grows well nearly everywhere in Mexico, from sea-level up to about 9,000 feet above. At least two crops of maize may be gathered every year, each crop yielding over 60 bushels to the acre. In some districts—notably that of Minatitland—three crops of maize are raised annually. The cultivation is exceedingly simple; no ploughing is done; one man makes with a pointed stick a series of holes about two or three feet apart; another man follows dropping two or three grains into each hole; the rain is trusted to fill the holes in. The crop is generally gathered in four months from the time of sowing. No manuring is done, so that the crop is a very cheap one. Mexican wheat is said to be the finest in the world after that of Egypt, and it yields in many places fine results. Barley and oats are also very remunerative crops; one grower stating that of the latter cereal he cut 60 tons of oat hay from the produce of 14 lbs. of seed.

Coffee, which not only occurs in a wild state in many parts of Mexico, but is cultivated there with marked success, is also an important crop. When properly cleaned and carefully assorted, Mexican coffee rivals in appearance and flavour any upland coffee cultivated in Costa Rica and Jamaica. The initial expense of this crop is greater and the returns much less quick than cereals, but in the long run it is a better paying one. It is estimated that the cost of planting 100 acres and three years' cultivation is £1,200. Coffee plants begin bearing in the second year, but in the following season the produce should be at the rate of 400 lbs. per acre, and this selling for £4 per 100 lbs., results in a sum of £1,600, or a nett profit of £400. At six years old the produce will be 800 lbs. per acre, valued at £3,200 for the crop, the expenses being about £400 per annum. We may mention that a coffee plantation will last from forty to sixty years. It will be seen therefore that this crop alone is an exceedingly good one.

* London: Alfred Boot and Sons, 24, Old Bailey, E.C., price 1s.

Another important and profitable crop is that of the vine. It bears in about three years, and produces an average of 40 lbs. of grapes per vine. Placing results at the lowest figure, the result would be at least £80 per acre. Rough wine is sold on the spot at from four to six shillings per gallon. In raisins also—the California variety being considered equal to Spanish malagas, and three times more prolific—a large trade is carried on. The cost of planting 50 acres (830 vines per acre) is reckoned at £10 per acre, equivalent to £500. The produce at the third year at about eight tons per acre will show a total of 400 tons for the 50 acres, or, in other words, a nett result of £3,200. The variety which answers most satisfactorily is the white Muscat which furnishes the muscatel raisins of world-wide fame. It is, in Mexico, a heavy bearer, producing two crops in one season. It begins to exhibit a decline, however, in eight or ten years—a contingency which is however avoided by grafting it on to more vigorous stocks such as Mission or Flame Tokay.

The tobacco industry has of late years assumed great proportions in Mexico, in consequence of the tobacco lands of Cuba becoming exhausted. Mexican tobacco has been found to possess a richness of aroma hitherto only excelled by that of Cuba; and there are now in the republic a large number of plantations of tobacco, and of cigar and cigarette factories. Some notion of the immensity of this trade may be gathered from the fact that the export to England of Vera Cruz tobacco alone amounts to more than £100,000 a-year. It is an exceedingly cheap crop; indeed, many of the planters have little capital, and they mortgage or sell the growing crop. It is, however, the planter who has plenty of capital, and who combines cigar-making with planting that makes the large profits. In Mexico a hectare of tobacco costs about 672 francs for planting, and 1,058 francs for working expenses; it produces 2,000 kilogrammes, which at five francs per kilogramme shows a nett result of 10,000 francs.

Sugar is another article of commerce which can be produced better and cheaper in Mexico than in any other country. In many parts of the Republic good sugar lands can be purchased at nominal sums. This field in an especially promising one for British energy and skill. Very little cultivation is necessary, and profit is doubly secured by the fact that corn may be cultivated along with the sugar-cane, the former alone generally paying all expenses. Cocoa, being indigenous to Mexico, is another paying crop, for, beginning to bear in their fourth or fifth year, they will continue prolific for thirty or forty years. Each tree yields at least fifty pods, equivalent to 1½ lbs. of merchantable cocoa. Reckoning 435 trees to the acre, the aggregate result will be 6 cwt. per acre. A nett profit of £400 on the whole outlay of planting 100 acres may reasonably be anticipated in four years, and double that in the sixth year. Cotton, tea, and vanilla are crops which have been grown with exceedingly satisfactory results. Many growers have also been very successful with olive trees, which when once planted need scarcely any attention, and yield a good and paying crop. Few trees are more beautiful, or more useful for shading purposes than the olive. The orange crop, although exceedingly profitable, is probably the slowest of any in yielding results. Other fruits which have been found to pay well in Mexico are pomegranates, figs, persimmons, bananas, pineapples, nectarines, apples, pears, and various nuts. It will be gathered, therefore, from what we have said that Mexico offers very great advantages to the young and energetic English gardener with a small amount of capital. All our statements and figures are corroborated by the most unimpeachable authorities, and may therefore be relied upon. Those who desire fuller information cannot do better than purchase Mr. Dunn's pamphlet.

A TRAVELLING BOTANIST.

AMERICAN NOTES.

ARSENICAL INSECTICIDES.

IN recording in the *Orchard and Garden* some experiments that had been made in spraying or syringing fruit trees with arsenical insecticides, Mr. A. B. Cordley, of the Agricultural College, Michigan, writes:—

The questions now to consider are; which one of the arsenites shall we use, how strong shall we use it, and when shall we apply it, to be the most effective and yet produce the least injury to the foliage? Many are, as we believe unwisely, advocating the use of white arsenic on the ground that it is cheaper to buy the pure arsenious acid, than to buy it in combination with other substances as in Paris green or London purple, and that they can get a more uniform article. Even admitting these suppositions to be true, we still believe it unwise to use white arsenic. It is more dangerous to handle and is more injurious to foliage. The arsenious acid in Paris green is in combination with copper and is very insoluble, while that in London purple is slightly more so. Both these substances remain in suspension in water, and if thrown upon foliage in moderate quantities, produce but little injury under ordinary circumstances. If rain follows, however, soon after spraying, something in the rain water, probably the ammonia, seems to render the arsenious acid more soluble. It is dissolved, enters the tissue of the leaf, and the foliage is burned. White arsenic, being more soluble does not need the agency of rain in its destructive work. Spray it upon a tree in any proportion, provided it is strong enough to kill the curculio, and enough of it is almost certain to be in solution to injure the foliage. In our opinion Paris green is preferable to London purple, for the same reason the latter is to be preferred to arsenic, *i.e.*, less of the arsenious acid is soluble.

BEST ROSES FOR CUTTING.

The market grower finds by experience that only a small part of the large number of roses grown are useful for the supply of cut flowers, Mr. J. N. May, one of the best American authorities on the subject, gives the following information in the *American Florist*:—If they are wanted for local trade in a small town where cheap flowers only are wanted, then I would advise the following: Bon Silene, Marquis de Vivens, Papa Gontier, Niphetos, Perle des Jardins and Souvenir de Wootton. But if the flowers are wanted to compete for good prices, or in other words, if really choice flowers are wanted, then I would say: The Bride, C. Mermet, Madame Hoste, W. F. Bennett, Madame Watteville and Duchess of Albany to which should be added for a place of any size, La France, Madame Cusin and Sunset. This will give the grower a good variety of colour, and all good roses.

TRADE CATALOGUES.

W. B. HARTLAND, CORK.—*Daffodils.*

HENRY BENNETT, SHEPPERTON, MIDDLESEX.—*New French Roses for* 1980.

ANT. ROOZEN AND SON, OVERVEEN, HOLLAND.—*Bulbs, Tubers, &c.*

Replies to Queries.

Certificating Unnamed Plants.—F. R. H. S.: According to the rules governing the work of the several committees, seedlings submitted to either of the committees should be named, for rule 3 states explicitly that "Seedlings sent without name will be passed over." This rule may not always be enforced, but you will act wisely in not disregarding it.

Tomato Disease.—Amateur, Sussex: The plants are evidently suffering from a severe attack of the fungus known as Cladosporium fulvum, and unless they receive great care a considerable proportion of the crop will be lost. The house must be more freely ventilated than has hitherto been the case, and the artificial heat be increased when necessary to maintain the requisite temperature. The atmosphere must be kept dry, and the foliage should be dusted with flowers of sulphur.

Names of Plants.—C. J. C.: Your beautiful moss is Dicranum scoparium. Its proper home is in woods, and it is in fruit in August and September.—E. E. T., Newington: The plant is Leycesteria formosa.—R. Whitley; 1, Calochortus elegans; 2, Cymbidium chloranthum; 3, Oncidium iridifolium; 4, Odontoglossum pulchellum.—Anderson: The woolly leaf is Verbascum thapsus. The smaller of the two orchids is Habenaria chlorantha, the other is Habenaria bifolia.—H. Wells: Your plant is Dipladenia amabilis.

Chrysanthemums.—E. R. B.: The grubs with which the leaves of your chrysanthemums are infested may be destroyed by crushing them between the fingers and thumb, their whereabouts being indicated by the bladders upon the leaves. Leaves that have been much injured should be picked off and at once burnt. You can obtain all particulars of the Gardeners' Royal Benevolent Institution from Mr. R. E. Cutler, secretary, 50, Parliament Street, Westminster.

Grape Vines.—Young Gardener: The vines are infested with red spider, and from the appearance of the leaves sent they have been kept too close and dry. You must ventilate more freely, and increase the atmospheric humidity by pouring water over the paths and the surface of the border, and by syringing the walls when the house is closed in the afternoon. Syringing the vines at the time of closing the ventilators would be of great assistance in checking the pest, but as the crop is on the point of commencing to change colour, the syringe cannot be used without the berries being more or less disfigured. An increase in the ventilation is necessary to the grapes colouring properly. The vines may be suffering from dryness at the roots, and it will be advisable to examine the border, and if dry give it a liberal watering.

Bouvardias.—R. S.: Small plants are useful, but where, as in your case, large quantities of flowers are required throughout the autumn, large bushy plants are the best. As you have only recently entered on your present charge, and have therefore had no opportunity of raising a stock from cuttings, the only course you can take is to purchase strong plants at once. These should be in three or five inch pots, preferably the latter, and they should be so well established as to require more root space. Repot at once, using pots in proportion to the size of the plants, and the majority should have two sizes larger. Use a moderately rich and open compost, pot rather firm, and have the pots well drained. Place in a frame and keep rather close until they are commencing to grow freely. Then gradually increase the ventilation, and during July and August withdraw the lights altogether. Planting in open borders is adopted by some growers with considerable success, but taking all points into consideration, pot culture throughout is preferable, the results being such as to give an adequate return for the additional labour involved.

British Ferns.—K. M.: British ferns that are being grown in pots may be purchased at any season of the year, but in the case of the choice varieties of the lady fern, the male fern, and other of the principal species there is an advantage in obtaining them in full growth, as with but few exceptions the varieties are raised from spores, and within their assigned limits vary considerably in character, some raised from each sowing being much better than others. As you require the plants for exhibition it is important that you should have the finest types only of the several varieties, and to be certain of them it is necessary you should make your selection when the plants are in character. July and August are suitable months in which to make the selection, as the fronds are then sufficiently firm to be packed and sent long distances without injury. As they are all comparatively slow in growth it will be advisable for you to purchase strong plants in six-inch pots. In the production of large specimens in the shortest time possible it is necessary to put two or three plants in each pot. This should be done when they are at rest, and in such a manner that the plants have the appearance of forming part of one large crown. There is no objection to this practice when the plants are grown together in the pots from the time of their commencing to make new growth in the spring. It is very different to putting several plants together in a pot a short time previous to the day of exhibition, as is sometimes done, occasionally resulting in disqualification.

Cinerarias.—Inquirer: The proper date for sowing seed of cinerarias depends in some degree upon the time they are wanted in bloom, and as you give us no information upon that point, we can only refer to the matter generally. In the production of plants for flowering during November and December, it is necessary to sow in April, and for flowering early in the year, in May or June, but the most generally useful plants are those raised from seed sown at the end of May. There is yet time to sow, but it must be done promptly, and the plants be grown on as rapidly as possible. We cannot advise you on the purchase of the seed further than to say that you should obtain seed that has been saved from a good strain, as we do not recommend dealers. Sow in pans filled with a light sandy mixture, and place in a pit or frame, and keep close and shaded until the young plants begin to make their appearance. Then commence to ventilate freely and shade in bright weather only. Immediately the seedlings begin to show signs of overcrowding prick them off into other pans. These are to be filled with a compost consisting of loam, leaf mould, and silver sand, the loam to be broken up moderately fine; keep close and shaded until they are established, and then ventilate freely and shade lightly. They will require to be potted off as soon as the leaves begin to touch each other, and they should be put singly in small or large sixties. They will require a more substantial compost than when in the pans, and a mixture consisting of fibrous loam six parts and well rotted manure, leafmould, and sand one part each will be in every way suitable. The maintenance of a moderately humid atmosphere about cinerarias when in full growth is essential, and it is a good practice to occasionally pour water over the floor of the frame.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises	Sun. Souths after Noon.	Sun. Sets	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		181
29	S	**4th Sunday after Trinity.**	3 47	3 10	8 18	4 53	1 24	10 47	11 17	7 43	8 12	62·5	Calanthe Domini ..... Gar. hyb.	180
30	M	William Roscoe died, 1831.	3 47	3 22	8 18	6 14	1 50	11 47	—	8 42	9 12	62·6	Cattleya Aclandiæ ..... Brazil.	181
		JULY.												
1	Tu	Princess Alice married, 1862.	3 43	3 33	8 18	7 34	2 25	0 14	0 40	9 39	10 5	62·7	Epidendrum alatum majus..... Mexico.	182
2	W	☽ Full Moon.	3 49	3 45	8 17	8 44	3 15	1 5	1 31	10 30	10 56	62·8	,, maculatum grandiflorum ,,	183
3	Th	Dog Days begin.	3 50	3 56	8 17	9 38	4 20	1 56	2 22	11 21	11 47	62·9	,, phœniceum ..... Cuba.	184
4	F	Garibaldi born, 1807. [Trinity Term ends.	3 51	4 7	8 16	10 19	5 38	2 46	3 12	—	0 11	63·0	,, verrucosum ..... Mexico.	185
5	S	Princess Helena married, 1866. Oxford	3 52	4 17	8 16	10 49	7 4	3 37	4 3	0 37	1 2	63·1	Calanthe masuca grandiflora ..... India.	186

ROYAL BOTANIC SOCIETY GARDENS, REGENT'S PARK.
EVENING FETE, WEDNESDAY next, JULY 2nd.
EVENING FETE AND SPECIAL EXHIBITION OF TABLE DECORATIONS, &c.
Gates open at Eight o'clock. The Gardens will be Illuminated from Eight to Twelve. Four Military Bands will be in attendance.
Tickets to be obtained at the Gardens only by Vouchers from Fellows of the Society. Price 10s. each, or on the day or evening of the Fête 15s. each.

ST. IVES' HORTICULTURAL SOCIETY.—THE FIFTEENTH ANNUAL OPEN SHOW of the ST. IVES' HORTICULTURAL SOCIETY will be held on THURSDAY, JULY 31, 1890.
For Schedules and Entry Forms apply to the Assistant Secretary, Mr. Walter Mann, The Quadrant, St. Ives, Hunts, or to
R. M. COPLEY, Hon. Secretary.
H. J. HANKIN, Hon. Treasurer.

THE WELLS CHRYSANTHEMUM, FRUIT, and FLOWER SHOW
Will be held on WEDNESDAY and THURSDAY, the 5th and 6th NOVEMBER, 1890.
£50 in Prizes offered and the Centenary Medal of the National Chrysanthemum Society.
For Schedules apply HON. SECRETARY, Wells, Somerset.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, JULY 1.—CANTERBURY.—Rose Show.
TUESDAY, JULY 1.—WEST OF ENGLAND ROSE SOCIETY.—Annual Exhibition.
TUESDAY, JULY 1.—SUTTON.—Rose Show.
TUESDAY, JULY 1.—COLCHESTER.—Rose Show.
WEDNESDAY, JULY 2.—BAGSHOT HORTICULTURAL SOCIETY.—Annual Exhibition.
WEDNESDAY, JULY 2.—HITCHIN ROSE SOCIETY.—Annual Exhibition.
WEDNESDAY, JULY 2.—ROYAL BOTANIC SOCIETY.—Evening Fete.
WEDNESDAY, JULY 2.—DURSLEY.—Rose Show.
WEDNESDAY, JULY 2.—BROCKHAM.—Rose Show.
WEDNESDAY, JULY 2.—CROYDON HORTICULTURAL SOCIETY.—Annual Exhibition.
WEDNESDAY, JULY 2, AND THURSDAY, JULY 3.—LEE AND BLACKHEATH HORTICULTURAL SOCIETY.—Annual Exhibition.
WEDNESDAY, JULY 2, AND THURSDAY, JULY 3.—CHERTSEY HORTICULTURAL SOCIETY.—Annual Exhibition.
THURSDAY, JULY 3.—BURY ST. EDMUNDS HORTICULTURAL SOCIETY.—Annual Exhibition.
THURSDAY, JULY 3.—BATH.—Rose Show.
THURSDAY, JULY 3.—FARNINGHAM HORTICULTURAL SOCIETY.—Annual Exhibition.
THURSDAY, JULY 3.—NORWICH HORTICULTURAL SOCIETY.—Summer Exhibition.
THURSDAY, JULY 3.—TRENTHAM.—Rose and Fruit Show.
THURSDAY, JULY 3.—ROYAL HORTICULTURAL SOCIETY OF IRELAND.—Summer Exhibition.
THURSDAY, JULY 3.—WANSTEAD FLORICULTURAL SOCIETY.—Annual Exhibition.
SATURDAY, JULY 5.—NATIONAL ROSE SOCIETY.—Exhibition at Crystal Palace.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, JUNE 28, 1890.

THE SMALLER ENEMIES OF PLANTS appear to have had a good time, and to have made the best of it. Our friends of the horticultural persuasion have been impressed by the fact that caterpillars and greenfly and small birds are neither contemptible as foes, nor sufficiently understood as friends to justify indifference to their doings in the mind of the cultivator. Whether palmer worm or aphis, beetle or acarus, may at any time be reckoned as the friends of man is a question that many whose judgment we respect would dismiss as unworthy of consideration. But as cochineal and lac are the products of scale insects, and oak galls result from the punctures of a cynips, and silk is made for us by a voracious worm that has no beauty; while we may, whenever we shall venture to take the trouble, obtain from the excrement of the larvæ of the common clothes moth a dye of any desired colour and of quality beyond reproach for the most delicate of purposes, it is not for us to defend the worms that ravage the crops, and so far as in them lies ensure for the human race a barren world, and a prospect of starvation. To treat these enemies with contempt would, in a general way, be simply contemptible; for we plant with a view to advantage, and to look on idly while the enemy is engaged in the work of destruction is, indirectly, to make a bid for disadvantage. Within some ten or fifteen years past the study of injurious insects has attracted many, and the labours of Miss E. A. Ormerod have proved of priceless value to this country, and indeed to the rural arts in general throughout the world. Amongst other active agencies for the repression of injurious insects there have been brought into use a number of preparations that now may be regarded as competitors for public favour, and as representing great and various commercial interests. Our coadjutors keep our readers informed upon the relative merits and demerits of these preparations, and we have none in particular in view at this moment. They are all founded on one and the same principle, and every inventor and practitioner must keep that principle in view or it will be far better to leave the enemy free to devastate, for an insecticide of the wrong sort, or the surest and safest of all that are known may prove more deadly than "grub," or "fly," or "scale," when employed without reasonable caution as to manner and quantity. The governing principle is to apply to the plant, or to the enemy, a destructive agent that the enemy will be injured by to a greater extent than the plant. Perfectly harmless insecticides are few in number, and possibly pure water is the best of them all. On the one hand mixtures of oils with water have but to be applied with skill, and the plant suffers to an inappreciable extent, while every insect reached by the mixture receives a death blow. Nor is this class of insecticides restricted to oils such as petroleum, for the Gishurst Compound of Price's Patent Candle Company, and the Aphis Wash of the City Soap Company derive their efficacy from lime and sulphur without the aid of grease, and are of the highest utility when judiciously applied.

On the other hand, parting from these comparatively harmless preparations that are dangerous alike to plants and to insects when injudiciously applied, we have in the preparations of arsenic and copper, a quite different class of insecticides that most certainly poison whatever they touch, and therefore demand more caution in the use than the class we have spoken of above as "comparatively harmless." When wisely used these preparations of arsenic and copper are as harmless as the rest, but injudicious employment of them may be attended by very serious consequences. It is probable that a healthy and well-fed brood of caterpillars might be washed with London Purple or Paris Green without any detriment to their health. But the process of washing them results in poisoning their food, and the outward application that is perhaps harmless is quickly followed by what the physician would term "a judicious exhibition" of the poison within, and a few meals of the washed leafage proves fatal to them. It must be evident to novices and experts alike that these mineral insecticides should never be employed except under intelligent direction, for an overdose may poison the plant so far that marauding birds may suffer first, and man, for whom the fruit is grown, may suffer in the next place, and inscriptions on the tombstones may testify that fruits flavoured with copper and arsenic are not adapted for the nourishment of the human frame. We say nothing against these preparations, for we have seen them applied with deadly effect on the insects while unattended with even the shadow of a risk to the health of man. But we have seen them safely used by able men thus far, and we do earnestly hope we may not be permitted to see them trifled with in the hands of fools, for the shallow-brained people are ever on the look out for nostrums, hoping always to obtain from patent medicines substitutes for good food and fresh air and good management of the industries that demand intelligence chiefly.

We have occasionally suggested to our readers that good management in farm and garden is, in itself, preventive of insect and other plagues that devastate the crops. Certain it is that many an outbreak of vermin that threatened to annihilate a plantation, through sheer inability to cope with it, has been allowed to take its course, and

in the end proved less injurious than the equivalent of the cost of the labour and material that would have been requisite for its reduction with the risk, of course, that the best endeavours might have proved futile in the end. We do not advise men to fold their hands and look on in confessed helplessness, nor would we see them fiddling while Rome is burning; but the self-command that carefully calculates possible cost and possible result is a good preliminary to the election of a course of procedure while the plague is in its first stage and there is time for active measures. We have lately inspected a number of fruit gardens that are singularly productive; and the abundance of fruit to be seen in such a season as this present was heightened in interest by our knowledge of the fact that in these particular gardens a visitation of worm or fly never creates an alarm and rarely inspires fear. Usually the enemy is treated with a contempt that is full of risk, but in a run of years the results of the system are satisfactory; the pruning knife is used with skill, the trees are aided with all that tends to healthy and vigorous growth, and never a bird is destroyed, because the watchful manager knows too well that it depends on himself chiefly whether he shall have all the good they can do and none of the harm or leave them to take toll beyond, perhaps, the wages that are their due. When the disposition of the feathered marauders is to strip the buds from the trees, a few men are kept at work, and the result is a reduction of the mischief to a harmless minimum. When fruit is more tempting than snails or caterpillars, as many hands as possible are kept moving amongst the crops, and the discharge of a gun occasionally—which is never intended to kill anything—proves a most effectual means of protection. Thus the birds are checked in their destructiveness and left free to consume the vermin as the plenty may be spread, and there is neither fear nor fret, and the occasional losses—for these do occur—are counted as nothing in comparison with the labour, the distraction, the expense, and the final uncertainty of employing preparations to repress insect plagues. Every case must be judged on its merits. The case of one is not the case of all, but this example of "masterful inactivity" has its merits, and if the great crops of apples and gooseberries and currants and strawberries we saw in the several gardens visited could speak for themselves they would assuredly say "give us a fair chance with what you call good cultivation, and as for the rest we will take care of ourselves."

Aylesbury Horticultural Society's exhibition July 3.

Kettering Horticultural Society's exhibition July 7.

Waltham Abbey Flower Show July 24.

Cardiff Horticultural Society's exhibition July 13.

Leeds Paxton Society will hold a chrysanthemum exhibition November 11 and 12.

Mr. W. R. Williams has been engaged as head gardener by J. M. Richardson, Esq., Seymour Court, Great Marlow.

Mr. W. Hall has been appointed superintendent of the public Parks, Sunderland.

Mr. John McDougall has been engaged as head gardener at Ardgarton, Argyleshire, the residence of D. MacGregor, Esq.

Mr. W. McDonald has been engaged as head gardener and bailiff at Cardrona House, Peeblesshire, the seat of Lord Watson.

Mr. Donald Clunas has been engaged as head gardener and forester to the Earl of Leitrim, Milroy, County Donegal.

Mr. A. Vince has been engaged as head gardener at Delaford, Iver, Bucks, the residence of John Ravenhill, Esq.

Mr. Alexander McKenzie, the superintendent of Epping Forest, has gone to the United States for a holiday tour.

Apples Imported in May amounted to 29,148 bushels, as compared with 63,554 bushels in the corresponding month of last year.

Potatos Imported last month amounted to 209,846 cwt., as compared with 133,523 cwt. in May, 1889.

Onions Imported in May amounted to 327,186 bushels, as compared with 350,146 bushels in the corresponding month of 1889.

A Plant of Cattleya Mossiæ alba was sold the other day by Messrs. Protheroe and Morris, and realized £136 10s.

Berlin International Horticultural Exhibition held from April 25 to May 8 proved a great financial success. The total takings were 183,000 marks, and the net profits 51,000 marks.

A Collection of Drawings of Orchids, by Durham, was recently sold by Messrs. Protheroe and Morris for £350. The collection comprised two hundred and eighty-six life size drawings in twenty-two volumes.

A New Park at Dulwich, amounting to 72 acres, for which a cost of £32,916 has been incurred by the London County Council, was opened to the public on Thursday last. It is particularly worthy of note that both music and public speaking are by Act of Parliament forbidden in this park.

Carter's Phonograph Pea is reported to present a fine appearance amongst the novelties in vegetables of the present season. We shall hope to be enabled to describe it in due time, and name the subject now, that readers who have opportunities for inspecting it may make the needful comparisons in good time.

York Floral Fete was attended by 47,000 persons in two days, but when the number on the first day is added the number reaches 49,746—in round numbers, we may put down the total as 50,000.

The suit instituted by Mr. T. G. Pascal against Mr. Charles Toope, of Stepney, on the ground of infringement of his patent pipe propagator was dismissed with costs by Mr. Justice Kay, Thursday, June 19, on the ground that the principle on which Toope's propagator is founded has been in common use for many years.

A Rose Fair in aid of the Gardener's Orphan Fund will be held in connexion with the show of the Croydon Horticultural Society on Wednesday, next in Addiscombe Road, Croydon. The local secretary, Mr. Cummins, The Grange, Wallington, will be glad to receive contributions of cut flowers.

Messrs. Foster and Pearson exhibited several forms of their portable plant frames at the recent floral fête at York, and their utility in the garden was fully recognized by the large number of horticulturists' present at the great gathering. The firm also exhibited their "Beeston" greenhouse, in which, by the addition of glass sides and ends, the larger sized frames are converted into spacious structures admirably adapted for the cultivation of plants of all classes.

Chiswick Horticultural Society's tenth annual exhibition will be held, as usual, in the gardens of the Royal Horticultural Society, which are peculiarly suitable and appropriate, and the use of which is a great advantage to this society. The band of the Grenadier Guards, under Lieutenant Dan Godfrey, will awaken echoes that have slept too long, and perhaps encourage many to hope that "the palmy days of Chiswick" are, at least, not obsolete.

The General Phosphate Corporation has been registered by Davidson and Morris, 40, Queen Victoria Street, with a capital of £1,000,000, in £10 shares. The object is to hunt for phosphates and to buy up rights, and put phosphates in the markets. The first subscribers are: Lord Stalbridge, Sir James Whitehead, Bart., Sir J. Wilson, Hon. Cecil Parker, Sir George Baden Powell, Sampson S. Lloyd, and H. Mallaby-Deeley.

Edinburgh Botanic Garden and Arboretum.—The Government has appointed a departmental committee to inquire into the working of the Edinburgh Botanic Garden and Arboretum, and as at present arranged the committee will hold its sittings at Edinburgh during August. The committee will endeavour in the course of its inquiries to ascertain how the arboretum and botanic garden may be rendered most useful both to students and the general public, and also consider the establishment of a school of forestry for Scotland.

A List of Garden Plants described in botanical and horticultural publications in the year 1889 fills a special issue of the "Bulletin of Miscellaneous Information" issued from the Royal Gardens, Kew. This list is good so far as it goes, but we cannot say that it is absolutely complete. Similar lists were published of the plants introduced in 1888 and 1889, and we may regard this annual summary as an established feature of the *Bulletin*. The editor may find publications other than those cited from which material may be derived for these lists.

"Orchids, their Culture and Management," by Mr. W. Watson and Mr. W. Bean, now completed and republished in a handsome volume by Mr. Upcott Gill, will claim an honourable place in the garden library, and prove of special value for consultation and reference wherever orchids are subjects of interest. The work extends to 554 pages. It contains a general description of orchids as to their structure, relationships, and cultivation, and a complete review of the genera in alphabetical order, thus combining the advantages of a treatise and a dictionary.

The Fruit Show Organized by the Fruiterers' Company is provisionally arranged for as regards the general plan and schedule of prizes. The committee of experts to whom the matter was remitted having made rapid progress in their work, the exhibition will in all probability be held in the Guildhall of London on the 6th, 7th, and 8th of October next. The Fruiterers' Company has allotted a sum of £800 for this undertaking, and one of the conditions is that the public are to be admitted on all three days free of charge by tickets that will be liberally distributed.

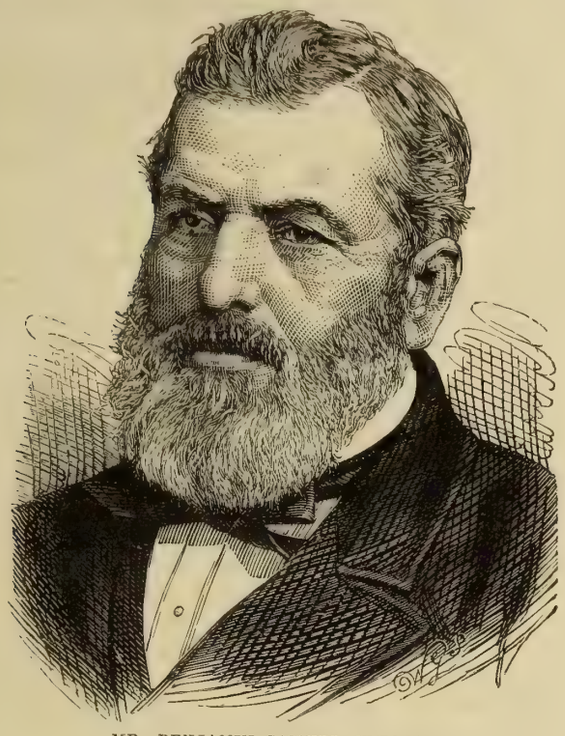
Death has been Busy in our ranks in the past week, and has made deep impressions on the observers of events. An appalling calamity, causing serious gaps in the staff of the Messrs. Veitch and Sons, was followed quickly by the death of one of the best known, most widely respected, and in every sense good and capable of men, Mr. Benjamin S. Williams, of Upper Holloway. His loss will be felt wherever horticulture obtains serious attention; and in this country at this time of assemblage in the exhibition tent and social gathering his name will have honourable mention, and his example will be called to mind as one for thoughtful and affectionate remembrance.

A Twin Cucumber, forwarded by "R. R. Kenton," is of some interest as illustrating a class of subjects we figured in the *Garden Oracle* for 1870, comprising a duplicate dahlia, an antipodean mushroom, a twin apple, a multiple pear, and a lettuce that from a small tuft of leaves produced a swollen root of great dimensions. The cucumber now before us consists of two fruits of average size, completely fused together on one side, but of excellent proportions throughout, and quite the average size of the variety, which is Telegraph. We have to thank our correspondent for the curiosity, which is in a capital condition for eating, and should prove just twice as good as any Telegraph of the single persuasion. The length of the double fruit is fifteen inches, the weight 2 lb. 5 ounces.

MR. BENJAMIN SAMUEL WILLIAMS.

IT is with more than any customary sense of loss and regret we record the death of our dear friend, the eminent and admirable Mr. B. S. Williams. He passed away quietly on the evening of the 24th instant, after a long and painful illness, during which he was comforted with the assurance of the wide spread sympathy of his many friends, to whom for some time past, his condition and its hopelessness were known. The event casts a gloom over the horticultural world that will be felt at all meetings and exhibitions for some time to come.

Mr. Benjamin Samuel Williams was the fourth son of James Williams, of Hoddesdon, who survives him, and, on account of his great age, will of necessity suffer much from the sad intelligence of his son's death. He was born at Hoddesdon, and at the age of fourteen entered the celebrated garden of Mr. John Warner, at Hoddesdon, where his father was long employed as gardener. At the age of twenty he entered the lists as an exhibitor and soon acquired fame as a cultivator and exhibitor of the pansy, a flower that now obtains but little attention. He next took up the ranunculus, and very soon launched out into floriculture of a comprehensive kind, accomplishing wonders with the aid of a few frames to enable him to grow flowers for exhibition in March and April. We hear of him as forcing rhododendrons and azaleas, and other plants of like character, with fermenting materials in cucumber frames. His ambition growing with his talent, he soon became an exhibitor of vegetables and fruits at Hoddesdon and the neighbouring towns, the slender means at his command proving but a slight impediment to one so bent on success and so capable of labour and sacrifice to secure it. There is a special interest in the fact that for a time he laboured in the nurseries of Messrs. Paul and Son, Cheshunt, after he had established himself as an exhibitor and a gardener of high promise.



MR. BENJAMIN SAMUEL WILLIAMS.

In due time he returned to the garden of Mr. Warner, where, under his father's teaching, he advanced in all the departments of the fruit and vegetable gardens, and soon after was entrusted with the management of the orchids. He soon felt the scarcity of books, and resolved that he would do something to provide gardeners with trustful information on the departments to which he was now giving special attention, and with a view to which he became a careful notetaker, accumulating material towards the object in view. Advancing in practice, we find him winning prizes with orchids and other high-class plants at Chiswick and the Regent's Park, and one of his great feats was his taking the first prize with twenty orchids, every one of which he had closely studied, learning thereby a lesson he often repeated in his conversations and "little speeches," that single plants make better specimens than any that are the result of "making up."

In the year 1852 Messrs. Chapman and Hall published Mr. Williams' first book, which was none other than his now famous "Orchid Growers' Manual," which Dr. Lindley believed could never pay, and which, indeed, made way so slowly at first that, from a commercial point of view, the thing was almost a failure. But here we see the advantage of being able to wait, for after the sale of the first thousand, which was a long time about, a succession of editions was called for, and the book has steadily grown from a thin duodecimo to a stout octavo, and is one of the necessities of the horticultural library. He said to the writer of this ten years ago, "we now sell as many copies of the book in one year as we used to do in ten." Other books followed on: "Ferns and Lycopods," "Stove and Greenhouse Plants," and the "Orchid Album," all of them characterized by soundness of teaching, a generous breadth of view of every subject treated, convenience of arrangement, and all that is implied in the term "good book-making."

A considerable part of the labours of our friend have been bestowed in the formation and management of the Victoria and Paradise Nurseries, first in Hornsey in conjunction with Mr. Parker, and subsequently at Upper Holloway, where his son, Mr. Henry Williams, became his partner and constant companion, the business demanding their united energies and reflecting splendidly their complete success in the acquisition of treasures from many parts of the world, including, in addition to orchids, stove and greenhouse plants and all the several subjects that are of importance in gardens. But orchids certainly take the lead there, and the collection is for the present the best monument of the skill, taste, and business energy of an honoured veteran, whose like we may not for many years look upon again.

We can but offer to the family our sincere condolence, hoping that in their present distress of mind there may be comfort found in the reflection that the worthy man who has been taken from them was sufficiently understood by the world around to be ranked with the just and true, ever cheerful, generous, and agreeable, a pattern of patience and perseverance that none who knew him will ever forget.

The funeral will take place at Highgate Cemetery, at half-past twelve on Monday next.

AMERICAN NOTES.

STRENGTH OF ARSENICAL INSECTICIDES.

THE question in regard to how weak a mixture of London purple or Paris green can be used and still be effective is more difficult to answer remarks Mr. Cordley. Until last season we had noticed but little injury to foliage from using one pound of London purple to one hundred gallons of water, but results from all over the country the past season show that we cannot safely use so strong a mixture. We sprayed both cherry and plum trees, at various times, from May 20 to June 12, with London purple, the strength of the mixture varying from one pound to one hundred gallons to one pound to two hundred gallons of water, and the foliage was injured but slightly, if at all. June 24, we sprayed peach, apple, and plum trees with one pound of London purple to one hundred gallons of water. Rain followed the next day and the injury was severe. From July 5 to July 10, we sprayed peach, pear, and cherry trees with one pound of London purple to two hundred gallons of water, and in every case the foliage on the peach trees was badly injured. July 11, we sprayed peach trees with Paris green, using one pound to one hundred, to two hundred to two hundred and fifty, and to three hundred gallons of water. In the first proportion, the injury to the foliage was slight; in the others none at all. These experiments seem to show: First, that London purple is much more injurious to foliage than is Paris green. Second, that peach foliage is much more susceptible to injury than is that of the pear, apple, plum, or cherry. Third, that we may spray pear, apple, plum and cherry trees, with London purple, but should not use it stronger than one pound to one hundred and fifty gallons of water. Fourth, that if we use the arsenites on peach trees, we should use Paris green and should not use over one pound to two hundred and fifty gallons of water.

CARNATION CULTURE.

As an instance of the way in which American market growers devote themselves, very often, to cultivating large quantities of a single kind of flower, a note from Springfield, Massachusetts, recently published in the *American Florist*, is of interest. "I grow Carnations only," said the writer, "and last season I cut 26,000 blooms from 700 plants of Grace Wilder. I now have 1,300 plants."

EDIBLE GOURDS.

A peculiarity of the plants producing what we call gourds or calabashes, remarks *Garden and Forest* is the musk-like odour that most of them give out when their leaves are pinched. We generally look upon a gourd as something unsuitable for the table; but Dr. Harris states that when cooked several of the varieties of Syria, Japan, and Brazil are quite palatable while young, especially those which grow long, thin, and green, like the Hercules Club. The fruit which furnishes the reticulated skeleton used as a bathing-scrubber and in making beautiful bonnets is in habit and growth a cucumber (*Cucumis reticulatus*), although sometimes called a "Dish-cloth Gourd" from one of its uses in our Gulf States. In India the natives eat one of the varieties when quite young; but of a dozen varieties grown by Dr. Harris in Philadelphia none were tempting to the appetite.

FRUITING OF LIVISTONIA SINENSIS.

One of the largest specimens of *Livistonia sinensis* in Horticultural Hall, Fairmount Park, Philadelphia, has, according to the *Garden and Forest*, recently perfected its first crop of seeds. The plant is about twenty-five feet in height, and it bore three large spikes of flowers which were followed by a liberal quantity of seeds, the latter setting in the spring of 1889, and ripening in April of the present season. As an instance of the readiness with which this species germinates, it may be added that some of the seeds that fell from the plant before the crop was gathered were found to have germinated while lying on the ground beneath, which was carpeted with Selaginella.

IMPORT DUTIES ON PLANTS.

The proposed alteration of the tariff, by which a duty of twenty per cent. will be imposed on plants, was discussed at a recent meeting of the Philadelphia Florists' Club, and a resolution protesting against the proposed duty was passed. It is claimed, however, that this resolution does not represent the true condition of opinion among the members of the craft in Philadelphia, as the resolution was passed by a bare majority in a vote comprising about one-fifth of the membership of the Club, and the question will probably be called up at another meeting.

HARDINESS OF INDIAN AZALEAS.

It is interesting to find in the shrubberies near Mount Morris, in Central Park, remarks the *Garden and Forest*, a number of large well-established plants of the old white Indian azalea, phœnicia, unharmed by the winter, and in full flower. The excellent condition of these plants testifies to the fact that the Indian azalea, or some of its varieties, at least, can be grown in much more severe climates than these plants have been supposed capable of flowering in. Only a faint idea of the beauty of the Indian azalea in flower is obtained by seeing it grown as a pot plant, as the flowers quite hide the foliage, and the real charm of their delicate colours can only be appreciated when the plants are brought into immediate contact with the bright green of the vernal turf or the dark green of some broad-leaved evergreen plant. Several varieties of these azaleas could be grown, no doubt, in this climate if a little care was taken in selecting sheltered positions for them and in furnishing a slight winter protection; and the experiment is certainly worth making. Azaleas in cultivation are all derived from plants coultivated originally by the Chinese in the southern part of the empire, or from the gardens of central and southern Japan. The so-called Indian azalea, or some of its forms, grows far north in Japan in a climate as severe as that of New England. It is improbable that these northern forms have ever been introduced into our gardens, where they are possibly destined to give birth to a new race of garden azaleas, which, there is every reason to believe, will prove as hardy and satisfactory here as have many other plants from the same region.

TASMANIAN APPLES.

These have during the present season been placed on the English markets in splendid condition, and at the present time (June 20), very fine and richly flavoured fruit of Sturmer Pippin are abundant. These are clean and bright in appearance and plump, with the "scrunch" of a newly gathered fruit, far finer than we can grow them here. It would be advisable for us to plant this kind on a warm wall, when its qualities would be more fully brought out and its Ribston flavour developed. It is a variety that hangs longer than any on the tree, and being a free bearer, requires thinning freely, and with aid from mulching, fully pays for all attention. As a rule, the fruit is tough and leathery, because not fully finished and very apt to shrivel. I commend this hint to those who require good late dessert fruit.

At the Colonial Exhibition most of the commercial varieties of Australian apples came before the Fruit Committee of the Royal Horticultural Society, and for flavour none approached Scarlet Nonpareil. Mr. Rivers says all Nonpareils revel in the warmth of Tasmania, and probably such fine late apples that I would name as Rosemary Russet, Duke of Devonshire, and Dutch Mignonne, would succeed there. Cox's Orange as tasted is not good, but many Scarlet Nonpareils are sold under this taking name. Remarkably fine King of Tomkins Co. have been sent me from Tasmania under the name of Prince Alfred. They were rather too ripe when shipped and were mealy in some cases, but the flavour of the best examples was very good and the size immense. Reinette du Canada were very fine at the Colinderies, both in shape and finish. Tasmanian Ribstons are fair but have that dry chippy flavour that foreigners affect.

I learn that the cost of transit is about five shillings per bushel, The style of package is to be commended—flat boxes holding about 30 lbs., and as not more than three layers can be packed, they open in better condition than hasselled fruit. Growers of choice English apples should take a note of this. The Antipodean Bismarck (properly Prince Bismarck), is again fruiting heavily on one-year trees, and will take its place as one of the best of recent introductions.

Maidstone. George Bunyard.

ROSES AND GREEN FLY.

It does not matter in what direction we go—up or down the country—green fly has attacked the roses everywhere, and where there has been no attempt made to destroy them serious harm has followed. The early growth has been checked and many of the flowers are very much disfigured. As furnishing evidence of the value of adopting some means to destroy these injurious insects, I may mention that I have quite recently seen the collection of roses grown by R. N. G. Baker, Esq. of Heavitree, Exeter, and also those of Mr. James Walters, of the Rose Nursery of the same place. In both cases I found the plants free from the fly and in the most perfect health. This statement must not, however, be taken as indicating that there had been no fly at any time during the season, because in both cases I was told that the plants had been very badly attacked, and that their present satisfactory condition was entirely owing to the means taken to get rid of the enemy. Mr. Baker's plants have been cleared of the fly by syringing with clear water only, and as I have already said, their condition now is quite satisfactory. But one experiences a kind of stupefaction in thinking of the labour that the syringing of many hundreds of plants implies. Mr. Walters uses soft soap and quassia chips in solution with which the plants are syringed. This he finds very effectual, and his stock bears evidence of the suitability of the mixture, for the plants are perfectly clean and in the most vigorous health. It must, however, be understood that a single application has not done this, as Mr. Walters told me that a portion of his stock had been operated on several times already, while it was still being repeated as a preventive measure. I find this gentleman rather in favour of soft soap for the destruction of the fly, as he says he finds it improves the foliage, which is just my experience, as it will kill the fly and destroy mildew as well. J. C. Clarke.

CANNA MADAME CROZY.

Reference has been made in these pages to several of the dwarf cannas introduced to cultivation during the past three or four years, and now mention must be made of another form, for it is one of the finest of the varieties belonging to the new dwarf race that has yet been submitted to public notice. This variety, known as Madame Crozy, does not exceed two feet in height when fully developed, has medium-sized bright green leaves, and produces short spikes of exceptionally large intense scarlet flowers. It is admirably adapted for outdoor culture, and forms effective specimens for the conservatory, as shown by the admirably flowered example exhibited at the Temple show by Messrs. Paul and Son, of Cheshunt. G.

AUCTION SALES FOR THE ENSUING WEEK.

Monday, June 30.—Messrs. Protheroe and Morris, at the Merton Abbey Nursery; Plants.

Tuesday, July 1.—Messrs. Protheroe and Morris, at their Central Sale Rooms 67 and 68, Cheapside; Orchids.

Thursday, July 3.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids.

Friday, July 4.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

The weather has been so far unsettled that it is found to be easier to get grass down than hay up. In the home counties there is much haymaking in progress, and the stars have not been propitious. At the present time the outlook is by no means favourable, and we fear the agreeable warmth of the past few days will be exchanged for northern blasts of a chilling character. Caution is much needed just now in respect of all outdoor work, for which dry weather is desirable.

ROYAL BOTANIC SOCIETY.

FLORAL PARADE AND FEAST OF FLOWERS, June 26.

The Floral Parade and Feast of Roses at Regent's Park last year in commemoration of the jubilee of the society proved so great a financial success that it was decided to include a similar fête in the programme of arrangements for the current season Thursday last was set apart for the gathering, and a comparatively liberal schedule of prizes offered for competition. In addition to the classes provided for carriages, cars, horses, donkeys, and tricycles dressed with natural flowers, there were eleven classes for plants and flowers to be shown under the great tent. These were mostly well filled, and as the general arrangements were admirably carried out the effect produced was highly satisfactory. The weather was so unfavourable in the early part of the day as to give cause for anxiety as to the success of the parade, but about two o'clock it began to clear up, and from that time to the close of the fête it was bright and otherwise enjoyable.

To the class for cut hardy flowers, Messrs. Kelway and Son, Langport, contributed an immense collection, consisting chiefly of herbaceous pæonies, delphiniums, and gaillardias. The flowers were of high quality throughout, and the gold medal was awarded the firm. Messrs. Barr and Son, 12, King Street, Covent Garden, exhibited a large and excellent collection, and were awarded the silver medal. Messrs. J. Cheal and Sons, Crawley, staged a small but beautiful collection, and were awarded the bronze medal.

Roses were well represented, and the gold medal offered as the first prize for collections of cut roses was awarded to Mr. Frank Cant, Colchester, for a large tastefully arranged bank of finely-developed flowers. Mr. W. Rumsey, Joynings' Nursery, Waltham Cross, contributed an extensive collection of admirable blooms associated with plants in pots, and received the award of the silver-gilt medal. Several excellent baskets of roses were shown, the best being that from Miss E. L. Clarke, Roseland Villa, Hounslow, to whom the silver medal was awarded. Mr. Garford, Stoke Newington, had a tasteful basket, and the bronze medal was awarded to him.

Chief amongst the exhibitors of plants was Mr. C. Turner, Slough, who had an extensive and beautiful group of show and fancy pelargoniums, and was awarded the silver gilt medal. Messrs. Hooper and Co, Maida Vale, presented an immense collection of caladiums, in which many of the finest kinds were represented at their best, and the gold medal was awarded the firm. Messrs. H. Cannell and Sons, Swanley, had a small but extremely beautiful collection of begonias, consisting chiefly of novelties, and were awarded the silver medal. Mr. H. B. May, had a beautiful collection of ferns, consisting of upwards of two hundred species and varieties, and the award of the silver gilt medal was made. Amongst other kinds was Pteris cretica nobilis, a finely crested form of this useful species, and the true Nephrolepis davallioides. Mr. Butler, gardener to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, was second for ferns, and received the silver medal. For collections of palms Mr. Butler was first, and received the silver gilt medal offered as the premier award. Mr. H. James, Norwood, had a good collection of flowering plants, in which orchids were prominent, and Mr. Mould, Pewsey, sent a group of stove and greenhouse plants, containing excellent heaths, and the silver gilt medal was in each case awarded. Mr. James and Mr. Butler also contributed good collections of ornamental-leaved plants.

The parade of the carriages, horses, donkeys, children's mail carts, and tricycles commenced at four o'clock and continued until five, when the banners indicating the awards made were handed to the successful competitors. The number taking part in the parade was about equal to that of last year, and the floral arrangements were perhaps on the whole rather more tasteful than were those of last season. The Royal Prize, of the value of twenty guineas, offered for "the best of the exhibits," was awarded to Mrs. Peters for a carriage and pair, the carriage tastefully dressed with yellow and crimson roses. A gold medal was awarded to Miss Woodhull, whose carriage was tastefully dressed with white pelargoniums and pink sweet peas. Two silver-gilt medals were awarded in the same class, one to Mrs. Bryant and one to Mr. J. Foster, both of whom had carriages decorated with scarlet and white. A gold medal was awarded to Miss Lee for a carriage effectively dressed with crimson roses in association with an abundance of foliage. The pony baskets were so tastefully embellished that Miss M. Sherwood and Mr. H. Reignart were awarded silver-gilt medals. Miss Sherwood's cart was decorated with blue cornflowers, white marguerites, and scarlet zonals and poppies; and Mr. Reignart's cart was dressed chiefly with pink and white flowers. The goat chaise from Mr. Chamberlain was dressed with much taste, the flowers chiefly employed being those of the Sweet Sultan. The tricycles were indifferently decorated; nevertheless, equal firsts and a second were distributed amongst the three competitors.

A considerable number of novelties were included in the collections of plants and cut flowers, and floricultural certificates were granted as under: To Messrs. Kelway and Son for delphiniums, *Henry Kelway*, blue and reddish pink; *Louis Kelway*, mauve and rose, semi-double; *David Kelway*, deep blue, veined red, semi-double; *Ida Kelway*, azure blue, veined rose; *Irene Kelway*, mauve, veined red, semi-double; *Hermoine Kelway*, violet, semi-double; *Gilbert Kelway*, cobalt blue with white eye, semi-double. Gaillardias, *George Kelway*, crimson with yellow margin; *Somerset*, bright yellow, quilled. Pæonies, *Helena Kelway*, white, tipped yellow, double; *Alonzo*, crimson, double; *Kelway's Queen*, flesh pink, double. To Messrs. H. Cannell and Sons for begonias, *Miss Edith Wynne*, pure white, double; *Miss Nicholson* flesh pink, double. To Messrs. Paul and Son for *Mrs. Paul*, rose, a light bourbon described in report of R.H.S.

The Proposed Gallery of British Arts is the subject of an important memorial from Mr. Henry Tate to the Chancellor of the Exchequer. It will be remembered that Mr. Tate made an offer of the gift to the nation of certain pictures painted by British artists, but the gift was declined on account of the want of space in the National Gallery for their accommodation. Mr. Tate renews the offer, and therewith states certain conditions to be complied with in the event of his offer being accepted. The sum and substance of those conditions is the establishment of a new gallery to be confined exclusively to works by British artists, and to be under independent management apart altogether from the National Gallery, the South Kensington Museum, and all other established institutions. Mr. Tate's list of fifty-seven pictures by such artists as Sir F. Leighton, Sir J. E. Millais, Mr. W. Q. Orchardson, Mr. J. C. Hook, Mr. Briton Riviere, Mr. Frank Holl, Sir E. Landseer, and a score more of our greatest painters, that he has offered to present to the new gallery, fills one with surprise at his munificent generosity.

PRIMULA SIEBOLDI AND ITS VARIETIES.

It is a singular fact that numerous and beautiful as are the varieties of the Japanese Primrose, P. Sieboldi, they yet appear to be very sparingly grown. Even the type, with its bright rosy-crimson flowers, which, with alba, grandiflora, and lilacina, were sent home from Japan by Mr. John Gould Veitch in 1865 is very seldom seen, beautiful, showy, and easily grown as it is. No other primula is so easily managed; scarcely another so much neglected. More's the pity, for what plants scarcely can compare with P. Sieboldi and its many varieties for decorative effect in April and May? Of late years Messrs. Ryder and Son, nurserymen, Sale, near Manchester, have taken this group of primulas in hand and raised many charming varieties, and they are spirited enough to bring them to the London exhibitions, where they display them to the best advantage; and on the occasion of the National Auricula Society's exhibition at the Drill Hall, Westminster, in April last, Messrs. Ryder and Son staged such a collection of them as had never been seen before, and one was enabled to realize how varied in colour and shape the flowers were, how free and showy, and what masses of bloom they yield; and, singular to state, I do not think the P. Sieboldi, as introduced by Mr. John Gould Veitch, has ever been surpassed for shape. stoutness of petal, and freedom of bloom. If half the fuss made over P. japonica had been made over P. Sieboldi—a very much more deserving species—the varieties would probably have been much more popular in our day.

I remember the four original forms—I think I am correct as to the number—P. amoena, rosy crimson; lilacina, deep lilac, much fringed; grandiflora, creamy white, with pink reverse; and alba, a flabby kind of flower that never expanded fully, and always had a limp appearance about it; and yet they have proved of enormous value as progenitors of a fine line of varieties.

It was not until a few years after that any serious attempt was made to obtain new varieties by means of seed. The original introductions seeded very sparingly. It is a disappointing kind of plant, because the seed pods will plump up as if full of grains, but when opened they are found to be completely barren. Almost at the same time seed was secured and seedlings raised by three different persons: M. Victor Lemoine, of Nancy, France; Mr. A. Dean, Bedfont; and Mr. James Allen, Shepton Mallet, Somerset. My brother was particularly fortunate in raising a few very fine varieties, such as *Laciniata, Purpurea, Charmer, Mauve Beauty, Lilacina perfecta*, &c.; while Mr. Allen obtained *Alba grandiflora, Snowflake, Hermia, Ophelia, Rosalba*, &c. M. Victor Lemoine appeared to be the only one of the three who continued the work of raising varieties, until Mr. George Geggie, then in business at Bury, Lancashire, succeeded in obtaining some fine varieties. Eventually he entered the service of Messrs. Ryder and Son, of Sale, taking his new varieties with him and every year some new types are obtained. In all probability seed is more readily obtained in the moister and cooler climate of Lancashire than in the South of England. It would seem that Mr. T. S. Ware, of Tottenham, is also raising new varieties, for he exhibits them from time to time.

Of the new varieties shown by Messrs. Ryder and Son during the past spring the following were the most striking:—*Alba magnifica*, pure white, good form, stout, and handsomely fringed; *Bruce Findlay*, deep bluish lilac, a striking and remarkable variety of fine form; *Leo H. Grindon*, deep rosy purple, large, stout, and of the finest form. *Mrs. Ryder*, white, with a blush reverse, a very charming combination; flowers stout and of fine shape. *Queen of the Whites*, a pure white, smooth-edged variety, large, and a very fine petal; *Ruby Gem*, bright ruby red, fine and striking in colour, and well formed flowers; *Harry Leigh*, lilac, with a white centre, very pleasing; flowers stout and well formed, the trusses bold and striking; and *Rosy Morn*, rosy pink with white centre; a large bright flower, quite smooth on the edge. This does not exhaust all the new varieties raised by this spirited firm, but are what I noted in their collection when exhibited in London, and nearly everyone of those described received awards of merit, or first-class certificates at meetings of Royal Horticultural Society or at exhibitions at the Crystal Palace and Regent's Park.

Of the varieties raised by Mr. Geggie while at Bury, the following are well worthy of cultivation:—*Brilliant*, rich rosy crimson, one of the deepest coloured varieties in cultivation; *Crimson King*, bright crimson; *Fairy Queen*, white, faintly tinted with delicate blue, flowers fringed, very pretty and distinct; *Gem*, deep reddish purple, fine form; *Mars*, reddish purple, fringed; *Miss Jeannie Ryder*, clear pleasing pink, white centre; *Miss Nellie Barnard*, glowing crimson, very bright and effective; *Mrs. Geggie*, clear rosy pink, with large fringed flowers of fine form; *Novelty*, pale lilac, changing to white; *Purple King*, clear purple, large and of good form; *Queen Victoria*, white, slightly tinted with lilac; and *Victor*, rosy red, large well-formed flowers.

The management and culture of these Japanese primroses are simple enough. They are practically deciduous, though under some methods of culture they might be made to carry their foliage all through the winter. After the plants have gone out of flower, the pots should be stood on a cool, shady border, away from the burning mid-day sun, and be not neglected, but watered as they require it. If placed in the sun and allowed to suffer for want of water, red spider will attack the leaves, and the roots are apt to become blind. Here they can remain until the autumn, when they should have the shelter of a cold frame during the winter, and in February or early in March the roots should be shaken from the soil, broken up, and each small piece placed in a small pot. On no account should the divided pieces be allowed to come under the influence of severe frost, as I have known the roots utterly destroyed in this way. All that is required is to grow on the plants in a cold house or frame, and as they soon become active no forcing is required.

The roots are in the form of creeping rhizomes which are near the surface, and which extend themselves in all directions, and throw down numerous thread-like roots nearly or quite to the bottom of the pots. The pots should be well drained, and if a little grit be added to some good auricula soil the plants can scarcely fail to do well, and blossom with freedom, causing great pleasure to the cultivator.

R. Dean.

LESCHENAULTIAS.

By W. Bradbury.

The admirably-flowered examples of the beautiful Leschenaultia biloba major contributed by Messrs. Balchin and Son to the metropolitan exhibitions from time to time have served to show in a marked manner how much is missed by those in whose collection of greenhouse plants it has no place. Once highly popular for exhibition purposes, the leschenaultias have received so little attention of late years that they are now seldom met with, and to many of the rising generation of plant growers they are practically unknown. It would not be difficult to fully explain the cause of their decline in popularity, but for the present purpose it must suffice to state that they are rather peculiar in their requirements and not well suited for exhibition specimens. They are not exactly difficult to grow, but, in common with the heaths and a few other classes of New Holland plants, they must have careful attention. Especially is it necessary to use the watering pot with care and to judiciously regulate the ventilation. Dryness at the roots is decidedly injurious, and, on the other hand, an excess of moisture is followed by results more or less unsatisfactory. Again, if kept too close or in an atmosphere more or less humid, the foliage becomes a prey to mildew, and when this happens the greatest skill alone can avert the death of the plants. As they increase in age they become more susceptible to adverse influences, and in consequence it was seldom that they could be kept in a satisfactory condition long after they had become large enough to have a place in a competitive group. Knowing this, and being acquainted also with the fact that all the kinds present the most attractive appearance when in the form of neat bushes from six to eight inches in diameter, I have no desire to assist in again placing them on the exhibition stage. I should, however, like to see them again grown for contributing to the attractions of the conservatory, for when well grown they are extremely beautiful and so distinct from all the other occupants that they invariably at once arrest the attention of those to whom they are not known. As a proof I would direct attention to the large share of attention bestowed upon the groups of Leschenaultia biloba major that have been exhibited, many of the visitors regarding it as some recent introduction of immense value.

The Leschenaultias being comparatively short-lived, and moreover the most attractive when of medium size, it is necessary to strike a few cuttings each year to ensure a succession of young and thrifty plants. To raise a stock from cuttings is comparatively easy. Early in the spring is the best time in which to proceed with the work of propagation, as the wood is then in capital condition and the young plants raised have sufficient time to become established by the autumn. Select the tops of the young shoots, take them off about three inches from the point, and with a sharp knife remove the leaves from the lower portion. Have in readiness five-inch pots, prepared as for heaths and insert them at a distance of about one and a-half inches each way. To fix them firmly in the sand is essential, and as each pot is filled sprinkle the cuttings with a can to which a fine rose has been affixed to settle the sand about them. Cover each pot with a bell glass and place in a shady position in a structure in which a temperature intermediate between that of the greenhouse and a plant stove is maintained. They must be kept moderately moist and close until they are struck, which will be in about seven weeks. Air must then be gradually admitted until they are so hardened that the glasses can be removed. It may be necessary to occasionally wipe the inside of the glasses, but when the watering is not overdone this will seldom be required.

To keep them in the cutting pots longer than is absolutely necessary is decidedly injurious, and everything should be in readiness for potting them off singly as soon as they commence to grow freely. In potting off use small or large sixties, preferably the latter, and fibrous peat which has been broken up rather fine and received a liberal addition of silver sand. Allow them to remain in the same structure until they have recovered from the check received, as indicated by their commencing to grow freely, and then remove to cooler and more airy quarters. In the meantime water rather sparingly, shade lightly during the hottest part of the day and give them a light skiff overhead from the syringe when the house is closed in the afternoon. By the end of July or the beginning of the month following, sufficient progress will have been made to render stopping necessary. This should be done by nipping out the points of the shoots. During the winter they should have a position in a structure in which a temperature ranging from 45 deg. to 50 deg. is maintained. They ought to occupy a position where they will enjoy an uninterrupted light, and if within twelve or fifteen inches of the glass it will be an advantage. The water supply must be carefully regulated during the winter season and the plants have sufficient moisture without being kept too wet.

By the end of the following February they will require an extension of root space, and should be shifted into five or six-inch pots, but for all the examples in a vigorous state of health the largest of the two sizes should be used. Fibrous peat to which a liberal proportion of sand has been added should be used, and the precaution be taken to press the new material firm enough to prevent the water soaking away without first having moistened the whole of the ball. They are so impatient of having the roots disturbed that they should be transferred to the new pots without having the crocks removed from the bottom of

the old ball. Towards the end of April nip out the points of the shoots to promote the production of lateral growth, and thus ensure the formation of neat bushes. During the summer let them have a place in a well ventilated structure, and shade lightly in very hot weather. Supply rather liberally with water at the roots, and from the time they go out of bloom until the end of July syringe them occasionally overhead in hot weather.

In the year following they will bloom freely, and during the time they are in the conservatory they should have a light and airy position. Immediately on the flowers having lost their freshness and beauty shorten the shoots by taking off two or three inches from the top, and keep rather close for a few days. When new growth commences shift into pots one size larger without disturbing the roots. This course should be taken each year so long as the plants continue to grow freely and bloom profusely. Immediately any decided decrease in vigour is apparent they should be put on one side to make way for younger examples, as to attempt to rejuvenate them will only end in disappointment.

HERBACEOUS PÆONIES.

Without a doubt these are among the finest of herbaceous plants flowering at the present time, both for the show they make in a growing state and the length of time they last fresh when cut and placed in water. The colours are now so variable that I think the most effective method of cultivating this plant is by themselves in a mass, the colour of one kind helping to show up that of its neighbour when associated properly. All the varieties that I know are clothed profusely with handsome foliage, just varying a little in colour and formation; and with liberal cultivation the foliage is a decided improvement to the appearance of the plants when in flower. A moist situation is needed to ensure a free growth and consequently a liberal crop of blossoms. According to my experience three seasons' growth is required to well-establish the plants in a flowering condition from the first planting of the roots, which is best done early in the autumn, first having deeply trenched the soil and added to it a liberal allowance of partly decayed farmyard manure. If for strong soil, that from the stables is best; but if on the contrary, cow manure is the more serviceable to light, sandy soil. It will also do away with the necessity of much watering being needed, as its tendency to retaining moisture is well known. Pæonies love moisture, and they must have it in some form or other if success is to be achieved. After planting, a thick mulching of manure should be applied to the surface, which should decay there, and be renewed the following and every autumn afterwards.

In our strong soil I find a top-dressing of partly decayed leaves answer the best. The beds in which the plants are growing are dug over in October every year, avoiding the disturbance of the roots of the pæonies by the digging. After this the mulching is done, nothing more being needed until the following October. In the summer management it is necessary to keep down weeds and support the growth and blooms in the manner least likely to be obtrusive through the use of a mass of stakes. If supports are not placed to the bushes in good time the flower heads fall about by their weight, and if allowed to become crooked in the stem half of their beauty is lost. To a plant carrying, say, fifteen main blooms, we place perhaps three stout stakes, and loosely tie the growths to these, each one separate. Space is thus allowed for all to develop both flowers and foliage, and to be free also from injury by wind or rain splashing the soil on to the flowers, which in the case of the light coloured sorts are soon spoilt in their appearance. When cutting the flowers care should be taken that the stem at first is not cut too long, because many side buds which will develop useful late flowers will be lost if cut away. Most of the double varieties throw out numerous side flowers. In some of the sorts these side buds do not form as early as the top buds; therefore the cutting of the main stem flowers spoils a second crop of blooms unless the stems are examined first.

Although dividing the roots is the general method of increasing the stock of plants, it is not wise to be constantly doing this. When two plants of each sort are secured much better is it to allow them to remain without disturbing their roots, as a season or two is lost before the same results can be secured as was the case before dividing was performed. Pæonies are impatient of root disturbance, and to merit success cultivators should remember this, and provide themselves with new roots if more are required, as they can now be procured reasonably from the nurseries where they are now largely cultivated by those who make a speciality of them. At the time when the flower buds are forming the rose-maggot attacks the point of growth, and if allowed to remain in secret for long much damage is soon caused to the flower buds. I have seen a whole season's crop of flowers spoilt on some plants owing to a day or two's neglect in removing the caterpillars, which must be sought after upon the first signs of the leaves curling. Single varieties are becoming popular, but for ordinary decoration the double varieties are more useful, as they last longer in perfection either on the plants or off them. Still, it is better to cultivate a few of both kinds rather than only one of them. There is nothing like cultivating familiarity with all classes of plants to induce a love for those at one time thought unworthy of attention. The following are good sorts:—

Triomphe de Paris, white, the centre primrose, which passes to white, rose scented.
Comte de Paris, rose carmine, the centre tinged with salmon.
Josephine Parmentier, rose lilac, centre salmon pink.
Gloire de Douai, very deep purple crimson.
Comte de Cussii, rose, fragrant, a fine variety.
Reine des Roses, guard petals, centre chamois, rose scented.
Beaute de Villecante, rose, with pink centre.
Madame Chaumy, pink, passing off blush, fragrant.
Rosea plenissima superba, soft rose, passing off blush.
Virginie, blush rose, large open flower, scented.
Clarisse, soft pink, rose scented.
Humei Carnea, rose, which passes off to blush, the centre blush, changing to white.

The above dozen kinds belong to the Chinese type. The following are single flowered, which bloom during May and June.

Anomala, rich crimson, yellow anthers.
Decora, crimson, which go off a deep rose.
Microcarpa, crimson, going off rose.
Officinalis rosea, rich deep rose, anthers yellow. E. M.

MISTAKES IN GRAPE GROWING.

It may be of some service to direct attention to a few errors that creep into the management of some grape growers at this season of the year. I should, however, first like to say that for the most part the mistakes to which I refer are errors in judgment only, and do not imply want of care or constancy. Most gardeners watch over the vines under their charge with a degree of care that does them credit, and in the majority of cases, when failures occur, it is through doing too much instead of too little. They will therefore, I feel sure, take kindly what I have to say in this matter.

The first mistake I shall refer to is that of letting out the fire too early in the season in the case of those vines that have been more or less assisted with fire-heat since they first started into growth. In the majority of cases I am well aware that the object of doing without the fire is to save fuel. But for all that, it is a mistake to do so until the natural temperature has risen sufficiently and the weather has become settled, so that there is no serious decline of heat in the house. That, however, is not always so. The grower seems to forget that the English climate is uncertain. A few warm days occur, it may be, at the end of May or beginning of June, and the fire is let out for the season. But the promising warm weather does not last, and a serious decline in the temperature takes place. As a consequence the vines receive more or less of a check at a very critical period of their existence. While sympathising with those whose object in such cases is to save fuel, I cannot altogether acquit them of blame. In many cases it is a matter of choice whether or not they commence applying fire-heat so early in the season as many do. My experience is that when the question of fuel has to be considered it is better not to start the vines so early, but to reserve the fuel for use later in the season. Supposing it has been usual to commence forcing at the beginning of February, and to let out the fire at the end of May, I am perfectly satisfied that the crops would be quite as early in ripening if forcing was commenced three weeks later, and the firing that would have been consumed during that time reserved for use later on. The quantity of fuel consumed at the beginning would be sufficient to keep the fire going until the weather is sufficiently settled to do without it. Only those who have watched the behaviour of vines which have received a check in the way I have indicated can realize the loss of time that results from it. The progress is so slow towards ripening that I have known many a cultivator get quite anxious about the future condition of the crop.

Every practical grape grower will support me when I say that it is not safe to let out the fire until Midsummer Day is past in any house where there are vines that have received the benefit of fire heat. If days are warm the nights are usually cold—frequently so cold that there is a serious drop in the thermometer unless means are taken to avoid it. To the unobservant eye the injury done by such a sudden change from heat to cold is not particularly clear, but the watchful man will detect that there is something wrong—either the berries do not swell so fast as they ought, or they do not colour so rapidly as he knows they should in accordance with the time at which they were started. There are more evils attending the withholding of fire heat at this time of year than many suppose, for now more than at any time fuel pays for judicious use.

The next mistake I shall allude to is the use of liquid stimulants. These do good or harm in proportion to the quantity applied. The prevailing tendency is to use them in excess, and then sooner or later mischief is the consequence. The desire to have an extraordinary crop may be laudable enough in a way, but gardeners are rightly expected to have sufficient knowledge of the materials they use to prevent their doing harm. If they have not the requisite knowledge they had better leave them alone. The concentrated manures are the materials I have chiefly in view in this connection. I know there are some growers who have great faith in them, and use them in considerable quantities, about which I have nothing to say so long as they do not bring trouble upon themselves and others by an injudicious use of them. But knowing something of the powerful nature of these stimulants, and having seen more than one sudden collapse of vines treated with them, I desire to caution the young and inexperienced cultivators not to use them freely until they understand something of their forcing character.

The man who uses any of the concentrated manures in a liquid form for the first time may in a certain sense be excused if he continues to do so. The rapid increase in the size of the leaves, and the dark green colour they quickly take on, have a sort of fascination for him that makes it hard to desist giving another extra dose or two. But he will be a wise cultivator if he resists using any more after the evidence he has before him of its action on the vines already dealt with.

It must not be understood that I am opposed to the use of these manures in moderate quantities. It is an excess that I want to guard

the young beginner against, because I know that when given in excess harm will certainly be the result. These manures when not properly applied have a tendency to produce soft and sappy growth, which does not ripen properly, The consequence is that the vines are barren the following year, or if not so bad as that the rods break irregularly and the bunches, if any come, will be loose and ugly.

The next mistake I will mention is, I am sorry to say, a common one. I refer to the removal of the lateral growth. There are so many who leave their vines alone so long without attention and then set to work and suddenly remove it that I once more raise my voice against the practice of cutting away so much lateral growth at one time. It is what I call a very unpractical way of doing one's work. If from any cause the lateral growth has been allowed to accumulate that is no reason why it should all be cut away at one time. That operation should extend over three or four days, so that the vines do not feel the loss of so much leaf action. The result of losing so much growth at one time is that the vines receive a sudden check, and so manifest is this that in bad cases berries that were swelling fast before suddenly come to a standstill, and remain in that condition for a week or more, or, in fact, until fresh lateral growth is being formed again. Be it understood I am not writing on imaginary evidence, I am only stating facts that have occurred under my own observation. The only object I have in placing it on record is to offer it as a warning to those who may wish to learn. To make a plain statement of the case the lateral growth ought not to be allowed to accumulate to such an extent that there is danger in removing it all at one time. The vines when making active growth should be looked over twice a week, and all the strongest growths removed, leaving in every case sufficient leaves to shade the bunches; for the sun will scald them if it reaches the berries in its full force. Where the rods are four feet apart the laterals should be allowed to cover all the wires.

With a little observation the cultivator will be able to tell when the berries begin to form their seeds. When they have reached that stage they do not, as a rule, make so much lateral growth for a time; indeed, not until the stoning process is complete. It is a good plan to allow what little growth they make during that time to remain, and remove it gradually after they start again more vigorously.

J. C. CLARKE.

RHODODENDRONS IN NATURAL SOIL.

By EDWIN MOLYNEUX.

YOUR leading article in the GARDENERS' MAGAZINE of June 14 on the subject of rhododendrons, and more particularly with their growth in the natural soil of each locality in which they may be placed, leads me to say that it is utterly useless to attempt to grow these plants in the natural soil in some districts. It will happen, owing to the variable nature of soils, that in other gardens only a few miles away, they grow and flourish amazingly without the slightest provision being made for them in any way as regards preparation of the soil. That which constitutes the natural elements of the place is quite sufficient to ensure success in one place and failure in another. Here then lies the difference in the cost of growing rhododendrons in the one garden over that of attempting to do so in the other. They are most accommodating subjects, without a doubt, when given a fair trial. No plant in the whole list of evergreen shrubs that I know is more worthy of a place in any garden than this. Rhododendrons adapt themselves to a variety of conditions, but where the natural constituents of the soil are not of the right kind, it is labour and expense thrown away in attempting to make a compromise with nature.

Where the natural soil is of a calcareous nature, rhododendrons of any kind, Ponticum or otherwise, will decline to exist. This, at least, is my experience here with a soil highly impregnated with chalk. The nearest point to actual chalk in that part of the garden where the rhododendrons are planted is four feet deep, and in other parts as much as ten feet lies between the surface and the chalk bed, so variable are the strata of the chalk beds even in a small area. Although the roots could not possibly be anywhere near the chalk proper, so highly is the soil overlying the chalk bed impregnated with this calcareous matter that, as I stated before, these plants cannot live in it, let alone flourish.

I had sad experience some eight or ten years since through attempting to grow rhododendrons in the natural soil of the garden, and it was only through trying to economise the peat and thus keep down the expense of that article. The experience taught me to say everybody should well consider the natural circumstances of their case and prove in a small way whether rhododendrons will flourish without the aid of special preparations.

To return to my experience as previously noted. When this garden was made eleven years since, space was set apart for four large beds for rhododendrons only. A collection of choice kinds was made, the plants being quite of the best health and promise for future displays of colour. The natural soil was removed from the beds two feet deep; this being of a heavy nature, freely mixed with large flint stones, as is the case in all our land which overlays a bed of chalk. Very good peat was procured from a distance, and with a view to economise this, a large stack of partly decayed turf was at hand, the old lawns having been stripped preparatory to building the mansion on their site. The turf was cut not more than one inch thick, was simply a mass of fibre, and judging from its appearance was considered good enough to grow anything. To two parts of peat was added one of the turf. The plants were carefully put in at a favourable time; all seemed to promise well, as good trusses of bloom were produced the first year and the second season also the plants flowered pretty well. But during the previous winter the colour of the leaves of some of the sorts assumed a pale hue and slightly drooped. Both these symptoms of decline were in part removed with the next season's growth; but the following winter brought a great change in the appearance of all the plants. Much rain fell that year which aggravated the circumstance, the soil about the roots being maintained at a much lower temperature than when the soil is drier. The leaves of all turned quite pale in colour and drooped very much, giving indications of early death. It was decided to lift all the plants and renovate the beds throughout. When the soil was moved—this being done early in April—it was found to be one inert mass; the fibre of the turf had decayed, the remains kneading the peat together quite solid. All the roots which the plants had when first planted, which had come in contact with the soil, were dead. It was no trouble whatever to pull them up. This was a plain case of the natural soil not being adapted to the growth of rhododendrons, but not owing to its being composed of chalk, for it was simply impregnated with this material. It had been the custom for many years to lay chalk upon the land during the winter, and in this way very likely some had come in contact with the turf in question and had become incorporated with it. The soil was turned over, breaking it up thoroughly, at the same time adding a considerable quantity of fresh peat, leaf soil, and white sand. The plants were quickly replanted, a small portion of peat placed around the roots, those dead having previously been removed. The plants were kept moist at the root, because a long spell of dry weather set in soon after the renovating was done. An improvement in the appearance of the plants was manifest the first year, but after the second year they again begun to show signs of failure in the same way as before, but not quite so bad.

We again decided to lift them; the loam again was found to be the cause of the trouble. Not a single live root could be found in contact with the loam, no matter how small the portion of soil. The same means were taken the second time as the first in renovating the soil. After growth had fairly commenced, the weather proving hot, a three-inch thickness of fresh cow-dung was laid on the surface, which had a stimulating effect upon the growth of the plants, and which has since been repeated with good results. At the present time no plants could look or be in a better condition than they are generally, although two of them appeared to have not yet fully recovered. This has been a decided uphill task of rhododendron cultivation under adverse circumstances, owing to the mistake of attempting to economise the peat, which was a most expensive article.

Since that time I have had further experience. In making some alterations in the garden it was decided to plant some rhododendrons in another part, and those in the first planted beds having become too thick these were taken out and replanted on a new site, and as they were not to be planted in a regular bed we took out good sized holes of the natural soil, filled in the bottom with peat and around the roots for one foot or more wide with the same material. As an experiment some were planted nearly on the surface, with peat underneath of course, and a mound was made around them with peat only. The result has been that those on the mounds have not made nearly so much growth in length of shoots, but they have annually flowered equally as well, and perhaps rather better. The growth is exceptionally short, but of a very firm character. Those planted in the usual way below the surface are now showing signs of "going back." The foliage is pale as compared with those on the mounds, and the leaves show a tendency to flag under hot sun. The trusses of bloom do not last nearly so long in good condition as do the others, showing that there is a scarcity of satisfactory root action, caused no doubt by the roots having run through the peat, and being now in contact with the natural soil. Our plan must be to take out another foot width of the natural soil, and fill in this space with peat, without disturbing the roots which are in the peat in which they were first planted. Those upon the mounds need nothing beyond a mulching of cow manure, now that growth is being made; and for our purpose they are growing as fast as required. Therefore, probably, they will not have any special attention.

In working upon the soil between the plants, such as hoeing the weeds or in planting flowers of any sort, as is sometimes done, much care is necessary in preventing any of the natural soil being raked upon the roots of the rhododendrons, even to the smallest extent. When this happens it is found to militate against success, so objectionable is this soil to these plants.

We find just the same effect upon all kinds of so-called American plants, such as hardy azaleas, andromedas, ledums, kalmias, &c.; none of them will exist in contact with the natural soil, so adverse are the roots to its constituent parts. We have this spring replanted a kalmia bed, using entirely peat and partly decayed leaves. Already more growth has been made this year by the plants than had been made in several before when growing in the mixture of loam and peat. Half-decayed leaves I find an excellent addition to the peat in the way that it effects a saving of that material, but of course the plants do not like it to the extent they do good peat. Wherever there is a piece of the latter it is found to be full of roots, provided they can come in contact with it. Silver sand is good to mix with the leaves, rendering it more gritty and better suited to the roots; but yellow sand, such as is commonly used for building purposes, is not at all suitable. It packs too close, and the roots do not like it. This I have tried more than once, but shall not do so again.

My experience of rhododendrons is that where the common heath does not grow naturally it is useless to attempt the cultivation of American plants, which are amongst the most interesting as well as useful subjects a garden can possess, and no garden is complete without some. But where no pains are taken in the preparation of the soil for them, they are woefully disappointing. It is the same here with Althea frutex—a grand shrub where it succeeds, but like the rhododendron it is necessary to make special provision to ensure its success.

SCARLET-LEAVED MUSSÆNDA.

Mussænda erythrophylla.

The generic name of this plant will remind the veteran plantsmen of the once highly popular and for ever beautiful Mussænda frondosa, which in a long run of years was a subject of the first importance for exhibition in groups of stove and greenhouse plants in flower. It was not the difficulty of growing it that displaced it from the list of first-class plants, but the decline of the class in which it customarily appeared, for with it passed into comparative obscurity many magnificent occupants of the stove that were its companions in the great classes. Mussænda frondosa is as easy to manage as any plant of its class known to cultivation; it is in fact a grand thing for a beginner, while it is not unworthy of the best care of the most experienced cultivator. In beauty it is unique, the great feature being the large white bracts that accompany the yellow flowers.

Mr. William Bull has the good fortune to be enabled to offer a yet more remarkable plant in *Mussænda erythrophylla*, a native of the Congo region, producing scarlet bracts as shown in the figure, each separate cluster of the yellow funnel-shaped flowers having one of these bracts or floral leaves, which in form are nearly round, and quite distinct from the true leaves, which are of a rich green colour. This may be spoken of as a glorious plant, suitable to supply to the show house in summer and autumn the kind of display that is obtained in winter from Poinsettia pulcherrima. We shall hope soon to see this new comer fully installed as one of the most valued of stove plants.



SCARLET-LEAVED MUSSÆNDA, *Mussænda erythrophylla* (Flowers yellow, floral leaves or bracts scarlet).

STRAWBERRY—LAXTON'S NOBLE.

This new strawberry fully sustains the character given it by the raiser. It is as early as any of the kinds which have fruit of the same size, and decidedly a better cropper than most of them, and what is equally as important, it appears to adapt itself to all kinds of soil. My plants were not put out until early in the spring of last year, but they gave me a few good fruit. The same plants are this year thoroughly satisfactory, although the soil in which they are growing is not very good. I have also seen it in other gardens. In one instance where the plants are well cared for, it proves to be a prodigious cropper. I have not the least hesitation in saying that I believe Noble will soon take a leading position for early crops, as the fruit is large and decidedly handsome,

J. C. Clarke.

STATELY MULLEINS.

Several of the large-growing Mulleins are now flowering in our collection of hardy plants, and arranged in groups along the back of the borders, they present such a bold and effective appearance as to surprise many of my friends. By the majority of those who have an opportunity of seeing them they are regarded as rarities, and thus beyond the reach of the general body of cultivators. They are, it must be confessed, not common in gardens; but rare they are not, for all the finest species can be obtained from seed costing from sixpence to a shilling per packet. One of the finest of those in bloom is the Olympian Mullein (*Verbascum Olympicum*), of which we have specimens ranging from five to six feet in height. The leaves of this species are large and silvery, and the flower-spikes are much branched, and form huge pyramids of flowers, which are of a bright yellow colour. Equally effective is the nettle-leaved Mullein (*V. Chaixi*), a species even taller in growth than the first-named. The leafage is green and the flowers yellow, with purplish stamens, and borne on large, much-branched spikes, *P. phlomoides* has a stately habit, rising to a height of about five feet; the foliage is deep green, and the flowers are bright yellow. *V. phœniceum* is comparatively slender in growth, and does not attain to such a great height as the foregoing, the height of full-grown specimens ranging from three to four feet. It differs also in the colour of the flowers, these being of various hues, the prevailing colour being violet-blue. The mulleins are not equally adapted to all soils and situations as in the case of many of the hardy plants, and the difficulties that some growers have experienced have, in some degree, restricted their cultivation. They are all perennial in duration when grown under favourable conditions; as, for example, on well-drained and comparatively light soils. On heavy soils they are liable to suffer during the winter after they have flowered. Therefore, in growing them on soils that are naturally cold and heavy, the best course is to raise a small stock annually from seed to ensure a continuous succession of young plants. They may be planted in any part of the pleasure-grounds, but they appear to the best advantage in spacious borders and in the wild garden.

Enterprising Amateur.

Mr. Walter Gardiner, M.A., F.R.S., has had the tenure of his Fellowship of Clare College extended for six years in recognition of his services to botanical science,

RHODODENDRON ARBOREUM AND ITS VARIETIES.

It troubles Londoners who have not seen many gardens in southern and western districts to hear Rhododendron arboreum spoken of as a hardy plant. We have before us at this moment a letter from our much-valued coadjutor, Mr. J. C. Clarke, in which he refers to it in this way, with apparent unconsciousness of the fact that in the home



NEPAL RHODODENDRON, *Rhododendron Nilgaricum* (Flowers light rose shaded, or rich rosy crimson).

counties and further north it is known only as a half-hardy plant requiring the protection of glass. And to put the case "practically," this tree, a native of Nepal, is, in common with a very large proportion of trees and shrubs from the same country, most properly excluded from the list of hardy subjects, because it is only in favoured places there is any profit in planting them in the open ground

But because they come so near to the requirements of hardy trees, many of these natives of Nepal, the beautiful Berberis Nepalensis foremost of the number, have higher claims to a place in gardens than have as yet obtained recognition. We hope ever to maintain the attitude of caution we have always observed in respect to risks attending possible modes of procedure, and it is in view of lessening such risks that when rhododendrons demand attention we are careful to advise the development of the natural capabilities of a place, as in a general way, preferable to the adoption of artificial soils and conditions that necessarily entail heavy charges on the garden, and do not invariably carry with them a promise of success. All the race of R. arboreum may be said to need shelter in this country, but they need little more; and the cool conservatory or temperate house is an

institution we hope to see established in gardens as a proper adjunct to the flower garden proper, where it is not possible at all seasons to enjoy the changing aspects of vegetation.

Rhododendron arboreum spreads itself over many far separated regions in its native country, and is met with in conditions that differ greatly in particulars and have obtained specific rank under various names. Wallich's plant figured in "Plantæ Asiaticæ" (II. p. 23, p. 123) from northern India is very different from what is understood to be the typical form of R. arboreum, which has a silvery tomentum on the undersides of the leaves, for the north Indian plant is of a rusty colour on the undersides of the leaves. When we get rid of the notion that the colour on the undersides of the leaves and the colour of the flowers may be dismissed from consideration as specific characters, we find we possess a number of varieties of this noble species and a certain rectification of labels is desirable.

We have lately enjoyed the free flowering of the beautiful *Rhododendron Nilgaricum* of B.M. 4,381, the beauty of which is certainly enhanced by the rich rufus colour of the undersides of the leaves. This was raised from seed derived from Nepal by Messrs. Lucombe, Pince, and Co., of Exeter, where it proved perfectly hardy, and one of the finest of its race. The R. nobile, of Wight and Arnott, is the same plant. The hardy *Altaclarense*, one of our grandest garden plants with scarlet flowers is a hybrid between *R. arboreum* and *R. Catawbiense*. Other hybrids are known as *Russellianum, Smithii, Undulatum*, and *Venustum*. Amongst the Indian forms of this same R. arboreum occur those known as *Album, Puniceum, Cinnamomeum, Niveum, Paxtoni, Rollissoni, Limbatum, Roseum*, and *Sanguinea*, all of which are of Indian origin, though sometimes described as garden hybrids, and too often reckoned substantial species, greatly to the perplexity of cultivators who have not given attention to the legitimacy of distinctive characters. The distinct and beautiful *R. barbatum* raised from Nepal seeds by Messrs. Dickson, of Chester, and that proved hardy at the Upton Nurseries as well as at Eaton Hall, comes near to R. arboreum. They all stand on the borderland between hardy and half hardy plants, and are ready for service whenever the temperate house shall obtain recognition as a proper aid to the enjoyment of an English garden.

The Nilgherry or Neelgherry rhododendron grows freely, forms a handsome tree, and produces noble trusses of flowers of a light rosy colour or of a colour approximating to rosy crimson.

NOTES ON ROSES.

Insect Pests.

THE cold and dry weather which prevailed for a considerable period during the spring months was so extremely favourable to the aphis that the pest increased at such a rapid rate upon the roses as to threaten at one time to do them much injury. No sooner were the young shoots an inch or so in length than they became infested with green fly, and where remedial measures were not resorted to the growth received so great a check that the production of first-class blooms is out of the question. In some gardens that I have had an opportunity of seeing this season the roses have suffered so severely from the attacks of insect pests that they are only just commencing to make a healthy growth, with the result that they will be late in flowering. A friend of mine has a large tree of Gloire de Dijon trained to one of the walls of his residence, which for many years past has produced a profusion of flowers at the end of May and throughout June. This season it has not made much growth or produced many flowers, and my friend was greatly troubled about the condition of the tree. It was supposed that something was wrong at the roots, and that the tree was dying from some mysterious disease. I was requested to have a look at it with a view to suggesting what steps should be taken in dealing with it. As anticipated, I found the tree literally smothered with the aphis, and without a full-sized healthy leaf or a flower that reminded us of the superb blooms produced in previous years. What was to be done? was a question not difficult to determine. To expect the tree to make a satisfactory growth until the aphis were materially reduced in numbers would have been hopeless, and I suggested that first attention should be given to them. The second suggestion made was the assistance of the tree with some suitable stimulant liquid or otherwise.

I have great faith in cold water in keeping plant pests in check, but it must be employed as a preventive rather than as a remedy. By commencing to syringe my trees with clear water as soon as they were attacked and continuing the syringings at intervals with an occasional dose of an efficient insecticide, I have been able to keep them clean. But in dealing with a tree that is badly infested something more deadly in its effects is required. I recommended my friend to syringe the tree with a solution of quassia, knowing it to be destructive to the aphis without being injurious to the trees. The solution I advised is prepared by first boiling four ounces of quassia chips in a gallon of soft water for a quarter of an hour, then straining off the chips and adding four ounces of soft soap. When this is dissolved add a second gallon of water. By syringing the tree alternately with this solution and clear water the green fly was annihilated, and the tree is now showing signs of producing strong shoots that will produce an abundance of flowers in the autumn. For my own use, I prefer an insecticide, of which paraffin forms a part both for its cheapness and efficiency, but I am afraid to recommend paraffin to those who have not had much practical knowledge, as there is some risk in its use. The insecticide is prepared as follows: A quart of water is brought to the boiling point and poured over four ounces of soft soap, and the mixture well stirred until the soap is dissolved. A wine-glassful of paraffin oil is then added, and the mixture is kept well agitated until the paraffin ceases to come to the surface, when the stirring is discontinued. Three gallons of soft water are then added, and the insecticide is ready for use. This mixture will not injure the young growth, provided it is not used too frequently, and, as a rule, an interval of ten days should be allowed to elapse between each syringing. Neglect of this precaution has, in several cases that have come under my notice, resulted in considerable injury being done.

Mulchings.

Roses will grow freely and bloom fairly well when the soil in which they are growing is not particularly rich, as witness the thousands of trees in all parts of the United Kingdom. But no plants grown in the English flower garden give a more liberal return for a generous course of culture. One of the best preventives of the various plagues of the rose is a liberal application of manure, and as a proof of this I would direct attention to the fact that when the trees are in a robust state of health they suffer but little from aphis or any of the pests that prey upon them. I have told you that my roses have suffered but little from the aphis, and their immunity is due in part to the washings with clear water, and in part to the liberal application of manure. In the autumn I had forked in a good dressing of partly decayed manure, and early in the spring I had the surface of the beds mulched with short manure from the stable. I attach considerable importance to mulching, for the manure checks evaporation from the surface in hot weather, and during rains it gives up its fertilizing properties, which are in due course washed down to the roots. The mulch is of special service on hot, dry soils, where it is found necessary to water freely, and is by no means so objectionable in appearance as is supposed by many to be the case. Liquid manure from the stable or farm-yard of a moderate degree of strength may with advantage be applied in a liberal manner when the buds are in process of development. Unfortunately there are few rosarians who are able to obtain liquid manure of this description, and I would therefore suggest sulphate of ammonia as an excellent substitute. This mixed with water at the rate of half-an-ounce to the gallon will make a highly stimulating liquid, but the mixing occasions considerable trouble and is by no means necessary.

I apply the sulphate in a dry state with the most satisfactory results and with much less trouble than when it has been previously mixed with water. The manure is distributed thinly over the surface, and if there are no signs of rain it is watered in. Some trees that were not so vigorous as could be desired had a fortnight since a dressing of sulphate of ammonia applied in the manner here described, and now the foliage is assuming a rich green colour and the buds are swelling up in capital style. When the soil has been liberally enriched with manure in the course of the winter one dressing will suffice, but in all other cases two applications will be beneficial.

Cutting and Staging Roses.

After all that has been written and said with reference to the manner in which roses should be presented at public exhibitions, it might be thought by some that there is no occasion for any further reference to be made to it. So far from this being the case, thousands of roses are annually staged in such an unsatisfactory manner as to render it desirable to take advantage of every opportunity of showing how improvements might be effected. The exhibitors at the shows of the leading societies have not much to learn, but at many of the minor exhibitions the roses convey the impression that the exhibitors have not mastered the elementary principles of staging them. We have, for example, boxes of varying sizes, and blooms so far advanced as to fall to pieces before the day is over and in many instances half buried in the moss instead of standing perfectly clear of it. Sometimes the cost is given as an excuse by exhibitors for not using boxes of regulation size; but it is a very poor excuse, and boxes of regulation size should invariably be insisted upon. When it is not necessary to provide boxes with covers or of sufficient strength to bear long railway journeys, a twenty-four box can be made for a mere trifle. The proper size of a box for twenty-four is as follows; length three feet nine inches; breadth, eighteen inches; depth, seven inches at back and five inches in front. A box for eighteen should be two feet nine inches, and for twelve, two feet, the breadth and depth at both back and front to be the same as for twenty-four. For supporting the tubes holding the roses, a board should be fixed two inches below the upper edge of the box and have holes made at equal distances apart to receive the tubes. The board can be readily held in position by two strips of wood, one at either end. The holes should be made just large enough to receive the tubes, as the latter should be held firmly. Green moss is in all cases preferable for surfacing rose boxes, but where it is difficult to obtain, velveteen of an invisible green colour is a good substitute, as it brings out the various hues of the roses remarkably well. When velveteen or plush is used the top board should be raised to within an inch of the edge, and the slope in all cases ought to be the same as that of the sides of the box. The box ought to be painted dark bottle-green, and a sufficient time before the date of the show.

To cut the flowers at the proper stage is not less necessary than to grow them to their full size, for to ensure a high position on the prize list, the exhibitors must place them before the judges in a condition as closely approaching perfection as possible. Generally speaking, those who take part in the minor exhibitions stage flowers that are too advanced. In cutting in the evening or morning as the case may be, they select blooms that are then at their best, with the result, that by the time they are seen by the judges they are fully expanded, and in many cases so far advanced as to show the centre. The exhibitor in cutting has to consider not what they are at 8 p.m. or 5 a.m., but what they will be at 11 a.m. or noon, consequently the blooms selected should be only partly expanded. The flowers must be put in water

immediately they are cut, and it is always a good practice to have a few good blooms in reserve for putting in the box immediately before the best are cleared, should it be seen that any of those staged have not opened sufficiently, or are too far advanced. Each bloom ought to be wired to keep it erect, and the tube so arranged that it will stand clear of the moss. The moss should be obtained some time the day before, and have sufficient water poured over it in the evening to make it thoroughly moist. The blooms should in all cases, when practicable, be cut with buds and leaves, but no foliage should be added. Due regard must be paid to a tasteful combination of colours, as general effect will not fail to secure points in a very close competition.

All roses at general exhibitions should be judged immediately the tents are cleared, and not be left as is frequently the case, until two or three hours afterwards, for reasons that are sufficiently obvious.

VIATOR.

Notes of Observation.

THALICTRUM AQUILEGIFOLIUM.

This columbine-leaved variety of Thalictrum is a neat-growing plant, very suitable for the rockery where a deep root run can be allowed, so that sufficient moisture may be obtained during a spell of dry weather. The foliage, with its glaucous tint of colour, is most useful for mixing with other flowers in a cut state. Its own blossoms are perhaps more effective when growing upon the plant than when cut; in doing this certainly the form of growth would be somewhat spoilt, as in its entirety a perfectly rounded bush is its natural growth. By dividing the roots either in the autumn or in the spring is the best mode of propagating. The latter time is preferable where the soil is strong or wet and cold; but where the reverse is the case in the character of the soil early autumn is the best time. A stock of plants is easily increased in some gardens. A very fine variety named *rosea*, and in others *purpurea*, is much to be desired, the colour of the inflorescence being an exquisitely beautiful shade of amethyst.

E. M.

EXHIBITING HARDY FLOWERS.

Notwithstanding the popularity of hardy flowers and the substantial service they are able to render in the exhibition tent, but little has been done by horticultural societies to develop their capacities for exhibition purposes. As presented at the public exhibitions they are in most cases mere masses of colour, and it is quite time that the managers of exhibitions should bestir themselves and see what can be done to improve the manner in which they are usually presented to public notice. In the first place, the prizes should be sufficient to give exhibitors an adequate return for their trouble. In the second, the stipulation should be made that taste in arrangement will be taken into account in making the awards. Extravagant prizes for hardy plants are not necessary, but they should bear some proportion to those offered in the other classes. The classes ought also to be increased, and the principal groups have provisions specially made for them. At York this is done to some extent, but even at that important exhibition the division was not carried so far as it might have been. There were, for example, classes for miscellaneous collections, and for pansies, violas, and pyrethrums, but these were not sufficient. There should have been classes also for single peonies, double peonies, iris, and delphiniums, all of which were there in perfection. The everlasting oblong boxes should be abolished, and some other receptacles be provided. Hardy plants of every description present by far the most pleasing appearance when arranged as bouquets in glasses or zinc tubes large enough at the neck to avoid the necessity for overcrowding the flowers. More encouragement ought to be given to showing herbaceous plants, for, as proved at York the other day, when the plants are staged in considerable numbers and in good condition, they form an extremely beautiful feature. Not only should provisions be made for them, but the schedule should contain at least two classes to enable the smaller growers to compete with a fair measure of success.

G. G.

YELLOW DAY LILY.

The variety of the day lily known as *Hemerocallis flava* is perhaps the best of the genus. The growth is not so rampant as some other sorts, therefore is more suitable for small gardens. Certainly no variety that I know flowers so freely as this. The colour, a light orange-yellow, is pleasing, and so is the perfume emitted from them. Strong clumps in the borders are now making a brave show. The colour produced by this plant is not plentiful enough just now in the borders, and therefore this hemerocallis is all the more appreciated. No trouble need be experienced in getting this subject to grow and flower freely, as by dividing the roots numbers of small offsets can be secured, and with liberal treatment will soon grow into flowering size. It is a good plant to enliven the ground under trees, as a considerable amount of shade is endured by it patiently.

E. M.

SPIRÆA ARIŒFOLIA.

In a very short time the creamy white plumes of this shrubbery spiræa will be developed, and although the colour is not so very taking in appearance upon a close inspection, yet as a shrubbery plant it is deserving of a good place. We have it growing behind some rhododendrons on a sloping bank and in front of a shelter of spruce firs. The green of the firs and the rhododendrons together set off the nodding panicles of the spiræa bloom to the best advantage. Moderate pruning during the winter suffices to keep the bushes within bounds, and enables them to produce a full crop of bloom annually. If cut too low nothing but strong growth is the result for the next season, and the feathery flower heads do not appear.

E. M.

THE EARLIEST TOMATO.

I am pleased to see J. C. C. and Mr. W. H. Stephens replying upon this question, and so far the former is of my own opinion that selections of the Old Red of which Conqueror is a type, and which have corrugated fruits, are the earliest, and most of them are heavy croppers. Last year Ham Green Favourite proved the earliest with me, but I was not satisfied with its cropping qualities. But then, as now, I had not the other varieties. Since writing the first note my own tomato plants have made considerable improvement, and I now think so highly of some of the Perfection type that I should not contemplate discarding that variety for any of the Old Red class. I beg to thank Mr. Stephens for his reply, and to add that I think highly of Hackwood Park Prolific; and further to add, that the variety in question formed the bulk of the plants which exhibited such a contrast to my neighbour's plants of Conqueror. But I must admit that this variety is earlier than Perfection. The only fault I have to find with Hackwood Park is the lack of beauty in the largest fruits. But its robust condition and enormous cropping propensities make up for these defects.

C. Warden.

AQUILEGIA CHRYSANTHA.

I lately saw growing in the centre of a circular bed in a cottage garden a splendid specimen of this columbine, and thought at the time how we may often look in vain for such plants in gardens of greater pretensions. The chrome yellow blossoms stand almost alone by themselves in the matter of colouring amongst hardy plants. The most certain manner of obtaining this variety true to name is to take off from the base in early spring small pieces of the plant with roots attached. In strong, cold, wet soil sometimes it does not survive a severe winter. If any doubt exists about this a mulching of the roots and about the crown of the plant with coal ashes will assist in its preservation, removing the same in the spring.

E. M.

POTATO.—SHARPE'S VICTOR.

We have in Sharpe's Victor a potato that will run a close race with the old Ashleaf for the first place for frame or pot culture. I have only grown it close to a warm wall for an early crop myself; but a friend, on my recommendation, has grown it in a brick pit this season for an early crop, and he is so satisfied with it, that in future he intends to grow more of it in the same way. Whether grown under glass or in the open air the young tubers have the merit of being dry and mealy when cooked, moreover the haulm is so dwarf that it wants even less room than the ashleaf. Those who grow potatos in pots for early work have in this sort a very suitable one for the purpose, as its cropping qualities are all that can be desired.

J. C. C.

HOYA CARNOSA.

It is not often one sees this old-fashioned wax flower in good condition of growth and freedom in flowering, although when under suitable conditions it is one of the useful plants to cultivate. It is one of the few flowering subjects which will grow and flower freely on the back wall of a late vinery, which hardly ever finds the benefit of the sun, owing to the thick mass of vine leaves overhead. Generally one sees this hoya in a pot half-full of soil, standing amongst bigger stove plants, and in such a manner that decent growth is out of the question. Even if it were not so, and a full crop of flowers were produced, the common way of training its growth balloon-shaped renders the flowers invisible, for the shape hides all but a few. Planted in a mixture of peat, leaf-soil and charcoal, all in a rough state, given abundance of tepid water both at the root and overhead during the spring and summer, free growth is made which should be trained thinly on the wall. Lots of flower trusses will then be produced during May and June. Shoots eight feet long were made by a plant last year on the back wall of the late vinery here, and which are now loaded with flowers.

E. M.

CAUCASIAN COMFREY.

The pale blue-flowered *Symphytum Caucasicum* is a good subject for flowering at this time of the year in the shrubbery or in the herbaceous borders. It requires plenty of space for its growth, which is very vigorous, indeed too much so for the herbaceous class of plants where space is restricted. But given an open position in the shrubbery it will quickly grow into a large size and produce abundance of flowers also. By dividing the roots any amount of stock can be secured in a short time. Coarse showy plants of this kind are invaluable in large rustic scenes.

E. M.

CHELONE BARBATA.

This bearded variety of pentstemon, which is best known under the above name, is one of the best plants we have for making a show in the herbaceous border, or in suitable positions on the rockery during the months of July and August. It often commences to open its blossoms in June. The colour of the flowers—coral-red—is exceedingly showy, borne as they are upon stout spikes two feet long. To preserve the erect style of growth and afford protection from strong winds, this, like many others of the same habit of growth, is best supported by placing in the centre of the clump a thin stake. To this tie each spike separately. Although the time required in doing this may be more than is consumed in the usual broom-like method of staking herbaceous plants, so often seen, the effect is considerably enhanced as long as flowers are produced. Clumps of this plant will go on flowering many years without being disturbed, but it is a better plan to raise a few fresh plants every year, as these have more vigour the second and third years, and throw up considerably stronger spikes of bloom. Early in October pull into pieces an old plant, discarding the growths from the centre, they being more weakly than those around the outside. Every bit with roots attached should be dibbled into a cold frame or temporary protection. Here they remain until the following April, when they will be stout, independent plants.

E. M.

IRIS PALLIDA.

I never saw this variety flower so well nor last so long in good order as it has done this year in the herbaceous border. Strong spikes have developed beautiful blooms with an orange blossom-like fragrance. The pale blue colour of the flowers renders this iris a very striking object in the borders during the month of May and the early part of June. It is a wonder examples of this type of a large genus are not more common in gardens, especially when its culture is so simple, combined with the easy manner in which it may be increased. Every piece with roots attached will quickly grow into a flowering size if planted in a sunny position, and aided with a small portion of manure being placed about the roots. E. M.

CHRYSANTHEMUMS IN JUNE.

We have at the present time lots of sorts of chrysanthemums in full bloom from plants struck in December last, and which have not been stopped in any way. More particularly is the rich orange yellow variety, Frederick Marrouch, developing good flowers. This is a telling sort amongst the Japanese varieties in November; its bright colour is very showy among others. As much as chrysanthemums are admired here at their more proper season of flowering, I cannot say that they are now appreciated, save to a limited extent, as they are not any more useful than many kinds of herbaceous plants, of which there is ample material to choose from in the borders. But as these plants showed an indication for flowering at quite an unnatural season, I thought we would see what could be done with chrysanthemums even in June.

E. MOLYNEUX.

SIEBOLD'S PLANTAIN LILY.

For growing under trees *Funkia Sieboldiana* is a capital subject where boldness of foliage is sought for. The glaucous colour of its leaves seems to be intensified in the shade, as a long spell of dry weather seems to make the foliage pale in colour when openly exposed to the sun's direct influence. Where the soil is deeply dug and well enriched with rotten dung, little time is needed to grow this plant into a large size. The autumn is the best time to divide the roots, every piece with a crown will quickly grow into a serviceable size. When dividing is left until growth has begun in the spring, a check is given to the plants which they do not recover from the whole year. A sheltered position should be chosen for this funkia, as strong north-easterly winds blowing in the spring when growth is being made, are likely to disfigure the leaves, which is the charm of the plant, the flower being of little consequence. E. M.

GLADIOLUS RAMOSUS.

This is one of the earliest flowering kinds of gladiolus we have, opening its blossoms at the end of May. For this reason it is deserving of extended cultivation in the herbaceous borders, where its colour, purple magenta, is very showy at this early season. The smallest of the six petals composing the individual flowers has a narrow white line down the centre which adds to its attractiveness. Strong flower spikes produce from fifteen to twenty blooms each, and reach fully three feet in height. I find that the roots of this variety are all the better if not disturbed oftener than, say every four years, at which time it may be necessary to overhaul the other occupants of the border with a view to re-arrangement and trenching of the border, which invigorates the roots therein growing. In one case we simply lift the gladiolus in a mass and replant it the same, without disturbing the roots any more than can be avoided. In this manner it will flower the next season without any apparent loss of strength. This variety is not always included in catalogues, but there can be no question of its beauty and usefulness. E. M.

CAMPANULA GLOMERATA.

This clustered variety of campanula, although a very old and by some considered a common plant, yet it is exceedingly showy in the front part of the herbaceous or shrubbery border. Upon the rockery it is equally effective, supplying a colour totally distinct from the majority of the sorts in the genus—deep purple. The flowers last a long time in a cut state when thoroughly developed before cutting. It is very easily increased by dividing the roots at any time of the year, but more particularly in the spring is it easier done—just when the new growth is on the move. Large clumps should be secured, a few of these being more satisfactory than any number of small plants making mere dots of colour. E. M.

DIANTHUS CHINENSIS HYBRIDA.

This improved form of the Chinese or Indian pink is just now making a bright display in the front part of the herbaceous borders. Its cheery rose coloured blossoms are effectively set off by the mass of greenery at the back, of which there is now an abundance. Most of the plants in this department have effectually benefited by the recent genial rains, and the growth has of late been most satisfactory. This pink grows about one foot high, the stout spikes being freely surmounted with flowers. Cuttings put in a cold frame in September and there wintered will be ready the following spring for transplanting to where required, and will produce a nice crop of bloom, but in the year following will be much more heavily laden. Although the roots will go on flowering for several years, after the third year they get untidy in appearance, and it is a much better plan to grow a few young plants every year, thus always maintaining a stock of vigorous plants, which need no care in staking the flowers, as at this age they are self-supporting. E. M.

MR. J. G. BAKER has been appointed keeper of the library and herbarium at the Royal Gardens, Kew, in succession to Professor Oliver, whose retirement we announced a short time since.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

HARDY PLANTS now in bloom include Achillea tomentosa, Æthionema grandiflora, Anchusa incarnata, Aquilegia glandulosa, A. nivea grandiflora, Campanula nobilis, Dianthus giganteus, Erigeron macranthus, Genista pilosa, Geum aureum, Hippocrepis helvetica, Iris cristata, Lychnis Haageana, Onosma tauricum, Potentilla rupestris, Spiræa palmata.

THE HOUSE.

FERN-CASES in a prosperous state must have regular attention, more especially in respect of watering and ventilating. One hour of strong sunshine is likely to make an end of the ferns for the season, or if they recover from the shock the summer will be gone before they make a new show of verdure. Therefore be particular to screen off the full blaze of the sun during the time cases are exposed it. We have had our cases sorely crippled through the blinds of certain windows being drawn up an hour too soon in the morning, but that would have done but little harm if the cases had been opened to admit air. But as they remained closely shut and the sun beat upon them for a considerable time, the interior became very hot, and the ferns were seriously injured. We have tied up fronds that lean forward to the light more than was desirable with common iron wire, which answers perfectly for this purpose, and if a little thicker than a darning needle will be stout enough. Flowers in vases and other table ornaments last longer if left untouched than if "put in order" occasionally, therefore avoid the practice so general of re-arranging cut flowers.

CONSERVATORY AND GREENHOUSE PLANTS.

AZALEAS to be prepared for ripening their wood by giving more air. Put out the earliest in a shady place.

CAMELLIAS.—Treat the same as azaleas, and shift any that require it. Their roots may be refreshed without giving larger pots by turning out the ball, removing some of the stuff from it, and making it up again with fresh compost. Pot firm.

CONSERVATORY to be freely ventilated night and day, and all plants in full growth to have an abundance of water overhead as well as at the roots. Neglect of watering now will hereafter show sad results, especially among soft-wooded and liliaceous plants.

ORCHID HOUSE AND STOVE.

ORCHIDS that have finished their growth should now have such attention as is required to well ripen the pseudo-bulbs. Many of the large specimens will be found to require sponging all over, and this had best be done at the first opportunity, and in the present lull of work there is a fair chance of its being done effectually. More air should be given now among orchids, and, to allow of a freer ventilation, put all the small and growing plants at one end of the house, where they can be kept close. Stanhopeas are about to commence their seasonal growth, which is a good time to repot them. As a rule they do best in baskets, both because of their habit of growth and the downward direction of their flowers. There need be very little fire heat in either house during the next four or five weeks, unless we have a long period of dull cold weather, in which case keep up the temperature by artificial means.

STOVE.—Clerodendrons require weak liquid manure to keep them in full vigour and beauty; shade at midday, and keep up a moist heat. Ixoras done blooming to be cut in close and placed on a bark bed to break afresh. See that the plants for winter blooming are doing well, and pay especial attention to Euphorbia jacquiniæflora and Poinsettia pulcherrima. Give air at every favourable opportunity; plants newly-potted to have moderate supplies of water at the root, but to be aided with a moist warm atmosphere.

FORCING AND FRUIT HOUSES.

PINERY.—As the fruit colours the plants should be kept moderately dry. Plants shy of fruiting should be kept dry for a while, to cause a check, and then be liberally soaked, and kept warm and moist, and the new growth will result in the production of fruit. But to check them before they are well matured may cause premature fruiting, and should not be done until the plants have had a long course of liberal culture. Young stock must be encouraged by allowing plenty of room in which to expand their leaves; give plenty of water and repot as necessary.

VINERY.—In vineries great attention must be paid to keeping the foliage healthy to the last, as on this depends the maturation of the buds that are to fruit next season. Keep up a moist atmosphere, and watch vigilantly against red spider. Vines carrying heavy crops of fruit must have the assistance of strong liquid manure. Be careful not to cut away laterals too freely, as they are most useful in helping the maturation of the fruit.

FRUIT GARDEN AND ORCHARD.

STRAWBERRY RUNNERS struck in pots may now be cut off, and the plants shifted into a size larger, or turned out into beds. Beds made now have the best chance of becoming strong before winter, to bear abundantly next year. Strawberry beds now require special attention. Strong rooted runners should be taken off to form new plantations, and be pricked out into well manured beds, pretty close together, to strenghten, preparatory to making new beds in September; or they may be laid in small pots, with a stone or peg to fix them, and will root directly.

STONE FRUITS.—Tie in and train as needful, and use the syringe to wall trees if the weather should be dry, and especially with east winds. Continue to bud stone fruit-trees for orchard and pot culture. Thin out weak spray on all bush fruits, and foreright shoots on wall fruits. Maiden trees intended to be trained should be stopped, to make them break into side-shoots, as a whole season's growth is thus saved.

FLOWER GARDEN AND PLEASURE GROUNDS.

EVERGREENS and shrubs of the free-growing kinds may be propagated from this time to the end of August; cuttings put in a shady place will root immediately. Prepare now to plant evergreens, which move well from the end of July to the end of September. In new ground this is the best season to plant them, but in established gardens the places intended for them are generally occupied with summer flowers.

HEDGES of all kinds, except holly, should now be clipped in. Hedges of large-leaved trees such as laurel, aucuba, &c., ought to be cut back with a knife, as the shears will spoil their appearance for the whole season.

PINKS to be propagated from pipings, layers, or cuttings as soon as the season of flowering is over. The last is the simplest, most certain, and therefore the best method.

Rhododendrons and other hardy Americans may be layered now. Beds of Americans much exposed to the sun will be benefited by being mulched with moss or well-decayed cow manure.

KITCHEN GARDEN.

Plant out Brussels sprouts, green collards, kale, savoys, cabbages, and broccoli as rapidly as considerations for other operations will permit. In planting in dry weather have all ready, and in the evening put out as many rows as possible, and give a little water to every plant. Next morning lay a few boughs or mats over them to shade off the sun, and the next evening get out more till the planting is finished. This is better than waiting for rain, which may be so heavy as to render the ground unfit to be trodden on, and if succeeded immediately by heat the plants will flag as much as if put out in dry weather, whereas, being already in the ground, the smallest shower benefits them.

Seed Beds for autumn spinach should now be made up and well manured and the seed be sown without delay.

VILLA FARM.

Pigeons are so destructive to garden and farm crops that unless there is plenty of room for them, or they can be kept within certain bounds with the aid of wire netting, they ought not to form part of the stock of the villa farm, because of the vexation they are likely to cause to the owner and his neighbours. There is, however, considerable interest attached to the keeping of really first-class breeds, and the healthy condition presented by the pigeons met with in the suburbs of large towns affords the best possible proof that a wide range of country is not essential to their well-being. Where pigeons are kept in small numbers the boxes provided for them must be so placed that the cats, which abound in large numbers wherever there is a cluster of houses, cannot reach them, for if they can reach the roosting places neither the young nor the old birds will be safe from them. Lofts for large stocks of pigeons should be substantially built, and they must be light and airy, and the openings so constructed that the cats cannot pass through. In stocking, strong young birds just before they are able to take wing are the most suitable, because they become well accustomed to their new habitation before they can fly far, and there is then not much risk of their deserting their new home. By beginning with young birds and feeding them generously they become so thoroughly domesticated that the trouble and labour of cutting wings and keeping in close confinement are avoided. Pigeon lofts must be kept thoroughly clean as well as freely ventilated, and those fully occupied should be cleaned out frequently, and have the inside walls washed over with quicklime four or five times in the course of a year, and at all times there should be a layer of nice clean gravel on the floor. Plenty of clean water must be provided close at hand, and the birds confined within enclosures should have facilities for indulging in their natural propensities for bathing; and during the summer season the water ought to be replenished every morning, or at the most every second day. A plentiful supply of water for drinking purposes is also a prime necessity. With reference to the selection of food, it is necessary to say that pigeons will thrive on corn of almost all kinds, and that the most economical foods for general feeding are grey peas and pigeon's beans. They should be varied with tares and inferior wheat or oats, and if wanted in exceptionally good condition they may have in addition a little rape or hemp seed once a day for a week or two. The two seeds last mentioned are rather too heating to be supplied regularly to pigeons.

Ware and District Horticultural Improvement Society.—The first monthly meeting of this society was held on the 17th inst., the Rev. A. E. W. Lofts presiding. Some excellent decorative pelargoniums, early peas, &c., were staged by Mr. G. Fulford. Mr. Riding exhibiting roses, and Mr. William Hurst peas; some monstrous lettuces were also shown by Mr. W. Osborne. A paper was submitted to the meeting by Mr. W. Pavey, entitled "Vegetable Gardening in June." The paper was very practical, and based on actual experience, and a capital discussion followed by Messrs. Anderson, Riding, King, and Osborne. The customary votes of thanks terminated a very successful meeting.

Rats in Lincolnshire.—In the fen districts of Lincolnshire the rat plague continues and a good deal of damage is being done. Thousands have been killed, but there is no appreciable diminution. On some farms as many as 100 a-day have been killed, and one rat-catcher living at Spalding has destroyed some 4,000 of the rodents during the past few months. The rat-catchers, however, declare that the worst is yet to come, and that in the winter they will swarm in larger numbers than ever. When in close quarters the rats are very vicious, and in some cases they have attacked people. A large number of chickens have been killed by the rats, which have also taken to devouring quantities of corn, mangolds, potatos, and the plants in the fields.

A Botanical Marine Station.—Kiel now possesses a well-equipped botanical marine station, under Herr Reinke, in connection with the botanical Institute, chiefly for study of marine algæ which are so plentiful at that part of the Baltic coast. There is no bitter place for brown algæ. Of green species the large siphoneæ of the Mediterreanan and such warm regions are mostly absent, but other forms are abundant. Only the red show a marked deficit. While there is no tide in the Baltic, a south wind always exposes many shore algæ at Kiel. The water is mostly calm, and the deeply cut harbour has a pretty smooth surface on one side, which also favours the work of collection. For longer excursions a small steamer is hired. The winter growth of Baltic algæ goes on at a temperature near freezing point, and their cultivation is found easy during that season in the unheated rooms of the station. No disturbance has occurred from low temperature, while a merely transient heating may prove injurious. The water is often renewed. In summer the task of cultivating some species is more difficult. All incidence of direct sunlight has to be avoided; and the plants are kept in an ice-chest of special form, with front and top of plate-glass, and the back of metal. This is placed at the window of one of the coolest rooms on the north side of the house. While the plants wanted immediately are kept at the station. Herr Reinke has a reserve supply in a sort of floating aquarium in the harbour. A raft is there anchored, from which are hung by chains, 10ft. or 12ft. long, wire cages containing algæ. Exposed thus to the currents and natural variations of sea temperature the plants grow under the most favourable conditions, especially in summer. The algæ collected in excursions are often placed there, and any failures at the station are made good from this stock, which will also furnish the algæ for a public aquarium about to be built in the Botanical Gardens. An excellent library and herbarium of algæ are possessed by the station, which appears to have received liberal aid from the Prussian Government.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, June 24.

Exhibition of Roses.

On this occasion prizes for new roses were offered by the National Rose Society and several of its friends, and the large number of blooms staged in competition contributed considerably to the attractions of the meeting. Ten classes were provided in the schedule, and of these eight were for teas and noisettes, and one for moss roses, and one for hybrid perpetuals. The competition was keen throughout, but the blooms generally were wanting in substance, and in other respects below the average in quality.

There were seven entries in the amateurs' class for twenty-four blooms of teas and noisettes to comprise not less than twenty varieties, and the premier award was made in favour of Mr. F. W. Flight, Cornstiles, Twyford, Hampshire, whose blooms were somewhat unequal. The varieties were Madame de Watteville, The Bride, Madame Willermoz, Jules Finger, Belle Lyonnais, Ethel Brownlow, Niphetos, Madame Lambard, Innocente Pirola, Catherine Mermet, Madame Cusin, Madame Hoste, Souvenir d'Elise Vardon, Hon. Edith Gifford, and Anna Olivier. Mr. A. H. Gray, Beaulieu, Newbridge Hill, Bath, was a very close second; and Mr. R. L. Knight, Bobbing Place, Sittingbourne, was third with a fine box, the bloom of Souvenir d'Elise Vardon being selected for the award of the Society's silver medal offered for the best tea or noisette in the exhibition. There were ten competitors in the class for twelve teas or noisettes to comprise not less than six varieties, and the post of honour was occupied by the Rev. H. A. Berners, Harkstead Rectory, Ipswich, with fairly good blooms of Madame de Watteville, Amazone, Catherine Mermet, Souvenir d'Elise Vardon, The Bride, Princess of Wales, Devoniensis, Jean Ducher, Hon. E. Gifford, Comtesse de Nadaillac, and Marie Van Houtte. Mr. O. G. Orpin, West Bergholt, Colchester, was second; and Rev. A. Foster Mellair, Sproughton Rectory, Ipswich, was third. Mr. Gray was a capital first in the class for six varieties, three trusses of each with neat blooms of Marechal Niel, Comtesse de Nadaillac, Souvenir d'un Ami, Caroline Kuster, Catherine Mermet, and Hon. E. Gifford. Rev. Page Roberts, Scole Rectory, Norfolk, was a capital second; and Mr. J. Bradbury, gardener to S. P. Budd, Esq., Gay Street, Bath, was third. Mr. F. R. Burnand, Birch Vicarage, Hereford, scored first in the class for six blooms of any one variety with excellent examples of Marechal Niel; Mr. Gray followed for second place with Comtesse de Nadaillac; and Rev. A. Foster Mellair was third with Marie Van Houtte. Mr. E. Mawley, Great Berkhampsted, was successful in occupying the post of honour in the class for six varieties with large and fresh blooms of Souvenir d'un Ami, Jean Ducher, and Anna Olivier; Mr. C. E. Cuthell, Boxhill, Dorking, and Rev. H. Biron, The Vicarage, Sympfield, were second and third respectively.

The competition was distinguished by its severity in the trade class for twenty-four, and the post of honour was occupied by Mr. B. R. Cant with Hon. E. Gifford, Princess Beatrice, Madame Willermoz, Jean Ducher, Souvenir d'Elise, Cleopatra, Ernest Metz, Anna Olivier, Marie Van Houtte, Souvenir de Therese Levet, Niphetos, Madame de Watteville, Marechal Niel, Madame Lambard, The Bride, Princess of Wales, Caroline Kuster, Madame Cusin, Comtesse de Nadaillac, Madame Hoste, Rubens, and Innocente Pirola. Mr. G. Prince, Oxford, and Mr. F. Cant, Colchester, were second and third respectively with blooms of high quality. Messrs. D. Prior and Son, Colchester, obtained premier honours in the trade class for twelve teas or noisettes with a good stand; and Mr. G. Prince and Mr. B. R. Cant followed closely for second and third places.

The prizes offered for twelve bunches of moss roses brought two competitors only. The first place was awarded to Mr. G. Prince for a good box, in which were represented Quatre Saisons, Lanei, Salet, Baronne de Wassener, Mousseline, Cristata, Blanche Moreau, Ferd. de Dalmais, Eugenie, Guinoisseau, White, and the Old Moss; Messrs. Paul and Son were second with blooms less advanced than those in the first prize box, and extremely beautiful. Especially keen was the competition for the prizes for twelve blooms of hybrid perpetual, to comprise not less than eight varieties, and the post of honour was occupied by Mr. Brown, gardener to Mrs. Waterlow, Great Doods, Reigate, with finely developed blooms of Mrs. Baker, Marie Cointet, Duchess of Bedford, Duchesse de Valombrosa, Captain Christy, Madame Isaac Perrier, Madame G. Luizet, A. K. Williams, Marquise of Castellane, Lady Mary Fitzwilliam, and Mons. Noman; Mr. J. Bradbury was a close second, and Mr. R. E. West, Reigate, was first with a good box in which occurred a superb bloom of Earl Dufferin, selected for the award of the silver medal offered as the best bloom of a hybrid perpetual in the exhibition. Several tastefully arranged baskets of roses were exhibited in competition for Messrs. Paul and Son's prizes, Mr. G. Prince staged three boxes of blooms of his white tea rose Souvenir de S. A. Prince, and Messrs. D. Prior and Son exhibited a good box of richly coloured blooms of William Allen Richardson.

Floral Committee.

Present: William Marshall (in the chair); Rev. H. H. D'Ombrain, and Messrs. B. Wynne, H. Herbst, J. Walker, W. C. Leach, Shirley Hibberd, H. Turner, R. B. Lowe, C. Noble, H. Cannell, G. Paul, E. Mawley, C. T. Druery, W. Goldring, and W. Holmes.

As at the first of the two meetings held this month, hardy flowers were largely shown. Messrs. Paul and Son, Cheshunt, exhibited a large and highly-effective collection of cut flowers of herbaceous plants, and were awarded the silver-gilt Banksian medal. The collection comprised potentillas, delphiniums, and herbaceous pæonies in great varieties and numerous plants. Especially conspicuous were Campanula persicifolia alba granda, the most beautiful of all the white campanulas, and Tropæolum polyphyllum, Cypripedium spectabile, and Orchis foliosa were also well represented. From Messrs. Barr and Son, 12, King Street, Covent Garden, W.C., came a charming collection of cut flowers, in which pæonies and irises predominated, and the award of the silver Banksian medal was made to the firm. Mr. Sich, Maidenhead, had a small but attractive gathering of cut flowers.

Messrs. J. Veitch and Sons, Chelsea, had a large and remarkably attractive collection of cut flowers, and were awarded the silver-gilt Banksian medal. Of exceptional excellence were the delphiniums, Canterbury bells, and aquilegias. The delphiniums were splendidly developed, and amongst the varieties staged were Arhidamum, a superb double variety, the spikes of great length and very massive, and the flowers are effectively coloured blue and rose. Nehameh, Mr. C. Wilde, and Beethoven, a trio of beautiful varieties, were also well represented. The Canterbury bells included exquisite beautiful shades of lavender and pink. Messrs. Veitch also contributed cut specimens of Kalmia latifolia splendens, a fine form, differing from the type in having

flowers of deeper colour; Olearia macrodonta, a distinct evergreen, producing large clusters of pure white flowers; Robinia hispida, a handsome species, with pink flowers; Styrax japonica, an extremely-beautiful shrub or small tree, producing a profusion of large white flowers; and Philadelphus microphyllus, a charming species, producing a profusion of small white flowers. The firm also exhibited Erica cinerea coccinea, a fine form, with flowers of a bright magenta-crimson; and several hybrid rhododendrons.

Messrs. H. Cannell and Son, Swanley, exhibited several new double begonias, one of which received an award of merit, and a large collection of splendidly-developed pæonies, and the award of the bronze Banksian was made. Messrs. Desbois and Co., Mont St. Amands, Ghent, submitted Spiræa astilboides floribunda, but as shown too much like the type. Rev. W. Wilks, Shirley Vicarage, presented a large gathering of Shirley Poppies. Sir C. W. Strickland, Bart., submitted Crinum crassipes, a handsome species, the flowers large blush suffused with rose, and an unnamed buphane with crimson flowers, from Zanzibar. Messrs. W. Paul and Son, Waltham Cross, exhibited several new roses, including Spenser, a beautiful light hybrid perpetual; Pink Rover, a valuable climber, with delicate pink flowers; Duchess of Albany, a deep rose coloured hybrid perpetual in the way of La France; White Lady, a white sport from Lady Mary Fitzwilliam and Marchioness of Lorne. Messrs. J. R. Pearson exhibited a collection of admirably-grown show pelargoniums, and several new zonal pelargoniums, one of which received an award of merit. Messrs. W. Cutbush and Son, Highgate, staged green and golden ivies and stephanotis.

An interesting and beautiful collection of garden roses was exhibited by Messrs. G. Bunyard and Co., Maidstone. Mr. Lynch sent from Cambridge an interesting collection of pentstemons, and Messrs. Laxton Brothers, Bedford, sent a large gathering of flowers of seedling pinks.

ORCHID COMMITTEE.

Present: H. J. Veitch, Esq., in the chair; Dr. Masters, and Messrs. Courtauld, T. B. Haywood, H. M. Pollett, H. Ballentine, J. Dominy, J. Douglas, E. Hill, F. Sander, L. Castle, and J. O'Brien.

The contributions to committee were comparatively few in number, and consisted chiefly of novelties. Mr. De B. Crawshay exhibited a richly-coloured form of Cattleya gigas, Messrs. J. Veitch and Son sent several hybrids, three of which obtained recognition; Mr. D. Collimore, gardener to Malcolm S. Cooke, Kingston Hill, submitted a handsome variety of Cattleya Gaskelliana, and a good specimen of the singular Catasetum atratum. From Messrs. F. Sander and Co., St. Albans, came the beautiful Phaius Humbloti, and its chaste white variety, Angræcum Chailluanum, a distinct species bearing elegant racemes of pure white flowers. Mr. Crispin, Bath, staged a small gathering of cut orchids.

FRUIT COMMITTEE.

Present: Sir C. W. Strickland, Bart., in the chair; and Messrs. J. Lee, T. F. Rivers, R. D. Blackmore, Harrison Weir, P. Crowley, J. Cheal, T. J. Saltmarsh, J. Willard, W. Bates, F. L. Lane, G. Wythes, H. B. Balderson, J. Hudson, J. Smith, and G. W. Cummins.

Amongst the objects of special interest was a remarkably good dish of Stanwick Elruge nectarines from Mr. T. H. Crasp, Cranford Gardens, Wimborne, who was voted a cultural commendation. A similar compliment was paid to Mr. J. Hudson, gardener to the Messrs. De Rothschild, for an excellent box of Lord Napier nectarines. Messrs. Paul and Son sent several dishes of strawberries, comprising Crescent Seedling, Bidwell, King of the Earlies, and Noble. Mr. G. Wythes, Sion, sent a seedling melon, and Mr. Palmer, Thames Ditton, sent well ripened fruit of the Countess and Triumph. The last-named exhibitor also sent long pod beans and peas. Mr. Osman, South-Metropolitan Schools, Sutton, staged examples of Stott's Monarch rhubarb, and from Mr. Brunswick, Leamington Spa, came a dish of tomatos.

NOVELTIES.

First-class certificates were granted as under:—

To Messrs. J. Veitch and Sons and Messrs. Paul and Son for

Philadelphus microphyllus.—A distinct species, light and elegant in growth, and bearing a profusion of comparatively small pure white flowers. Figured in G. M., Aug. 31, 1889.

To Messrs. F. Sander and Co., St Albans, for

Sarcopodium Godseffianum.—A remarkably distinct and handsome species. The growth dwarf, the flowers comparatively large, the upper sepal deep yellow spotted with crimson; the lateral sepals yellow suffused and spotted crimson, the petals pale yellow, and the labellum white spotted with purple.

To Malcolm S. Cooke, Esq., for

Cattleya Gaskelliana, Cooke's Var.—An exquisitely beautiful form; the flowers rather above the average in size, the sepals and petals soft lavender-rose, the labellum pale rose with white throat stained with yellow.

To Messrs. J. Veitch and Sons for

Epiphronites Veitchi.—A remarkable hybrid orchid raised from a cross effected between Epidendrum radiatum and Sophronites grandiflorum. The growth is slender, the pseudo-bulbs rising, in the case of the plant shown, to a height of about six inches; the leaves stout and about two inches in length by half an inch in width, the flowers nearly two inches in diameter, the sepals and petals deep scarlet, the labellum scarlet with golden blotch.

Lælio-cattleya eximia.—A beautiful hybrid raised from Lælia purpurata crossed with Cattleya Warneri. The flowers are equal in size to those of the last-named cattleya, the sepals and petals of great breadth and of a warm rose-pink hue, the labellum large and well expanded, and of deep, rich marone purple.

Awards of merit were made as under:—

To Messrs. J. Veitch and Sons for

Lælio-cattleya Canhamiæ.—A beautiful hybrid also raised from Lælia purpurata, the pollen parent Cattleya Mossiæ. The flowers are about equal in size to those of a good form of Cattleya Mossiæ; the sepals and petals are pale rose, the labellum rich purple shaded rose, and intermediate in form between the two parents.

Rhododendron Ajax.—A beautiful greenhouse hybrid remarkable for its high quality; the flowers are comparatively large and borne in trusses of noble proportions, the colour rich salmon.

To Sydney Courtauld, Esq., for

Masdevallia Courtauldi.—A dwarf growing species with comparatively large flowers, the interior pale rose, and the outside suffused rosy red.

To Sir C. W. Strickland, Bart., for

Disa tripetaloides.—An interesting species with comparatively small purplish flowers.

To Messrs. Paul and Son for

Rose J. D. Pawle.—A distinct hybrid, the flowers large, with fine petal and delightfully fragrant, the colour growing crimson.

Rose Mrs. Paul.—An exquisitely beautiful bourbon, the flowers of medium size, quite full, and of superb form; the colour blush suffused with rose.

Pæony Daubenton.—A handsome double variety with large well formed flowers of deep rose colour.

Pæony Berlioz.—A remarkably fine double variety; the flowers of noble proportions and of fine form, and with excellent petal; the colour rich crimson.

Campanula persicifolia alba grandiflora.—A pure white variety with flowers of immense size and superb form. One of the most valuable herbaceous plants introduced of late years.

Strawberry Crescent Seedling.—A distinct variety, producing medium sized conical fruit, bright in colour, but second rate in quality. It was the first to ripen in the Chiswick collection, and is useful for its earliness.

To Mr. H. J. Jones, Lewisham, for

Carnation Pride of Great Britain.—An exceptionally fine variety, raised by Mr. George Fry. The growth is vigorous, and the flowers are between three and four inches in diameter, perfectly double, and with fine petal; the colour bright clear yellow.

To Messrs. W. Paul and Son, for

Rose Marchioness of Lorne.—An extremely beautiful hybrid perpetual; the blooms large, beautifully cupped, and with large stout petal, the colour glowing rose, shaded bright carmine in the centre; specially valuable in the garden for the freedom with which it flowers.

To Messrs. J. R. Pearson and Sons, Chilwell Nurseries, Nottingham, for

Pelargonium Midsummer.—A distinct and beautiful zonal, neat in habit, and producing large globular trusses of finely-formed flowers, the colour pale rose-pink, shaded carmine in the centre.

To Messrs. H. Cannell and Sons, for

Begonia Miss Eastwood.—A superb double variety, the habit neat, the flowers large, and of fine form, the colour bright pink-tinted rose.

RICHMOND HORTICULTURAL SOCIETY, JUNE 25.

The annual exhibition of the Richmond Horticultural Society was held on Wednesday, and proved one of the most brilliant of the many successes achieved by the society since its foundation, sixteen years since. All classes of plants, flowers, fruits and vegetables, proper to the season, were shown in immense numbers, and in a condition that did credit to the cultural skill of those who took part in the competition. Stove and greenhouse plants were more strongly represented than for several years past, orchids were especially good, and cut roses were so largely shown as to form in conjunction with the flowers arranged for the table and personal adornment, an extensive and beautiful exhibition. The weather was delightfully fine, and the attendance such as to show that a keen interest is taken in the society and its work. As usual, the general arrangements were remarkable for their completeness, and Mr. J. H. Ford, the courteous honorary secretary, and the other members of the executive are deserving of much praise.

CUT ROSES were so largely shown as to form a feature unsurpassed in importance or attractiveness. In the twenty odd classes provided for roses there were over a hundred entries, and as the competitors included all the principal trade-growers, and many of the most successful amateur rosarians, the general quality was relatively high. Especially severe was the competition for the prizes for thirty-six varieties, three trusses of each, and in the result the premier award was made in favour of Messrs. Paul and Son, Cheshunt, whose blooms were of good size, bright in colour, and well finished. The finest blooms were, perhaps, those of Alba rosea, Francois Levet, Lady Alice, Madame Victor Verdier, Devoniensis, Marechal Niel, La France, Madame Gabriel Luizet, Maurice Bernardin, Mons. E. Y. Teas, Mdlle. Prosper Langier, Lady Mary Fitzwilliam, Ulrich Brunner, and Souvenir d'Elise Vardon. Mr. B. R. Cant, Colchester, was a very close second with well-developed blooms, the most noteworthy being those of Anna Olivier, Francois Michelon, Niphetos, Caroline Kuster, Duke of Edinburgh, Souvenir d'Elise Vardon, La France, Souvenir de S. A. Prince, Jean Ducher, and Madame Gabriel Luizet. Messrs. D. Prior and Son, Colchester, were third. The competition was equally keen in the class for twenty-four varieties, three trusses of each, and Mr. B. R. Cant obtained premier honours. Messrs. Paul and Son were a good second, and Messrs. G. and W. H. Burch were third, with well-developed blooms. The entries were numerous in the class for twelve varieties, single trusses, and Mr. R. E. West, Reigate, was first with superbly-developed blooms; Mr. C. Warwick, gardener to J. P. Kitchin, Manor House, Hampton, and Mr. E. Rutter, Shepperton, were second and third respectively. The class for twelve teas was well filled, and the post of honour was occupied by Mr. Charles Turner, Slough, with splendidly-developed blooms of Catherine Mermet, Devoniensis, Souvenir d'Elise Vardon, Alba rosea, Caroline Kuster, Jean Ducher, Madame Margottin, Rubens, The Bride, Innocente Pirola, Comtesse de Nadaillac, Comtesse de Panisse; Mr. R. E. West, and Mr. F. Wigan, Cromwell House, Mortlake, were second and third, with excellent stands of blooms.

Several capital stands were contributed to the class for twenty-four varieties single trusses, and the prizes were awarded to Mr. R. E. West, Mr. C. Warwick, and Mr. P. C. Burnand, Reigate, in the order of their names. In the special class for twenty-four varieties single trusses, Mr. West was again first, and Mr. J. Bateman, Rose Vale, Archway Road, and Mr. F. Goddard, Shepperton, were second and third. Mr. D. White, gardener to Mrs. Farnell Watson, Redlees, Isleworth, obtained premier honours in the class for eighteen roses with a capital box of blooms, and Mr. E. Laken, gardener to H. M. Rowe, Esq., Twickenham, was second, and Mr. Croker third. The last-named exhibitor was successful in occupying the first place in the district class for twelve. There were eight or nine entries in the class for three blooms of any one variety. Mr. Croker and Mr. White were first and second with excellent examples of La France.

BOUQUETS AND TABLE DECORATIONS were of great excellence. The class for three stands was remarkably well filled, and the premier award was made in favour of Mr. J. R. Chard, Stoke Newington, who had three tastefully-dressed stands of the pattern in general use. Mr. W. Brown, St. Mary's Nursery, Richmond, a very close second with flat dishes filled with English iris, and remarkable for the taste that had been brought to bear upon the arrangement of the flowers. Miss Wigan was third with trumpet glasses filled with grasses and English iris. Mr. E. Chadwick, Hanger Hill House, Ealing, contributed arrangements evincing much taste. In the other classes for stands, Miss J. Bray, Miss. G. Bray, and Miss Reynolds were the most successful exhibitors. Miss Mann, Whitton, had the best collection of sprays and button-hole bouquets. Two classes were provided for bouquets without restriction as to the flowers, and in one Mr. Chard and Messrs. Perkins and Son, Coventry, were first and second, and in the other the firm last named occupied

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he post of honour, and Mr. Chard was second. In both cases the bouquets were remarkably good and differed but little in relative merit. Mr. E. Chadwick, who was third in one of the classes, also had a beautiful bouquet. The exhibitor last named was first for a bouquet of roses. The baskets of roses and of miscellaneous flowers were all more or less good, the premier basket of roses from Miss Clarke, Hounslow, being extremely beautiful. Mr. Bates, Poulett Lodge, Twickenham, obtained premier honours for twelve bunches of cut blooms with a capital collection.

Orchids were well represented, and proved eminently attractive. Mr. A. Howard, orchid grower to H. Little, Esq., Baronshalt, Twickenham, was first for six with splendidly-flowered specimens of Cattleya Mossiæ fimbriata, one of the most beautiful of the many fine forms of this species, C. Mendeli, Cypripedium barbatum superbum, C. Lawrenceanum, and Dendrobium thyrsiflorum. Mr. Young, orchid grower to F. Wigan, Esq., Clare Lawn, East Sheen, was second with small, but nicely-flowered specimens of Cattleya gigas, Phalænopsis grandiflora, Aerides crassifolium, and other good things. Mr. H. James, Castle Nursery, Norwood, third. In the class for a specimen plant in flower, Mr. Parsons, gardener to T. Twining, Esq., Penrhyn House, Twickenham, was first with a huge finely-flowered specimen of Oncidium sphacelatum, and Mr. Howard was a close second with Cattleya Mendeli in superb condition. Mr. Little also contributed not for competition a large group of orchids, consisting chiefly of varieties of Cattleya Mendeli and Mossiæ, and was awarded a silver medal.

Stove and Greenhouse Plants in bloom were contributed in larger numbers than for several years past, and were also somewhat above the average in quality. Two classes for six were provided, and in that open to all comers Mr. F. Mould, Pewsey, Wilts, was first with a good collection, the best specimens being those of Erica aristata, Stephanotis floribunda, and Allamanda grandiflora; Mr. H. James, second; and Mr. Currey, gardener to Colonel Pepper, Milford House, Salisbury, was third. The premier position in the class restricted to exhibitors resident within the society's district was occupied by Mr. J. Parsons with an excellent collection, in which was a good specimen of Schubertia grandiflora; Mr. W. Bates was a close second.

Fine Foliage Plants were about equal to the average, and for six Mr. Currey was first and Mr. H. James and Mr. Mould were second and third. Mr. E. Coombes, gardener to W. Furze, Esq., Teddington, and Mr. J. Barnes, Richmond, were first and second for coleus, with neat, well-coloured specimens; and in the several classes for palms the most successful competitors were Mr. H. James, Mr. Currey, Mr. T. Wilks, and Mr. W. Bates.

Ferns were rather unequal. Mr. C. Want, gardener to F. Wigan, Esq., Clare Lawn, was first, and Mr. Wilks second for six exotic kinds. The exhibitor last named obtained the premier place. In competition for six hardy kinds Mr. Waite, Glenhurst, was placed first for large masses, chiefly of British species; and Mr. D. White was second with medium-sized and admirably-grown specimens of choice varieties of species indigenous to the United Kingdom.

Softwooded Plants in bloom constituted an effective feature. Mr. C. Turner obtained premier honours in the class for six show, and also for six fancy pelargoniums in each case with finely-flowered specimens. In the collection of show varieties occurred a fine example of Duke of Norfolk, a variety of recent introduction, with finely formed flowers of a brilliant scarlet hue, marked with black on the top petals, and of special value for specimen culture. Mr. Turner was first also for groups of show pelargoniums, and Mr. Hibburt, gardener to W. Clay, Esq., Kingston, was second. Zonal pelargoniums were remarkably good, and the collections staged by Mr. E. Coombes, Mr. G. Watts, gardener to H. Little, and Mr. Barnes, to whom the prizes were awarded, did them much credit. Mr. Watts scored a capital first for twelve begonias, staging large superbly flowered specimens. Gloxinias were of great excellence, and Mr. Meaton was first in each of the two classes provided, with specimens, large in size, densely flowered, and perfect in finish.

Groups were numerous and good, and in competition for the prizes offered by Lady Ellis, Mr. W. Brown was first with an arrangement evincing much taste. In the open class Mr. Currey was first, and Messrs. Fromow and Sons, Chiswick, second, both having excellent groups. Messrs. J. Laing and Sons, Forest Hill, staged, not for competition, a beautiful group of miscellaneous plants. A fine group was also contributed by Messrs. Puttock and Shepherd, Kingston. Mr. W. Gordon, Twickenham, had a beautiful group, consisting chiefly of orchids and lilies. A medal was in each case awarded.

Fruit was plentiful and good, and included a fine collection of cherries, from Messrs. T. Rivers and Son, to whom a silver medal was awarded. In the class for collections Mr. Burton, Mr. Osman, Mr. W. Bates, and Mr. D. White were the successful exhibitors. Mr. Howard was first for two dishes of strawberries, with Sir J. Paxton and Mr. White second. Mr. Sullivan, Downshire House, Roehampton, was awarded the first prize for peaches and for nectarines with Condor and Lord Napier respectively. Mr. Bates and Mr. D. Campbell were especially successful in two of the classes for grapes. In a second class for black grapes, Mr. Thompson, Hounslow, was first with good Madresfield Court, and in the class for Muscat of Alexandria Mr. Feist, Staines, was first, and Mr. Clinging second. Mr. Bates was first for a pine, a well-ripened Queen.

Vegetables formed a large and interesting feature. For a collection of twelve dishes Mr. Waite and Mr. White were first and second with excellent produce. In competition for the prizes for nine kinds Mr. White was first, and in the class for six kinds, in which the prizes were provided by Messrs. Carter and Co., Mr. Waite, Mr. Hilditch, and Mr. Coombes were the prizetakers.

Miscellaneous Contributions included, in addition to those mentioned above, several beautiful wreaths and other arrangements of cut flowers from Mr. W. Brown, collections of hardy flowers and roses from Messrs. J. Veitch and Sons, and cut roses from Messrs. Lee and Son and Messrs. Jackman and Son.

The judges were Mr. A. F. Barron and Mr. W. Denning for fruit, Mr. J. Douglas and Mr. J. Laing for plants, and Mr. L. Castle and Mr. George Gordon for cut roses and floral arrangements.

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY, June 24.

In brilliant weather, this society held its sixty-first midsummer show in St. John's College Gardens, Oxford. Being one of the events crowded into the "Commemoration week" provision is usually made for competitions in classes "Open to all England," and thus secure a display worthy the notice of the many distinguished visitors who celebrate the close of each academic year at the old classic city. St. John's College Gardens, three acres in extent, are admirably adapted to the holding of an outdoor festivity, such as a flower show, the spacious chief lawn affording plenty of room for the erection of tents of any capacity, with ample promenade. There are three lawns intersected with winding walks, and each of the wide borders is filled with a well-selected stock of early-flowering perennials, including very choice iris, saxifrages, pyrethrums, violas, lathyrus, pæonies, rockets, campanulas, delphiniums, dianthus, spireas, papavers, gaillardias, lupins, lychnis, &c. The attractions of the show included the performance of the Coldstream Guards band, the attendance being larger than for some seasons past.

In briefly noting the main features, special reference should be made to the splendid lot of orchids sent by his Grace the Duke of Marlborough from Blenheim Gardens, which were tastily arranged with neat palms and small ferns to form a close pyramidal bank. The varieties included several specimens each of Dendrobium suavissimum, D. Deari, Cattleya Harrisoniæ, C. gigas, C. Gaskelliana, C. Mossiæ, C. Mendeli, C. Warneri, Odontoglossum Harryanum, O. citrosmum, O. hastilabium, Cypripedium grande, C. superbiens, C. selligerum majus, Lycaste Dieppei Anguloa Ruckeri, Vanda teres, Brassia verrucosa, Masdevallia Dayana, and Calanthe vestita occulata gigantea.

Stove and Greenhouse Plants were presented in fine condition, those in competition for the open prizes being giants, and well flowered. For nine Mr. J. Cypher, Cheltenham, was awarded the first prize (£10) for Hedaroma tulipifera, Ixora Pilgrimi, I. coccinea, Bougainvillea glabra, Erica tricolor Wilsoni, E. jubana, Cattleya Mossiæ, Azalea Prince Albert, and Clerodendron Balfouriana; and J. Marriott, Esq., Coventry, second (£8) with Lælia purpurata, Ixora coccinea majus, I. amabilis, Dipladenia amœna, Phænocoma prolifera Barnesi, Erica ventricosa minor, Bougainvillea glabra, and Clerodendron Balfouriana; Mr. Mould, Pewsey, being a good third. Heaths were very good, Mr. Mould taking the first prize; Mr. Cypher was second, and J. Marriott, Esq., third. In the members' class for six stove and greenhouse, in flower, Mr. G. Jacob, Witney, had the premier card.

Orchids.—The members' class for these subjects are never over-filled here, Mr. G. Jacob leading with nice examples of Cattleya Mendeli, Cypripedium lævigatum, Lælia purpurata, and Odontoglossum Pescatorei; Mr. R. Price, Headington, second, with Cattleya Mossiæ, Cypripedium barbatum, Dendrobium Deari, and D. suavissimum.

Pelargoniums and Fuchsias were in plenty. The decorative, fancy, zonals, ivy-leaf, and gold and silver tricolor pelargoniums were all largely represented. Fuchsias were generally good, but another week would have helped to develop several of the specimens staged. Tuberous begonias were pretty, but a very limited show; and the achimenes and gloxinias deserve mention.

Single Specimens were staged in considerable numbers: For stove, Mr. J. Mattock, New Headington was first, presenting a charming globular-trained Stephanotis, grandly flowered; Mr. G. Jacob, second, with Vinca rosea. For greenhouse, Mr. C. Jacob, Headington, led with Statice profusa; Mr. J. Bates, Blenheim Nursery, Oxford, second, with a beautiful begonia; Mr. G. Jacob, third, with a fresh example of Plumbago capensis.

Roses were the great point of attraction in the cut-flower section, the number of blooms staged being nearly 800, and the bulk fresh and good. In the open class for twenty-four triplets, Mr. J. Mattock scored a first with a very level lot of good average form and quality, including A. K. Williams, Duke of Teck, Lady Mary Fitzwilliam, Madame Gabriel Luizet, Mons. Noman, Violet Bouyer, Amazone, Catherine Mermet, Innocente Pirola, Jean Pernet, Madame de Watteville, Rubens, Souvenir de Therese Levet, and Souvenir de Paul Neyron; Messrs. Cooling and Sons, Bath, second, with Mr. G. Prince third. For twenty-four and eighteen singles, Mr. Prince took the cards in both classes, Mr. Mattock second, and Messrs. Cooling and Sons third in each class. In the members' classes for twenty-four and eighteen single trusses, Mr. Mattock took the firsts; Mr. Walker, Thame, second for twenty-four, and third for eighteen; Mr. J. Sanders, Headington, securing the remaining prizes in a keen competition. In the amateur division, Mr. W. Narroway, Headington Quarry, was first for nine; and Mr. A. Evans, Marston, for twelve roses, he also leading for six teas.

Dinner-table decorations were not overdone. Mr. Mattock first for three pieces with very light arrangement, the second card falling to J. S. Parker, Esq., Iffley, for a neat showy set, in which the usefulness of the many-hued Shirley poppy was demonstrated.

Cut Flowers.—Zonal pelargoniums were fully up to the average for quality, Mr. J. Walker, first. The best pansies were staged by Mr. J. G. Kitching, Linton, Burton-on-Trent; Dr. B. Ward, Warneford, had a dozen fair pinks; Mr. J. Johnson the best stand of pyrethrums; P. Southby, Esq., Bampton, the finest ranunculuses; Mr. R. Price the best collection of perennials; and Mr. W. F. Cross, Chilswell, the best half-dozen triplets of iris. A first-class certificate was awarded to Mr. J. Lakin, Cowley, Oxford, for new white pink, Mrs. Lakin.

Fruit was plentiful and of good quality. The winning cards for white grapes fell to Muscat of Alexandria, from Colonel Miller, Shotover House; Buckland Sweetwater, from Wroxton Abbey; and Foster's Seedling, from Colonel Lee, Aylesbury; the Black Hamburgh from W. A. Wykeham-Musgrave, Esq., Thame Park, Colonel Lee, and Lord North. Mr. T. Lockie was to the fore for a melon, peaches, nectarines, and cucumbers. The strawberries were very handsome fruits. In the gardeners' class the best dish was President; in the amateurs' Sir J. Paxton; and in the cottagers' the premier was a fine sample of Noble. The Provost of Worcester College, Oxford, produced the best dish of cherries. There were some grand dishes of tomatos, but the champions came from Dr. Watt, The Hill, Witney, being fine fruits of Perfection.

Vegetables formed a very extensive feature, so good in fact that a champion exhibitor in open to all England competitions remarked that he had never seen such good produce before in June at a provincial show. In some classes there were eighteen entries. For the open prizes offered by Messrs. Sutton and Sons, for six dishes, there were a dozen competitors, Mr. W. Pope, Highclere Castle Gardens, Newbury, taking the premier with Canadian Wonder beans, Magnum Bonum cauliflower, Improved Telegraph cucumber, Market Favourite carrot, Sutton's Seedling potatos, and Early Surprise peas. Mr. T. Lockie, Windsor, second; Mr. G. Neal, Bampton, third; Mr. Blizzard, The Abbey Gardens, Abingdon, fourth; and Mr. A. Kirtland, The Rectory Gardens, Bletchington, fifth. In a similar class provided by Messrs. Webb and Sons, Mr. W. Pope again led, securing the premier award; Mr. Lockie, second; Mr. T. A. Beckett, Amersham, third; and Mr. G. Neal, fourth. Potatos were generally large and well finished. In the first division for Kidneys, the Provost of Worcester was first with Sutton's Seedling; Mr. R. Ryman, second, for Walnutleaf; Mr. W. H. Smith, Bampton, third, for Ringleader; Mr. G. Kirtland, Bletchington, winning two firsts in the amateurs' division, with International and Bedfont Prolific.

Replies to Queries.

F. L.—We were unable to find any insects in the soil taken from the cucumber bed.

Oetzmann's Flower Boxes.—Mrs. S. M. may obtain these from Messrs. Oetzmann's, Hampstead Road, London.

Names of Plants.—J. B.: The fern with large pinnules is Adiantum capillus-veneris. The one with small pinnules is A. gracillimum. The one with grey bar in the centre of each division is Pteris cretica albo-lineata.

Cracking of Grapes.—H. R.: The cracking of the berries of the Muscat of Alexandria is probably due to the vine having suffered from drought for some time previous to the heavy rains, which thoroughly saturated the border. It is quite possible that the artificial waterings were not sufficient to moisten the soil to any considerable depth.

Siebold's Primroses.—Amateur: The varieties of Primula Sieboldi should occupy a shady position during the summer season, and receive moderate supplies of water. There is no better place for them during June and the two following months than the north side of a hedge, and if the pots are plunged to the rim in coal ashes or cocoanut fibre refuse it will be an advantage.

Gum for Flowers.—H. W.: The gum used for fixing the petals of pelargoniums and other flowers is made by dissolving gum shellac in methylated spirits. The gum when prepared should be of sufficient strength to hold the petals securely, but at the same time be of a consistency that will permit of its flowing freely from the brush. The proportions can be readily determined. If there is an objection to the odour of the methylated spirits, spirits of wine may be used instead, but of course it is much more expensive.

Thrips on Melons.—J. L.: The melon plants from which the leaves received were taken are much infested with thrips, and unless remedial measures are adopted to keep the pest in check the fruit will fail to ripen satisfactorily. The best course of procedure will be to fumigate two or three times with an interval of five or six days between each fumigation, and to use the syringe freely afterwards. Tobacco or tobacco paper may be used. Thrips and red spider are common pests of melons, in consequence of frequent mistakes of cultivators as to the amount of moisture they require.

Snowdrop Tree.—A. B.: The Snowdrop Tree (Halesia tetraptera) is quite hardy, and may be propagated by seeds and layers, and also by cuttings of the root. It is not more particular as to the character of the soil in which it is grown than are the majority of the hardy trees and shrubs; but it does best in a rather deep sandy, moist soil. It is probable that your failure arose through improper planting, or allowing the plants to remain out of the ground too long. You cannot do anything to resuscitate the examples planted in the spring, and your best course will be to cut them down and replace them in the autumn with plants from the nursery.

Woodwardia radicans.—R. W.: Although hardy Woodwardia radicans attains so much finer proportions in the cool house we would strongly advise you to keep it under glass. The chief essentials in its culture are to provide plenty of space for its roots and a substantial compost. A mixture consisting of tough peat and fibrous loam in equal proportions is the most suitable. If the peat does not contain a moderate proportion of sand, add a little coarse sand when the compost is being prepared. As the fronds arch over downwards place the specimen in a high position to enable the fronds to assume their natural position.

Botanical Magazine.—Francis: A complete copy of *Botanical Magazine* in good binding would be worth about £150. Messrs. Sotheran, of the Strand, lately offered a set considerably below that figure, but a large proportion of the later volumes were in parts. Many sets have been made up by the purchase of odd lots from time to time. We do not recommend you to adopt that course, for so much depends on your opportunities, of which we know nothing. We have seen some nice lots of the early volumes in the shop of Mr. Cooper, King Street, Hammersmith. To the close of 1889 there are 115 volumes, and the work is continued monthly at 3s. 6d. each monthly part. Many of the later volumes are obtainable from the publishers at two guineas each.

Peach House.—O. J.: The span-roof house you are about to erect for peaches should have east and west aspects. If the aspects are north and south as you propose the trees on the north side of the house will not have sufficient sunlight to properly ripen either their fruit or wood. Three trees on each side of the house, or six in all, will be sufficient for furnishing the house, and dwarf-trained trees will be the most suitable. The varieties that can be recommended are Alexander, Crimson Galande, Grosse Mignonne, Royal George, Noblesse, and Barrington. These are all excellent varieties, and ripen in the order in which the names are here placed. Tomatos and bedding plants may be grown in the house without injury to the peaches, and the structure might be profitably utilized in the production of tomatos until the trees come into bearing. It will not be advisable to have a mushroom house underneath the peach house, or to attempt to grow mushrooms in the stoke-hole. The preferable course will be to erect a structure for the cultivation of mushrooms within a short distance of the peach house, and heat both structures from the same boiler.

Stopping the growth of Fruit Trees.—Young Gardener: No general rule can be given for stopping fruit trees, as the several fruits grown in gardens differ somewhat in the attention they require during the season of growth. Peach and nectarine trees against open walls ought not to be stopped at all during the summer season, but the young shoots should be thinned sufficiently to allow those remaining to have space for their full development. In the case of young trees, the number of shoots laid in will depend upon the space to be furnished. But in thinning the wood of trees that fully occupy the space allotted them, each shoot of last year should have two growths, one at the top and the other near the base, the lower one being required to take the place of the bearing shoot cut away at the winter pruning. Cherries, whether grown as pyramids or against walls, will with the exception of the Morello require to be stopped twice, the first stopping to be immediately above the sixth leaf and the latter or secondary growths at the fourth leaf. The Morello should not be stopped, but some amount of thinning will be required to prevent overcrowding. The young shoots of plum trees should be stopped in the same manner as advised for the cherries. In stopping pears it is a good rule to stop them at the first shoot, at the fourth leaf, and the laterals at the third leaf. It is very important to keep the trees free from aphis, for when the growth is checked to any extent it is not completed until so late a period as to render it impossible for the new wood to became thoroughly ripened. To prevent the attacks of insect pests, wash the trees at frequent intervals with clean water, but when black or green-fly has become established the use of some efficient insecticide is necessary.

Anthurium Scherzerianum.—H. B.: The seed should remain until quite ripe, and be then gathered and sown. The pans in which it is sown should be provided with efficient drainage, and be then filled to within about an inch of the rim with a mixture consisting of peat, chopped sphagnum, and silver sand. In sowing distribute the seeds thinly and press them down firmly upon the surface of the mixture with which the pans are filled. This having been done, lay a square of glass over each pan, and then place in the stove or melon house as may be most convenient. Screen from the sun and maintain the soil in a moderately moist state. Under favourable conditions the seedlings will soon make their appearance, and when they are an inch or so in height the glass should be taken away. Immediately on their showing signs of becoming crowded pot them off singly, and use three-inch pots and a mixture similar to that recommended for filling the seed pan, but with the addition of a few small crocks. Lift them carefully to avoid injury to the roots, and put sufficient material in the pot to raise the base of the plant nearly level with the rim. Press the material firmly about them, and as they are potted place them in a warm corner of the stove, where they will enjoy a full share of light without being exposed to direct sunlight, and then give them a liberal watering overhead. The large specimens should not be disturbed now, but be repotted or top dressed at the beginning of January.

Exhibiting Hardy Plants.—F. W.: Whether you can lift plants from the open borders and put them in pots a day or two before the date of exhibition will depend upon the regulations in the schedule of the exhibition at which you propose competing. If there are no stipulations as to the plants having been grown in the pots in which they are shown it will be perfectly fair for you to stage newly-potted plants. It is a general practice to show herbaceous plants that have been lifted from the borders, and something may be said both for and against it. By growing the plants in the borders a material saving in labour is effected as compared with pot culture. Not only do the plants in pots require more frequent attention, but it is necessary to have under preparation a number considerably in excess of that required in the collection. The specimens, moreover, show more clearly the habit of the respective species and varieties when grown naturally. There are objections of considerable force to the lifting of plants, and that is their liability to flag and present an unsatisfactory appearance before the end of the exhibition. Sometimes they show signs of distress before the prizes are awarded, and when this happens, as was the case at the recent exhibition at York, there is but little chance of the exhibitor occupying a high position on the prize list. If you decide to enter into competition for the prizes at the exhibition mentioned it will be necessary to lift the plants with a good ball of soil, and pot them quickly with as little disturbance of the roots as possible. When potted give them a liberal watering, sprinkle the foliage without wetting the flowers, and place them in a house or pit where they can be kept close and shaded until sent to the exhibition.

TRADE CATALOGUES.

MICHAEL RAINS AND CO., 34, MANSELL STREET, ALDGATE, LONDON.—*Dutch Flower Roots.*

E. H. KRELAGE AND SON, HAARLEM IN THE NETHERLANDS.—*Wholesale Catalogue of Bulbs, Tubers, &c.*

Obituary.

ON the 19th inst., Mr. ROBERT HENRY SODEN-SMITH, keeper of the Art Library of the South Kensington Museum, in his 69th year.

ON the 19th inst., from the upsetting of a boat on the Thames, W. WILSON, aged 25 F. SMITH, aged 23; and W. CHAPPLE, aged 20, employed in Messrs. J. Veitch and Sons' Nurseries at Chelsea.

ON the 21th instant, Mr. BENJAMIN SAMUEL WILLIAMS, after a long and painful illness, in his 68th year. In another part of this sheet will be found a brief biography of this eminently successful and exemplary veteran horticulturist.

WE have to record the death, on the 19th inst., at the age of 74 years, of Mr. W. H. BAXTER, formerly curator of the Oxford Botanic Garden, and superintendent of the University parks. In early life Mr. Baxter was associated with Mr. J. C. Loudon in literary work, and he was a frequent and much-valued contributor to the horticultural periodicals. His knowledge of plants was extensive, his personal character all that could be desired in a public officer, and his management of the Oxford garden obtained universal approbation.

Markets.

COVENT GARDEN.

FRUIT.			
Apples ... per ½-sieve	1s. 6d.	to	7s. 6d.
App's, Tasmanian, p case	14s. 0d.	,,	21s. 0d.
Grapes ... per lb.	1s. 6d.	,,	3s. 0d.
Lemons ... per case	12s. 0d.	,,	18s. 0d.
Melons ... each	1s. 6d.	,,	3s. 6d.
Peaches ... per doz.	3s. 0d.	,,	18s. 0d.
Pine-apples, St. Michael's each	2s. 6d.	,,	6s. 0d.
Strawberries ... per lb.	0s. 6d.	,,	1s. 0d.
VEGETABLES.			
Asparagus, English, pr bun.	4s. 6d.	to	7s. 6d.
Asparagus, Sprue, per bun.	1s. 0d.	,,	1s. 6d.
Beans, French ... per lb.	0s. 6d.	,,	1s. 0d.
Beet ... per doz.	1s. 0d.	,,	2s. 0d.
Cabbages ... per doz.	1s. 0d.	,,	2s. 0d.
Carrots ... per bun.	0s. 4d.	,,	0s. 6d.
Cauliflowers ... per doz.	2s. 0d.	,,	3s. 0d.
Cucumbers ... each	0s. 4d.	,,	0s. 8d.
Endive ... per doz.	1s. 6d.	,,	2s. 0d.
Herbs ... per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish ... per bun.	3s. 0d.	,,	4s. 0d.
Leeks ... per bunch	0s. 2d.	,,	0s. 4d.
Lettuces ... per doz.	0s. 6d.	,,	1s. 0d.
Mushrooms ... per basket	1s. 0d.	,,	1s. 6d.
Onions ... per bunch	0s. 3d.	,,	0s. 4d.
Parsley ... per bun.	0s. 4d.	,,	0s. 6d.
Radishes ... per doz. bun.	0s. 6d.	,,	1s. 0d.
Rhubarb ... per bun.	0s. 3d.	,,	0s. 4d.
Shallots ... per bun.	0s. 4d.	,,	0s. 6d.
Small Salading ... per pun.	0s. 3d.	,,	0s. 4d.
Spinach ... per bushel	2s. 0d.	,,	3s. 0d.
Tomatos ... per lb.	0s. 6d.	,,	1s. 0d.
Turnips ... per bunch	0s. 3d.	,,	0s. 4d.
CUT FLOWERS.			
Abutilons ... per doz. bun.	1s. 6d.	to	3s. 6d.
Azaleas, per doz. sprays	0s. 6d.	,,	1s. 6d.
Bouvardias ... per bunch	0s. 8d.	,,	1s. 0d.
Callas ... per doz.	3s. 0d.	,,	4s. 0d.
CUT FLOWERS.—*Continued.*			
Carnations, per doz. blms.	1s. 0d.	to	1s. 6d.
Carnations, per doz. bun.	3s. 0d.	,,	5s. 0d.
Cornflower, per doz. bun.	2s. 0d.	,,	4s. 0d.
Eucharis ... per doz. blms.	3s. 0d.	,,	5s. 0d.
Escholtzia, pr doz. bun.	2s. 0d.	,,	3s. 0d.
Gardenias, per doz. blms.	1s. 6d.	,,	3s. 0d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Iris ... per doz. bun.	4s. 0d.	,,	12s. 0d.
Ixia ... per doz. bun.	2s. 6d.	,,	5s. 0d.
Liliums, per doz. blooms	0s. 6d.	,,	2s. 6d.
Maidenhair Fern, per doz. bun.	3s. 0d.	,,	6s. 0d.
Marguerites, pr doz. bun.	2s. 0d.	,,	4s. 0d.
Mignonette, per doz. bun.	2s. 0d.	,,	3s. 0d.
Pæonies ... per doz. bun.	5s. 0d.	,,	15s. 0d.
Pelargoniums, per doz. trusses	0s. 4d.	,,	1s. 0d.
Pinks ... per doz. bun.	2s. 0d.	,,	4s. 0d.
Poppies ... per doz. bun.	1s. 0d.	,,	5s. 0d.
Pyrethrums, doz. per bun.	2s. 0d.	,,	4s. 0d.
Roses, Coloured, per doz.	2s. 0d.	,,	3s. 6d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	1s. 6d.
Roses, Red, per doz. bun.	2s. 6d.	,,	5s. 0d.
Roses ... per doz. bun.	3s. 0d.	,,	9s. 0d.
Stephanotis, pr. dz. sprays	1s. 6d.	,,	3s. 0d.
Sweet Sultan, pr doz. bun.	4s. 0d.	,,	5s. 0d.
Tuberoses, per doz. blms.	0s. 6d.	,,	1s. 0d.

BOROUGH AND SPITALFIELDS.

POTATOS.			
Regents ... per ton	85s.	to	70s.
Magnum Bonum ... per ton	40s.	,,	100s.
Beauty of Hebron ... per ton	30s.	,,	40s.
Imperator ... per ton	40s.	,,	65s.
Jersey Rounds ... per cwt.	5s.	,,	6s.
St. Malo Rounds ... per cwt.	5s.	,,	6s.
Cherbourg Rounds ... per cwt.	4s.	,,	6s.
Jersey Kidneys ... per cwt.	7s.	,,	8s.
St. Malo Kidneys ... per cwt.	6s.	,,	7s.
Jersey Flukes ... per cwt.	7s.	,,	8s.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.		Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.			1890
6	S	**5th Sunday after Trinity.**	3 53	4 27	8 15	11 12	8 31	4 28	4 54	1 28	1 53	63·1	Aerides affine	India.	187
7	M	Sheridan died, 1816.	3 54	4 37	8 15	11 32	9 54	5 21	5 47	2 19	2 46	63·2	Aerides quinquevulnerum	Manilla.	188
8	Tu	Adam Smith died, 1790.	3 55	4 46	8 14	11 49	11 16	6 13	6 38	3 12	3 38	63·2	Acineta Barkeri	Mexico.	189
9	W	Fire Insurance due. (Last Quarter.	3 56	4 55	8 14	Morn.	After.	7 5	7 33	4 3	4 30	63·2	Dendrochilum filiforme	Manilla.	190
10	Th		3 57	5 4	8 13	0 7	1 49	8 0	8 29	4 58	5 25	63·3	Mormodes citrinum	Mexico.	191
11	F	Bombardment of Alexandria, 1882.	3 58	5 12	8 13	0 25	3 3	8 59	9 32	5 54	6 24	63·3	Mormodes luxatum	Mexico.	192
12	S	J. A. Kinglake (author) died, 1870.	3 59	5 20	8 12	0 45	4 15	10 5	10 39	6 57	7 30	63·3	Angræcum caudatum	S. Leone.	193

BEDFORD AND BEDFORDSHIRE HORTICULTURAL SOCIETY.

SEVENTH ANNUAL SHOW at BEDFORD, JULY 17th, 1890. Special prizes for Roses and Cut Flowers, open to all England. Entries close July 8th. Schedules and entry forms to be obtained of

Stoneleigh, Bedford. HENRY TEBBS, Hon. Sec.

ROYAL HORTICULTURAL SOCIETY, CHISWICK GARDENS.

GRAND CARNATION, PICOTEE, and FERN CONFERENCE and EXHIBITION, JULY 22nd and 23rd, 1890.

The Conference will be opened each day at Half-past Two p.m. Interesting papers will be read on the History and Culture of Carnations and Ferns, by eminent Botanists and Cultivators.

Admission: Tuesday, from Two o'clock; Wednesday, from Ten o'clock; One Shilling. Schedules, and further information, may be obtained on application to the Secretary, R.H.S., 117, Victoria Street, S.W.

Entries to be returned to Mr. A. F. BARRON, R.H.S. Gardens, Chiswick, not later than Friday, July 18.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, JULY 8.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral, Fruit and Scientific Committees.
TUESDAY, JULY 8.—GLOUCESTER.—Rose Show.
TUESDAY, JULY 8.—IPSWICH HORTICULTURAL SOCIETY.—Summer Exhibition.
TUESDAY, JULY 8 TO FRIDAY, JULY 11.—WINCHESTER HORTICULTURAL SOCIETY.—Summer Exhibition.
WEDNESDAY, JULY 9.—TUNBRIDGE WELLS HORTICULTURAL SOCIETY.—Annual Exhibition.
WEDNESDAY, JULY 9, AND THURSDAY, JULY 10.—BRIGHTON.—Rose Show.
WEDNESDAY, JULY 9.—EALING HORTICULTURAL SOCIETY.—Summer Exhibition.
WEDNESDAY, JULY 9.—WIMBLEDON HORTICULTURAL SOCIETY.—Summer Exhibition.
WEDNESDAY, JULY 9.—DISS.—Rose Show.
THURSDAY, JULY 10.—BIRKENHEAD.—Rose Show.
THURSDAY, JULY 10.—WORKSOP HORTICULTURAL SOCIETY.—Annual Exhibition.
THURSDAY, JULY 10.—CHISWICK HORTICULTURAL SOCIETY.—Summer Exhibition.
SATURDAY, JULY 12.—GALASHIELS HORTICULTURAL SOCIETY.—Annual Exhibition.
SATURDAY, JULY 12.—ROYAL BOTANIC SOCIETY.—General Meeting.
SATURDAY, JULY 12.—NEW BRIGHTON.—Rose Show.

Auction Sales for the Ensuing Week.

TUESDAY AND WEDNESDAY, JULY 8 AND 9.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.
FRIDAY, JULY 11.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, JULY 5, 1890.

THE STRAWBERRY SEASON will probably prove one of the best in recent years, but there will be needed a term of brighter sunshine than the fruit has thus far been favoured with to ensure a satisfactory wind up. The prodigious productiveness of the plant is seen only in a season like the present, for without abundant moisture, its capabilities cannot be fully developed, as without sun to accompany the heavenly watering, the colour and flavour will be deficient. One reason doubtless may be given for its rapidity in forming and finishing its fruit, in the fact that it contains so little substance as to be manufactured from the atmosphere chiefly, differing greatly in this respect from the more nutritious stone and pomaceous fruits which draw largely on the soil and heavily tax the energies of the plant for the accumulation of their more condensed constituents. The scientific advisers on health say we may eat any quantity of strawberries without needing to fear injury to the organs of digestion, and this equally with the fecundity of the plant may be partly if not wholly explained by the same lack of substance that accounts for its rapid and abundant production. Society recognizes in this fruit somewhat of an æsthetic character. It is not accounted as ungentlemanly or unladyly even for one person to eat a peck or so of strawberries at a sitting. But to do the same with a whole leg of mutton would be deemed an act of gluttonous vulgarity. We may regard apples and pears and plums as food, but we cannot so regard the strawberry. That it is food and might perhaps be described as angels' food needs not to be discussed, because we prize it chiefly for its beauty, refreshing flavour, and perfect wholesomeness, for it has repute as a health restorer not less than as a summer delicacy. But for all this there is food in strawberries, as armies on the march have discovered to their satisfaction. In the Southern States of North America the plant attains the stature of a bush, and the fruits are so abundant in the woods that large companies of men have been satisfied with them as food for days together when on the march and short of provisions. The average of water in the fruit is 87 per cent.; the average in plums being 80, and of peaches 83 to 84. A good sample of strawberries contains 4 to 4½ per cent. of sugar, that of plums being 3 to 3½; and of peaches, 2 to 3; in apricots rarely exceeding 1½. Of nitrogenous material strawberries contain at least 0½ per cent., and the wild fruit is richer in nitrogen than the cultivated. In plums and peaches there is less of the nitrogenous principle, and therefore as regards nutritive value the strawberry takes precedence of those fruits. In cherries the nitrogenous constituents rise to 2 and even 3 per cent., while in apples the high figure of 4½ to 7 per cent. prevails. At a meeting lately held whereat strawberries were talked about, a casual speaker, who deserved to be consigned to the casual ward, spoke of the necessity for keeping the soil in condition for this fruit, because it contains 50 per cent. of potash! It is truly marvellous that men generally well informed can make these outrageous blunders. What a dreadful thing would any fruit be that contained so much as 5 or even 1 per cent. of potash. The saline constituents of this delicious fruit amount to about 0½ per cent. of the entire substance, and of this about half probably is potash, which by this reckoning is in the proportion of one pound to 400 lbs. of the fruit. We take our figures from Fresenius, and it would not in any material degree alter their purport were we to state them more particularly and minutely, for a general view of the subject is the only one appropriate to the present occasion.

The several points of special interest in the history and cultivation of the strawberry were discussed at length at the recent conference of the British Fruit Growers' Association. The business was greatly aided by the generous contributions from the Royal Gardens, Kew; the Royal Horticultural Society's Gardens, Chiswick; the garden of G. F. Wilson, Esq., F.R.S., Weybridge Heath; and others interested in the matter, and desirous of promoting the diffusion of useful information. One of the leading results of the conference is to establish the absolute newness of the strawberry as a product of the gardens of Europe, the history of the cultivated varieties being comprised within but little more than a hundred years. It is a matter of peculiar interest that the British Queen, the most famous of all strawberries, fills up some fifty-four years of this time, for it was in existence in 1836, and was first grown by the Royal Horticultural Society at Chiswick in the year 1837, Robert Thompson, one of our best of fruitists, being then in command there. It will be remembered that the grandest of chrysanthemums, the Queen of England, is nearly of the same age, while in the way of apples, pears, and plums, and other fruits, a certain number of the very best are also among the very oldest, and, in fact, they imitate humanity by refusing to tell their age, and we have no clue to their origin. It is true that the garden strawberry is a creation (if we may use the term) of the garden, and a quite modern product of art; but the early appearance of the variety that is still the most highly-esteemed illustrates in an agreeable manner the generosity of Nature, and affords encouragement to those who aim

at further improvement by systematic endeavour. Mr. Thomas Laxton, whose latest achievement in the strawberry way is the beautiful and useful "Noble," tells us that he has raised and fruited and destroyed as worthless no fewer than ten thousand seedlings, saving only nine from the sum total as worthy to be named and kept. We remember the late Mr. John Salter saying that he reckoned on raising two thousand seedling chrysanthemums to secure one worth keeping. Such facts have a discouraging appearance, but they do not so operate on the minds of men who have acquired some amount of experience, for they have learned that fruits, unworthy to be named as new, may be useful in various ways, and a ton of seedling strawberries taken from plants it is intended to destroy would doubtless make excellent jam; while as to the chrysanthemums, their flowers might have a money value if bunched and sent to market. We are not greatly concerned about the disposal of condemned seedlings, because a fruit is a fruit, and a flower is a flower, and the man who can raise either will generally know what to do with it. But we are concerned to say that when a good thing is secured the world will never refuse to accept it at a reasonable price, and the commercial element is not, therefore, eliminated by the comparatively, or, say, apparently, small percentage of the acquisitions. Probably, no man ever raised a good thing for the mere purpose of making money. None will grudge him his reward; but all should know that it is the love of the thing that gives the impulse, and the fruits and the flowers that are from time to time brought forward as candidates for public favour, represent enthusiasm much more than business.

MR. DAVID RHIND has been engaged as head gardener to The Mackintosh of Mackintosh, Moy Hall, Inverness.

MR. THOMAS HULL has been engaged as head gardener at Loudoun Hall, the residence of H. H. Marks, Esq., L.C.C.

REV. H. H. D'OMBRAIN was presented with a gold watch and chain at the recent dinner of the National Rose Society.

MR. W. GUY has been engaged as head gardener at Honington Hall, Shipston-on-Stour, the residence of F. Townsend, Esq., M.P.

MR. A. G. CATT has been engaged as head gardener to C. W. Lea, Esq., Parkfield Hallow, Worcester.

THE HONOUR OF KNIGHTHOOD was on Monday last conferred by the Queen, at Windsor, on Mr. Henry Trueman Wood, M.A., secretary of the Society of Arts.

A SPECIAL SHOW OF GLOXINIAS should prove a special and delightful entertainment. This is promised by Messrs. John Peed and Sons, at their Nurseries, Norwood Road, S.E., on Wednesday and Thursday next, July 9 and 10.

A MONTHLY ORCHID JOURNAL is about to be published by the Vicomte de Saint Leger, at Rio Janeiro. The letterpress will be in Latin and Portuguese, and each number will contain two coloured plates.

THE CULTIVATED ORANGES AND LEMONS OF INDIA AND CEYLON are treated at length, with the aid of ample illustrations, in a handsome volume just published by Messrs. W. H. Allen. The author is Dr. G. Bonavia.

MESSRS. WESLEY'S BOOK CIRCULAR, No. 101 (28, Essex Street, Strand), contains a few old herbals and other botanical books of importance. The list includes modern books chiefly, and amongst them works of authority on important subjects.

NORTHERN SECTION OF NATIONAL PINK SOCIETY will hold its exhibition in the Royal Botanical Gardens, Manchester, in conjunction with the Manchester Rose Show, on Saturday, July 19. The schedule is an admirable arrangement, and the management is in most capable hands.

A FLORAL FETE in aid of a church to be erected in Paris will be held in Prince's Hall, Piccadilly, on this present Saturday, July 5. Certain leading painters will produce copies of their pictures by the grouping of living models. This is a new idea, and one that promises to become an institution.

POSTCARDS.—It is understood that the departmental committee appointed to consider the advisability of permitting adhesive stamps to be affixed to cards by the public for transmission through the post on the same terms as postcards issued by the Government have decided in favour of allowing the change to be made.

GERMAN IRIS promise a great crop of seed as a record of a very flowery season. These and the herbaceous peonies have amply paid for the space they occupy in gardens by their profusion of flowers in the past season, and now both classes are promising amusement for those who find occupation in raising seedling stocks of good plants.

THE VICTORIA REGIA in the Royal Gardens, Kew, is now in flower, and the outdoor attractions are many, although the weather has not been favourable to the production of flowers. It is a local tradition that Kew looks well in a wet season, and its present richness of verdure justifies the traditional philosophy.

HIMALAYAN OAKS.—We learn from the *Athenæum* that a treatise on the oak tree, with a scientific description of every known species in Europe and Asia, illustrated with lithographs, has been completed by Dr. George King, superintendent of the Government chinchona plantations in Bengal, and is being printed at Calcutta. The work will be chiefly valuable for its notices of the various Himalayan oaks.

THE EAST TERRACE OF WINDSOR CASTLE, which since the death of the Prince Consort has been closed while her Majesty is in residence, was opened to the public between a quarter past four and six on Sunday afternoon last, and was visited by about 7,000 persons. The promenade will in future be open to the public every Sunday when the Queen is at the Castle.

AMERICAN LOCUST TREE (*Robinia pseudo-acacia*) has been employed with great success in Roumania in holding the shifting sands at several places on the banks of the Danube. It is reported in "Revue des Eaux et Forêts" that during the past five or six years nearly fifteen thousand acres have been planted with this tree for the purpose of preventing the shifting of the light surface soil.

SECOND PORTION OF MR. TAUTZ'S COLLECTION OF ORCHIDS will be sold by Messrs. Protheroe and Morris on Tuesday and Wednesday next. At the recent sale of the first portion of this collection a plant of Cypripedium Tautzianum, with two growths, realized fifty-one guineas. Cypripedium leucorhodoum was sold for sixteen guineas, Odontoglossum triumphans for twenty-eight guineas, and Lælia autumnalis alba for ten and a-half guineas.

THE WEATHER has too severely justified our note of expectation at page 376 of last week's issue. A low temperature with much rain and wind have made unpleasant impressions on many things, although the rain was wanted, and as regards the total that has fallen since the year begun the heavens are still somewhat in arrear. The outlook is still unsatisfactory, but we hope for improvement as the week advances.

THE DEATH OF MR. GEORGE DEAL will not surprise, but will deeply pain the large circle of horticulturists to whom he was known as a first-rate man of business, and a well-tried friend to every philanthropic cause that had any claim upon his sympathy. When a sudden affliction lately removed him from the management of the Gardeners' Orphan Fund, it was feared he would not again appear in that region of benevolence in which he was so conspicuously useful, and at the same time happy in work that he loved. The funeral is arranged to take place at Woking Cemetery this day, July 5.

THE FUNERAL OF MR. B. S. WILLIAMS, on Monday last, when the weather was at its worst, cold winds and heavy rains prevailing, was attended by fully 400 persons desirous by their presence of testifying their respect for their late friend, as also their sympathy for the family. There were many contributions of flowers, and on every face was seen the expression of deep regret that an earnest, high-minded and most able horticulturist had passed away, leaving in each mind the question "When shall we look upon his like again?"

GERMINATION OF SEEDS.—Experiments have recently been made in the Ghent Botanic Gardens for the purpose of determining whether the seeds which germinate the most rapidly produce the most vigorous plants, and whether, in the case of stocks, the seeds which germinate first produce, as stated by Dr. Noble, the largest proportion of plants bearing double flowers. The experiments, as recorded in "Botanisch Jaarbock," appear to bear out both assertions, but they cannot be regarded as conclusive upon either point.

INTENSELY HOT WEATHER is reported as prevailing in the United States, more especially in the west and south, but spreading towards the Atlantic coast. Our friends on that side appear to have followed their old practice of sending us the bad weather, for here the prevailing low temperature has prejudiced many things. But if the heat in the Far West spreads over to the East, will it not cross the Atlantic and help to make our hay and ripen our strawberries? We will hope for it.

LILIES IN THE ROYAL GARDENS, KEW, offer at this time some special attractions. An admirable feature has been made of these summer flowers by planting them in the beds amidst evergreen shrubs in the panel garden next the Palm House, and with the rhododendrons on the main walk. And there is no better way of displaying lilies, while the shelter thus secured is greatly to their advantage when they are first pushing up in the spring, and a touch of frost might cripple them for the season.

KIDWELL'S PARK ESTATE of twelve acres has been presented to the town of Maidenhead by the Mayor, Mr. James D. M. Pearce, J.P.

AN EXPEDITION TO DISCOVER THE SOURCES of the great river Congo will be sent out by the Congo Commercial Company. This will lead to the exploration of portions of the African interior of which absolutely nothing is known at present. Tracts of country in proximity to the supposed fountains of the Congo are known to be cold, fertile, salubrious, and rich in minerals. There are no Englishmen named for the exploring party at present.

BRICK BURNING AT BEDFORD PARK, CHISWICK, has furnished a case for the consideration of the Chancery Division, and a most salutary decision has been given by Mr. Justice Kay to the effect that the law does not permit the burning of bricks in such a way as to prove a nuisance, and prejudicial to the health of persons dwelling in the neighbourhood of the operation. In many a suburb of London the burning of bricks is conducted in such a manner as to prove a burning shame. But it does not follow that industry or trade are unfairly interfered with when the law declares that such work should be done in a decent manner. It is not the burning of bricks simply that constitutes a nuisance, but burning them with fuel gathered from sources unsuitable for the supply. Decayed vegetable refuse, and the miscellaneous sweepings from dustbins and factories, may, when burned in brick clamps, generate odours that are at once unendurably nasty, and injurious to the health of those who inhale them. The law stops no man's trade so long as he conducts it in a manner free from offence and injury to others.

Law.

NUISANCE CAUSED BY BURNING BRICKS.

In the Chancery Division, June 26, before Mr. Justice Kay, the Attorney-General *v.* Hussey. This was an action by the Attorney-General at the relation of the Chiswick Local Board for an injunction to restrain the defendant from burning bricks on his brickfield at Stamford Brook, in the parish of Hammersmith, so as to occasion a nuisance. The complaint was that, in the process of the defendant's brick-making, offensive, noisome, and unwholesome effluvia were emitted which were injurious to the health of the inhabitants of Bedford Park and the neighbourhood. The action now came on for trial. The evidence on the part of the relators tended to show that an unpleasant, pungent smell was emitted from the burning brick-kilns and clamps and the refuse used in the manufacture of bricks, and was productive of nausea, loss of appetite, sore throat, and general *malaise*. On the other hand, it was said, on behalf of the defendant, that the insanitary conditions complained of were due to the nature of the locality of Bedford Park, the neighbourhood being described as an "unhealthy one, the drainage bad, the surface only 4 ft. above the Thames high-water mark at Chiswick, and a clay soil." It was elicited from the defendant and his witnesses that, for the purposes of his business, the contents of dustbins were carted on to the brickfield, and there raked over, screened, and separated, the "hard core"—that is, ashes and cinders—being reserved for brick-making, and the "soft core," consisting of vegetable refuse and various descriptions of organic matter, being, it was said, buried. One of the defendant's witnesses said, in cross-examination, that so far from finding the pungent smell from the brickfield disagreeable, he "rather liked it," in reply to which the learned counsel suggested that possibly it might possess the bracing and curative properties of "Epsom salts." The trial of the action occupied the greater part of four days.

Mr. Marten, Q.C., Mr. A'B. Terrell, and Mr. F. Baden Fuller appeared for the relators.

Mr. E. Cutler, Q.C., Mr. Bigham, Q.C., and Mr. K. G. Metcalfe, for the defendant, contended that the nuisance, if any, was only intermittent, the brick-burning being confined to about three or four months in the year; and that it was contrary to the principles of the Court to stop a large trade on the ground that it caused merely a fluctuating nuisance; and that the relators' evidence failed to establish such an interference with the health or comfort of the neighbourhood as would justify the Court in granting an injunction; and, moreover, that the relators' witnesses were inconsistent and contradicted one another as to the commencement, duration, and nature of the alleged nuisance; and as, according to some of those witnesses, the alleged nuisance had gone on for four or five years, the right to an injunction, though claimed by the Attorney-General on behalf of the public, was barred by delay and *laches*.

Mr. Justice Kay, without calling for a reply, delivered judgment in favour of the relators. He observed that he had not to do with an action by a private individual for a nuisance, but one by the Attorney-General at the relation of the Chiswick Local Board, who were the local authority of this particular district. His Lordship proceeded to describe the process of brick-making as carried on in what are known as "clamps," as distinguished from kilns. He explained the mode of arrangement of the bricks in a clamp, and how the heat was brought to bear on every part of the clamp to such a uniform degree that every brick got red hot. He further explained how the refuse from dust heaps was used as a heating agent, such refuse being screened and sifted into a fine dust. This dust contained both animal and vegetable matter, and it followed that this dust was calcined to a red heat and that the vapour resulting therefrom came off from the clamp. That vapour was not merely the vapour of the burning clay, but of the animal and vegetable matter contained in the dust. No one could doubt that a vapour so composed would be more deleterious to health than the smoke of coal, as used in the country where bricks were baked in clamps, though even under these circumstances the smell was nasty enough. A nuisance did not necessarily mean that which was injurious to health. There were plenty of nuisances in law which were not in the least injurious to health; though, no doubt, injury to health, if proved, rendered a nuisance more considerable and important. Offensive smells from smoke manufactories or sewage were nuisances, if there were enough of them, although in no way shown to be injurious to health. His Lordship then proceeded to deal categorically with the evidence of the witnesses, and concluded his judgment by saying that there must be an injunction for the following reasons—namely, because he was satisfied, from the evidence, that there was [in 1889 a nuisance which, according to the definition laid down by the Lord Justice Knight Bruce, when Vice-Chancellor, in "Walter v. Selfe" (4 De G. and Em., 322), was to be considered "as more than fanciful, more than one of mere delicacy or fastidiousness, as an inconvenience materially interfering with the ordinary comfort, physically, of human existence, not merely according to elegant or dainty modes and habits of living, but according to plain and sober and simple notions among the English people;" and, further, because he was also satisfied, if it was necessary to rely upon that—which it was not—that the nuisance was one which was calculated very greatly to interfere with, or be injurious to, health; and because he was satisfied that the nuisance was one which would depreciate the value of property in Bedford Park. For those three reasons, anyone of which would be sufficient, he came to the conclusion that he must put the defendant under an injunction not to burn bricks upon this brickfield, or any part of it, in such a manner as to cause a nuisance to the inhabitants of Bedford Park and the other neighbourhoods of the brickfield. And, as the defendant had fought the action with this result, he must pay the costs of it.

A Pink Show has come within possibility, and having been done in the heart of London, the lovers of the ancient but ever youthful flower are greatly encouraged. The Upper Hall, known as the Hall of St. Stephen's, which forms a part of the Royal Aquarium at Westminster, received the first exhibition of the National Pink Society on Friday and Saturday last, and the pinks shared with strawberries in the admiration of the few who found them. There was an admirable collection of flowers, and it was a grief to all that while the show of roses and peonies in the great hall below was admired by thousands, the pinks in the hall above were seen only by hundreds. But the beginning has been made, and we hope our friends of the pink persuasion will have better luck next time.

THE ORIGIN OF THE CULTIVATED STRAWBERRY.

By Shirley Hibberd.

Read at a meeting of the British Fruit Growers' Association, June 27, 1890.

The cultivated strawberry of British gardens is a comparatively modern fruit, for of ancient history it has none; and consequently there are not many mysteries in connection with its origin, the clearing up of which might bring honour to the present essayist. But we have ancient strawberries that can scarcely be said to be cultivated now, although there is something to be said for them as wholesome, agreeable fruits that have a somewhat picturesque history. Time was when the wild berry of the woods had a place in gardens, but that time has passed; our native wood strawberry has been superseded by a more stately, and in some respects superior fruit, that obtains from us an immensity of skill and care; while as to the strawberry of the past, it is scarcely known to any but wayside botanists and village children; and these important persons prefer the modern British Queen, when they can get it, to the freshest and ripest berry from the banks. When the Duke of Gloster sent the Bishop of Ely to obtain for him some strawberries from the Bishop's garden at Holborn, it was simply to get rid of him in aid of a conference with the Duke of Buckingham. But the incident has historical value, as Shakespeare derived it from Sir Thomas More's "Tragical History of Richard III.," and it tells of the esteem in which the British *Fragaria vesca* was held in the days of the last of the Plantagenets. The strawberries were sent for on Friday, June 13, 1483, at which time Mayster Groshede was engaged in translating into English the "Boke of Husbandry," printed by Wynkin de Worde, in which the strawberry is not even mentioned. The Bishop of Ely's garden was one of the most important for its productions and management in the fourteenth and fifteenth centuries; and as at that time the wild wood strawberry was alone cultivated in this country, the incident marks the esteem of our forefathers for a fruit that now obtains so little attention as, in towns at least, to be practically unknown. Thomas Tusser, writing his "Hundred Points of Good Husbandry" about 1557, gives directions for planting strawberries, the roots of which are "growing abroad among thorns in the wood," and in his "September's Husbandry" the strawberries remind him of other things then to be planted.

> "The gooseberry, respis, and roses al three
> With strawberries under them trimly agree."

Even so late as the time of Sir Hugh Platt, who wrote his "Garden of Eden" about the year 1606, cultivated the British strawberry in his garden in St. Martin's Lane, London, where it was considered a better fruit than the Virginian, which at that time had been introduced, although the books give a later date for it. Sir Hugh says: "Strawberries which grow in woods prosper best in gardens," and this agrees with the Shakesperian philosophy as spoken by the mouth of another Bishop of Ely in the drama of "King Henry V.," to the effect that

> "The strawberry grows underneath the nettle,
> And wholesome berries thrive and ripen best
> Neighbour'd by fruit of baser quality."

The common explanation of the name as derived from the practice of spreading straw on the ground to keep the fruit clean is as shallow as common explanations usually are. Centuries before it became the practice to strew straw for strawberries it was known by the same name as now. In the most ancient documents in which English names of plants occur we find the strea-berige, straeberie-wisan, strebere-wise, and strabery. It is the plant that strays by the aid of threads or wires from the parent centre to find pastures new, and in so doing strews or straws itself upon the soil, as quaintly put in an ancient song—

> "And can the physitian make sicke men well,
> And can the magician a fortune devine,
> Without lily, germander, and sops in wine?
> With sweet-bryer
> And bon-fire
> And strawberry-wyer,
> And collumbine."

The above references to Shakespeare include the only occasions of his mention of the strawberry, for the handkerchief spotted with strawberries that Othello gave to Desdemona is so described through a misconception of the poet's, the truth being that the handkerchief was marked with three mulberries, which was the device of the great captain's shield. It was about the time of Shakespeare, however, that the garden strawberry of the present day may be said to have come into being. The books are full of interest on this point. In Lyte's translation of the Herbal of Dodoens, 1578, the wood strawberry alone is mentioned as a plant that grows in shadowy woods, and deep trenches, and banks, and by highway sides. In "Gerard's Herbal," 1597, only two kinds are mentioned, and they are the wood strawberry, *F. vesca*, and the hautbois, *F. elatoir*, described as red and white. But in Parkinson's Paradisus, published 1629, we have, in addition to these, the Virginian strawberry and the Bohemian, and these, so far as the chronology is concerned, may be considered the parents of our modern strawberries.

It is of considerable importance to note that in the introduction to his chapter on strawberries Parkinson makes a distinct declaration that "the wilde strawberry that groweth in the woods is our garden strawberry, but bettered by the soyle and transplanting." He then describes the red, the white, and the green forms of alpine and hautbois strawberries, and evidently ranks the Virginian and the Bohemian far below them in merit, for he says "scarce can one strawberry be seene ripe among a number of plants. I think the reason thereof to be the want of skill or industry to order it aright. For the Bohemian and all other strawberries will not bear kindly, if you suffer them to grow with many strings, and therefore they are still cut away." That the so-called Bohemian strawberry was an interesting novelty may be concluded from Parkinson's description of the berries as measuring "neere fiue inches about." He says "Master Quester the Postmaster first brought them ouer in our country, as I understand, but I know no man so industrious in the careful planting and bringing them to perfection in that plentiful manner, as Master Vincent Sion who dwelt on the Banck side, near the old Paris garden stairs, who from seven roots, as he affirmed to me, in one yeare and a halfe, planted halfe an acre of ground with the increase from them, besides those he gave away to his friends; and with him I have seen such, and of that bignesse before mentioned."

It will be observed that Parkinson had no success with his Virginian and Bohemian strawberries. It should not surprise us that those newcomers occasioned perplexity, for the truth must be told that in the fifteenth and sixteenth and seventeenth centuries the cultivation of this fruit was understood

by very few, and the produce of the woodlands was of far more importance than that of gardens until a quite new race had been established. Mr. T. Hudson Turner, the eminent archæologist and author of "Manners and Household Expenses of England," writing on horticulture in the thirteenth and fourteenth centuries, says:—

"Strawberries and raspberries rarely occur in early accounts, owing probably to the fact that they were not cultivated in gardens, and known only as wild fruit. Strawberries are named once in the Household Roll of the Countess of Leicester for the year 1265. The plant does not seem to have been much grown even at the end of the sixteenth century. Lawson speaks of the roots of trees being 'powdred' with strawberries, red, white, and green. Raspberries, barberries, and currants he describes as grown in borders. Both fruits, being indigenous, were probably to be found plentifully in the woods of ancient times, and thence brought to market, as they are in the present day in Italy, and other parts of Europe."

The allusions to the fruit in poetry and the drama bear out the statement of the antiquary. We find in Ben Jonson a person saying—

> "My son hath sent you
> A pot of strawberries gather'd in the wood
> To mingle with your cream."

Spenser had in mind the attractions of wood strawberries, where, in the tenth canto of the sixth book of the "Faerie Queen," he takes Calidore and Corydon and Pastorell "To the green woods to gather strawberries."

It is a question of some interest—when did the scarlet or Virginian strawberry first reach this country? It is named in a catalogue of Jean Robin, botanist to Louis XIII., in 1614, and in Johnson's "History of English Gardening," page 343, the date of its introduction to England is stated to be 1625, but Sir Hugh Platt possessed it in 1606. Parkinson had it in 1629, and, as already remarked, was unable to grow it, probably because the plants were allowed to run into a mat, the systematic propagation now practised being then unknown. Indeed, the author of the Paradisus remarks at page 528 that "strawberries will not beare kindly, if you suffer them to grow with many strings, and therefore they are still cut away." The culpivation of the strawberry, as described by John Evelyn at page 201 of the second volume of his "Compleat Gardener," published 1693, begins with the removal of plants from the woods and the putting of two or three plants in a hole, which is made with a stick nine or ten inches asunder. He recognizes only two kinds, the red and the white, evidently knowing nothing of the Virginian strawberry. It appears that the system pursued ensured a crop of fruit in the second year after planting, and that was the only crop obtained; consequently annual or biennial renewal of the beds was necessary. It may be assumed, moreover, that the best forms of the plant were not secured in the first instance, and certainly there was no haste shown in raising seedlings, nor did anyone suspect the capabilities of the plant for variation and improvement. To obtain a faithful representation of the subject in what may be termed the middle period, I turn to the sixth edition of Miller's "Gardeners' Dictionary," published 1771, where, under Fragaria, I find it stated that there were four kinds of strawberries then in cultivation—the Wood strawberry, *Fragaria vesca*; the Scarlet strawberry, *F. Virginiana*; Hautbois, *F. muricata*, "with fruits as large as a small Plumb"; and the Chili or Frutilla strawberry, *F. Chiloensis*, "with a large fruit and hairy fleshy leaves." Speaking of the introduction of the Chili strawberry, Miller says—"In the year 1727 I brought a parcel of the plants to England, which were communicated to me by Mr. George Clifford, of Amsterdam, who had large beds of this sort growing in his gardens at Hartecamp. The leaves of this sort are hairy, oval, and of a much thicker substance than those of any sort yet known, and fixed upon very long hairy footstalks; the runners from the plants are very large, hairy, and extend to a great length. The footstalks which sustain the flowers are very strong; the leaves of the empalement (calyx) are long and hairy. The flowers are large, and often deformed; so are the fruits also when cultivated in very strong land, in which the plants produce plenty, which are firm and well flavoured; but as it is a bad bearer in most places where it has been cultivated, so in general it has been neglected."

It is of great importance—so it appears to me—to note further what Miller says on some other points. In common with Parkinson he reports three varieties of the wood strawberry, the red, the white, and the green; the last named being particularly valued for its fine flavour. The scarlet strawberry of Virginia he places high above all other sorts for earliness to ripen and every other good quality; and he adds, "it is so different from the wood strawberry in leaf, flower, and fruit, that there need be no doubt of their being distinct species." It startles one to find Miller describing the Hautbois strawberry, which he catalogues *F. muricata*, as originally derived from America. He speaks of its capability of producing large fruit of a globular form, as the result of good cultivation, and he adds that when neglected for a year or two, these superior kinds degenerate to the common hautbois. I submit that the sample of Muricata on the table kindly supplied by G. F. Wilson, Esq., F.R.S., of Weybridge, will give the reason for its name as well as an explanation of its history. It is the kind described by Parkinson on page 528 as "somewhat reddish, like unto a strawberry, but with many small harmless prickles on them, which may be eaten and chewed in the mouth without any manner of offence." This is the prickly strawberry of Tradescant, formerly found wild in Hampstead Wood near London, now only known as a garden curiosity. It is a variety of the hautbois, and when Miller says he obtained it from America, we need not put that down as one of his blunders, because our wood strawberry has certainly been found growing wild on the American continent, and Miller does not say whether he obtained it as a wilding or as a garden plant.

We have thus far only two or at the utmost three species of strawberry before us; these we may class as the Low wood (F. Vesca), the High wood (F. Elatior), and the Scarlet (F. Virginiana).

In the year 1759 at the latest, the Pine strawberry, *Fragaria grandiflora*, was introduced. The source of this is not clearly determined, but Surinam is commonly named as its native country. There can be no objection in the nature of things to the acceptance of Surinam as the original home of the pine strawberry, for it should be observed that it does not take us from the American continent. Indeed there is a peculiar propriety in finding a strawberry in Guiana, for we may suspect it to be but an eastern form of the Chilian species; which perhaps, is but a southern form of the Virginian species; just as our wood strawberry is the western and the hautbois the eastern form of the European species; and all five are probably radiations from one centre, and there cannot be a question that all will cross or breed together as commonly happens with plants nearly related in origin and constitution.

While Miller tells us he obtained the pine strawberry from a friend in Amsterdam who derived it from Surinam, Duhamel speaks positively of its having been raised from the seed of the Chili strawberry. Both may be right, for the Dutch settled at Surinam in 1654, and on the higher lands of that tropical country many plants from cool climates prosper; and from the beginning of the world a Dutchman would have a garden wherever he himself might be planted, and would gather treasures from all climates to furnish it. That the pine strawberry is closely related to the Chili is sufficiently evident to give reasonable colour to Duhamel's declaration.

(To be continued.)

TWO FLEMISH BOTANIC GARDENS.

Within ten minutes' walk of the Place d'Armes, Ghent, are situated the exceedingly interesting, if somewhat antiquated, botanic gardens. They are on the site of the once famous Bandeloo Convent, now suppressed, and indeed the place is now commonly known as the Bandeloohof. The botanic gardens, which were founded in 1799, are said to be the finest in Belgium. There are throughout the place many evidences of antiquity, nearly all the greenhouse shrubs and trees being very aged and very leggy.

There is not at Eastertide, at all events, much life about the place, and it was only after a good deal of exploration that the present writer and a friend unearthed from one of the stoke-holes a very intelligent and courteous disciple of the spade, who has apparently grown with the place. The conservatory contains a fine lot of specimen plants of camellias, Araucaria Bidwillii, Cunonia capensis, Jubæa spectabilis, Grevillea robusta (very tall and frightfully leggy). The plant of Sabal Blackburniana must be one of the finest in Europe, being twelve or thirteen metres in height, and, like the Aquarium giantess, it is "still growing." Although a pit of three metres in depth has been sunk to hold the pot in which it is growing, its top leaves, figuratively speaking, clamour for more room, and lie close to the glass of the roof. Several very fine specimens of Euphorbia splendens, quite six feet in height, added quite a brightness to the stove house with their clusters of bright red, waxy bracts. Here, as at M. Van Houtte's, there is a specially constructed circular house for the Victoria Regia, which has already thrown out signs of vitality by way of several leaves. Among the orchids there were many splendid specimens of Arpophyllum giganteum, and its cylindrical spikes of densely and symmetrically arranged purple flowers. The most noteworthy in the collection, perhaps, is Lycaste Harrissoniæ, which, our guide informed us, was now in flower for the first time for thirty years. Among the ferns the plant that attracted our attention the most was that named Adiantum capillus-veneris. It is not, however, the typical species, and must be either the Cornish variety, or that raised by Mr. Jannoch, of Wersingham, and named by the late Thomas Moore as "grande."

The Botanic Gardens at Brussels, situated on the slopes opposite the Hospital of St. John, and opening into the Boulevard du Jardin Botanique, does not very greatly differ from that of Ghent in general appearance. The origin of this botanic garden is attributed to a stray witticism, and may be here described. During 1826 a flower show took place at Brussels, and attracted a crowd of amateurs. Among the plants put up for sale was a very rare shrub—the name of which appears to be unknown now—but at so high a price that no private person ventured to bid. "We must buy it," cried a voice, "for the botanic garden of Brussels." "The wit is in the right," said the King's Secretary. "It is a disgrace to Brussels that it has no botanic garden. We must establish one to place this shrub in it." The idea was received with much enthusiasm by the public, and a subscription list being opened considerable sums were soon forthcoming. As a result the garden was opened in the year of the Revolution—1830. It skirts, over an extent of 600 yards, the boulevard already mentioned. At the extremity are situated extensive conservatories, flanked by a couple of pavilions, and having in the centre a circular orangery crowned by a "crystal dome." Within a few yards there is a circular house built for the reception of the Victoria Regia—which appears to be an exceedingly interesting plant to our Continental neighbours. Entering the Botanic Gardens from the part of the boulevard which commences at the Place des Nations, the early spring appearance of the place is very charming. Much attention is apparently paid to hardy herbaceous plants, the huge spikes of Petasites officinalis contrasting strongly with the humble primulas and saxifrages. Two or three fine trees of Magnolia Yulan were in full beauty, and a number of flowering shrubs were also putting on their spring apparel. The most noteworthy feature which at once strikes the visitor on entering the garden is the large "geographical" labels. The object of these is to give, by means of a "rough and ready" sort of map, painted in two colours, the student an immediate knowledge of the country of plant to which the label is attached. These labels are certainly not ornamental, and as far as we can see the information which they are supposed to impart is confusing rather than helpful. It would be much better to give merely the names of the particular locality and country in which the plant is found. Its geographical conditions are best learned in the study.

The greenhouse and conservatory plants are superior to those of a similar class at the Ghent Botanical Gardens. The plants are very nicely arranged, and one end group of large specimen plants of Cibotium Wendlendi and Dicksonia antartica, planted with smaller palms and ferns, looked exceedingly effective.

A few minutes from the Botanic Gardens, and in the Rue Royale, we come upon the park which spreads in front of the National Palace. It forms a parallelogram, the larger diameter of which measures 1,800 yards, and the smaller 1,150 yards. From the central circular space in front of the National Palace strike three divergent avenues: that in the middle runs parallel to the line of the major diameter, the two others abut on the south-east and south-west angles of the park. The avenues are intersected by others directed perpendicularly to the principal avenue. The park is well laid out, and is a favourite place of resort, whilst a band plays during summer for an hour and half daily, Sundays included; whilst in the north-east corner are the Vauxhall Gardens, where open-air concerts take place on summer evenings. The park was the scene of the principal combat during the Revolution of 1830, and until a few years ago the trees bore evident traces of the shots, &c. The Parc Léopold, beyond the Luxemburg Railway Station, and about ten minutes' walk from the park, is also an interesting piece of public ground, notable, among other things, as containing the extensive buildings of the Horticulture Internationale which opened on May 10, 1888. W. Roberts.

Dr. Nansen, who lately penetrated to the interior of Greenland, is about to start on an expedition for the North Pole. For this undertaking the Danish Government has voted a grant of 200,000 kroner.

SUMMER CULTURE OF THE AMARYLLIS.

By James Douglas.

This useful spring-flowering hothouse plant should have careful attention now, as it is in the midst of its growing season in our hothouses, having passed out of bloom with us this year about the middle of April. Seeing that March and April are the months in which we obtain the greatest quantity of bloom, it would be a surprise to many to witness the fine collection of flowering plants exhibited by Messrs. Kelway, of Langport, Somerset, in May and June, a prolongation of the flowering period of the greatest interest to cultivators.

The system of culture pursued by Messrs. Kelway is different from that usually adopted by growers near London. The usual method is to grow the plants in a hothouse in beds of warm tan, and a temperature of 55 deg. in the spring as a minimum, raising it to 65 deg. as the season advances. Mr. James Kelway was good enough to send me an account of the system of culture pursued in their nursery. They have been raising seedlings for the long period of seventeen years, and have a stock of 20,000 bulbs. They commence to plant their seedlings in cold frames in January. The frames are placed on the ordinary soil in an open situation, and that part of the soil the frames receives a good dressing of decayed hotbed manure and the yellow sand of the neighbourhood to keep the soil open, as the Amaryllis under whatever conditions of culture thrives best when the water drains freely away from the base of the bulbs. The bulbs are planted in shallow drills from three to six inches asunder. These are small seedling bulbs or offsets, and the plants remain in frames from two to three years, until they have grown into a size large enough to bloom. Even at the end of that period they have not all grown into a flowering size, but all the bulbs large enough, and that are likely to bloom, are potted up, and instead of being placed in a hothouse, or even the slight warmth of a house such as a cool greenhouse, the pots containing them are merely plunged in cold frames over the rims, as we would treat the hardy hyacinths or tulips. The flower scapes appear in April, and the flowers are produced in May and June, in fact, to a limited extent all through the summer months, receiving no artificial heat whatever at any period of their growth. During severe frosts in winter they are protected by a thickish covering of hay inside the frames, and ordinary mats outside. They are evidently a hardier strain than those grown by us from the Brazilian Hippeastrum Leopoldi and the freely spotted H. pardinum. The form of the flowers exhibited by Messrs. Kelway suggests that H. vittatum has a place in the parentage.

I commenced by stating that the plants in our hothouses were now in full growth; and one important part of their culture consists in plunging the pots over the rims in spent tan. This is done as soon as the flowering period is over; and in the course of the season the roots push freely over the rims, and run into the tan, forming a dense network of roots; and what is most remarkable, that although the tan beds are not large, holding about three van loads of tan, it requires a load every year to make up the loss caused by the growth of the plants, and this is done every year, not a spadeful being taken out. The tan will also fall away during the summer leaving the rims of the pots bare. Some tan should be kept in reserve to cover the rims so exposed, as the important part is to encourage the roots to push over the rims, which they do to a very large extent.

At this season when there is considerable warmth under glass, the leaves are very liable to be attacked by red spider and thrips, indeed, we have had to sponge the leaves over once this season to destroy red-spider. Thrips have not yet appeared, but when this pest once gains a foothold it is not easy to get rid of it. The plants are fumigated with tobacco smoke, or the leaves are sponged over with tobacco or soapy water; and in either case the insects drop down amongst the tan, to be up and at their work of destruction as lively as ever within twenty-four hours. Therefore I advise occasional fumigations with tobacco smoke to prevent these insects from attacking the plants at all. It may be thought by some that there would be a difficulty in watering plants that are plunged over the rims, as the state of the roots could not be ascertained. But in practice no difficulty is experienced. The beds are merely watered with the rose of a large waterpot once a week, giving enough water to go to the bottom of the bed, which is not more than fifteen inches. Any plants that show signs of disease may be examined at the roots, and if it is seen that those particular plants are too wet or too dry, they may be specially attended to. All those that are growing well, and are in a healthy condition, may be trusted to ripen up, and produce good flowering bulbs by the end of the growing season. At present the deep green succulent leaves must not be exposed to bright sunshine, but when the bulbs have well grown, and the leaves are on the change to decay, full exposure to sunshine is best.

Seedling raising is an interesting and important item in the cultivator's programme. The grower of any class of plants who has no seedlings to flower loses much pleasurable excitement. The seeds are now being saved; and as soon as they are ripe they should be sown in pots or pans, as many as fifty or sixty seeds in a six-inch pot or pan. They will vegetate in less than two weeks, and in three weeks after they have appeared above ground, the plants should be carefully shaken out of their pots and be planted, say about ten or twelve in a six-inch pot. These plants will grow freely all through the autumn and part of the winter, and will form nice sized bulbs by the time they have to be repotted. This time three bulbs may be put in a six-inch pot, and with careful culture, by the end of the season they will have produced bulbs, some of them as large as a pheasant's egg. These are repotted singly, and will after another season's growth flower strongly.

RHODODENDRONS WITHOUT PEAT.

By J. O. Clarke.

Your leader on the subject of Rhododendrons in the Gardeners' Magazine for June 14th interested me very much, as for a number of years I have been interested in the cultivation of these plants on an estate where many acres of them grow in the natural soil of the place. It was a fortunate circumstance for me that many years before I took charge, the beauty and value of the rhododendrons as decorative hardy plants had been fully recognised. Some of the earliest introduced plants of the arboreum group had been secured and planted for the purpose of comparison between those and the hybrid forms introduced later. I was consequently happily placed. Therefore, taking advantage of the opportunity presented to me, I began to watch the behaviour of the different sections, and in due time came to the conclusion that, although many new and beautiful hybrids had been introduced, the characteristic features in habit of growth and hardiness had not been improved; rather on the contrary, the form of growth had somewhat suffered. This, I was however prepared for, as it is only what might be expected, for a diversity of characters is the natural sequence of raising seedling plants. At the same time I often felt sorry that the compact form of growth in the earlier seedlings of the arboreum section could not be maintained. I must, however, confess that the rich diversity and splendid form and substance in the flowers that the new varieties possessed were a good set-off for the trifling loss in the general style of growth. So far as I can answer, there are none of the hybrids that possessed the same compact growth as the old form of arboreum. The oldest plant of this section that I am acquainted with is near upon forty feet in height with a proportionate spread of bunches with an even outline of a conical shape. One requires to see a plant of such dimensions when in flower to properly appreciate its great beauty and striking character. In my opinion there is nothing to equal the rhododendron in this respect in the whole range of hardy flowering shrubs.

The least satisfactory, according to my observation, is the catawbiense section. These never looked happy under the same conditions as the others. The growth was less vigorous and irregular, while the trusses of flowers were small and fewer in number. For this reason they were mostly discarded after a few years.

The hybrid forms vary a good deal in the character of their growth, some being compact and therefore more suitable for single specimens or standards, while others are somewhat loose. A knowledge of these characters is therefore necessary when making selections for different purposes. It is all the better in fact, even when the plants are to be placed in masses, when the positions are arranged according to the character of growth of each. Some sorts are naturally of a spreading habit and therefore suitable for the outside row, while others have longer jointed growth and attain a greater height. These characters are of course a good deal influenced in the way in which they are allowed to grow. If the plants are allowed to become crowded they will not be so well defined. It is, however, a very great mistake to plant too thickly in the first place; when masses are to be formed the inner rows should be six feet apart and the same distance between the plants in the row. Those in the front row may be from four feet to five feet apart; the following species will do very well at four feet:—

Ciliatum, rosy or white, flowering early, dwarf growth.
Cinnabarinum, deep red, early, dwarf.
Daphnoides, waxy rose, beautiful, dwarf.
Hirsutum, pale rose, dwarf.

Some good plants for large masses may be found in the following hybrids:—

Blandyanum, dark crimson with light centre.
Brayanum, light scarlet, fine.
Maculatum, blush, with orange spots.
Marian, shaded pink, dwarf growth.
Minnie, blush white, chocolate spots.
Othello, deep marone crimson.

With regard to others suitable for massing, the number is so large that it is a difficult matter to make a selection unless on a large scale. I will, however, make selections from those which I have had under observation and which I know will disappoint no one. My choice of six varieties only would be:—

Helen Waterer, white, first-rate.
Joseph Whitworth, purple lake, grand.
Concessum Roseum, rosy pink.
John Waterer, glowing crimson, free and fine.
Lady Eleanor Cathcart, light rose with chocolate spots.
Verschaffelti, rosy lilac with chocolate blotch.

For a selection of twelve I would add to the above the following:—

Luciferum, blush white.
Lady Lopes, rosy scarlet, distinct and splendid.
Michael Waterer, rosy scarlet, grand foliage.
Schiller, light bright purple, very showy.
Mrs. Heneage, rosy purple.
Reedianum, cherry red, very pleasing.

If a more extended list is required, another good dozen will be found in *Everesteanum*, *Fastuosum flore pleno*, *Frederick Waterer*, *Helen Waterer*, *Lady Clare*, *Lefevreanum*, *Madame Wagner*, *Nero*, *Purpureum elegans*, *William Bovil*, *Stella*, and *The Queen*.

These last named are all distinct and beautiful, some of them being comparatively new varieties.

With regard to the arrangement of the plants when they are required to form bold and effective masses in as short a time as possible, each sort should be planted in groups of three plants in each. The distance between the plants may be from four to five feet. I advise planting in this way because I know in my earlier experience I planted too closely. Even when the soil is quite suitable it will take a single

plant ten years to grow into a conspicuous specimen, but three planted in a group will make a good feature in half that time. I have also experienced the folly of filling up the whole space of a large bed or border with expensive kinds. I should never do so again, my practice of late years has been to plant the best kinds the same distance apart that I have advised and to fill in the remaining spaces with the common Ponticum. These last are to be removed as the permanent plants fill out the space. This is a far better plan than planting the best ones closer together for the purpose of filling up the space and then to have to rearrange the whole of them in a few years; as however carefully the work may be done, the plants cannot be moved without experiencing more or less of a check.

In your leader of June 14 you very properly refer to the question of making the soil for rhododendrons as one of serious importance. I know I have found it so in practice, even when the right sort of material was to be had for the carting on the same estate. I found in making positions for these plants that there was generally a tendency to curtail the space for the roots. The result was, that in ten or twelve years they began to give out. The first part of my time I thought a depth of two feet was ample, but this I proved to be insufficient. I then increased it to three feet with much better results, as if you provide for these plants the right sort of soil they will go down that depth and do better than when in a shallower medium. Observation has also taught me that whether the natural soil is the right sort or whether it has to be made for them, it is a mistake to plant them in positions that are anyway raised, as in such cases they are sure to suffer from drought. I am referring to ordinary cases. If they must be planted in places more suitable for growing watercresses than rhododendrons, raised beds become necessary, but even then I think it would be better to plant the ground with osiers. In places where the land does not require draining, any raised positions should be avoided for rhododendrons. I am quite satisfied that these plants suffer more from drought than many people suppose. This statement may perhaps appear at variance with what I have just written in regard to avoiding a water-logged soil; but it is nevertheless true. Rhododendrons like moisture, both in the air and the soil. But in the latter it must not be in excess of what they require.

AFRICA FOR GARDENERS.

We know something of America for gardeners, and Australia and New Zealand have their several attractions and employments. Lately Mexico has opened wider doors to British interests, and the gardener appears to be wanted there for work that none can do so well as he. The latest phase of the African question does certainly promise an enormous field for British commerce, and wherever that prospers horticulture finds a place and the gardener new employment, with opportunities for enterprise and adventure. When we read of cabbages selling at from two to five shillings each at Barberton, it seems that there must be room for a little gardening there or near at hand. But far away northward in the region of the great lakes, to which Zanzibar is the key in the east as the Congo is in the west, a new world appears, for although a quite old world that has consumed much of European life, it becomes new in its relationship to Europe, and for the energies that call for space in which to expand it has attractions that will rapidly augment under the direction of the powers that henceforth will be responsible for their development in the aims and arts of peace. Amidst the conflict of opinions it is above all things necessary to keep a close eye on the fact that Mr. H. M. Stanley is our highest authority on the characteristics and capabilities of those regions to which negotiations pending refer. This is agreed on all hands. He has, perhaps, exceeded moderation in urging that Britain should take a lead in the settlement of the African interior, and it is possible that he is again immoderate in his enthusiasm on the bold policy our Government is now developing. We must make allowance for enthusiasm, and be thankful that there is yet some fire left in human nature to warm with generous feeling that generally dreadful region of activity known as the "political world." In any and every case Mr. Stanley is a master of the facts; he has trodden the country, become familiar with the people, and has acquired his knowledge, not in haste as a mere tourist, but through years of toil and suffering in which he has never ceased from painstaking and accurate observation. Better than ten thousand newspaper critics who know nothing of the subject first hand is he entitled now to speak, and he has spoken to some purpose. Amongst his many speeches that delivered on the 19th inst. at Newcastle is the briefest, clearest, and most definite in all the series of utterances that have followed upon the announcement of the Anglo-German agreement. From this Newcastle address we have selected a passage that will have a permanent value, both as a record of the present phase of the subject and as a foreshadowing of the possibilities of Africa as affording a new outlet for the energies of Englishmen who find the crowd here too pressing, and opportunities for advancement too poor and too few.

Mr. Stanley said: "Yesterday you were all electrified, I dare say, and grateful for the intelligence that England was about to become in accord with Germany upon the East African question. Only forty-eight hours ago I was inveighing with all my might and main against the British Government and Lord Salisbury for sacrificing, or being about to sacrifice, or threatening to sacrifice, 150,000 square miles of British territory. I was telling them that the British Government had actually been giving a charter to a number of British merchants, and telling them to go to work in Africa and develop it, and see what they could do with it, and immediately after that, when they proceeded to build warehouses and thirty-five miles of railway, and release 3,000 slaves, and pay £11,000 annually to the Sultan of Zanzibar, and when 3,000 labourers were brought to work, under sixty British officers, all at once they were told to stop. They were told that beyond a certain line they could not go. I thought it was my opportunity to say something, and say it I did only forty-eight hours ago. And yesterday I was as much electrified as any of you could possibly be, because I saw that what a legion of explorers had been unable to do, and the army of martyrs and missionaries—those who had died, those who lived, and those who are labouring—your eminent and great Premier had, by a stroke of the pen, secured, not 150,000 square miles, but half a-million square miles more; and then, amply recognizing the muscular, commercial, and the diplomatic power of this country, he had prepared an area of one million square miles over the valley of the Nile, where, if you fill in that compact territory of 650,000 square miles, you might overflow and run at large over the Nile valley, from the equator down to the Pharos lights. That was grand. Now in looking at the agreement, of course professional ranters and talkers may find a good deal to criticize. But we must remember that only about forty-eight hours ago people were trembling about the safety of that 150,000 square miles. And yet now they have got this large area spread over the whole region north of the equator. I see good will on both sides—on the German side and on the English side. You must look at it in that way. Only forty-eight hours ago there was a German territory adjoining the British territory, and they were carping and talking and using rather uncomfortable words towards one another, and it did not seem likely that British territory and British influence would be permitted to expand to the north. Yet the principle has been, "You get out of there, and we will let you come down to the south." So, if you find nothing to be content with on the north-east corner of Lake Nyassa, you will find much to be grateful for to the north. But not only that; you have the whole coast lying up to the Juba river, and if for 125 miles or so near the coast there is nothing to be grateful for, and perhaps for over 100 more it is something like a desert, yet, as soon as you leave it, you have a glorious table-land, and you are in the heart of Africa. So I see now prospects by which British people could breathe in the heart of Africa, whereas before I was very doubtful whether colonists could live there and multiply there as they have multiplied in America. But I see now a possibility, because you will have the whole slopes of Kenia, that magnificent table-land rising to 7,000, 8,000, or 9,000 feet. You have also Mfumbiro, the Mountains of the Moon, and that great escarpment of marl stretching right up to the neighbourhood of the fortress station of Baker. All that territory is fit for colonization. I examined carefully and keenly this morning before leaving Edinburgh what the size of that country was. I found it to measure 900 miles in length and 700 miles in breadth—a very compact bit of territory. On the north there is the grand and sure boundary called the Juba river. It has a length of about 500 miles. It rises in a beautiful and picturesque country which, no doubt, will be thickly populated in the future. On the south you have the Umba river and Kilimanjaro, and after arriving at that place you have the Alexandra Nile, separating you from the German territory to the south; and if you look to the west you see extreme evidence of German goodwill. Of course, they looked to getting the 'Hinterland' or 'back-country' to all their territory east of Victoria. But I have made treaties with a very responsible King in Africa, who could muster 200,000 warriors at any time, and who has territory embracing a considerable mountain range from 1,000 to 12,000 feet high—a beautiful country, inhabited by a very docile and teachable race. What did the Germans do? They said that, although their line should be one degree further south, they would draw their line so that we could have the whole of that King's territory. That is an evidence of German goodwill. Again, after being enabled to draw your line straight to the Congo State, they also grant you freedom of transit. Now, that is just as good for you, for the English people, as though you owned the territory. You have a right to pass through the country from one part to the other. I see another good arising out of the agreement. Portugal, of course, in the hope that the Germans would be barking and biting, perhaps might, like a terrier, bark too. Now, when the two great nations of Europe have joined hands and come to a common accord, and are about to enter into a contract, they will have their best answer. The British are not compelled to retire in disgust on account of fear of squabbling in the future, nor is Germany compelled to retire from East Africa. It has got a magnificent empire, which it can develop; and if they will only study the map, and study the latest reports from explorers who have travelled through that country, they will see enough to encourage them and to enable them further to develop their territory."

EARLY FLOWERING PERPETUAL ROSES.

In Mr. J. Walter's rose nurseries, Mount Radford and Heavitree, Exeter, large numbers of roses are grown for sale, and are at all times interesting to the rose admiring public. The interest is highest, of course, at the time the plants are in flower. I had the opportunity quite recently of looking over them, my object being to obtain the names of the best roses amongst those that flower early. It is pretty generally known that every rose has its season, as every dog has its day. This is the case especially with the hybrid perpetuals, and I shall only refer to that section in this connection. I must mention that in making comparisons as to the time any particular variety may be in flower, the reader should bear in mind that the list I intend to furnish of those I found well in flower in the third week in June was compiled in Devonshire. The names are not taken from individual plants, as in some instances long lines, containing two or three hundred or more of each variety, are grown. The names, therefore, which I give may be considered as representative. My object in obtaining this information is to furnish a list of early flowering roses that will supply a long-felt want in small collections, as by making a selection from the following list the cultivator will secure varieties that will be in bloom before the majority of the same section, so that by growing some of these a longer succession of flowers may be obtained.

Although this list was compiled in Devonshire, the northern reader need not hesitate to avail himself of the information it contains, as this early flowering feature being characteristic, climatic conditions would not alter it. As a matter of course they would not be so early in the north as in the south, but they would be *relatively* early, and therefore valuable.

There is another advantage in planting those I mention. The varieties which flower early in the season generally bloom again in the autumn, or, in other words, they are more thoroughly perpetual flowering in their character than those which do not bloom until July. The reason for this is easily explained, from the fact that the first lot of flowers being over early, there is more time for a second growth to be made. The following are the names of those I found fairly well in flower at the time stated:—

Mrs. George Dickson.—This is a grand rose with large and healthy foliage. The colour bright satiny pink. It is not surpassed as an autumn bloomer.

Alphonse Soupert.—The colour is a pure, vivid rose; the flower large and excellent in form; the growth is also vigorous.

Victor Hugo.—Brilliant crimson, with a very pleasing shade of purple; a very desirable and free flowering variety.

General Jacqueminot was conspicuous both on dwarf plants and standards. This fine old rose holds its own as a garden flower against all comers on account of the brilliant-scarlet crimson colour that is so rich when the flowers are caught at the right time.

Boule de Neige is still the best early and late flowering white perpetual, although *Merveille de Lyon* runs it a close race as an early variety.

Heinrich Schultheis is especially valuable in this list, not only for the delicate colouring that characterizes the flower, which is a pleasing shade of pinkish-rose, but also for its agreeable fragrance. This variety has a robust growth.

Charles Lefebvre deserves prominent mention here, as the dazzling crimson colour of the flowers is very striking.

Alfred Colomb maintains its position, as is evident from the long lines of plants prepared in this nursery for sale. Its fiery red flowers on a bright summer day are certainly very attractive.

Madame Gabriel Luizet is as conspicuous for its bold and handsome foliage, as for its large and full satiny rose-coloured flowers.

Amongst others which were well in bloom, and which are so well known as not to require describing, I may mention *Marie Baumann, Marquise de Castellane, Jules Margottin, Madame Victor Verdier, Comtesse de Serenye, Charles Lamb, Marie Finger, Abel Carriere, Firebrand, Lord Bacon.*

From the foregoing list the reader will find all the colours that he will be likely to require for early flowering. There is not a bad rose amongst them. The only doubtful one as a doer is Marie Baumann, but it is such a grand flower when well done that it is worthy of a trial. I ought to remark here that this list might be extended, as I do not profess to have named all which I saw; only those I considered to be the earliest and best. It is a great treat to look through such a rose nursery as that from which my list was compiled, where neatness and order reign in every part. Ten acres of ground for the most part devoted to roses, means that the directing mind must be always occupied with some part of the management. Where every season the entire stock is sold out, and the land planted again, it is very clear that a man must mean business to keep things going.

After having gained the information I required, the next thing that interested me more than any other was the excellent condition of the whole of the stock of plants, which certainly was a surprise. Knowing, as I did, that roses had been grown upon the same land for more than twenty years, I expected to see some evidence of weakness or disease amongst the plants, but there was nothing of the kind. On the contrary, the stock is more vigorous now than it was ten years ago. In every direction the plants, both standards and dwarfs, are making magnificent growth, and promising a rich harvest of bloom at the proper time. I felt at once that there was some reason for this. The proprietor saw this, and very kindly explained the reason of the improved condition of his stock. It really did not want much explaining, although the results obtained were so striking. The explanation was simply this, that the ground had received a dressing three inches thick of fresh maiden loam before the stocks for the roses were put in, which had made so much difference since I saw the place.

There is in this case a useful lesson to be learnt by those who have to grow roses in old gardens, and do not succeed as they desire. The cause may be that the plants have got tired of the soil, and the remedy is a good dressing of loam. This is putting the case in a nutshell, but if I were to write another long paragraph on the same subject I could not give better advice.

J. C. Clarke.

AMERICAN NOTES.

Fraser's Magnolia.

The flowers of *Magnolia Fraseri* are, observes *Garden and Forest*, of a light canary colour, and with almost the same exquisite fragrance which characterises those of the Swamp Magnolia. A large specimen of this species still stands in Bartram's Garden, and Mr. Joseph Meehan writes of two others in Germantown, one of which is thirty-five feet high, and, although it flowers profusely every year, it never perfects seeds. We have also received from the Meehan Nurseries a flowering branch of a variety of *Viburnum plicatum*, known as Rotundifolium. It seems quite distinct, with reddish twigs and tinted leaves, and comes into flower several days earlier than the typical plant.

The Black Haw.

One of the most beautiful and effective plants which have lately flowered in Central Park, New York, is, states *Garden and Forest*, the Black Haw (*Viburnum prunifolium*), a large, tree-like shrub, which is one of the native plants of this vicinity, although much more common further south. It was planted long ago, fortunately in large numbers, in the park, where many specimens have now grown to a large size; and this year they were unusually full of their large, flat clusters of white flowers, which, later in the season, will be followed by bright blue-black berries. The Black Haw, as it appears in the park this year, is another example of the great value as ornamental plants of many of our little known native shrubs, among which are to be found the safest and therefore the best material for the decoration of parks and pleasure-grounds in the region where they grow naturally. Our flora contains some of the most beautiful trees and shrubs known to man, but Americans, or those who plant gardens, are only just beginning to realize the fact and to learn that they must depend on the native products of the soil for the best material for their plantations. A desire to imitate what is done in other countries has certainly had some deplorable results in retarding the development of American gardening.

New Hydrangea.

Since the introduction of *Hydrangea Hortensia* from China a marked improvement has, remarks the *Orchard and Garden*, taken place in this genus of flowering shrubs. *H. Hortensia* has been superseded by *H. Otaksa*, a better grower and more profuse bloomer. Not long since, *H. paniculata grandiflora* was introduced from Japan, and has taken its place as one of the finest hardy shrubs we have for outdoor cultivation. Various other fine sorts, such as *H. H. rosea, H. stellata prolifera*, &c., have been introduced from time to time. This season there is offered a new and valuable acquisition to the list that will undoubtedly attract much admiration. This, known as *H. ramulus coccinea*, is quite distinct from all others in that the foliage stems are of a dark purplish hue, while the flowering branches are of a dark crimson shading towards the heads to a bright transparent red, from which fact it has been called "Red-branched." It differs also from others in the size of the florets and in the greater circumference and size of the truss. It has the great merit of blooming profusely and producing a fine flower-head upon every shoot. It is remarkable for its large and free blooming. The colour of the flowers is a clear, bright rose, which it retains, when forced under glass, to a much greater extent than does either *H. Otaksa* or *H. Hortensia*, which renders it especially desirable to florists for forcing. Its habit of growth is low and branching

Imported Vegetables.

A considerable quantity of fine vegetables, observes the *Garden and Forest*, come to this city (New York) from Europe during the winter, such as brussels sprouts, with endive and other salad plants. Romaine lettuce is now coming in from Long Island, but an occasional lot still comes from France. The imported lettuce is very large and fine flavoured and sells for 2 dols. 50c. per dozen. A few globe artichokes still arrive and sell for 20 dols. per hundred. The very finest heads are said to be raised in Algeria, whence they are shipped to France and are brought here in boxes of ice which are furnished by the importers.

The Japanese Barberry.

The Japanese Barberry, writes Professor Sargeant in *Garden and Forest*, may perhaps be considered by botanists an extreme form of the common barberry, which assumes very various aspects in the different regions over which it ranges from western Europe to Japan. From a garden point of view, however, it is abundantly distinct from all the forms of the common barberry in cultivation, and Miquel's name of *Berberis Sieboldi* may therefore well be maintained in garden literature at least. It is, in cultivation, a stout, compact shrub, three or four feet in height, with angled branchlets covered with pale grey bark, and slender, three-forked spines. The leaves have finely ciliate margins, and are obovate, rounded or rarely pointed at the apex, and are gradually contracted below into short, broad petioles; they are chartaceous, becoming somewhat coriaceous at maturity, dark green and lustrous, rather paler below, two inches or more long and an inch broad. They turn in the autumn to the most brilliant shades of scarlet and orange. The flowers, with pale greenish yellow ovate petals an eighth of an inch long, are produced in racemes two and a-half to three inches long, and are larger than those of the common barberry. The fruit, which is bright scarlet at maturity, is oval or obovate and half an inch long. It is the most ornamental of all the barberries of the vulgaris section, and there are very few plants which equal or surpass it in the autumn colour of its foliage.

ASPARAGUS CULTURE.

The note by your able correspondent, "J. C. C.," in the issue for June 7th under the above heading was very interesting to me, but I must very strongly differ from the conclusion at which he arrives. I have for the last seven years had to cope with what was originally a very stiff soil, but which has now, by constant cultivation, been mellowed to a depth of fifteen inches, below which is a bed of clay such as would delight the heart of anyone requiring material to puddle a lake or canal. The beds are very old, yet year by year my asparagus grows to the thickness of a man's thumb, and is incomparably superior to that grown in a larger garden on the estate where the subsoil is gravel. At the present time there is grass on my beds which has attained a height of over five feet, and is growing fast. I am still cutting an occasional dish, and shall continue to do so until the end of the month [June]. My course of cultivation is quite ordinary, simply consisting in cutting off the dead tops in the autumn, and applying about four inches of *green* manure, which is taken off again in March, and a dressing of salt and soot applied, and the only subsequent attention being to keep down the weeds. Previous to coming here I had many years' experience in asparagus culture on light land, and never did better than here. My opinion is that the whole question hinges on drainage. This garden is drained about twenty inches below the surface with old tile drains, which are laid pretty closely together, and although they have probably been laid fifty years, are still running freely, so that with ordinary care my land is always in good condition. "J. C. C." says his land was badly drained, so I think he should have improved it in this respect before blaming the staple, as I contend good asparagus can be grown on any ordinary land. I well remember, many years ago, an excellent gardener being appointed to the charge of a large establishment in Derbyshire, where his predecessors had always failed in growing this vegetable, laying the cause of failure to the close, cold subsoil. I was applied to for advice, and my recommendation was to put in at least a foot of broken brickbats, &c., under each bed, and incorporate a large quantity of leaves and road scrapings and a fairly liberal allowance of manure with the staple, raising the beds several inches above the general level, and also to plant only *one year* plants. My advice was followed with the result that asparagus was grown fit for any table. My experience as regards putting out young plants here coincides with that of Mr. Shirley Hibberd, and in forming a new plantation next spring I shall follow my usual custom, applying a moderate amount of manure, and growing radishes and lettuce amongst the asparagus the first season, after which it will require all the ground. I do not claim to have stated anything new, but I hope no one will be deterred from entering on the cultivation of this valuable vegetable simply because they have to deal with a heavy soil, as that is no reason why they should not succeed.

William Smith.
Uttoxeter.

The Household.

RHUBARB JAM.

I was pleased to read your remarks on rhubarb jam making in your issue for June 21. May I supplement them by my own experience? To nine pounds of rhubarb add a quarter of a pound of small sago, the rind and juice of two lemons. These give solidity and flavour to what is usually a sloppy and mawkish preserve. I find three-quarters of a pound of sugar quite sufficient to a pound of rhubarb. I have never seen any mildew on our jams, but then we boil rhubarb *more* than the hour. A third of ripe black currants mixed with sliced rhubarb makes an excellent schoolroom jam for open tarts or rolled suet pudding. Both ingredients are improved by mixing, and I find it highly approved even by those of the household who are not in the schoolroom or nursery.

Housekeeper.

IMPNEY, NEAR DROITWICH.

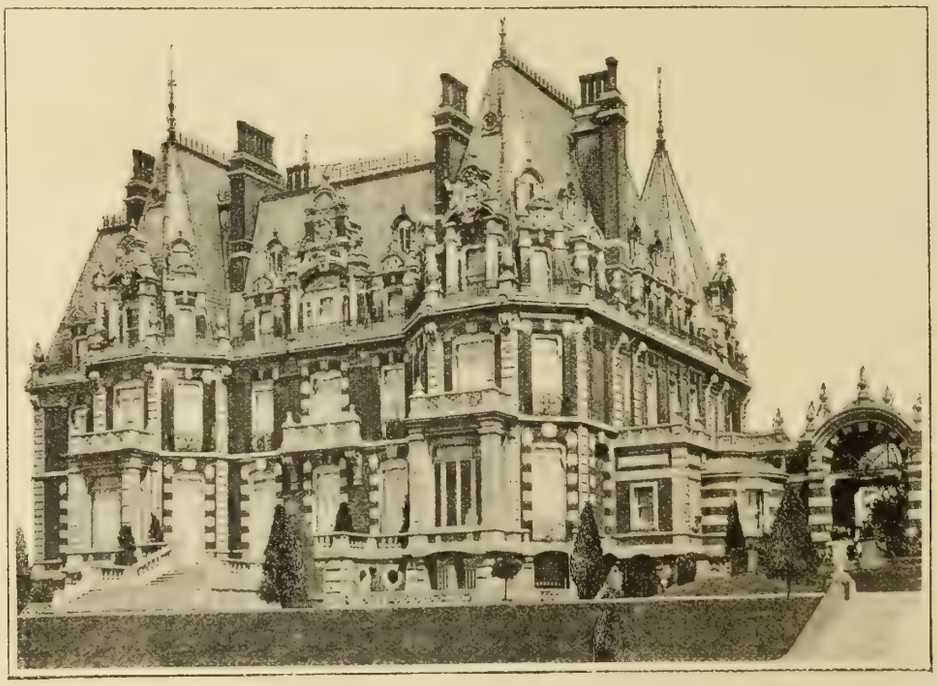
The city of salt is of ancient renown, for the finding of Roman coins on the spot, and the names of the places, tell of a traffic in salt originating here even before Roman times, although those renowned civilizers valued the brine springs, and carried the traditions of their Celtic predecessors into the region of serious facts. But the saltway that passed over the Lickey to Birmingham and Lincolnshire, and the lower saltway passing hence through Evesham towards Hants, indicate by their names that it was in Saxon times these roads or trackways acquired importance, for the word salt is Teutonic, and possibly derived from the Latin sal, though we are never safe in assuming that the Teutons were debtors to the Latins in respect of these apparent transferences from one language to another, because both languages may derive from the same Aryan root. This city of salt is in a peculiar transitional condition, and to the commercial world it presents the various characters of a mixed pickle, the tumble-down houses and the sinking roadways being as emblems of its fortunes, while the fiery furnaces in which the brine is boiled to make commercial salt are certainly typical of the life that remains in the changing industry which has firm foundations in the productions of nature and the necessities of man. When Leland, in the time of Henry VIII., visited Droitwich, he found three salt springs which, he says, produced the finest salt in England. The amount produced up to 1725 was as nothing to what resulted from the discovery made in that year. Sir R. Lane, M.P. for Worcester, caused the gypsum at the bottom of an old brine pit to be pierced, and very soon there resulted from the operation a river of brine affording a copious supply that soon made Droitwich a place of wealth and importance. The old pits became worthless, and their owners were beggared; but the new river of salt proved such a source of wealth that many fortunes were made and powerful families established.

Although we journeyed to Droitwich to see a garden, while caring but little for salt, we were tempted to halt in the town and look over the Droitwich Baths, those of St. Andrew's being the more important, as embodying the latest notions of the scientists on the subject of employing salt as a curative agent in cases of rheumatism, gout, neuralgia, sciatica, paralysis, and all that class of diseases. These St. Andrew's Baths are of the most diverse character, comprising douche, needle, vapour, and swimming baths, all admirably fitted, so that the patients experience much more of pleasure than of pain in submitting themselves to the routine of the salt cure. The brine employed is of immense strength, and has the effect of exciting the skin and all the excretory organs, greatly to the advantage of the general health, and more especially in cases where defective assimilation is the main cause of the necessity for a cure. John Corbett, Esq., M.P., the owner of the St. Andrew's Baths, is building a huge boarding house for the accommodation of patients resorting to these baths, and it is highly probable that Droitwich will acquire importance as a winter health resort, the climate being mild and equable, and the country around full of interest and beauty in all seasons of the year.

At a brief distance from the town is the new and beautiful residence of Mr. Corbett, who has here built his house upon a rock and called it Impney. It is a stately and quite ornate mansion in a style of Gothic commonly known as "French," and, in a general way, represents the Norman renaissance. The house presents a brilliant mass of colour amidst the abundant greenery of its surroundings, its facings consisting of red brick and grey stone, with abundant ornament and a profusion of ascending lines that culminate "Gothically" in the sharp pitch of the roofs.

The interior corresponds in the nobleness of the chief apartments and the richness of their contents in works of art. The pictures constitute a special and important feature of Impney, and include a fine early Turner in the strong, positive colour of his best time; many portraits of British statesmen and other celebrities; a few remarkable flower pieces by a French painter of about the time of Watteau, and a good selection of landscapes and cattle pieces by modern British artists. Amongst the sculptures, here is the original marble of the celebrated "Reading Girl" that gave delight to thousands in the International Exhibition of 1862. She is as young, as beautiful, as refined and intellectual, and as completely absorbed in the book she reads as when she surprised and delighted the world on her first appearance in society. But she has turned down a corner of the book, and that is a sin of so serious a nature that it proclaims her to be, like the marble she is made of, a quite terrestrial creature.

The grounds and gardens of Impney are of great extent, and have been in great part formed, and for some years past wholly managed, by Mr. Richard Parker, who is a king of chrysanthemums, a fact particularly worthy of notice, because we find him here a master of the large work that is included in the higher departments of landscape gardening, his business ranging from geometric gardening to fruit and flower forcing, and thence to woodlands, water scenes, prospects, and plantations. The terrace garden, with its boundary lines of lemon thyme, is of considerable extent, and leads off to massive surroundings of rhododendrons and other ornamental trees and shrubs, and thence again to rockeries and water scenes of great variety and beauty, the river Salwarp being convenient for the purpose, and of special value in the beautifying of this property. In the woodland walks the water affords endless entertainment, especially when we get high up in some commanding position, and through openings that serve as green picture frames to the scenes revealed, we are enabled to trace the windings of the stream or enjoy the foam and the roar of its rush over the rocks, or, again, its placid quietude where expanded into a lake-like breadth, and affording proper sites for rustic bridges to connect the walks and save many a toilsome round. In many places Mr. Parker has been enabled to produce most picturesque effects by taking advantage of circumstances, and in all the rockeries he has employed the stone of the district, which is not only appropriate but singularly effective in its colours, the rock here being a fine-grained sandstone of the New Red formation, as is the case also in the salt districts of Cheshire.



IMPNEY, NEAR DROITWICH, THE RESIDENCE OF JOHN CORBETT, ESQ., M.P.

The glass at Impney is of a comprehensive character, including all the requirements for a plentiful production of pines, grapes, peaches, and other such requirements of a substantial country house. The handling of first-class fruits here is in first rate style, and as we pass from house to house noting the successional crops and the prosperity of all, we find ample explanation of Mr. Parker's honourable position in the fruit world, and marvel somewhat that he can find time and strength to do justice to the chrysanthemum, of which he is one of the most renowned masters. But as we pass from the houses to the frame grounds and sheltered enclosures we see the "mums" in a grand state of growth, and are well advertised that he will be as happy amongst the flowers of the autumn as amongst the fruits of the summer, and we may add the vegetation of all seasons. We noted in several of the vineries that fig trees were trained to the back walls for clothing merely, the shade of the vines being too much for any expectation of fruit. But figs are as well grown here as other fruits, and a tree of Negro Largo presented such a crop as would suggest that the utmost limit of fruitfulness had been attained in

this instance. This is a fine variety, and one of the best for pot culture. Probably hoyas would help out the clothing of the back walls of these vineries, but it would be an extreme test of their capabilities for prospering in the shade.

There will shortly be developed here a great and grand feature in a house now in course of construction by Messrs. Boulton and Paul, of Norwich. Mr. Parker has in his charge a number of tree ferns that are fast outgrowing the space allotted them, and will either lift the roof or suffer in the attempt. For these and other plants of stately character requiring only a temperate climate the new house is being prepared. The site of a quarry near the mansion has been selected for this house, which will therefore be considerably below the level, and indeed the roof will not rise above the level, and the whole thing will be invisible until actually approached because of its surrounding screen of trees and shrubs. The vast roof will possibly sometimes have to sustain a considerable weight of snow, for although this is a mild climate, snow is in the list of contingencies, and we shall hope to learn something in due time in respect of plant house construction under peculiar circumstances. The manner in which the pipes are being taken from the boilers afar off for the heating of this house is an ingenious bit of engineering as interesting as the construction of the house itself.

Many other works of extension and improvement are in progress, and it is contemplated to rearrange the geometrical terrace garden, which is not quite in harmony with the style of the new house. This will be a big job, and the choice of a design is a matter of the first importance.

At the time of our visit the rhododendrons were flowering superbly. These shrubs thrive in a more satisfactory manner in the reddish sandy loam of the place than in beds of peat specially prepared for them. Those in peat make a somewhat "long-jointed" growth, and although they flower gaily, they are in respect of flowering not equal to those in the natural soil, which make less annual growth, are "short-jointed," and flower most profusely, while they are always in perfect health. This agrees with what our esteemed coadjutor, Mr. Clarke, reports of those he planted on mounds, and that, being influenced by perfect drainage and full exposure, made a short annual growth, which was perfectly matured and produced a fuller head of bloom than those in the peat beds and growing more freely.



TERRACE GARDEN OF IMPNEY.



IMPNEY AND THE RIVER SALWARP, AS VIEWED FROM THE WOODS ABOVE.

THE PHYSICK GARDEN AT CHELSEA.—The *British Medical Journal* understands that the Apothecaries' Society are considering the propriety of selling their old botanical garden, known as the "Physick Garden," at Chelsea, which is in the vicinity of the Chelsea Hospital. The freehold is said to be of the value of upwards of £30,000, and the maintenance involves a cost of £600 a year; and it is thought the fund might be better applied. It may be necessary, however, to apply for new legal powers in respect to such sale.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Orchids now blooming include:—Anguloa Clowesi; Cattleya amabilis, C. candida, C. crispa, C. M'Morlandi, C. Schilleriana; Cœlogyne Lowi, Cycnoches barbatum; Dendrobium albo sanguineum, D. formosum; Epidendrum alatum majus, E. maculatum grandiflorum; Oncidium divaricatum, O. papilio majus; Stanhopea aurea, S. Devoniensis; Vanda tricolor.

THE HOUSE.

The employment of plants for the decoration of the fireplaces in the principal apartments has acquired considerable popularity, and much might be said in its favour, for, when the plants are appropriate and tastefully arranged, they present a far more attractive appearance than any of the so-called grate ornaments. The most useful plants are such as afford striking forms and pleasing tones of green or variegated foliage. The palms, dracænas, grasses, and miscellaneous "foliage" plants of neat and, generally speaking, light habit should predominate—lumpy plants presenting large surfaces are not suitable—and there must be a fair proportion of colour to light up the group. For this purpose the flowers should be choice as well as showy. A general objection may be urged against all kinds of bedding plants as unsuitable: the same principle should be followed in selecting the flowers, as the leaves, form, and a certain airiness of style are of great importance. Hence a neat tuft of white marguerites peeping out from amongst grassy leafage will be far preferable to a zonal pelargonium. Many greenhouse plants answer admirably for this kind of decoration, which never need be costly, but must always be tasteful, and combine richness and delicacy without any strong display of colour. A simple procedure that may or may not answer, as the case may be, consists in covering the back of the grate with cheap thin paper of a very dark green colour, and putting it on as much crumpled as possible, so as to be practically invisible, to afford a kind of distance rather than a background, its real purpose being to conceal ugly ironwork and prevent the intrusion into the midst of the plants of any such features. The plants must all be clean and dry when placed in position, but the soil in the pots should be moist enough to carry them through for a few days, when a change must be made for the sake of the plants.

CONSERVATORY AND GREENHOUSE.

Conservatory must be ventilated night and day, unless there are many stove plants, in which case shut up while the sun is on the house. Use water in plenty, and liquid manure wherever it seems to be required. Free-growing soft-wooded plants may be assisted now by placing the pots in pans of water, and sprinkling the paths morning and evening.

Greenhouse Herbaceous Plants, such as cinerarias, primulas, heliotropes, herbaceous calceolarias, &c., must have frequent attentien now. Seedlings to be pricked out into pans or put singly in thumb pots; shift cuttings and rooted suckers; sow calceolaria and cineraria seed to succeed the first lot; a moist, cool, shady place will bring them on, and as they gain substance they must have more light and air. Use for all these plants a light rich compost in a sweet and friable condition.

Winter Flowers must have attention. Propagate euphorbias; repot and propagate poinsettia pulcherrima; give salvia splendens another shift. Put all potted shrubs for winter blooming on a cool, moist bottom for a month, then remove them to a sunny position under a wall or fence, to hasten the ripening of the wood.

STOVE AND ORCHID HOUSE.

Orchids require now a free circulation of air to ripen the spring growth. Use as little shading as possible, and keep the air moist by watering the paths and borders in the afternoon, after which shut up.

Stove Plants required for the production of flowers during the winter to be grown on vigorously, to have them strong and well established by the end of the autumn. Ventilate freely and maintain a moist atmosphere.

FORCING AND FRUIT HOUSES.

Cucumbers must have a steady bottom heat to produce fine fruit. It is a common fallacy that when the weather becomes warm the beds may be left to cool down, but it is rarely fine fruit are cut from frames that are never lined after the first heat is out. Keep a moist atmosphere, for cucumbers never thrive in a dry air.

Fig Trees swelling up a second crop require a moderate amount of atmospheric humidity and to be supplied with abundance of moisture at the roots. Trees in pots to have liquid manure two or three times a week.

Vines in early houses to be kept rather dry to promote the ripening of the wood, and to have plenty of air. In late houses encourage quick ripening, keeping up the heat, and ventilate well to prevent damp and mildew. Water and mulch the borders of late houses, and by all means abstain from cropping the borders, as the practice is most injurious to the roots of the vines, the best of which are near the surface.

FLOWER GARDEN AND PLEASURE GROUNDS.

Chrysanthemums require liquid manure now and frequent sprinkling overhead. Tie out as fast as the side shoots break, for if they once harden out of shape it is no easy matter to restore them to a proper form.

Hardy Shrubs of all kinds may now be propagated by layers or cuttings, the latter preferably, and the smaller the better if the shoots are firm.

Rhododendrons should have the dead trusses removed with as little delay as possible, but without injury to the young shoots. If seeds are allowed to ripen the growth is checked, and there will be less bloom next year.

Roses require a mulch of rich manure and plenty of water to assist the late blooms. Half-ripe shoots of most of the perpetuals may soon be struck with the help of a moderate bottom-heat; but it is full early yet, and better to wait a week or two than waste time in putting in soft shoots. Buds to be entered on briers with discretion; if either the buds or the shoots to be entered on are in a soft state they will not take; the bark must be firm or the work cannot be done properly.

FRUIT GARDEN AND ORCHARD.

Bush Fruits.—Put netting over currants, gooseberries, and cherries to keep the birds from the fruit. To retard or keep hanging currants and gooseberries cover with mats.

Raspberries to have their suckers reduced to three or four to every stool; those left will rise strong and ripen their wood well, but a forest of spray will be all weak alike. Never dig between raspberries, it causes them to throw their suckers a long way from the stools; but surface manuring at this time of year, and no disturbance of the earth, causes strong suckers to rise near home.

Strawberries, as soon as rooted in pots, to be removed to a frame and placed upon a bed of some moist material, where they will soon fill the pots with roots. Remove weak runners, and peg down in pots or on the border a few more of the best.

KITCHEN GARDEN.

Broccoli must be put out to furnish a supply during autumn. Manure liberally, and if the planting is done in dry weather give water as abundantly as possible. Better, however, to get the ground ready and wait for showers, both to save labour and give the plants a better start, for a free and natural growth is especially requisite for broccolis and cauliflowers. Transplant from the seed bed to a piece of rich light soil and plant from the late sowings.

Cauliflower.—Plant out and remember that for this crop the soil cannot be too rich; they will actually grow well in dung only, if well rotted. Hoe between those coming forward, but do not earth up the stems, except of such as are loose at the collar.

Celery requires a heavy watering where the ground is dry. If the fly has attacked the leaves pick them off and burn them; generally a few leaves only are touched, and they can be spared. But as no crop will bear to be entirely disleafed, where the grub has got the upper hand it will be in vain to expect much produce. Dustings of soot are useful to protect celery.

Winter Greens to be planted out at every opportunity. It is most important to get out good growths of Brussels sprouts as early as possible.

VILLA FARM.

As there is usually a scarcity of grass on farms of small size at the present moment, it is essential to direct special attention to the fact that there is some risk of the milch cows and other cattle suffering from an insufficiency of food. On meadows that have been regularly fed from during the early spring months there is but little grass, and in the meadows that have been mown the grass has not yet had time to recover and make new growth. If there are any signs of the cows not having a sufficiency of nutritive food, such as indicated by their appearance or decrease in the quantity and richness of the milk, means should be taken to remedy the deficiency by supplying them once or twice a day with pea or bean meal, cake, or brewers' grains, and if available supply once a day with green tares or cabbages, but preferably the former, as there is no risk whatever of the milk having a disagreeable flavour imparted to it. A bite of hay once a day will also be of much service. It will of course be necessary to utilize the food that is at hand or can be the most readily procured; but of one thing the owners of small holdings may be assured—that it is mistaken economy to feed milch cows indifferently, for any stint in the food tells at once on the quality and the quantity of the milk. Although in some respects the maintenance of young stock in first-class condition is of less importance than in the case of the cows, these animals must not be allowed to fall away and have their growth checked, and it will be more profitable to supplement the grass, if the supply is at all short, with cabbages, tares, lucerne, or whatever green food may be available. Pure water in abundance should be provided for all classes of stock at this season of the year, and if the animals can be placed where they can have the shade of trees at mid-day it will be a decided advantage.

Notes of Observation.

THREE GOOD PEAS.

I wish to publish a few lines in the Magazine about *Laxton's Earliest of all Pea*. I have grown this variety for several years, and have been rewarded with a most abundant crop every year. The crop I have been gathering has astonished everyone that has seen them. I have grown all the early sorts of peas from different firms, and cannot find one to equal this for earliness, and it is most prolific, and the flavour all that can be desired. I have to supply a large family, and, therefore, I must provide for a good cropping variety. The next best with me is *William the First*, and for the main crop *Duchess of Edinburgh*. The last-named is the very best pea ever grown at the present day for crop and flavour. William Cavill.

Bishop's Hull House, near Taunton.

ERFURT EARLY CAULIFLOWER.

This might be called "The Gem" cauliflower, for it is a perfect beauty in size, form, and colour; neat, compact, modelled for a gentleman's table. In its behaviour it is as gentlemanly—or if you prefer it, ladylike—as could be desired by anyone who has tasted both the difficulties and delights of cauliflower culture. With This or That in the cauliflower line for early supply I must sow in autumn and keep the plants over winter. But the Erfurt may be sown in a pan in January, February, and March to supply a succession, and that being done, very simple management suffices to ensure supplies of perfect cauliflowers from the middle of June until Veitch's Autumn cauliflower takes its place. This Erfurt beauty is unique for quickness of growth and table quality. H.

The Temperature of the Moon is not of great consequence, or so at least it will appear to the mass of mankind at present. But the information now at command on the subject may be worth the trifle of space it will occupy here. Professor S. P. Langley has been for some time occupied in observations and researches thereupon at the Alleghany Observatory, and has reached what he believes to be a safe conclusion in a matter which will be understood to be one of peculiar difficulty. And the conclusion is that the mean temperature of the sunlit lunar soil is but a little above freezing point, or zero of centigrade. What is the temperature in the absence of the sun is quite unknown. It is a fact admitting of no dispute that a certain amount of heat is radiated from the sunlit lunar surface, and is made sensible to observation.

Literature.

MR. STANLEY'S "DARKEST AFRICA."

In Darkest Africa; or, the Quest, Rescue, and Retreat of Emin, Governor of Equatoria. By Henry M. Stanley. (Low, Marston, and Co.)—The two volumes of Mr. Stanley's great book will assuredly be devoured as the greatest banquet of the season. They have been produced in such haste that we marvel at the fewness of their blemishes, but remembering who and what Mr. Stanley is, we will not confess to any surprise that great as were our expectations, they are considerably surpassed by the thrilling interest and the scientific value of the story now told in full detail of the most remarkable expedition of modern times, perhaps of all times. The grasp of the subject, which is so peculiarly his own, is equalled by the vigour, the dignity, the picturesqueness, and the grand sincerity of the style, the man who stands alone, almost in the world, as a manager of men, is not the less a hero when he writes a book.

In our issue for May 10, 1890, we placed before our readers a map of Mr. Stanley's journey from Yambuya to Bagamayo, and with it some account of his recent glorious expedition. The story now fully told loses nothing of its interest through the anticipatory particulars that have been made public in this kind of way, for in truth the whole thing is so vast in plan, purpose, and results, that had we not been prepared for it by various premonitory notes, we might find these two volumes less attractive and impressive than they actually are, just as the Falls of Niagara disappoint us at a first view, because too vast to be comprehended until the mind has undergone some training for the task. Let no one suppose, therefore, that because Mr. Stanley has himself communicated freely on the subject of his adventures and discoveries, that he has robbed his book of its freshness or its importance, or raised a question of the necessity for a careful perusal of it by all who would be informed of the facts of the case and the philosophy that underlies them. The philosophy? That is by no means concealed, for herein are solved the greatest of geographical problems; herein is a new empire opened for intelligent industry and the development of the arts of civilization in place of the barbarity, cruelty, ignorance, and bloodshed that justify the expression "Darkest" Africa, and supply a sufficiently dark side to a story that is unequalled for its romantic interest and its splendour as a picture of the interior of the Africa of to-day.

The rescue of Emin might have proved an anti-climax, but the event shrinks now to the proportions of an incident. Emin should have been a hero to stride in these pages like a colossus, but he is not that. Time may put the case in a light now unsuspected, but for the present we cannot but compare Stanley's unquestionable nobleness with Emin's apparent meanness, and it is somewhat of a relief in the end that he did not accompany his deliverer to be fêted and lionized as a benefaction to the London season. It is best for the present to let pass all the moral considerations that arise out of Emin's conduct, and to turn to this grand book for information that touches our sympathies and interests, apart from the personal and political points that are necessarily prominent in the comprehensive consideration.

Turning to the book for the matters that will in the future establish it as of the very first importance as a record of discovery, we find that Mount Ruwenzori is the centre of interest, and in one sense at least the most wondrous mountain in the world, for, to put a sort of mountain into a word, this cloud-collecting mass is the source of the Nile, and thus the question of ages is answered.

If the reader will refer to the map at page 270 of the G. M., May 10, 1890, it will be seen that after leaving Yambuya, on the Aruwimi river, Stanley's course was nearly due east to Kavalli, on the southern shore of Lake Albert Nyanza. It was in this part of the journey that he found himself in the vast forest, the description of which has been felt like a picture of another world. It was here he met with the cannibal tribes established in villages, and the pigmies of ancient renown, that long since were banished to the region of myths, but are now re-established to justify the stories of the ancients. And yet another tribe is here, the Manyuema, a race of marauders employed by Arab slave and ivory traders, who butcher, and capture, and plunder the other tribes as policy or lust influence them in their expeditions. From these the Stanley Expedition obtained help, and so was made to appear in a false light by the tribes they customarily harried, and while they gave help they committed unheard of wrongs in the way of murder, cruelty, and devastation. We know of nothing in records of travel that can be cited as parallel in fascination to Mr. Stanley's description of this forest, and the very rain that covers it with gloom and fills it with fertility, acquires an interest that probably few have ever felt in rain before. He says:—

The fifth rain of this month began at eight a m. Had we not enough afflictions without this perpetual rain? One is almost tempted to think that the end is approaching. The very "floodgates of heaven" seem opened and nature is dissolving. Such a body of rain is falling that the view of all above is obscured by the amazing fall of raindrops. Think of the countless number of leaves in this forest, and that every leaf drops ten to twenty times per minute, and that from the soaking ground rises a gray cloud of minute rain in vapour, and that the air is full of floating globules of water and shreds of leaves! And add to all this the intense fall of rain as the blast comes bearing down the top, and whips drowning showers on us, and sways the countless branches, and rushes wailing through the glades with such force as though it would wrench the groaning trees out of the earth. The moaning and groaning of the forest is far from comforting, and the crashing and fall of weighty trees is far from assuring, but it is a positive terror when the thunder rumbles above and its sounds reverberating through the aisles and crooked corridors of the forest, and the blazing lightning darts spitefully hither and thither its forky tongues and sheets of flame, and explodes over our heads with overwhelming and deafening shocks. It would be a vast relief for our sick and wounded to be free of such sounds. An European battle has no such variety. And throughout the day this has continued unceasingly. It is now about the tenth hour of the day. It is scarcely possible daylight will ever appear again, at least so I judge from the human faces steeped in misery. Their owners appear stupefied by terror, woe, sickness, loss of friends, hunger, rain and thunder, and general wretchedness. They may be seen crouching under plantain-leaf-sheds, native shields, cotton shelters, straw mats, earthen and copper pots above their heads, even saddles, tent canvas covers, blankets, each body wreathed in blue vapour, self-absorbed with speechless anguish. The poor asses with their ears drawn back, inverted eyes, and curving backs, captive fowls with drooping crests, represent abject discomfort. Alas! the glory of this earth is quite extinguished. When she finally recovered her beauty, and her children assumed their proud bearing, and the growing lakes and increasing rivers were dried up, and how out of the chaos the sun rose to comfort the world again I know not. My own feeling of misery had so exhausted me that a long sleep wrapped me in merciful oblivion.

From the southern shore of Lake Albert Nyanza, as the map will show, the journey to the western shore of Lake Victoria Nyanza lies through the Semliki Valley, the mighty Ruwenzori lying midway east of the route, the seat of the fountains of the Nile, the peaks of Ruwenzori being the "Mountains of the Moon" known, with the forests and the pigmies, to Hekateus and Hipparchus and other ancient writers. The snows of this mountain make the famous river, but until now the fact has never been scientifically stated or generally believed, and the present revelation is, in one sense at least, the result of the misfortunes Mr. Stanley had to endure, for these detained him at Kavalli a sufficient length of time to enable him to make the necessary observations.

It should be observed that Ruwenzori does not like to be stared at, and he so envelopes himself in mists that one may wait and watch for months without once seeing him. This is the explanation in great part certainly, and it may be altogether, of the mystery that has to this time enveloped the geography of the river Nile. Travellers have passed through these regions seeing nothing because there was nothing to be seen. It would probably have been the same with Stanley, but his troubles detained him and he had time for obtaining glimpses and ultimately for solving the great problem. The Semliki river, which is the first stream fed with the snows of the neighbouring heights, flows through a gorge which is the greatest manufactory of cloud and mist in the world, and it is only on about sixty days in the whole year that Ruwenzori is visible. These mists rise and become chilled upon the upper peaks where they change to rain and snow, and a prodigious production of water is the result. There is no wind to move the mist, for the vastness of the mountain intercepts every breeze, and it is particularly interesting to learn that our "London particular" as Charles Dickens characterized the fog of the smoky metropolis is not the only fog that produces unpleasant sensations. Mr. Stanley describes the fog of the Semliki, which we take to be pure humidity as "smarting the eyes and half suffocating us." And he further says that the abundant humus of the soil, the accumulation of ages, aids the growth of plants as the vapour aids it above, the result being a marvellous vegetation. "Where the humus is deep we find a tall and stately forest, with an impervious underwood of young trees bound together and sometimes altogether hidden by countless climbing vines and robust plants; where the humus is thinner, as near the foot of the range, dense crops of cane grass, from 10 feet to 15 feet in height, flourish luxuriant and impenetrable. Every tree stem has its green robe of soft moss dripping with dew, and each tree fern or horizontal branch has its orchids, or broad elephant-eared plant. Every rock is clothed with lichens, and if but the slightest hollow is found in it there will be seen a multitude of tropical plants crowding every inch. In short, everywhere, except upon the perpendicular face of a late moved boulder, vegetation thrives of every variety of greenness, form, and character."

The description of the mists and clouds, their movements, colours, changes, and visible influences fasten one in a new way, and it is evident that average home experience of mountain vapours shrinks to nothing in comparison with the wonders of cloudland in the heart of Africa. Often the scenes in which the cloud is everything and the mountain, mighty as it is, becomes nothing because not seen, surpass in splendour all that we have heard of hitherto of such aspects of nature; but often also they surpass all average experience in unmitigated horror, for darkness that may be felt, and that for many days together is unrelieved by any change from the saturating mist, depresses the spirit of man, and goes near to render life unendurable. It is agreeable to be taken from the record of actual sensations by Mr. Stanley's admirable mode of presenting a picture of the distribution of land and water here in a way to be generally understood. He says:—

"The average European reader will perfectly understand the character of the Semliki Valley and the flanking ranges, if I were to say that its average breadth is about the distance from Dover to Calais, and that in length it would cover the distance between Dover and Plymouth, or from Dunkirk to St. Malo in France. For the English side we have the Balegga Hills and rolling plateau from 3,000 feet to 3,500 feet above the valley. On the opposite side we have heights ranging from 3,000 feet to 15,500 feet above it. Now, Ruwenzori occupies about 90 miles of the eastern line of mountains, and projects like an enormous bastion of an unconquerable fortress, commanding on the north-east the approaches by the Albert Nyanza and Semliki Valley, and on its southern side the whole basin of the Albert Edward Lake. To a passenger on board one of the Lake Albert steamers proceeding south, this great bastion on a clear day would seem to be a range running east and west; to a traveller from the south it would appear as barring all passage north. To one looking at it from the Balegga, or western plateau, it would appear as if the slowly-rising tableland of Unyoro was but the glacis of the mountain range. Its western face appears to be so precipitous as to be unscaleable, and its southern side to be a series of traverses and ridges descending one below the other to the Albert Edward Lake. While its eastern face presents a rugged and more broken aspect, lesser bastions project out of the range, and is further defended by isolated outlying forts like Gordon Bennett Mountain, 14,000 feet to 15,000 feet high, and the Mackinnon Mountain, of similar height. That would be a fair figurative description of Ruwenzori.

"The principal drainage of the snowy range is to the west, down into the Semliki River, and south to the Albert Edward Lake. The Katonga, flowing into Lake Victoria, and the Kafur into the Victoria Nile, are both fed from the eastern face of Ruwenzori. The Mississi River, emptying into Lake Albert direct, rises from the northern extremity of the mountains."

The reader to whom amusement is more attractive than information may find much in these volumes worthy of perusal and remembrance. The story of humanity, however sad in the aggregate, is never without ludicrous features, and the elements of fun for such as can perceive them. There is a lot of light in "Darkest Africa" and the necessarily heavy matter that must have prominence is not without much lively relief that detracts not from the dignity of the book because of its truth and appropriateness. As a master of men Stanley wins laurels, whether compelling carriers to carry, or assassins to withold their clubs and poisoned arrows, as when composing the squabbles of the camp and the difficulties of the domestic life of the motley crew that commonly surrounded him. He is generous to Emin, and if he obtains no gratitude nor even recognition of what he did for that eccentric individual, he has no complaint to make, and for our part we are content to dismiss him, satisfied for the present that he has played a most useful part in decoying Stanley to Africa to effect his deliverance.

Exhibitions and Meetings.

ROYAL AQUARIUM ROSE AND PINK SHOW, June 27 and 28.

The fourth of the series of horticultural exhibitions at the Royal Aquarium, under the superintendence of Mr. William Holmes, was held on the above dates, and proved highly successful. Roses, to which the exhibition was chiefly devoted, were shown in immense numbers and in remarkably good condition, tea-scented varieties forming a very strong feature. Pinks shown in competition for the prizes offered by the National Pink Society were sufficiently numerous to produce an interesting display, and to encourage the society to persevere in the work it has taken in hand. Hardy flowers had a prominent position in the schedule, and as the whole of the classes were well filled, they contributed liberally to the attractions of the exhibition. Additional interest was imported to the gathering by the large exhibition of strawberries held in conjunction with the conference of the British Fruit Growers' Association.

Roses.

The competition was very severe throughout, the entries ranging from six to fourteen in each class, although some who had entered failed to put in an appearance. Tea-scented varieties were exceptionally well shown, and the large assemblage of blooms proved to demonstration the great extension the cultivation of these exquisitely beautiful varieties has undergone of late years.

Nurserymen's Classes were all well filled, and contained collectively the finest roses in the show. Mr. B. R. Cant, Colchester, was successful in taking the first place in the competition for the prizes for forty-eight. The blooms were large, and bright in colour, and the varieties represented were Lady Mary Fitzwilliam, Victor Verdier, Madame Hoste, Francois Michelon, Marie Verdier, General Jacqueminot, Merveille de Lyon, Madame Ducher, Madame Willermoz, Marie Baumann, Gabriel Luizet, Alfred Colomb, Madame Cusin, Suzanne, Marie Rodoconachi, Niphetos, Etienne Levet, Viscountess Folkestone, Le Havre, Baroness Rothschild, Dupuy Jamain, Innocente Pirola, Senateur Vaisse, Madame Desir, Madame C. Joigneaux, Her Majesty, Alfred K. Williams, Marie Van Houtte, Mons. Treviz, La France, Prince Arthur, Marguerite de St. Amand, Duke of Wellington, Catherine Mermet, Magna Charta, Marechal Niel, Boieldieu, Souvenir d'un Ami, Duke of Edinburgh, Cleopatra, John Hopper, Mrs. J. Laing, Victor Hugo, Souvenir d'Elise Vardon, Marie Baumann, Marie Verdier, Ulrich Brunner, Pride of Waltham, and Madame de Watteville; the English Fruit and Rose Company, Hereford, was a close second; and Messrs. Paul and Son, Cheshunt, and Messrs. D. Prior and Son, Colchester, were third and fourth respectively. There was a spirited contest for the prizes for thirty-six varieties, and the premier award was made in favour of Messrs. Keynes, Williams, and Co., Salisbury, who had superbly-developed blooms of Francois Michelon, Catherine Mermet, Constantin Fretiakoff, Lady Mary Fitzwilliam, Catherine Mermet, Francois Michelon, Niphetos, Madame Alphonse Lavallée, La France, Horace Vernet, Francisca Kruger, Star of Waltham, Mons. Noman, Alfred Colomb, Countess of Pembroke, Francois Levet, Amazon, Madame Charles Wood, Madame de Watteville, Duke of Wellington, Senateur Vaisse, Souvenir d'Elise Vardon, Countess of Oxford, Comtesse de Nadaillac, Marie Baumann, Madame Gabriel Luizet, Etienne Levet, Jean Ducher, Duke of Edinburgh, Her Majesty, Madame C. Joigneaux, Souvenir d'un Ami, Ulrich Brunner, and A. K. Williams; Messrs. George Cooling and Sons, Bath, and Messrs. G. and W. H. Burch, Peterborough, followed closely for second and third places. The class for twenty-four roses, three trusses of each, was a remarkably good one, and here Mr. B. R. Cant was first with finely-developed blooms of Ulrich Brunner, Pride of Waltham, General Jacqueminot, Her Majesty, Prince Arthur, Souvenir d'Elise Vardon, Victor Hugo, Merveille de Lyon, Baroness Rothschild, John Hopper, Duke of Edinburgh, Souvenir d'un Ami, Dupuy Jamain, La France, Alfred Colomb, Marie Verdier, Francois Michelon, Innocente Pirola, Lady Mary Fitzwilliam, Alfred K. Williams, Etienne Levet, Violet Bouyer, Mrs. J. Laing, and Marie Baumann; the Fruit and Rose Company was a capital second; and Messrs. Paul and Son and Mr. C. Turner, Slough, were third and fourth.

There were two classes for eighteen teas—one for single trusses, and the other for triplets. In the second of the two, Mr. G. Prince, Oxford, scored a capital first with superb blooms of Princess of Wales, Souvenir de S. A. Prince, Souvenir d'un Ami, Alba Rosea, Souvenir d'Elise Vardon, Francisca Kruger, Marechal Niel, La Princesse Vera, Innocente Pirola, Catherine Mermet, Comtesse de Nadaillac, The Bride, Hon. E. Gifford, Anna Olivier, Jean Ducher, Cleopatra, Marie Van Houtte, and Rubens. Messrs. D. Prior and Son and Messrs. Keynes, Williams, and Co. were second, third, and fourth respectively in the class. Mr. B. R. Cant and Mr. G. Prince changed places in the class for eighteen single trusses, the former being first with remarkably fine blooms of Madame Bravy, Francisca Kruger, Hon. E. Gifford, Ethel Brownlow, Marechal Niel, Madame de Watteville, Madame Willermoz, Ernest Metz, Caroline Kuster, Catherine Mermet, Marie Van Houtte, Amazone, Souvenir d'un Ami, Madame Cusin, Innocente Pirola, Souvenir d'Elise Vardon, Niphetos, and Madame Lambard; Mr. G. Prince occupied the second place, Messrs. J. Burrell and Co. third, and Messrs. Keynes, Williams, and Co. fourth.

Amateurs' Classes brought out a keen competition and contained large numbers of first-class blooms, although they were not in the aggregate equal to those staged by the trade growers. The class for thirty-six was a very strong one, both as regards the number of entries and the quality of the blooms. Here as in two or three other classes in the amateurs' division, sufficient importance was not attached to finish and colour, with the result that mere size was unduly exalted. Mr. G. Jordan, gardener to the Rev. H. Berners, Harkstead Rectory, Colchester, was first with finely developed blooms of Marie Baumann, Lady Mary Fitzwilliam, Duke of Connaught, Madame Willermoz, Heinrich Schultheis, Comtesse de Nadaillac, Star of Waltham, Anna Olivier, Marie Finger, Captain Christy, Gloire Lyonnaise, Mrs. J. Laing, Merveille de Lyon, Francois Michelon, Duke of Edinburgh, Madame Gabriel Luizet, Roseriste Jacobs, La France, Dupuy Jamain, Hon. E. Gifford, A. K. Williams, Innocente Pirola, Crown Prince, Catherine Mermet, Etienne Levet, Violet Bouyer, Marquise de Castellane, Viscountess Folkestone, Earl of Dufferin, Her Majesty, Le Havre, Madame Cusin, Madame Isaac Periere, Marie Cointet, and Jean Soupert. Mr. J. Bradbury, gardener to S. P. Budd, Esq., Larkhall, Bath, was a very close second; Mr. A. Slaughter, Steyning, was third with a rather unequal stand; and Mr. R. E. West, Reigate, was fourth, his blooms being of medium size, well-finished, and superbly coloured. Rev. A. Foster Melliar, was first for twenty-four with medium-sized and admirably finished blooms of Heinrich Schultheis, A. K. Williams, Baroness Rothschild, Captain Christy, Madame Isaac Periere, Roseriste Jacobs, Alphonse Soupert, General Caillat, Etienne Levet, Lady Mary Fitzwilliam, Duchesse de Valombrosa, Charles Lefebvre, Marie Verdier, Pride of Waltham, Countess of Rosebery, Marie Finger, Mrs. Baker, Mrs Turner, Mons. Noman, Marguerite de St. Amard, Dr. Andry, Mdlle. E. Verdier, Marquise de Castellane, and La France. Rev. J. Pemberton. Havering, Romford; Mr. E. B. Lindell, Bearton. Hitchin; and Mr. J. G. Fowler, Woodford, were awarded the remaining prizes in the class. For twelve varieties, single trusses, Mr. E. Williams, Lyndhurst, Sutton; Mr. H. Foster, Ashford, Kent; and Mr. P. Burnard, Reigate, were the prize-takers in the order of their names. For the same number of varieties, three trusses of each, Mr. B. Lindson was first, and the remaining prizes were awarded to Mr. A. Slaughter, and Mr. G. Jordan, in the order of their names. In the second class for teas, the most successful were: Rev. F. R. Burnside, Birch Vicarage, Hereford; Mr. G. Jordan, Mr. R. Bonnett, gardener to Rev. W. Williams, Stagsden Vicarage, Bedford; Mr. E. B. Lindsell, and Rev. A. Foster.

Open Classes contained much to interest rosarians, and the contributions, moreover, produced an effective display. In competition for the prizes for twelve trusses of any yellow rose Rev. F. R. Burnside and Mr. W. Rumsey, Waltham Cross, were first and second with Anna Olivier, and Mr. B. R. Cant was third with Marechal Niel. There were fourteen entries in the class for twelve trusses of any white rose, and Mr. B. R. Cant was first with Innocente Pirola, Messrs Keynes, Williams, and Co. second with Niphetos, and Mr. G. Prince third with Souvenir de S. A. Prince. For twelve trusses of a crimson rose Mr. B. R. Cant occupied the first place with Marie Baumann, and Messrs. D. Prior and Son and Mr. J. Bradbury were second and third with Ulrich Brunner. In the class for twelve trusses of a hybrid perpetual the Fruit and Rose Company was first with Ulrich Brunner, Mr. G. Prince obtained premier honours in the corresponding class for teas with superb blooms of Comtesse de Nadaillac, and Mr. J. Jordan and Mr. B. R. Cant were second and third with Souvenir d' Elise Vardon.

Pinks.

Although the blooms staged in competition for the prizes offered by the National Pink Society did not occupy a relatively large space, there were sufficient to encourage those engaged in promoting an extension of the cultivation of these flowers to continue their labours. The most important of the several classes was that for twenty-four blooms of laced varieties, and here Mr. C. Turner was first with finely finished blooms of Boiard, The Rector, Minerva, Hebe, Excelsior, Modesty, H. Hooper, Emerald, Empress of India, Eurydice, Rosy Gem, and Bertram, the majority of the laced varieties being shown in duplicate. Mr. F. Hooper, Widcombe Hill, Bath, occupied the second place with an excellent stand of blooms. In competition for the prizes for twelve laced flowers, Mr. C. Turner was again first, staging Modesty, Empress of India (selected as the premier bloom in the exhibition), Device, The Rector, and Minerva. Mr. F. Hooper was again second. The sixes were very good, the best stand being that from Mr. C. Turner, whose varieties were Boiard, The Rector, Empress of India, Eurydice, and Minerva; Mr. F. Hooper second, and Mr. J. Lakin, Temple Cowley, Oxon, third. For six laced flowers in not less than three varieties Mr. C. Turner was again first, staging good blooms of Boiard, Device, Hebe, and Empress of India; Mr. F. Hooper and Mr. J. Lakin second and third. There was only one competitor for prizes for twelve bunches of border pinks, and that was Mr. F. Hooper, who was deservedly awarded the first prize. Especially good were the bunches of Her Majesty, a large white flower raised by the exhibitor. Mr. F. Hooper was first also for six bunches. Mr. C. Turner sent a collection of laced flowers arranged in bouquets, a style of exhibiting that should be liberally encouraged. Mr. E. R. Johnson, 90, Harleyford Road, S.E., sent two boxes of blooms not for competition, and was accorded a vote of thanks. Mr. Turner had the best bunch of a border pink, the variety being Anna Boleyn. Mr. F. Hooper was second with Her Majesty. With the same variety Mr. Hooper was first for a bunch of a white border, Mr. J. Lakin being second with Mrs. Lakin.

Several novelties were exhibited and first class certificates were granted as under: To Mr. J. Lakin for *Mrs. Lakin*, a beautiful pure white variety, previously described; to Mr. F. Hooper for *Her Majesty*, a pure white variety, remarkable for the large size and fine form of the blooms; to Mr. C. Turner for *The Rector*, a beautiful laced variety, the flowers large, smooth, and with broad well-defined deep purple lacing; to Messrs. Ryder and Son, Sale, for *Souvenir de Sale*, a distinct border variety, the flowers large with finely fringed petals, and of pale rose pink hue.

Hardy Flowers.

Several classes were provided for these, with the result that they formed a feature of considerable importance. Messrs. Paul and Son were first for miscellaneous hardy flowers with a large and very tastefully arranged collection; Messrs. Barr and Son were a capital second, and in the class for iris they occupied the post of honour with a very beautiful collection; Messrs. Paul and Son were second. The same firm also had a collection of herbaceous pæonies, which arranged in large bunches produced a striking effect.

Miscellaneous contributions included a group of bedding pinks from Messrs. Sutton and Sons, Reading. These were interesting as showing the usefulness of seedlings for the embellishment of the border and the supply of cut flowers. The plants, raised from seeds sown in February 20, 1889, and planted out last September, were of large size and bearing hundreds of flowers and buds. The firm had also gloxinias and begonias. Mr. W. Gordon, Twickenham, contributed a fine group of lilies, the Fruit and Rose Company exhibited cut roses, Mr. Rumsey presented a large collection of cut and pot roses, and Messrs. R. Beale and Co. had an extensive collection of horticultural sundries comprising samples of excellent peat and loam and bamboo canes now being so extensively used as plant supports.

Novelties were not numerous, but the majority were sufficiently meritorious to justify their being certificated. The following first class certificates were awarded in addition to those conferred upon the pinks: to Messrs. Paul and Son for *Constance Deveril* and *Claude de Lorraine* pæonies and *Mrs. Paul* rose, and to Messrs. Sutton and Sons for *Fairy Queen* begonia, a dwarf growing variety producing a profusion of rose-fawn coloured flowers and evidently of much value for bedding purposes.

THE STRAWBERRY CONFERENCE, June 27.

In carrying out the programme of meetings arranged for the current year, the British Fruit Growers' Association held a Strawberry Conference in St. Stephen's Hall, Westminster, on the 27th ult., and the measure of its success was so large as to exceed the expectations of the promoters. The exhibition, although no prizes were offered, comprised upwards of one hundred and sixty dishes, and was thoroughly representative, both as to the practice which obtains in the various parts of the United Kingdom, and the varieties most popular with the general body of growers. The meeting in the afternoon for the reading and discussion of papers on the development and culture of the strawberry was not less satisfactory, the papers throughout being of a high degree of excellence, and the attendance good.

The most important of the contributions to the exhibition was unquestionably that of Mr. T. Sharpe, Royal Strawberry Gardens, Knowle Hill, Virginia Water. The contribution consisted of five dishes of British Queen, the fruit large and finely coloured. The same number of dishes of Empress Eugenie, and forty dishes of Marguerite, which is found to succeed remarkably well on the light, sandy soil at Knowle Hill, the plantations continuing in the most productive condition from eight to ten years. Mr. Sharpe exhibited also several plants of the last-named variety, lifted from the open beds and arranged on a tray at the same distance apart as was allowed them in the plantations, with fruit resting upon a bed of fresh green moss. In addition, Mr. Sharpe exhibited several of the cross-handled baskets and one of the crates he uses for sending the fruit to market. The baskets are about six inches in depth, and twelve inches in diameter, and the crates are large enough to carry four dozen punnets, in three tiers, each tier resting upon a light, open stage. The stages are just far enough apart to hold the punnets firmly, without pressing upon the fruit. The ends are fitted with lattice-work, to permit a free circulation of air through the crate. Samples of the soil were shown, and much surprise was expressed by many of the experts present that such excellent fruit of British Queen should be produced on so light a staple. A silver medal was awarded Mr. Sharpe.

From Mr. H. Ridgwell, Heston Road, Cambridge, came a collection of twenty-one dishes of excellent fruit; a bronze medal was awarded. Prominent in the collection was Incomparable, a variety raised by the exhibitor from Keen's Seedling, and highly promising. It is said to be a heavy cropper under ordinary field culture, and to continue in bearing for a much longer period than do the majority of the varieties in cultivation; the fruit is large, globular, and bright in colour, and the flavour remarkably rich. Other varieties included Sir Joseph Paxton, Pauline, King of the Earlies, James Veitch, British Queen, President, Noble, Marguerite, Unser Fritz, Auguste Nicaise, and Captain. Remarkably fine fruit was shown by Mr. John Watkins, Pomona Farm, Wittington, Hereford, of James Veitch, Marguerite, Stirling Castle, Noble, The Captain, Prescot's Improved (syn. Brown's Prolific), Comte de Paris, Auguste Nicaise, Dr. Hogg, Sharpless, and Vicomtesse Hericarte de Thury. A vote of thanks was accorded the exhibitor. A similar compliment was paid to Messrs. G. Bunyard and Co., Maidstone, for a collection in which occurred excellent fruit of King of the Earlies, Duke of Edinburgh, Sir Joseph Paxton, Keen's Seedling, Vicomtesse Hericarte de Thury, President, Noble, The Captain, and La Grosse Sucrée. Messrs. Paul and Son, Cheshunt, sent a representative collection, comprising excellent dishes of King of the Earlies, Commander, Sir Joseph Paxton, Vicomtesse Hericarte de Thury, La Grosse Sucree, A. F. Barron, President, and Noble, and were recorded a vote of thanks. Messrs. Saltmarsh and Son, Chelmsford, contributed large and well-coloured fruit of Sir Joseph Paxton, President, Commander, Noble, and Lucas, and received a vote of thanks. Messrs. J. Peed and Son, Roupell Park Nurseries, Streatham, contributed two fine dishes of Noble; and Mr. E. Butts, Leigham Court, Streatham Hill, sent a similar number of dishes of Vicomtesse Hericarte de Thury, in which that useful variety was seen at its best.

From Mr. G. Wythes, gardener to the Duke of Westminster, Syon House, Brentford, came a good collection, and a vote of thanks was accorded. The varieties comprised President, Sir James Paxton, Noble, Keen's Seedling, Sir Harry, and Dr. Hogg. Mr. Webber, Covent Garden, sent excellent samples of Sir Joseph Paxton obtained from Kent, Middlesex, Dorset, and Hampshire, and received a vote of thanks. To Mr. Will Taylor, Hampton, was awarded a cultural commendation for exceptionally good fruit of Grove End Scarlet, so valuable for preserving, Sir Charles Napier, and President. A cultural commendation was also awarded to Mr. Goldsmith, gardener to W. B. Waterlow, Esq., High Trees, Redhill, for boxes of large superbly coloured fruit of Vicomtesse Hericarte de Thury and Sir Joseph Paxton, which attracted much attention. Of a high degree of excellence also was the fruit of Lucas, James Veitch, President, and Sir Joseph Paxton. Messrs. H. Cannell and Sons, Swanley, sent from Eynsford two peck baskets of Sir Joseph Paxton to show the quality of the fruit produced in the district and the style of packing adopted by the Kentish growers when the fruit is sent to market other than in punnets. These baskets are not unlike the seive baskets so largely used in the market, but they are much contracted at the top, which allows them to be piled one upon the other without the upper baskets pressing upon the fruit. A vote of thanks was accorded the firm.

Mr. Thomas Laxton, Bedford, sent a large collection of excellent fruit, in which were two seedlings of great promise, the fruit being large, handsome, and rich in flavour. The named varieties included Bothwell Bank Seedling, Laxton's Pioneer, McMahon, Prescot's Improved, The Abbot, Laxton's King of the Earlies, The Captain, Commander, Laxton's Noble, and A. F. Barron, a remarkably handsome fruit of good quality. A cultural commendation was awarded.

The meeting held for the reading and discussion of papers was well attended, and amongst those present were cultivators from widely-separated districts in the United Kingdom. The chair was occupied by T. Francis Rivers, Esq., who in his opening address briefly explained the objects of the British Fruitgrowers' Association, and passed under review the work it had accomplished since its foundation two years since. These objects, he stated, were to promote the profitable culture of fruit of all descriptions, and to disseminate by means of conferences and lectures information upon matters of special importance to those engaged in the work. He expressed the thanks of the Conference to those who had contributed so liberally to the exhibition, with the result that it was of large extent and highly interesting and instructive, and also proposed a vote of thanks to Mr. L. Castle, the honorary secretary. This having been duly seconded and carried,

Mr. Shirley Hibberd then gave a lecture on the "Origin of Cultivated Strawberries," in which he showed that the strawberries in general cultivation have descended from the Virginian and Chilian strawberries. The lecture was illustrated by plants of the Virginian Strawberry (*Fragaria Virginiana*), the Chilian Strawberry (*F. Chiliensis*), the Hautbois Strawberry (*F. elatior*), and the One-leaved Strawberry (*F. monophylla*) from the Royal Gardens, Kew, G. F. Wilson, Esq., Weybridge Heath, and Royal Horticultural Society's Gardens, Chiswick. Mr. J. Wright followed with a paper on the "Culture of Garden Strawberries," in which he pointed out the varieties best adapted for the maintenance of a supply of fruit over as long a period as possible. The next paper was one on the "Market Culture of Strawberries," in which the practice which obtains amongst the most successful cultivators was clearly explained. Unfortunately, Mr. Bunyard was unable to be present, and his representative, not fully recognizing the immense area of St. Stephen's Hall, failed to make himself heard to more than a very small part of the audience, with the result that but few were able to appreciate the value of the paper. Mr. T. Laxton next dealt with the raising of "Seedling Strawberries," and in the course of his paper referred to the points to be aimed at in the work of raising new varieties, and the course of procedure likely to give the most satisfactory results. In the course of the discussion which followed,

Mr. Albert Bath said he was unable to agree with Mr. Bunyard's estimate of the profits of strawberry culture, and considered that £40 per acre was too high. He considered that in growing strawberries for market rather more space should be allowed between the plants in the rows than was stated by Mr. Bunyard, and according to his experience, the largest crop was obtained by having the plants sixteen inches apart.

Mr. Cannell expressed his opinion that both Mr. Bunyard and Mr. Bath were referring to the distances required by plants grown in ploughed land. When so grown the space was no doubt sufficient, but when the land was deeply stirred and liberally manured, they required even more room than stated by Mr. Bath. He was very glad indeed that the British Fruit Growers' Association had made arrangements for a conference on strawberries, for their culture had now become an industry of immense importance, and more especially was this the case in the county of Kent, where there were now between 2,000 and 3,000 acres devoted to strawberries, giving during the picking season employment to a whole army of men, women, and children. As showing in some degree the extent of the crop, he would mention that when at Swanley Junction in the morning he saw no less than fifteen trucks waiting to be loaded and dispatched in the course of the day to the large towns in the midland and northern counties. With reference to the soil, he agreed with Mr. Wright as to strawberries flourishing on light soils as proved by the abundant crops produced on the chalk in Kent.

Mr. J. Peed, in referring to the comparative merits of varieties, said that he regarded Laxton's Noble as a great gain. It was one of the most handsome strawberries he knew; and as regards its size he would mention that a few days previously he had gathered nine fruits, one of which turned the scale at 1¾ oz., and the remainder weighed 12 oz., or an average of 1½ oz.

Mr. Cheal, in proposing a vote of thanks to the readers of the papers, said the association had good cause to congratulate itself on having been able to obtain the co-operation of such high authorities on the respective subjects as the gentlemen who had contributed the papers.

Mr. Hammond seconded the motion, and said that he had in Essex tried for several years to grow the British Queen, but with very little success. Eventually he obtained runners of that variety from a neighbour who was very successful in its cultivation and since had obtained excellent crops.

The motion having been unanimously adopted, the proceedings terminated with the customary vote of thanks to the chairman.

LEE AND BLACKHEATH HORTICULTURAL SOCIETY, July 2 and 3.

The exhibition held by this important society on Wednesday and Thursday afforded abundant proof, if proof were wanted, that there is no decline in activity in the ranks of horticulturists resident in the districts embraced by its operations. Stove and greenhouse plants grown for their flowers and remarkable for the beauty of their foliage, were staged in large numbers, and in a condition that bespoke cultural skill of the highest class; soft-wooded plants grown for their flowers were in strong force, and fruits and vegetables were so plentiful and good as to show that both receive a full share of attention from the members of the society. The arrangements were characterized by their completeness, and to Mr. C. Helmer, the able secretary, and other members of the executive engaged in carrying out the various details, much praise is due. Effective grouping and the convenience of the judges were alike considered, with the result that whilst the contributions to each class were placed side by side, each of the four spacious tents provided presented a highly effective appearance.

Stove and Greenhouse Plants in Bloom were splendidly shown, and constituted one of the most important of the many good features. There was a keen contest for the prizes for six, and in the result, Mr. Hudd, gardener to F. W. Prior, Esq., Gordon House, Blackheath Park, was first, his collection comprising large, splendidly-developed specimens of Ixora Williamsi, Clerodendron Balfourianum, Bougainvillea glabra, and other good things. Mr. Reece, gardener to R. Whyte, Esq., Old Road, Lee, was a close second with a collection in which occurred a finely-flowered specimen of Ixora Colei, which has pure white flowers, and is therefore valuable for its distinctness. The premier award for four was made in favour of Mr. Jeffery, who had excellent specimens; those of Allamanda Hendersoni and Clerodendron Balfourianum being the best. Mr. C. Nunn, gardener to J. Soames, Esq., Maze Hill, Greenwich, was a close second. Seven or eight single specimens were staged, and Mr. Nunn occupied the first place with a superb stephanotis, and Mr. Mullins followed closely for second place with a densely flowered azalea. Orchids were not very numerous, but those staged were remarkably good. Mr. Barker obtained premier honours for four, and Mr. J. Hudd occupied the second place. In the class for single specimens Mr. Hudd was first with a superbly flowered example of Dendrobium Pierardi, and Mr. Barker was second with an immense cypripedium.

Fine Foliage Plants were even more largely shown than were those grown for their flowers, and were throughout of high quality. The most important of the several classes was that for six, and here Mr. Hudd was first with excellent specimens, those of Cycas undulata, Croton Queen Victoria, and C. Johannis being particularly good; Mr. Reece was an uncomfortably close second with a group including a large, well-developed specimen of Phyllotænium Lindeni; and Mr. J. Lambert, gardener to H. W. Segelcke, Esq., Herne Hill, was third. Very brisk also was the contest for the prizes for four, and the awards were made in favour of Mr. Barker, Mr. C. Nunn, and Mr. Mullins. Caladiums were admirably shown, and in competition for the prizes for six, Mr. Aley, gardener to R. Kersey, Esq., High Road, Lee, was first with large, well-coloured examples; Mr. Nunn was second with smaller but highly-finished examples; and Mr. Dobson was third. For four

caladiums, Mr. Newnham and Mr. Mullins were first and second respectively. Coleus were remarkably good, and the premier prize for six was awarded to Mr. Fox, gardener to Mrs. Penn, The Cedars, Lee, who had large, brilliantly-coloured pyramids; Mr. Rhoden, who was second, also had highly-coloured pyramidal specimens. Mr. Mullins scored a capital first for six palms, and had in his collection one of the most perfect specimens of Latania borbonica that has been presented to public notice. For a single palm, Mr. Hudd was first with a well-developed Seaforthia elegans; and Mr. Mullins was second with Kentia Fosteriana. Dracænas are invariably a strong feature at the exhibitions of this society, and on this occasion they were somewhat above the average. For six, Mr. Lambert was a good first with Lindeni, Amabilis, Auerleyensis, and other well-known kinds in superb condition; Mr. J. Hudd and Mr. Aley, gardener to R. Kersey, Esq., Lee, were second and third. The successful exhibitors in the class for four were Messrs. Nunn, Barker, and Fox.

Softwooded Plants in bloom, constituted a remarkably attractive feature. Gloxinias were much above the average, the plants being of large size and superbly flowered. In competition for Messrs. Carters' prizes, Mr. Sholdice, gardener to R. P. Barrow, Esq., Blackheath, was first with some of the finest specimens that have been placed upon the exhibition stage. Mr. Rhoden, gardener to F. Vavasser, Esq., Blackheath, was a close second, and Mr. Reece was third. In the ordinary class for six, Mr. Barker, Mr. Sholdice, and Mr. Rhoden were the prize takers in the order of their names. Begonias were admirably shown, and the principal prizes in the several classes were awarded to Mr. C. Helmer, gardener to Miss Hookey, Lee Terrace; Mr. A. Spurling, Blackheath Park; Mr. Sholdice and Mr. Rhoden. Fuchsias were about equal to the average, and for six Mr. Dobson, gardener to F. P. Preston, Esq., Blackheath, was first with densely flowered pyramids, and Mr. C. Saville, gardener to J. M. Wilson, Esq., Lee Terrace, was second. Standard fuchsias of such great excellence as those shown on this occasion, are seldom seen at public exhibitions, and Mr. Hudd and Mr. Dobson, who were first and second, may be heartily congratulated on the results of their labours. Pelargoniums were contributed in sufficient numbers to nearly fill a large tent, and as they were all more or less good they produced a brilliant display. The principal prize takers in the class for show pelargoniums were Mr. Hudd, Mr. Reece, and Mr. Jeffery, and in the four classes provided for zonals the chief prizes were awarded to Mr. Jeffery, Mr. Dobson, Mr. Reece, and Mr. Hudd.

Ferns were not less satisfactory than were the other classes of plants invited by the schedule. Mr. Hudd, Mr. Rhoden, Mr. Mullins, and Mr. Reece were especially successful, and the finest specimens were those of Gleichenia rupestris glaucescens, Davallia Mooreana, Cyathea dealbata, and Nephrolepis davallioides. Hardy ferns were well represented, the finest collections being those from Mr. Sholdice and Mr. Mullins.

Groups constituted a pleasing feature, and in the special class Mr. Hudd, Mr. Barker, gardener to J. Hemmerd, Esq., Blackheath, and Mr. Nunn were first, second, and third respectively. Mr. Hudd occupied the post of honour in the class for a group of twenty-four plants and had a fine specimen of Nepenthes Morganiæ; Mr. Reece and Mr. Payne were second and third respectively with good collections. Mr. J. Mullins obtained premier honours in the class for a table of plants with a tasteful arrangement; and Mr. Fox and Mr. Jeffery were second and third. Mr. Barker had the best group of twelve plants.

Cut Flowers were abundant and included large quantities of excellent roses. Messrs. Bunyard and Co., Maidstone, were first for forty-eight and for twenty-four roses with fine stands of blooms; Mr. Burnand, Reigate, was second for twenty-four, and Mr. Barker third. Mr. Burnand was first for twelve with superb blooms, and Mr. J. Bateman, Highgate, was second with a good stand.

Fruit and Vegetables were plentiful. Mr. Fox and Mr. Payne were first and second for collections of fruit. Mr. Goddard obtained premier honours for black grapes, and Mr. Payne was first for white grapes. Mr. Hudd, Mr. Rhoden, Mr. Reece, Mr. Shrubb, and Mr. Jeffery were also very successful in the fruit classes. There were six classes for collections of vegetables, and Mr. Fox and Mr. C. Nunn were first in two each, and in the remainder the firsts were awarded to Mr. Burgess and Mr. Stockwell.

Miscellaneous Contributions included an extremely beautiful collection of flowering and ornamental plants and cut roses from Messrs. J. Laing and Sons, Forest Hill, and a group of petunias of high quality from Mr. H. J. Jones, Hither Green, Lewisham.

The judges were Mr. George Gordon, Mr. J. Ward, and Mr. J. Wright.

CROYDON HORTICULTURAL SOCIETY, July 2.

The executive of the Croydon Horticultural Society had good cause for congratulating itself on its exhibition held on Wednesday, for a more thoroughly satisfactory gathering could not have well been desired. All classes of plants, flowers, and fruit proper to the season were staged in large numbers and in exceptionally good condition, the arrangements were admirably carried out and the attendance was such as to prove that the shows of the society enjoy a high degree of popularity.

Stove and Greenhouse Plants in bloom were of a high degree of excellence, and the collection of nine from Mr. W. King, gardener to P. Crowley, Esq., Waddon House, Croydon, produced a striking effect and did much credit to the cultural skill of the exhibitor. All the specimens were of large size, splendidly-flowered, and characterized by extreme freshness. The most noteworthy examples were Bougainvillea glabra, Clerodendron Balfourianum, Allamanda Hendersoni, A. grandiflora, the soft yellow flowers of which are very pleasing, and Ixora Williamsi. Mr. H. James, Castle Nursery, Norwood, was a good second. For a single specimen these exhibitors changed places, Mr. James being first with Erica Jubana, and Mr. King second with Bougainvillea glabra.

Ornamental-leaved Plants were admirably represented, and in the great class for nine Mr. W. King was first with specimens of immense size and in the most robust state of health. Especially deserving of mention were Anthurium crystallinum, Alocasia macrorhiza variegata, Croton Queen Victoria, and C. Johannis, which are seldom seen in such fine condition as in this case. Mr. H. James was a capital second, and Mr. W. Jupp, gardener to Cuthbert Johnson, Esq., Duppas Hill, was third, the last named having a finely coloured specimen of Dracæna Lindeni. Coleus were numerically strong and the majority of the specimens were superbly coloured. Mr. C. Welstead, gardener to Mrs. Lodge, Branley Hill, Croydon, obtained premier honours for six, and Mr. Haynes, gardener to Miss Freeman, South Norwood Hill, was a close second. Dracænas were represented by excellent collections from Mr King and Mr. Scott. In the first prize collection occurred a specimen of D. Lindeni about seven feet in height and feathered to the rim of the pot with foliage.

Soft-wooded Plants in bloom were staged in large numbers, and contributed their full share to the attractions of the exhibition. Mr. H. Elsey, gardener to Captain Wright, St. Peter's Road, had the premier award made in his favour in the class for six fuchsias, the specimens of medium size and admirably flowered. Mr. W. Jupp, who was second, had an excellent collection. Mr. Perrett, Duppas Hill, contributed a very fine hydrangea, and was awarded the first prize for a single specimen in bloom. Mr. Welstead and Mr. Perrett were first and second for six zonal pelargoniums, and in the class for nine zonals Mr. Welstead, Mr. Perrett, and Mr. W. Jupp, were first, second, and third respectively. The collections were highly meritorious in all the classes. Mr. W. Jupp obtained premier honours in competition for the prizes for nine begoniass, and Mr. W. Kirk followed closely for second place.

Cut Roses had as usual special provisions made for them, and as the result they formed one of the most important of the many good features. Much interest necessarily centred in the competition for the twenty-five guinea challenge cup for thirty-six varieties, single trusses. The entries were numerous in this important class, and in the result Mr. J. Brown, gardener to Mrs. Waterlow, Great Doods, Reigate, was first with a stand of magnificent blooms. The varieties were Her Majesty, A. K. Williams, Merveille de Lyon, Earl Dufferin, Captain Christy, Etienne Levet, La France, General Jacqueminot, Charles Lefebvre, Francois Michelon, Alfred Colomb, Marie Baumann, Duke of Wellington, Comtesse de Nadaillac, Duchesse de Morny, Catherine Mermet, Star of Waltham, Annie Wood, Mrs. Baker, Innocente Pirola, Heinrich Schultheis, Eclaire, Mrs. John Laing, exceptionally fine, and selected for the award of the medal offered for the premier rose in the show; Le Havre, Mdlle. Marie Verdier, Ulrich Brunner, Marie Finger, Duc de Montpensier, Baroness Rothschild, Auguste Rigotard, Prince Arthur, Dupuy Jamain, Louise Van Houtte, and Madame S. Rodoconachi. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Reigate, was a capital second, and Mr. R. E. West, Reigate, was third. In competition for the prizes for twenty-four, Mr. Salter was first with an excellent stand, in which Louis Van Houtte, Comte de Raimbaud, Etienne Levet, A. K. Williams, Mrs. J. Laing, and Duke of Wellington were represented by superb blooms; Mr. R. E. West and Mr. A. Slaughter, Jarvis Villa, Steyning, were second and third with good stands. In the smaller classes set apart for amateur cultivators, Councillor Dart, Croydon; Mr. C. J. Grahame, Croydon; Mr. F. C. Pawle, Reigate; and Mr. Bannell were the most successful competitors. Mr. Brown was first in the class for six varieties, three trusses of each, with superb blooms of La France, Francois Michelon, Mrs. J. Laing, Dupuy Jamain, Her Majesty, and Duke of Edinburgh. In addition to the first prize in this class, Mr. Brown was awarded the silver medal offered for the best box of hybrid perpetuals in the show. Mr. Brown was first also for twelve teas, and, in addition, received the silver medal for the best box of teas in the exhibition. To take a challenge cup and the medals for the best rose, the best box of H.P.'s and the best box of teas, forms a record of which even so successful an exhibitor had good cause to be proud.

The competition in the whole of the classes open to trade growers was very severe, and the blooms generally were of high quality. For forty-eight Mr. Frank Cant, Colchester, was first, Mr. B. R. Cant, Colchester, was a close second, and Messrs. D. Prior and Son, Colchester, were third. In the second prize box was one of the finest blooms of Victor Hugo that has yet been placed on the exhibition stage. For twenty-four varieties, three trusses of each, Mr. B. R. Cant obtained premier honours, and Mr. F. Cant and Messrs. D. Prior and Son were second and third. Messrs. J. Cheal and Son, Crawley, were first for twenty-four varieties, single trusses with superb blooms, and Mr. T. Butcher, Croydon, was a capital second. Very fine were the blooms shown in the class for twelve teas by Mr. F. Cant, in whose favour the award of the first prize was made. The varieties were Innocente Pirola, Souvenir d'un Ami, Marie Van Houtte, Jules Finger, Comtesse de Nadaillac, Rubens, Catherine Mermet, The Bride, Niphetos, and Souvenir d'Elise Vardon. The second and third prizes were respectively awarded to Mr. G. Prince and Mr. B. R. Cant. For twelve blooms of any one variety, Mr. F. Cant and Mr. B. R. Cant were first and second with remarkably fine blooms of Mrs. John Laing.

Bouquets and Table Decorations were largely shown, and with miscellaneous cut flowers proved highly attractive.

Fruit and Vegetables were admirably represented. Mr. Clinging, Marden Hall, obtained premier honours in the class for a collection of fruit, and the most successful competitors in the grape classes were Mr. D. Love, Mr. Blurton, and Mr. Clinging. There were two classes for collections of vegetables and one for salads, and in each the post of honour was occupied by Mr. W. Jupp with produce of high quality, and distinguished by the taste with which it was arranged. Plants and fruits of his Improved Telegraph cucumber were shown by Mr. A. C. Roffey, and served to show in a marked manner the great excellence of the strain, which is the result of many years' careful selection.

ROYAL BOTANIC SOCIETY'S EVENING FETE.

The evening fête of the Royal Botanic Society was held on Wednesday, when, as on similar occasions in previous years, there was a large attendance of Fellows and their friends. The exhibition in the great tent was rich and various, though less in extent than in former years, and the illumination of the ground was liberal and effective. The main walk was festooned with white lights, the large trees and flower beds were adorned with coloured lights in great profusion, and all the side walks were bordered with colours. On the lake the principal illuminations were in the form of floating stars, but a grand feature of a novel kind was the façade of a Greek temple, formed of glowing lines of colour. This merited and obtained special approbation. The rhododendron tent was filled with flower beds and gigantic festive lamps, and here a company of bell-ringers performed from time to time.

In the display of decorated dinner tables a most dainty effect was produced with seaweeds and corals on a ground of old gold by Mrs. M. Smout, of Hastings. For this the large silver medal was awarded. The small silver medal was awarded to Messrs. Cheal, of Crawley, for a table enclosed by a screen representing the walls of a room; these walls being decorated with wreaths of roses, and the table having vases and cups containing roses; a very pleasing arrangement. Two firsts were awarded for highly dressed tables, one of the winners being Messrs. Graham and Biddle, Oxford Street, the other Messrs. W. P. and G. Phillips, Oxford Street. These tables were loaded with flowers, lights, glass, and subsidiary decorations, and appeared to leave no room for food or the conveniences of dining. A second prize went to Mr. W. L. Buster, of St Mary Cray, whose decorations were grasses and bright

flowers, the "lightness" being carried to an extravagant point, and the effect almost too perfect. Third, Mr. W. Isom, West Hampstead. Here were mixtures of gay flowers in a low plateau, and rather too many tuberoses amongst them, for a decidedly rich odour is not to be desired at a dinner table.

The usual ceremonies of the reception, with coloured fires, combined bands, and other attractions kept the gay throng together until the hour of twelve, when suddenly the gardens were cleared as though the whole affair had been but a splendid dream. The desolate appearance of the place when the last of the visitors had retired made a painful contrast to the gaiety that had reigned for fully four hours.

CHRISTCHURCH (NEW ZEALAND) CHRYSANTHEMUM SHOW.

The cultivation of chrysanthemums is evidently obtaining much attention in New Zealand, for at the exhibition of these flowers held by the Christchurch Horticultural Society there was a marked advance both in the number and the quality of the flowers shown. It was in fact far superior to the corresponding shows held in previous years, and the visitors mustered in such strong force as to show that the residents in the town and surrounding districts take much interest in chrysanthemums.

The cut bloom classes were of the greatest importance, as they were all well filled and contained blooms of high quality. The stand of twenty-four blooms, to comprise equal numbers of incurved and Japanese varieties, from Mr. R. E. Evans, was of a high degree of excellence. Especially good were the blooms of Empress of India, Jeanne d'Arc, Princess of Teck, Madame C. Audiguier, Mdlle. Lacroix, Comte de Germiny, Golden Dragon, and Diamond. Mr. Bremford's stand of twelve incurved was remarkable for the finish of the blooms, the most noteworthy being those of Lord Wolseley, Empress of India, George Glenny, and Golden Empress. The same exhibitor had six remarkably good blooms of George Glenny. In a second class for six incurved Mr. Brooking staged six finely-developed blooms of Venus, and for a similar number of blooms of any Japanese variety he was first with Fernand Feral. Mrs. T. Gordon was a good first in the class for twelve Japanese varieties with a stand in which Coquette de Castile, Gorgeous, Tasselled Yellow, and Fair Maid of Guernsey were represented at their best. For six Japanese varieties Mr. Beumelberg was first, his best blooms being those of Bouquet Fait, Elaine, and Fernand Feral. Mr. Evans was successful in obtaining the first prize for eighteen incurved, and also that for eighteen Japanese. The finest blooms in the first of the two classes were perhaps those of Guernsey Nugget, Barbara, Golden Queen of England, Empress of India, and Jeanne d'Arc. His most noteworthy blooms of Japanese varieties were those of Fair Maid of Guernsey, Moonlight, Golden Dragon, Elaine, Madame C. Audiguier, and Golden Lotus. The finest of the reflexed varieties shown were King of the Crimsons, Cloth of Gold, and Dr. Sharpe, of which there were very fine blooms in Mr. Brooking's stand. A special prize was offered for six blooms of Fair Maid of Guernsey, and seldom have finer flowers of that variety been presented to public notice than those staged by Mr. Evans, in whose favour the award was made.

There was a large display of fruit, for, in addition to the contributions to the competitive classes, several large collections were staged not for competition. Mr. T. D. Adams sent 72 varieties of apples, Mr. C. C. Bowen staged 108 varieties of apples, and Mr. E. Ivory contributed 120 varieties. The apples in both the competitive and non-competitive classes were comparatively large in size and bright in colour, but the collections contained many varieties of but little value. The large collections are useful for trial purposes, but for the garden and orchard comparatively few will suffice, and at present the New Zealand growers of the apple have too many kinds.

THE GARDENERS' ORPHAN FUND.

The usual monthly meeting of the committee took place at the Caledonian Hotel on the 27th ult. The minutes of the last meeting having been read, the hon. secretary laid upon the table a balance-sheet of the receipts and expenses of the recent Covent Garden Floral Fête, showing a clear gain of £173 8s. 7d. A draft report of the committee for presentation at the coming annual meeting was read and adopted. Several matters of detail connected with the annual meeting and dinner were passed, and a cheque for the quarterly allowances to the children on the fund amounting to £65 was ordered to be drawn. The third annual meeting will take place at the Cannon Street Hotel, E.C., at two p.m., on the 18th inst., and the annual dinner at five p.m. on the evening of that day, Mr. Shirley Hibberd presiding.

BIRMINGHAM GARDENERS' ASSOCIATION.

A special meeting was held June 24 for the illustration and study of herbaceous plants; and another meeting of a corresponding character will be held about the end of August for the similar study of florists' flowers. On the 24th herbaceous plants were most liberally represented, in fact, there has not been such a show of these plants in Birmingham before. Amongst the contributors were Mr. T. S. Ware, of Tottenham; Messrs. Harkness, of Bedale; Messrs. Backhouse, of York; Messrs. R. Smith and Co., Worcester; Messrs. Sutton and Sons, Reading; Messrs. Hewitt and Co., Solihull; Mr. W. B. Child, Acocks Green; Mr. W. Jinks, of The Gardens, Widdrington; Mr. A. Cryer, The Gardens, Berrow Court; and others. This society has now 300 members, and about twenty new members joined on the occasion of the splendid show of herbaceous plants.

Valuable Fruit Trees.—By order of the court a Rhenish railroad company recently paid £125 for ten apple trees, five of which were full grown and five of small size, which stood on a plot of ground that had been taken for its use. Another company in Prussia was obliged, in the year 1886, to pay £120 for a single cherry tree, as it was proved that its product annually sold for at least £5.

Magnolias.—Monsieur Croux exhibited, according to a report published in a late issue of the *Revue Horticole*, a collection of magnolias before the National Society of Horticulture of France. This contained, besides the magnolias ordinarily cultivated, Magnolia spectabilis, with small white flowers flushed with pink; M. hybrida speciosa, described as similar to M. Soulangeana, although later in blooming; M. Norbertinia, the latest flowered of all the magnolias derived from M. conspicua; M. rosea grandiflora, a seedling raised by M. Lenne, with large, handsome, rose and white flowers, and one of the best varieties, and M. odoratissima, a hybrid between M. conspicua and M. Lenne, with large, rose-white, fragrant flowers.

MR. HANBURY'S GARDEN AT LA MORTOLA.

It is a difficult task to write an account of such a garden as that of Mr. Hanbury. I find a pocket book half full of notes taken there, and I have been making selections from these and again going through these selections a second or third time in order to keep my account within reasonable bounds. Readers may form some idea of the extent of the collections at La Mortola when it is stated that the "Alphabetical Catalogue of plants growing in the open air in the garden of Thomas Hanbury, F.L.S." occupies sixty quarto pages; at the end of this catalogue the plants are arranged geographically—that is to say alphabetically under each country. A mere glance through this portion shows at once how much each part of the world contributes to the gardens of Palazzo Orengo. A Systematic Catalogue—published like the last in 1889—has the plants arranged in families, and so without trouble the relative importance—in numbers—of the various natural orders can be readily ascertained. Both lists give, after name of plant, references to either descriptions or figure, the time of flowering at La Mortola and the native country of the species.

Winter or early spring is the best time to see this garden; then, I have no doubt, the words of Mr. Hanbury's gardeners, Signori Villa and Verri—both men who not only know plants, but love them—would be doubly true. Whilst wandering from one surprise to another my companion and myself frequently expressed our astonishment and admiration, until at last our courteous conductors remarked, "At this season the place is not such great things, but come in winter or spring and you will at once call it an earthly paradise.

A few data summarized from the catalogues mentioned will give some idea of the extent and interest of Mr. Hanbury's collections. There are fifty-one Agaves, sixty-nine Opuntias, thirty-nine Cereus, as many Mamillarias, forty Aloes, twenty-seven Stapelias and nearly a hundred Mesembryanthemums. To go on counting would be a tedious task; I therefore drop statistics with the remark that Acacia occupies a page and a half and Solanum nearly a page of the catalogue.

Of course all the Palms mentioned in previous series of notes, and many others besides are to be seen in La Mortola, but the general collections of plants are too vast to allow space for large masses of each species. The most attractive member of the genus Phœnix—I am speaking of those cultivated in the open ground along the Riviera is *P. Canariensis;* it is a quick grower, and is now grown in enormous numbers. Instead of having somewhat scattered glaucous pinnæ and rather stiff habit like the common Date Palm, it has more numerous glossy bright green pinnæ and a graceful habit. There seems to have been some doubt always as to the origin of this species until Dr. Christ, of Basle, who studied some year or two ago the flora of the Canary Islands on the spot, found localities in which truly wild colonies of the Phœnix were growing; other evidence of an historical nature collected by Dr. Christ, and his companion Dr. Bolle, furnishes additional proof that this handsome Palm is really a native of the Canary Islands. Altogether forty-four Palm names figure in Mr. Hanbury's catalogue—some of these, however, will have to be reduced when the plants flower and fruit.

I select a small proportion of the plants in flower at the time of our visit: *Tecoma stans* and *T. capensis*, the former with yellow, the latter with scarlet flowers—both splendid bushes. *Carica Cundinamarcensis* was both in flower and fruit. *Statice rosea*, a south African plant was charming, rose coloured blossoms, was represented by a big, dense bush clothed with flowers; under cultivation in England it is rarely satisfactory. *Russellia juncea* and *Plumbago Capensis* gave an abundance of blossom, and in one or two spots the splendid blue trumpets of *Ipomœa Learii* formed quite a dazzling sheet of colour; never under glass in England had my companion or myself seen this climber to such advantage. *Correa cardinalis*, the most beautiful member of this Australian genus, was noted as especially attractive; not far from it another Australian plant, *Pimelea decussata*, was also in flower. *Iochroma Tonellianum*, with purple blossoms; *I. coccineum*, with scarlet ones, and the Humming-bird's Trumpet, *Zauschneria Californica*, made an attractive trio. The huge, white flowers of *Cereus Napoleonis* were especially striking, and on a "pergola," or walk with a sort of flat, trellised roof clothed with a bewildering array of climbers *Passiflora Decaisneana*, with its large, handsome flowers—in form and colour not unlike those of *P. alata* and *P. quadrangularis*—was very conspicuous. On the low stone wall on one side of this walk numerous species of Begonia, Æschynanthus, many Bromelias—some of these in flower—*Cypripedium insigne*, etc., flourished in the shade.

Mr. Hanbury has paid special attention to economic, particularly medicinal, plants. As most of these, however, are not of value from an ornamental standpoint, I pass them over. A large collection of Orange trees, etc., gathered together from all parts of the world where oranges are cultivated, affords means for studying and comparing the various forms of this puzzling family which do not occur in every country. A large bush or small tree of the curious Chilian *Quillaja Saponaria* was laden with its woody carpels, which, at first sight, by no means recall the order Rosaceæ, to which the plant belongs. The thick bark is rich in saponin, which can be procured from it purer and more plentifully than from any other source; up to the present the principal use has been in washing and cleansing fine stuffs and tissues; but recently, however, the discovery of the action of saponin or a decoction or infusion of Quillaja bark on hydrocarbon oils, has opened out great possibilities for its use. Such extremely inflammable oils as benzoline—the dangerous character of which rendered the utmost care necessary in packing, carrying, etc.—can now be solidified and shipped with little danger or trouble—the liquid condition being readily restored on arrival by the addition of a small quantity of citric acid.

A covered way clothed with *Ephedra altissima*, a member of the order *Gnetaceæ*, a family nearly allied to the conifers, was gay with the numberless coral-red fruits which weighed down the green, leafless, twiggy branches. Probably the Kaffir Plum or Kei Apple, of South Africa, fruited for the first time in Europe in Mr. Hanbury's garden some years ago. At the time of our visit the tree was laden with its yellow plum-like fruits, somewhat acid in taste and astringent in character. One of the most beautiful of all the fruiting herbaceous plants was a Solanum received from Vilmorin, Andrieux and Co., under the name of *S. ciliatum macrocarpum*. It had a spiny stem and leaves, and spreading branches borne down by the weight of the large, bright vermilion-red fruits; on comparaing with herbarium specimens it appears to be identical with the Brazilian *S. aculeatissimum*.

A South African plant, a composite from the Karroo region, though not in flower at the time of our visit, is interesting on account of its having, more than any other at La Mortola, won the admiration of Queen Victoria when she visited Mr. Hanbury's garden in March, 1882. The plant in question, *Pteronia incana*, forms a dense, twiggy shrub, and has small, ashy gray leaves. The pretty yellow flower-heads so charmed the Queen that she took

away with her a quantity of the flower-laden branches. Since then the species has been called in the neighbourhood, "La pianta della reina"—the Queen's plant.

At Mentone, which is so near La Mortola that the climate of the two places must be almost alike, the mean temperature of November is fifty-four degrees Fahr., December forty degrees, February forty-nine degrees, and March fifty-three degrees. Nearly the whole of the annual rainfall takes place during the winter and spring months; during summer only an occasional thunder-storm comes to moisten the thirsty ground. The storing of water, therefore, for use during the hot, dry summer months is an absolute necessity, and entails much labour and expense.

George Nicholson, in *Garden and Forest.*

Replies to Queries.

Strawberries for Forcing.—Young Gardener: The most useful varieties for forcing are Vicomtesse Hericarte de Thury, Sir Charles Napier, President, and British Queen.

Tacsonia Van Volxemi.—R. M.: As the tacsonia occupies a position in a border in which Dicksonia antarctica is growing luxuriantly, it is reasonable to infer that the wholesale dropping of the buds is caused by an access of moisture to the roots.

Ventilating Greenhouse.—Dublinensis: The ventilators should be fixed in the roof, as with roof ventilation there is not so much risk of the plants suffering from cold draughts as when air is admitted by openings in the back wall.

Late Peas.—M. A.: It is now too late to sow main crop varieties such as Dr. Maclean and Ne Plus Ultra, but you may with advantage make, in the course of the month, a liberal sowing of one or two of the early varieties. Two of the best kinds for sowing now are Chelsea and Advancer, both of which are productive and of good quality.

Ivy-leaf Pelargoniums.—K. M.: The plants have evidently become stunted in growth, and they will soon cease flowering unless something is done to restore them to a moderately robust condition. The most suitable stimulant to apply is sulphate of ammonia dissolved in soft water at the rate of one ounce to two gallons of water. Apply this alternately with clear water until the plants are commencing to grow freely, when it should be discontinued, as it is not desirable to promote excessive luxuriance.

Doubling of Clematis.—A. S. Hurworth: There is not anything unusual in the occurrence so far as the variety in question is concerned. One of the peculiarities of the variety is to bear single flowers the first season after it is planted, and another is to subsequently produce single and double flowers. As the single flowers are borne on the strong shoots near the top, it is probable that their production is in some degree due to an excess of vigour. The doubling is the result of the conversion of the stamens into sepals, and anything that interferes with the process will necessarily change the character of the flowers. You will find indications of the change of the stamens into sepals, and in the double blooms will be able to trace the transition from the first change in the stamen to the complete development of the sepal.

Aquilegias.—W. S.: The most useful of the aquilegias to grow in quantity for the mixed border and for the supply of cut flowers are Aquilegia californica hybrida, yellow and orange-red; A. cærulea, deep blue; A. chrysantha, bright yellow; A. chrysantha alba, pure white; and A. Skinneri, scarlet and yellow. Seed can be readily obtained of the several kinds mentioned, and if sown at once the plants will acquire sufficient strength to bloom profusely next summer. Sow in shallow pans or boxes filled with a mixture consisting of loam, leaf-mould,and sand, and when the plants are of a suitable size prick them out on a nursery bed at a distance of about three inches apart each way. Some time during September or early in October transfer them to the beds and borders in which they are to remain. They produce a very beautiful effect when arranged in groups of three or four plants, each group consisting of a distinct colour.

Chrysanthemums.—Amateur: It is much too early to "take" the buds of varieties required in bloom in October and November. The beginning of August will be quite early enough to take the buds of such late flowering varieties as Boule d'Or, Grandiflorum, and Meg Merrilies. Early and mid-season varieties ought not to be allowed to form until the end of August or the beginning of September. Buds that are forming at the present time are practically worthless and should be nipped out. Shoots produced immediately below the bud should be allowed to grow unchecked, or as many of them as may be considered advisable, the others being removed close to the stem. If the plants are required for the conservatory all the growths may remain, but if they are intended for the production of exhibition blooms it will be necessary to reduce them to three to each plant. The aphis that have taken possession of the points of the shoots will do considerable damage unless repressive measures are adopted without delay. Syringing with tobacco water or any approved insecticide will destroy the aphis. Dusting with tobacco powder will also prove highly destructive to these pests.

Planting Strawberries.—Inquirer: By forming the plantations some time during the next four or five weeks you will be able to gather a good crop next year; but if the planting is delayed until the autumn, you will not be able to gather much fruit before the summer of 1892. There is no better course of procedure than to layer the runners in three inch pots, and to plant them out when sufficiently rooted to admit of their being severed from the stools without flagging of the leaves. The pots should be filled with a substantial compost consisting of loam and partly decayed manure, and the runners be pegged down upon the surface. It is essential to maintain the soil in a moderately moist state, and to avoid the risk of the pots being knocked over in the process of watering place the pots in the alternate spaces. An open sunny position should be selected for the new plantation, as it is hopeless to expect well-flavoured fruit from plants partly shaded by trees. The varieties you intend adding to your stock should be purchased in small pots, and the proper course will be to order them at once for delivery as soon as they are ready. The leaves ought not to be cut off the old plants when the crop has been gathered. We are well aware that good crops have been gathered from plantations that have been mown over at the end of the summer or early in the autumn, but the fact of defoliated plants bearing is a proof of their recuperative power rather than of the practice being a good one. The spaces between the rows should be cleared of all runners and weeds, to more fully expose the crowns to the influence of the light and air, and at the same time a few of the older leaves may be removed.

Names of Plants.—Adolescens: 1, Campanula turbinata pallida; 2, C. carpathica; 3, C. Portenschlagiana; 4, C. pusilla; 5, C. persicifolia fl. pl.—K. Y.: 1, Selaginella Kraussiana; 2, Sedum acre; 3, Viburnum opulus; 4, Begonia Knowsleyana; 5, B. Dregeana; 6, Mimulus moschatus; 7, M. Harrisoni.—W. S., Pontefract: Calathea pavonina.—R. Ruckard: 1, Santolina alpina; 2, Achillea eupatorium; 3, Ageratum strictum, 4, Menyanthes trifoliata.—F. W. R., Leek: 1, Hypericum coris; 2, Lithospermum tinctorium; 3, Gratiola quadridentata; 4, Oxalis discolor.—Pevensey: 1, Vaccinium caracasanum; 2, Menziesia polifolia latifolia; 3, Kalmia cuneata; 4, K. hirsuta; 5, Rhododendron hirsutum; 6, R. punctatum.—H. P. G.: The coleus are probably, 1, Princess Royal; 2, John Benary; 3, Pine Apple Beauty; 4, Mrs. George Simpson; 7, Mrs. K. Hugeson; 8, Edith Sentance; 9, Jules Chretien; 10, Mr. Bolas.—S.L., Exminster: Your plant is Olearia Haasti, a native of New Zealand.

Primulas.—G. H. C.: Having failed to induce the seed sown some time since to germinate, your best course will be to obtain plants sufficiently advanced to be potted off singly. They can be had at a comparatively cheap rate, and will, of course, effect a considerable saving of time as compared with raising plants from seed. When they come to hand put them into small sixties, and place in an unheated frame. It will be necessary to keep rather close and moist for a short time, to assist them to recover quickly from the check received, but they must not be kept too moist, or a proportion will probably damp off. It will be necessary to shade during bright weather. The most suitable compost for the single primulas is one consisting of six parts of mellow fibrous loam and one part each of well-rotted cow manure, leaf mould, and silver sand. If you are unable to obtain cow manure use instead manure from an old hotbed, care being taken to see that it is free from worms. It is an advantage to stand the pots upon a bed of coal ashes, as the ashes retain a certain amount of moisture, and thus assist in maintaining a moderate degree of humidity in the frame. When the pots are well filled with roots, and before the plants have become pot bound, shift them into five or six inch pots, as may be the most desirable. If you require medium-sized plants put them into six-inch pots, and grow them on without any further extension of root space. On the other hand, if large specimens are required, use five-inch pots, and as soon as these are well filled with roots shift into others eight inches in diameter. After the plants have recovered from the check received in being transferred from the seed-pans to the small pots, ventilate the frame rather freely both night and day until danger from frost is apprehended. Then remove to a greenhouse or other structure where the plants can be kept safe from frost, and have a position not far removed from the glass. Careful watering, more particularly during the winter months, is essential to success, and, so far as we can judge from the information contained in your letter, the primulas were injured by an excess of moisture at the roots during the winter.

Obituary.

On the 27th ult., at 17, Grosvenor Gardens, Lord Magheramorne, President of the Metropolitan Board of Works in its later years, and until the Board was superseded by the London County Council.

On the 27th ult., at his residence in Norwich, Mr. Robert Leeds, chairman of the Royal Agricultural Hall Company, aged 79 years.

On the 29th ult., at 21, Gordon Road, Ealing, Mr. Francis Dancer, formerly market gardener at Chiswick. Mr. Dancer was a man of great ability, extensive knowledge, and originality of wit and humour. As a fruitist his experience and judgment were always at the service of his friends, and he was one of the best advisers of his time.

On the 30th ult., at Ealing, Mr. George Deal, of the firm of John Weeks and Co., horticultural builders, Chelsea, Fellow of the Royal Horticultural Society, and Chairman of the Executive Committee of the Gardeners' Orphan Fund. Mr. Deal was born in 1834, and early in life gave his mind to the branch of engineering in which he ultimately became a proficient expert. It was his good fortune to initiate several valuable expansions of Messrs. Weeks's business, one especially having proved of great importance, that of supplying heated air of any required degree of humidity, without contact with over-heated metallic surfaces. It seems but as yesterday that an attack of paralysis prevented our friend's appearance in his customary place as chairman of the executive of the Gardeners' Orphan Fund, and now the grave is opening for what remains of one of the best of men.

Markets.

COVENT GARDEN.

Fruit.			
Apples.....per ½-sieve	1s. 6d.	to	7s. 0d.
App's, Tasmanian, p. case	14s. 0d.	,,	21s. 0d.
Grapes.....per lb.	1s. 6d.	,,	3s. 0d.
Lemons .....per case	12s. 0d.	,,	18s. 0d.
Melons .....each	1s. 6d.	,,	3s. 6d.
Peaches .....per doz.	2s. 6d.	,,	10s. 6d.
Pine-apples, St. Michael's each.....	2s. 6d.	,,	6s. 0d.
Strawberries.....per lb.	0s. 4d.	,,	1s. 0d.
Vegetables.			
Beans, French .....per lb.	0s. 6d.	to	0s. 8d.
Beet .....per doz.	1s. 0d.	,,	2s. 0d.
Cabbages.....per doz.	1s. 0d.	,,	2s. 0d.
Carrots .....per bun.	0s. 4d.	,,	0s. 6d.
Cauliflowers .....per doz.	2s. 0d.	,,	3s. 0d.
Cucumbers .....each	0s. 4d.	,,	0s. 8d.
Endive.....per doz.	1s. 6d.	,,	2s. 0d.
Herbs .....per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish.....per bun.	3s. 0d.	,,	4s. 0d.
Leeks .....per bunch	0s. 2d.	,,	0s. 4d.
Lettuces .....per doz.	0s. 6d.	,,	1s. 0d.
Mushrooms ...per basket	1s. 0d.	,,	1s. 6d.
Onions.....per bunch	0s. 3d.	,,	0s. 4d.
Parsley .....per bun.	0s. 4d.	,,	0s. 6d.
Radishes ...per doz. bun.	0s. 6d.	,,	1s. 0d.
Rhubarb .....per bun.	0s. 3d.	,,	0s. 4d.
Shallots .....per bun.	0s. 4d.	,,	0s. 6d.
Small Salading...per pun.	0s. 3d.	,,	0s. 4d.
Spinach .....per bushel	2s. 6d.	,,	3s. 6d.
Tomatos.....per lb.	0s. 6d.	,,	1s. 0d.
Turnips .....per bunch	0s. 3d.	,,	0s. 4d.
Cut Flowers.			
Abutilons ...per doz. bun.	2s. 0d.	to	3s. 0d.
Bouvardias.....per bunch	0s. 8d.	,,	1s. 0d.
Callas .....per doz.	3s. 0d.	,,	4s. 0d.

Cut Flowers.—*Continued.*			
Carnations, per doz. blms.	1s. 0d.	to	1s. 6d.
Carnations, per doz. bun.	3s. 0d.	,,	5s. 0d.
Cornflower, per doz. bun.	2s. 0d.	,,	4s. 0d.
Eucharis ...per doz. blms.	3s. 0d.	,,	5s. 0d.
Eschscholtzia, pr doz. bun.	2s. 0d.	,,	3s. 0d.
Gardenias, per doz. blms.	1s. 6d.	,,	3s. 0d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Ixias .....per doz. bun.	2s. 6d.	,,	5s. 0d.
Liliums, per doz. blooms	0s. 6d.	,,	2s. 0d.
Maidenhair Fern, per doz. bun.....	3s. 0d.	,,	6s. 0d.
Marguerites, pr doz. bun.	2s. 0d.	,,	4s. 0d.
Mignonette, per doz. bun.	2s. 0d.	,,	3s. 0d.
Pelargoniums, per doz. trusses.....	0s. 4d.	,,	1s. 0d.
Pinks.....per doz. bun.	2s. 0d.	,,	4s. 0d.
Poppies .....per doz. bun.	1s. 0d.	,,	2s. 0d.
Roses, Coloured, per doz.	2s. 0d.	,,	3s. 6d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	1s. 6d.
Roses, Red, per doz. bun.	2s. 6d.	,,	5s. 0d.
Roses .....per doz. bun.	3s. 0d.	,,	9s. 0d.
Stephanotis, pr.dz.sprays	1s. 6d.	,,	3s. 0d.
Sweet Sultan, pr doz. bun.	4s. 0d.	,,	5s. 0d.
Tuberoses, per doz. blms.	0s. 6d.	,,	1s. 0d.

BOROUGH AND SPITALFIELDS.

Potatos.			
Regents .....per ton	35s.	to	55s.
Magnum Bonum .....per ton	40s.	,,	60s.
Imperator.....per ton	40s.	,,	60s.
Kidneys, New .....per ton	120s.	,,	140s.
Rounds, New .....per ton	100s.	,,	110s.
Jersey Rounds .....per cwt.	4s.	,,	5s.
St. Malo Rounds .....per cwt.	4s.	,,	5s.
Cherbourg Rounds ...per cwt.	4s.	,,	5s.
Jersey Kidneys .....per cwt.	6s.	,,	7s.
St. Malo Kidneys .....per cwt.	5s.	,,	6s.
Jersey Flakes .....per cwt.	6s.	,,	7s.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.		Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.			1890
13	S	**6th Sunday after Trinity.**	4 0	5 28	8 11	1 12	5 24	11 11	11 42	8 4	8 36	63·3	Anguloa Clowesi macrantha	Columbia.	194
14	M	Battle of Aschaffenburg, 1866.	4 1	5 34	8 10	1 42	6 29	—	0 12	9 7	9 37	63·3	Bolbophyllum Henshalli	Java.	195
15	Tu	*St. Swithin.*	4 2	5 41	8 9	2 20	7 25	0 39	1 4	10 4	10 29	63·4	Warrea tricolor	Brazil.	196
16	W		4 3	5 47	8 8	3 3	8 12	1 28	1 49	10 53	11 14	63·4	Vanda tricolor	Java.	197
17	Th	● New Moon.	4 4	5 52	8 7	4 4	8 49	2 9	2 28	11 34	11 53	63·4	Stanhopea aurea	Guatema.	198
18	F	Wigan Colliery Explosion, 1874.	4 5	5 57	8 6	5 8	9 17	2 47	3 4	—	0 12	63·4	Stanhopea Devoniensis	Mexico.	199
19	S	Bishop Wilberforce died, 1873.	4 6	6 2	8 5	6 14	9 42	3 22	3 39	0 29	0 47	63·4	Cattleya amabilis	Brazil.	200

Exhibitions and Meetings for the Ensuing Week.

Tuesday, July 15.—Christleton.—Rose Show.
Tuesday, July 15, to Thursday, July 17.—Wolverhampton.—Horticultural Exhibition.
Tuesday, July 15, to Thursday, July 17.—Portsmouth.—Flower Show.
Thursday, July 17.—National Rose Society.—Exhibition at Birmingham.
Thursday, July 17.—West of Scotland Rose Society.—Exhibition at Helensburg.
Thursday, July 17.—Hammersmith Horticultural Society.—Annual Exhibition.
Thursday, July 17.—Bedford Horticultural Society.—Annual Exhibition.
Friday, July 18.—Ulverston.—Rose Show.
Friday, July 18.—Gardeners' Orphan Fund.—Annual Meeting and Election.
Saturday, July 19.—Manchester Royal Botanical Society.—Rose Show.

Auction Sales for the Ensuing Week.

Tuesday, July 15.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.
Thursday, July 17.—Messrs. Protheroe and Morris, at Poulett Lodge, Twickenham; Plants.
Friday, July 18.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.
ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, JULY 12, 1890.

The Gardeners' Orphan Fund will claim the special attention of its supporters on Friday next, when the annual business meeting will be held in the Cannon-street Hotel at two p.m., to be followed by the annual dinner at the same place at five p.m. precisely. When the accounts have been passed, and the officers for the ensuing year are elected, the meeting will proceed to an election of ten children to the benefits of the Fund, a matter of the first importance and of the highest interest to its supporters.

From the day of its inauguration this admirable charity has had an unchecked flow of prosperity, and has quickly risen from the position of promising with which it began life, to performing which now distinguishes it. But none of our readers need to be informed that the loss of Mr. George Deal is to be counted as a disaster; and the more certainly so because death has claimed him in the fulness of his powers, while there appeared to be alike in his substantial frame and manly mind a considerable reserve of force for the service of humanity through many years to come. But misfortune must be met by prudence and firm resolve in salutary causes, and we shall hope to see in due time a worthy successor appointed to the chair that our cheerful and far-seeing friend occupied so well. When a sense of depression consequent on loss acts as a deterrent from well-doing, it may be assumed there is a lack of moral courage and of the energy and high-mindedness that are needed for the repair of disasters and for sustaining a cause against the temporary disturbances of adverse fate. It is in no fear of any decline of earnestness or willingness to make sacrifices on the part of the supporters of this charity that we give expression to our thoughts. Our only object is to suggest that grave questions affecting management and proposals for expansion or modification of plans may with advantage be postponed for the present, that the annual meeting may find the promoters unchanged in spirit and purpose, and prepared to meet present troubles by renewed efforts for the furtherance of the cause. The proposals that have been made with reference to the reserve fund may be postponed without danger, for a reserve fund *is* a reserve fund, and will increase while those who wish to take special action in regard to it are preparing a policy and canvassing opinions. We must augment the reserve on Friday next, at the same time that we augment—as we shall hope to do—the resources directly available for orphans in present need of help. The change that is contemplated by certain good friends of the fund is not of such immediate importance that it need be brought into the programme of formal business at the present time. Nor, on the other hand, is it so wanting in importance that whenever it is brought forward as business it can be dismissed without free and full discussion. Happily all parties are of one mind as to the ultimate object of every detail of management. It is for the care of necessitous orphan children of gardeners that the fund has been instituted, and not one of its supporters would fail to keep that fact in view whatever new views might arise as regards details of management. This is a young institution, and it must not be assumed that the scheme is perfect. It may admit of many and great improvements, but there should be no haste in urging them. Let them first be well considered, and in due time the entire body of supporters may be prepared to decide what is best for the management in future. To carry through the business of Friday next as with one mind and one heart is of vital importance. As we press together for mutual aid and protection when tempests threaten and the skies grow black, there should be on the coming occasion a great gathering of gardeners for the defence of their chosen wards, the orphans of their brethren left without the means of nurture.

Carnations and Ferns are associated in the exhibition to be held in the gardens of R.H.S. at Chiswick on Tuesday and Wednesday, July 22 and 23. It is of importance for all concerned that a full and representative exhibition should be secured. Thus far the exhibitions of the National Auricula and Carnation Societies have attracted larger attendances than any other of the Tuesday meetings (Temple show, of course, excepted), and the removal of the scene to Chiswick is an event of some significance. The relation of ferns to carnations and picotees is remote certainly, but they may help one another for all that, and the ferns need what society sweetly designates "patronage;" but we will be content to say that they have been in some degree neglected in recent years, and should have formal recognition as important candidates for horticultural honours. The conjunction of carnations and ferns will remind many that a similar juxtaposition of subjects prevailed for several years when the bedding mania was rampant, for at that time ferns were extensively cultivated and took precedence of many orders of plants that have in some degree outdistanced them in popularity. Fashion is a peculiar occult abstraction, and it influences thousands who fondly imagine themselves safe against any influence that has not reason for its basis. Alas, we are all made of clay and our minds are as loose in texture as sand or dust. Many of the men who are now so reasonably crazed about cypripediums, and so sure that their taste is sound, will live to marvel that they should have been so eager in the race and so lavish of their money, because in their minds some new craze will have grown to commanding proportions. But the taste of the day must be gratified, for happiness consists therein, and it is not for us or for any to say that ferns are better than orchids, or that carnations are better than cactuses. Nature is generous and always willing to amuse us. But we shall claim a right to rejoice that for two days in this year, 1890, the serious ferns will have the special attention of the Royal Horticultural Society in connection with the joyous carnations and picotees.

F F

Knowle and District second show, August 11.

Mr. G. Picker, late of Branston Hall, Lincoln, has taken charge of the gardens of C. E. Shea, Esq., The Elms, Foot's Cray.

Surrey Floricultural Society. The annual exhibition will be held in the grounds of Casino House, Herne Hill, on Wednesday and Thursday July 23 and 24.

Kew "Bulletin of Miscellaneous Information" for July contains reports on West African Annatto, Preservation of Grain from Weevil, Colombian Rubber, Fibre Industry at the Bahamas.

Rose Fairs recently held on behalf of the Gardeners' Orphan Fund have fully justified the efforts of the promoters. At Croydon the sum of £15 11s. was realised, and at Richmond the receipts exceeded £6.

Paddington Recreation Ground should have been opened on Saturday last, but was rendered impossible by the weather. On Wednesday the ceremony was accomplished under the cheering presidency of the Prince of Wales. The extent of the ground is twenty-one acres, and the cost will be £50,000, of which a large proportion has yet to be secured.

Gardening is to be taught at a Ladie's College. What will Girton say to that? Miss White, Lady Principal of the Alexandra College for Ladies, Dublin, has collected a sum as a scholarship for gardening and wishes it taught as a subject in the usual college course of education. We are indebted to our friend Mr. F. W. Burbidge, M.A., for the information, he having been desired to prepare a scheme of operations as a basis for a ladies' scholarship of gardening.

Mr. E. Toope, of Stepney Square, London, E., desires us to state that the action Pascall *v.* Toope was not dismissed on the ground that the principle on which Toope's Propagator is founded had been in use many years, but on the ground that Pascall's principle had been in common use many years, thereby disposing of his claim to a patent. Mr. Justice Kay said he was opposed to anyone monopolising an old principle, and condemned Mr. Pascall to pay full costs.

A George Deal Memorial will, we fully expect, be inaugurated and completed at one operation. The indebtedness of the Gardeners' Orphan Fund to him for time and talent, and many sacrifices cheerfully made in its behalf have but to be recognized on a suitable occasion, and the appropriate act of respect and remembrance will follow. For the present we will be content to suggest that our friends keep in mind that in due time the first step must be taken, and it will be consistent with the business promptitude of the man we lament that the one first step should begin and complete the business.

The Opening of Vauxhall Park, on Monday last, by the Prince of Wales, with the assistance of the Duke of Edinburgh, on behalf of the Kyrle Society, worthily commemorates the eminent statesman who lived on the spot, the late Mr. Fawcett's house having been allowed to remain to serve ultimately as a museum or for some other useful purpose in connection with this new people's park. The planting and general arrangement of the grounds, on which much praise was bestowed, has been carried out by Mr. William Holmes, of Frampton Park Nurseries, Hackney.

A Memorial of the late Mr. B. S. Williams has been proposed, and will certainly be formulated. The first stage in the organization should be well thought out, that supporters may clearly understand from the first what is to be done. But that point being determined, the rest will be a comparatively simple matter, for our departed friend left a name and a fame that need no trumpeting. It is of importance the matter should have the prompt attention of the leading spirits in horticulture, and we commend to the attention of our readers the letter from Mr. Bruce Findlay that appears in another part of this sheet. On Tuesday last at meeting of R.H.S. the subject was informally discussed.

Papers to be read at Chiswick July 22 and 23 include, first day, July 22, Carnation Conference at 2.30 p.m.; *The Carnation*, from a botanical point of view, by Mr. F. N. Williams, F.L.S.; *The Florists' Carnation and Picotee* as Exhibition flowers, by Mr. Harry Turner, F.R.H.S.; *Carnations and Picotees in towns*, by Mr. Martin Rowan; *Border Carnations*, by Mr. Richard Dean, F.R.H.S. Second day, July 23, Fern Conference at 2 p.m.; *The Systematic Relations of Ferns*, by Professor Bower, F.L.S.; *Hybrid Ferns*, by Mr. E. J. Lowe, F.R.S.; *Plumose British Ferns*, by Mr. C. T. Druery, F.L.S., F.R.H.S.; *Hardy Ferns and their Cultivation*, by Mr. J. Birkenhead, F.R.H.S. Two silver challenge cups will be awarded to amateurs by the R.H.S., one for the best collection of Hardy Ferns, the other for the best collection of Filmy Ferns grown without heat.

A Revolution in Road-making appears to be imminent, for the new road that is proposed has in it a promise of superseding the granite cubes, wood, and asphalte. As for wood, it is abominable, and would never be tolerated if people were to reflect on what it compels them to breathe in dry weather when a breeze prevails. Wood is a perishable material, and therefore is always decaying; it promotes miasma in wet weather, and a dust chiefly compounded of triturated horse-droppings during dry weather. The new paving, strange to say, consists in the first place of granite blocks of five by eight inches, but these are laid on a bed of bitumen and fibre, and are packed between with a similar or the same material. The result is an almost noiseless paving that water will always wash clean, and that contributes to the atmosphere whether of damp or dust a minimum of impurities, while for horses it affords a good grip, and when laid diagonally appears perfect for tramways both to suit the tram traffic and the ordinary traffic. The Inventors' Institute lately held a meeting for a lecture on this subject by Mr. D. Nicoll, who has given his attention to road making fully a quarter of a century.

Chiswick Horticultural Society.—The challenge cup given by J. Mantel, Esq., for the best 24 trebles of cut roses was taken by Mr. Frank Cant, of Colchester. The first prize for group of decorative plants arranged for effect was awarded to Mr. Brown, of Richmond.

A Portrait of the Rev. H. H. D'Ombrain is given in this week's issue of the *Journal of Horticulture*. It is an admirable likeness, and is accompanied with a brief biographical notice that adds to its value as an adornment of the "Journal," but cannot add to our estimation of the worth of the most gentle and earnest of modern florists.

"Gardeners' Magazine" Fruit Reports will be presented in the usual form, and possibly will have more than an average of interest this year, even if that interest is other than jubilant in character. A treacherous spring and a wintry summer do not contribute to the filling of the autumnal fruit basket, and yet, although this cannot prove a prosperous year to cultivators, there is much fruit in the country at the present time, and some of it may attain to ripeness. Any way the facts are full of importance, and will have a practical value whatever in the end may be their general complexion. Forms for filling up have been despatched to our several correspondents. Friends who have not received forms, but are desirous of contributing information, will be at once supplied if they will kindly communicate with us on the subject.

The Weather is determined to be interesting, for having treated us to floods and winds, making January of June, it has proceeded to frost and snow, making February of July. Our friends in the north have had to suffer greater hardships than we of the south have experienced, though in the home counties and the midlands the hay crops are going to ruin. The cereals are much laid, and the harvest heavily discounted. In our last we anticipated improvement, and comparing the close of this week with the close of last week, our expectations are in some degree fulfilled. We will hope for further improvement. From the minimum temperature of 57 deg. that prevailed this day week, we are now the better by some ten degrees; and we have seen the sun and felt his pleasant warmth. As regards the arrears of rain, they are now about cleared off; and it will be agreeable if the clouds will allow us to get on the credit side of the account, to make room for heat and light, for those blessings are in arrear considerably.

THE LATE MR. B. S. WILLIAMS.

Much to my regret I was prevented from paying the last tribute of mourning regard to my old friend. On Thursday last I met at the Trentham Flower Show Mr. F. Sander, of St. Albans, who suggested that something should be done to perpetuate our departed friend's memory, and that it should take the form of a medal similar to the "Veitch Medal." I quite agree with the suggestion, and shall be most happy to do all in my power to assist in carrying out this most desirable object. Mr. Williams always took a most lively interest in horticultural exhibitions, and no one contributed more to their success, and no one was more highly esteemed amongst horticulturists of all grades. The main cause of this was his naturalness. There was nothing assumed, or—to use a figure of speech in common use in the present day—he put "no side on," and in this respect I think all of us may learn an important life lesson, summed up in two words, "Be natural." I am not wedded to the "medal" idea. The fund might be devoted to "The Orphanage," but this, of course, is a matter of detail which the trustees appointed would determine to the satisfaction of all concerned.

Bruce Findlay.

Manchester.

AUSTRIAN YELLOW ROSE.

After many years searching in all the most likely places, as well as making innumerable inquiries and purchases of this supposed form of single yellow rose, Mr. J. Walters of the Rose Nursery, Exeter, has at last been able to secure it in its true form. Until about a year ago all his efforts to obtain it true failed. The "Persian Yellow" has hitherto taken the place of the other. That, however, need not occur again, as the true form is now in evidence at this nursery. Having seen it when in flower I can answer for its distinct character, as the colour is a brighter yet deeper tone of lemon yellow. So bright in fact is the colour that it is at once striking, and the freedom with which the plants flower is a conspicuous feature. As showing that this form is distinct from the Persian Yellow, I may mention that it is rather later in opening its blossoms. It is a matter of surprise to me that more of these early flowering hardy yellow roses are not grown, as they flower three weeks before the hybrid perpetuals and teas. As a matter of fact, my own plants of these useful roses are going out of bloom as I write on midsummer day, while the other sections I have referred to are not well in flower. The single Japanese, with the hardy Chinas and the yellow kinds I have mentioned, have furnished a wreath of roses for nearly a month past.

J. C. C.

[In all proper lists of roses the Single Austrian Yellow is kept apart as distinct from Persian Yellow. Nor is any special faculty requisite for the recognition of their differences, for though not so unlike as chalk and cheese, they are unlike enough to be properly separated and differently labelled.—Ed.]

AN AMATEUR'S FERNERY.

To the man who "goes about" amongst gardens there is probably no higher enjoyment to be found than a critical walk round a genuine amateur's garden. The great gardens have their great attractions, and often the men who manage them are more attractive than the grand scenes amidst which they move and that owe so many of their splendours to the gardener's taste and industry. A first-class gardener, at home in his garden, discoursing on his vineries, peach houses, fruit walls, park scenes, and flower garden grandeurs, is a study for one experienced in observation and having faith in men as better in themselves than their best work. But the amateur's garden and the amateur are immensely removed in some points, and are quite akin in others. And there are many such, the reader may perhaps say. Now, I like to agree with everybody if I can, because every little question that may arise from day to day cannot be worth disputing. But I am quite prepared to contend that there are not so many amateurs or amateurs' gardens as the world supposes. There are many so-called, and they would be shocked if told that they were only as yet in the position of novices in the world of amateuring. It is the old story of degrees and the comparisons that are "odorous," and there may be as much sincerity and consequent happiness in the million amateurs who do a little this way and a little that as in the man who strides beyond all ordinary limit in a special hobby to which he brings special talent, taste, energy, patience, and perseverance.

Such thoughts passed through my mind as I returned home from a visit to my friend, Mr. C. T. Druery, F.L.S., a short time since. This friend gives his mind to British ferns. If there is a man living who knows more about them than this particular friend I should like to see the human curiosity. He who can handle them more skilfully, whether in the way of hybridising, cultivating, discovering and *keeping* rarities, or arranging them to display their several characters without aid from colour, I do not want to see, because such an one must be a supernatural being and might frighten me. In plain English, I do not believe the man can be found who is the equal much less the superior to this friend in the way of finding, making, and multiplying hardy ferns, and when I make that declaration I have several fern amateurs, good and true, gifted and discreet, in my mind's eye. It was on my return from the aforesaid visit that these further reflections occurred to me.

And what did I see? Well, in a very small garden in Windsor Road, Forest Gate, I found my friend, and we began to rummage the stock. The garden in a general view of things is small, neat, lively, and interesting; it has no scenic beauties, but it has a collection of ferns, which are mostly housed in roomy frames, arranged in two lines, back to back, and having in consequence exactly opposite aspects. Some ferns love the sun, and others prefer the shade, and Mr. Druery understands their wants and wishes, as well as a mother understands her child; better perhaps, for the ferns always speak the truth, and have no fits of whim or temper. In odd places there are what may be called boxes, wedged in amidst some unpretentious rockery, which exists to accommodate plants, and not to surprise those superficial people who doat on stalactites, and shells, and such gimcrackery. These boxes, two or three feet square, are covered with glass which has but to be lifted to display delicious gardens of todeas, trichomanes, hymenophyllums, all in such a state of health and vigour and riotous growth, that the first glance assures us we have once more met with the *rara avis*, the genuine amateur, who might perhaps sometimes make a professor look small if the latter were fool enough to behave presumptuously. Many of these filmy ferns have been located in their boxes for years, and have overgrown one another considerably, insomuch that when the fronds of some todea superba are pushed aside we see snugly hiding beneath them, others as rare and beautiful, and in the same perfect health as those that appear to have a monopoly of advantages. "They get a little water about once a month, I suppose," said I, "Yes," said my friend, "about that; they get too much in gardens generally, and they die from dropsy." On the dry bricks that formed the sides of a little recess, covered with a mere square of glass, I observed that Trichomanes radicans had fastened itself firmly, and was making a delightful growth as though created for clothing a wall in a garden five miles only from the Post Office in London. How many amateurs have failed with filmy ferns it would be painful to conjecture, and impossible to know, but the man who has penetrated the secrets of the fern world has no trouble with them. He gives them a little water once a month, or so, and they grow like weeds, and his trouble is that they threaten to crowd up and lift the glass, and go off to another garden because in want of room.

In the frames there is a good general collection, but it is of a peculiar kind. The taste of my friend runs upon rare varieties, and he does not trouble himself to grow duplicates and specimens of any of the species. Indeed, he has no room for such business. But his rarities are better than diamond dust, or even than diamonds, though it is not expected of the race of men to be free in acknowledging the fact; moreover, it does not matter. Men who prefer diamonds may find plenty for the searching at the Cape or in Brazil, but will not easily find, and will often less easily keep, such rarities as are here. If you will look over the figures in Mr. Druery's book on "Choice British Ferns," published lately by Mr. Upcott Gill, you will obtain at least a hint of the kind of treasures to be seen in these frames. Here, for example, is Blechnum spicant in a dozen singular forms, the fronds forked, contracted, expanded, lengthened, shortened, frilled, tasselled, and crimped. One form is a miniature that may be described as rich in colour, perfect in form, and small enough to be covered by an ordinary watch glass, or, even in some cases, by a lady's thimble, and this when mature and having no more growing to do. Then again, the common polypody that everybody knows, that used to grow in tens of thousands on the hornbeam pollards in Epping Forest, and perhaps may be found in thousands there now, proves equally prolific of varieties. Mr. Druery has a better cambricum than the typical cambricum, and a better hibernicum than the type plant bearing that title. And to pass over whole series with forked fronds, tassels, divisions, and other peculiarities, he has one that may be likened to a tuft of fine grass or a silky myriophyllum. The singularly variable, and always beautiful, soft Prickly Shield fern is here in endless variety, and I quickly learned the meaning of the remark at page 127 of my friend's book. He says, "The capacity of variation in this fern is so great, and the size of many of its best forms such, that a large space would be required to accommodate a fair selection of those in trade hands, outside of which there are practically innumerable forms, including some of the best which exist as unique plants in private hands." Yes; it is impossible these should all, or even any considerable part of them, pass into commerce, for they have been found as isolated or detached examples, and in many instances it is such slow work to propagate them that they increase only fast enough for occasional exchanges, and, like certain rare gems and precious paintings, a knowledge of their existence carries with it a knowledge of their ownership and some knowledge, it may be, of the circumstance of their discovery. The distinguished amateur at Windsor Road, Forest Gate, has been one of the most fortunate of finders, for good luck has dodged his footsteps. But he happens to have a taste for exploring and an eye for perception of any new or strange thing, and a rare skill in securing a find when good fortune has revealed it.

Amongst the many beautiful curiosities I had the pleasure of inspecting, none made a deeper or more delightful impression on my mind than the series of lady ferns. Their number is surprising and their beauty more so. The one long-since named *Victoriæ* is here in a grand state of development, and it strikes one as a daring attempt on the part of Nature to invade the realms of art. The attenuated, frizzled, and crested pinnæ start alternately at opposite angles, and form a precise "herring bone" pattern, in one sense ludicrous, yet, for all that, beautiful. The richer forms of *Plumosum* are, perhaps, the grandest of all British ferns, and some of Mr. Druery's examples surpass in beauty the best of the todeas, but as to many readers that will appear extravagant praise, let it suffice for the present that they bring into the field a different character, and therefore the comparison is superfluous. These and others of not less rarity fill a comfortable conservatory that adjoins the dwelling-house, and is quite a curiosity shop in the vegetable way. A plant of the crested male fern here has a stem about a foot high and a blechnum has developed a perfect little stem with two forks. When you read Mr. Druery's book you read about what he possesses and what he does, not about what he thinks or would like to do.

ALPHABETAGAMMA.

WORK FOR THE BEE-KEEPER IN JULY.

THE month of June did not come up to the expectations of some bee-keepers owing to the general low temperature and abundant rainfall. But for all this good colonies have made steady progress, and in the last few days of June all were making progress. It is not a good policy to keep interfering with the bees, and on the other hand they should not be left entirely to themselves. A look through the apiary once a week without fail is never too much, and on this occasion it is by no means necessary to upset all the hives, but simply have a peep into the corner to satisfy oneself that all is going on right, and where the state of the colony cannot be properly understood further inspection may be necessary. But nothing can be more unwise when trays of sections are put over bees, and they have taken possession of them and are working satisfactorily, than to remove the tray or otherwise disturb them for the purpose of knowing better what is going on beneath. If the bees take possession of the supers and commence to fill them there will be little the matter, and the least they are disturbed the better.

On the other hand, if no progress is being made, and the colony does not become very populous and busy at this season, a search must be made for the cause. According to reports from different parts the disease known as "foul brood" is very prevalent. This may be detected by examining the combs, as many of the cells will be found to contain a sticky mass which emits an offensive odour. But more often this want of energy will be found to rest with the queen, which under the bar frame system, and giving abundant space for the business of the colony, has been allowed to live and reign beyond the time of her full vigour and productiveness. In such a case it would be best to remove her, and give the bees a frame on which a good queen cell is approaching maturity, or destroy the colony by using the combs or frames for strengthening others which are likely to produce a good surplus.

But if there is the least doubt or suspicion about the health of the stock do not upon any consideration unite it to another, as this will only be spreading the evil. In most cases it is better to destroy any unhealthy colonies, taking care to destroy all affected combs, and thoroughly disinfect and cleanse the hive.

Unfortunately for bee-keepers since the above was written we have had a relapse of stormy and cold rains which has entirely put a stop to honey gathering, and very much more, for on making inspections of colonies where abundance of sections were nearly completed we find the bees have uncapped many of the cells that had been sealed over, and are obliged to fall back on their stored up goods at a time when from their numbers they should be making a surplus. The general commotion about the hives tells too plainly that they would like to get at the liquid sweets of their neighbours if they were only able to do so. This state of things never happens when honey can be found abroad. In southern districts the season for an abundant harvest is almost past where no heather is close at hand. Most of the meadows have been stripped of their crop of grass and wild flowers, and although the lime tree has yet to flower, and with abundant sunshine after the recent rain we may get some yield from the second bloom of white clover, anything like a general heavy yield need not be looked forward to. Some bee-keepers contend that showery weather will give the best yield of nectar, but from observations extended over some years I have always had the best yield in fine bright summers. In many districts much honey has already been secured, but a very great deal was only wanting the finishing touch when the heavy rains set in, and since then they are farther from finishing than ever.

Usually during this month a sharp look out has to be kept to see that the hives are properly shaded and ventilated. The best of all shades is that produced by some growing plant, and so far as I have seen nothing adapts itself so well to that purpose as the grape vine, which can be trained so that it breaks the fiercest rays of the sun, and can be kept trimmed so as not to impede the flight of the bees in and out of the entrance. The vine is very much used in America for the purpose of shading hives.

It will not be wise to add much to the storing space for the bees except in decidedly favourable localities. But as sections become completed remove them, and close the others up together; and where weaker colonies are not making so much progress with the completing of sections, some of them may be removed and added to those more populous in bees.

APIARIST.

ROYAL HORTICULTURAL SOCIETY.

Meetings of Committees, Tuesday, July 8.

This was a good meeting, the hall being well filled with good things, and presenting a gay appearance.

On the centre table were several fine groups of plants. Messrs. Veitch and Son put up a great collection of first-class trees and shrubs, including such interesting subjects as Robinia pseud-acacia glutinosa, with flowers whitish, stained with rose; Indigofera floribunda alba, with racemes of flowers of the purest white; Notospartium Carmichaeli, with whip-like shoots beset with bunches of small pink flowers; Stuartia pseud-camellia, very neat in style of growth, forming a handsome shrub with globular white flowers; Spiræa bumalda variegata, a form of this pretty rockery plant with abundant leaf variegation of a clear amber colour. In addition to these and other shrubs, there were in this group cut flowers of hybrid rhododendrons, Javanicum-jasminiflorum series, Iris Kæmpferi, delphiniums, the double or "calycanthema" section of Canterbury Bells. For this a silver medal was awarded.

Mr. T. S. Ware set forth a group of lilies to illustrate the lecture given by Mr. H. J. Elwes, F.L.S. The lilies shown included about forty species and varieties, amongst them being a fine example of Lilium Martagon Dalmaticum. A silver medal was awarded.

A run of nine boxes of cut roses from Messrs. Paul and Son, Cheshunt, made an attractive episode, for the quality of the flowers was fine and their condition brilliant. For this welcome display a silver medal was awarded.

Messrs. Barr and Son, of Long Ditton, presented a group of useful miscellanies, including lilies, delphiniums, Iceland poppies, alstromerias, inulas, and other showy summer flowers, and obtained in recognition a silver medal.

A great bank of yellow carnation Germania from Lord Rothschild, Tring Park, obtained much attention. Such exhibits, being apart from all trade interest, speak directly of the prevailing horticultural tastes, and in this case afford a pleasing example of the appreciation of cheap hardy flowers in grand gardens. A silver medal was awarded.

Sir Trevor Lawrence, Bart., M.P., presented a few rare and beautiful orchids. Amongst them were Bulbophyllum grandiflorum, a quite curious example of structure, and a really fine thing in its way; the long divisions are densely spotted with purple on a ground of dull green; Aganisia cyanea, a little beauty, the colour delicate lavender blue, the lip warm cinnamon; Cypripedium Curtisi, the dorsal sepal delicately lined, the petals pale with spots, the lip large, lumpy, dull purple.

Messrs. Sander and Co., of St. Albans, sent a number of fine orchids, conspicuous amongst them being a grand example of Cattleya Sanderiana in delicious colours. This is the same as C. gigas, which is the same as C. imperialis, which is the same as C. Shuttleworthiana, and so on and so on, thanks to the clever people who do the naming "by virtue of their high office." Lælia grandis has an interesting character, the sepals and petals dull fawn colour, the labellum purple. Aerides expansum Leoniæ gratified many, the pendant racemes are lightly furnished with large flowers, the colours blush and purple, and distinct and handsome; Odontoglossum crispum punctatissimum is of a rosy blush coloured with a few spots. A hybrid cypripedium and a variety of Oncidium hirsutum are in their way interesting.

A collection of Alströmerias and Pentstemons from Mr. W. C. Leach, the Gardens, Albury Park, Guildford, kept us in mind of the outdoor flowers that are now so abundant and various.

From Mr. Wythes, the Gardens, Sion House, the old, valuable, and delightful Clethra arborea, one of the many so-called "snowdrop" trees, belonging properly to Ericaceæ, quite a model of growth, and gay with its profusion of white flowers. Stuartia Virginiana is a handsome shrub, with large white flowers that have a purple centre. These were much admired.

Messrs. H. Cannell and Son, of Swanley, presented a gay group of flowers of tuberous begonias, affording a rich display of colour.

Mr. H. J. Jones, of Hither Green, Lewisham, presented a fine lot of yellow carnations, double petunias, and fancy pansies.

Mr. H. Eckford was great in sweet peas; his bunches representing some thirty distinct colours, from glowing crimson through all shades of purple to pure white.

The Fruit Committee had agreeable work, and the visitors were well persuaded that the production of fruit is still possible in this benighted country. Messrs. Paul and Son, of Cheshunt, put up a great collection of strawberries in brilliant colour. Messrs. G. Bunyard and Sons, of Maidstone, were great in strawberries. Messrs. Veitch and Son kept up the strawberry feast, and Mr. H. Ridgwell was in the same mind, the result being a prodigious quantity of fruit. Two large boxes of the same seasonable delicacy came from Mr. W. C. Leach, of Albury Park, consisting of Paxton and President.

Mr. T. F. Rivers, of Sawbridgeworth, Herts, out-distanced all the contributors of fruit with his splendid collection of peaches, plums, cherries, and nectarines. Here we found grand examples of Monarch plum; Early Beatrice, Early Louise, Stump the World, Alexander, and Exquisite peaches; the cherries were in brilliant colour, and there were some seedlings that we shall doubtless hear of again.

Fruit Committee.

Present: R. D. Blackmore, Esq. (in the chair); Messrs. P. Crowley, Harrison Weir, G. Bunyard, J. Willard, T. J. Saltmarsh, G. Wythes, James Hudson, H. Balderson, F. Q. Lane, T. F. Rivers.

Strawberry Auguste Boisselot, from Messrs. Paul and Son, Cheshunt. A large, oval fruit, of a deep red colour, richly flavoured. First class certificate.

Fig St. John, from Messrs. Veitch and Son, Chelsea. This is the earliest fig in cultivation, being ripe in June. It is of excellent quality. First class certificate.

Melon Hero of Lockinge, from Mr. W. A. Cook. Award of merit.

Melon Golden Perfection, from Mr. W. A. Cook. Award of merit.

Strawberry Incomparable, from Mr. H. Ridgwell, Cambridge. The fruit is large, globular, solid; flavour piquant, and, under present circumstances, scarcely sweet enough. Award of merit.

Seedling Melon, from Mr. Wythes, Sion House. Award of merit.

Melon Highland Hybrid, from Mr. J. F. Wilkinson. Award of merit.

The silver Banksian medal was awarded to Messrs. T. Rivers and Son, Sawbridgeworth, for a collection of fruit, in which Jefferson and Monarch plums, superb peaches, nectarines, and cherries were conspicuous for size, colour, and high flavour.

The bronze Banksian medal was awarded to Messrs. Veitch and Son, for collection of fruit, and to Messrs. Paul and Son, Cheshunt, for collection of strawberries.

Floral Committee.

Present: William Marshall, Esq. (in the chair); Dr. Masters, Messrs. Shirley Hibberd, H. Herbst, J. Walker, W. C. Leach, H. B. May, J. W. Girdlestone, H. Cannell, B. Wynne, Thomas Baines, Charles Noble, John Fraser, C. T. Druery, William Holmes, W. Goldring, Frank Ross, G. Nicholson.

Babiana rubro-cyanea, from M. de Graaf, Leyden. A beautiful cape irid of dwarf growth, the flowers deep blue with centre of deep red. First-class certificate.

Spiræa bumalda variegata, from Messrs. Veitch and Son, Chelsea. A neat habited shrubby spiræa of dwarf growth, the flowers deep reddish-pink, freely produced in terminal heads. This variety is pleasingly variegated pale clear amber. First-class certificate.

Polyantha Rose, The Engineer, from Mr. J. T. Gilbert, Bourne, Lincolnshire. A neat small formed variety of excellent make and shape, the colour lovely carmine-crimson. A nice companion to Mignonette in the same series of polyantha roses. Award of merit.

Lilium Bolanderi, from Mr. T. S. Ware, Tottenham. A beautiful small lily, the leaves in whorls, the flowers in a light panicle. Award of merit.

Zingiber D'Arceyi, from Messrs. Veitch and Son, Chelsea. A neat growing stove plant, with light green leaves, striped and banded with creamy variegation. Award of merit.

Gloxinia Nestor, from Messrs. Veitch and Son. The flowers are of medium size, perfect in form, the colour intense carmine self. The most brilliant of the self-coloured exhibited this season. Award of merit.

Gloxinia Gaiety, from Messrs. Veitch and Son. The flowers are large; the margin of blush forms a waving band enclosing a rich carmine body-colour, which is continued in the throat. Award of merit.

Pelargonium Turtle's Surprise, from Messrs. H. Cannell and Son, Swanley. A neat, dwarf, compact plant, with smallish, deeply-zoned leaves. The flowers are in globular trusses on stiff footstalks; they are semi-double and of a dazzling scarlet colour. In habit and abundant flowering surpasses all of its class with which it may be fairly compared. Award of merit.

Carnation Mrs. Sanders, from Mr. H. J. Jones, of Lewisham. A very free flowering yellow carnation of good form, but not with florist's petal. It has good staying power as a border flower, and is one of the many good things of this class raised by our esteemed friend, Mr. John Fry, of Lewisham. Award of merit.

Sweet Peas Dorothy Tennant and *Stanley* from Mr. H. Eckford. The first is a pleasing purplish blue, the second a brilliant rosy red. Award of merit to each.

The Silver Gilt Banksian Medal was awarded to Lord Rothschild, Tring Park, for a great group of Carnation Germania.

The Silver Banksian Medal was awarded to Mr. T. S. Ware for group of lilies, to Messrs. J. Veitch and Sons, for miscellaneous plants and cut flowers; to Messrs. Barr and Son for group of cut flowers; and to Messrs. Paul and Sons, Cheshunt, for collection of cut roses.

Orchid Committee.

Present: H. J. Veitch, Esq. (in the chair); Messrs. De B. Crawshay, J. B. Haywood, H. M. Pollett, C. Pilcher, H. Ballantine, J. Dominy, E. Hill, Lewis Castle, James Douglas, A. H. Smee, James O'Brien.

Lælia grandis, from Messrs. Sander and Co. This is a scarce and interesting orchid; in growth like Cattleya labiata; the flowers in groups of three to five, sepals and petals olive tinted fawn, sometimes tawny yellow; labellum white on the sides, the front lobe rounded, white, heavily veined with dull purple. First-class certificate.

Cattleya Empress Frederick, from Baron Schroder. First-class certificate.

Masdevallia Schroderiana, from Baron Schroder. First-class certificate.

Cypripedium hybridum Youngianum, from F. Sander and Co., St. Albans. Award of merit.

Zygopetalum crinito-maxillare, from Lord Rothschild. Award of merit.

HARDY HERBACEOUS PLANTS

Flowering in the Gardens of St. John's College, Oxford, during June, 1890.

Achillea ægyptiaca, Aconitum napellus, Allium moly (luteum), Anchusa italica, Anthericum liliastrum, Aquilegia chrysantha (varieties), Armeria cephalotes rubra, Asclepias tuberosa, Asphodelus alba, A. luteus.

Bocconia japonica.

Campanula abietina, Cedronella incana, Celsia betonicifolia, C. cretica, Centaurea babylonica, C. montana, Chelone barbata, Codonopsis ovata (rare), Crucianella stylosa.

Delphinium (garden varieties), Dianthus atrococcineus, D. deltoides, D. fimbriatus, D. neglectus, Dictamnus fraxinella, Digitalis purpurea, Doronicum austriacum.

Erigeron aurantiacum, Erodium manescavi, Eryngium amethystinum, Erysimum Perowskianum, Euphorbia cyparissias.

Funkia ovata.

Gaillardia grandiflora, Galega officinalis, Geranium armenum, Geum coccineum.

Heracleum giganteum, Heuchera glabra, H. grandiflora, H. sanguinea.

Inula glandulosa, I. oculus Christi, Iris germanica (in variety), I. sibirica, I. hispanica.

Lathyrus latifolius, Lupinus arboreus, L. polyphyllus, Lychnis flos Jovis, L. Haageana.

Malva moschata alba, Mertensea Sibirica, M. Virginica, Mimulus cardinalis, Monarda didyma, Morina longiflora, Muscari comosum.

Œnothera eximia, Onosma tauricum.

Pæonia albiflora, Papava bracteatum, P. Caucasicum, P. involucratum, P. nudicaule, P. orientale, P. pilosum, Pentstemon cæruleum, P. Himalaicum, P. repens, Polygonum Sieboldi, Potentilla tridentata, Pyrethrum roseum (in variety).

Ranunculus aconitifolius, Reseda glauca.

Salvia horminum, Saxifraga Andrewsi, S. cotyledon, S. Wallacei, Scorodosma fœtidum, Stenactis speciosa.

Thalictrum adiantifolium, Tradescantia Virginica, Trollius Asiaticus.

Veratrum nigrum, Verbascum olympicum, Veronica amethystina.

Mr. Henry Fitchett is the gardener, and takes his instructions from Rev. J. H. Bidder.

Notes of Observation.

NECTARINES CRACKING.

I NOTE on page 350 what "Chatterbox" says as to the cause and cure of the cracking of the fruit. In addition to the causes he names I think the stoning of the fruit has much to do with their cracking also. If the trees have been subjected to extra heavy crops for several years in succession, that would aggravate the evil of cracking also, even in such varieties as pine apple in addition to those he names cracking of the fruit occurs. There is no doubt keeping the roots too wet and syringing the foliage and fruit aggravate the cracking, but in my opinion cracking is often due to inaction of the roots occasioned by too heavy crops, which weakens the constitution of the trees. Trees which are not well furnished with healthy roots and are allowed to carry heavy crops of fruit, and which are restricted to narrow inside borders also often refuse to perform what is asked of them, simply because they cannot. The consequence is the fruits do not perfect their stones, and later on this defect is apparent in the cracking. I do not think that the continual syringing of the trees unless in an injudicious manner, is to blame for the cracking of the fruit, although an excess of it in damp dull weather would aggravate seriously the evil in question. But no one with any experience at all would fall into this error in cultivation, I should say. There are cases where it is impossible to do other than well syringe the trees daily after the second swelling takes place; as for instance trees that are affected with red spider, owing to the necessity of keeping other kinds of plants in the same house. The trees may have been troubled with this pest for many years, through in the first place being allowed to get dry at the roots. In such cases as those cited, it would be impossible to do without syringing freely, which without a doubt is one of the best remedies to rid the trees of this obnoxious pest. The cause of cracking of the fruit must be in the majority of cases looked for at the roots; if these are in a healthy state, little cracking will be experienced, even with varieties in which it the more commonly occurs. H.

PRIMULA ALLIONI.

This comparatively rare species is one of the latest of the alpine primulas to bloom, and is therefore especially valuable for forming a succession to the numerous kinds that are at their best during March, and the month following. Under ordinary conditions it commences to flower at the beginning of May, and is usually in perfection towards the end of the month; but in cool situations the plants will continue in bloom during the early part of June. The flowers are bright rosy purple, comparatively large in size, and as so well shown in the accompanying illustration nestle close down upon the foliage. In growth this species is moderately free, when the plants are placed under favourable conditions, and forms tufted masses from ten to twelve inches across of spathulate leaves, which have a dense covering of minute viscid hairs. In the nurseries of Messrs. Backhouse and Son, at York, it grows freely in fissures of the rock garden, with rich calcareous loam, and the plants present an exceeding attractive appearance even when not in flower. It may also be successfully cultivated in pots, as exemplified by the condition of the large stock of plants in the nurseries of Messrs. Backhouse, by whose courtesy we have been enabled to present this highly characteristic figure. G.



PRIMULA ALLIONI (flowers rosy purple).

GIANT MULLEIN.

We have in the giant *Verbascum Chaixi* a plant eminently suitable for planting amongst the rhododendrons, a position which appears to suit its requirements exactly. The flower spikes from seven to eight feet high, are effective above the foliage of the evergreens, and tend to brighten up the beds now that the flowers are past. In no way do these mulleins grow to greater advantage. E. M.

GOAT'S BEARD.

Spiræa aruncus is one of the best of the herbaceous kinds of this family. It is suitable for planting amongst shrubs, where its tall, feathery spikes show to perfection when backed up by dark evergreen subjects. At the back of a broad herbaceous border it is equally effective, but of all the sites where it seems to show to the greatest advantage is by the waterside, where its tall, erect spikes of blossoms and the luxuriant foliage make a fine reflection in the water. We have it growing in a recess of the rockery close to the water's edge, and right well it succeeds, growing nearly six feet high. During dry weather it has abundance of water given to its roots, which assists growth considerably. We have another plant under the same name which is dwarfer in growth, the flower spike more compact, and earlier in opening its flowers by fully ten days, which leads me to think there is another variety of this type. E. M.

SHRUBBERY APPLE-FLOWER.

The shrubs known as Weigelas are also known as Diervillas, being so named in honour of a French surgeon—M. Dierville. In cottage gardens it receives the name of the "Apple flower," occasioned by its similarity to the blossoms of that tree. The variety most commonly known is *W. rosea*, which flowers profusely every year in any position where sunlight is obtained. Especially do small plants growing in a well exposed aspect of a garden give a wealth of blossom. The only fault I find with this variety is that the flowers are short-lived. *W. amabilis* is much superior to rosea in almost all respects. The flowers open considerably paler in colour, but deepen with age, are larger, and last much longer in good condition upon the plant—a considerable gain in favour of amabilis. The growth is also much more vigorous, which materially increases the size and floriferousness of this sort, as upon strong shoots of the previous year's growth the finest spikes of flowers are produced. The colour of the foliage is much paler than that of rosea, which is detrimental to the appearance of amabilis, and gives one the impression of ill-health. By growing the two sorts a larger succession of flowers is obtained. E. M.

RUST ON GRAPES.

To the note on the above subject by "Chatterbox," page 350, I should like to add another cause of rust on the berries of grapes which he does not mention, but which can easily be averted when the danger is well known. It is a common practice amongst grape growers who are troubled with red spider upon the foliage to dust or paint the hot-water pipes with sulphur with a view of destroying that insidious insect by smothering it with the sulphur fumes. If the sulphur is not entirely removed from the pipes by the winter cleaning of the house preparatory to starting the vines in the spring, the fumes arising from even a small quantity of sulphur still adhering to the pipes when the vines are in bloom is certain to cause those bunches over the pipes to be rusted. The fumes appear to act upon the stigma of the flower in a detrimental manner. I have seen many bunches of grapes quite spoilt by this seemingly simple cause; indeed, on one occasion, all of them directly over the pipes—which were clustered together along the front of the house—were quite spoilt by rust caused by the fumes arising from the sulphur which had been applied the season before to kill the spider. Hot-water pipes, which are not annually coated with lamp black, should not be painted about the joints with sulphur, as here it is often most difficult to wash them clean. Another source of rust is where the vineries are heated with flues running along the front of the house. Over these, in some instances, plants are grown standing upon batten stages. The surplus water from the pots falling upon the flue when hot causes steam to ascend to the bunches, and when these are in bloom the stigma is affected in a like manner to that caused by the sulphur. H.

LEOPARD-SPOTTED LILY.

Lilium pardalinum is one of the early flowering kinds which assist in making the herbaceous borders gay during the early part of July. The flowers are produced on slender stems about four feet high. The colour of the flowers, which are drooping, is orange red at the tips, pale yellow towards the base of the petals, which are six in number, each about four inches long, sharply pointed. The centre of the flower is heavily spotted with very dark purple specks. It is certainly one of the most interesting varieties of early flowering border liliums. E. M.

SUMMER PRUNING RED CURRANTS.

As a rule the finest fruit of red currants is grown on plants which are annually subjected to summer pruning of the shoots. Of all bush fruits there is no kind which pays for keeping the branches thin so much as do red currants. The advantages of summer pruning are these—First, by the removal of all surplus growth now instead of during the winter, the whole energy of the bush or tree is devoted to the swelling of the fruit, whereas when summer pruning is not practised at all some portion of the strength of the plant must go into useless growths. Secondly, the buds for next year's supply of fruit have a greater opportunity to mature by increased sunlight. In the same manner does the present crop of fruit stand a superior chance of ripening better and quicker also. Thirdly, the fruit is rendered quite clean and free from honey dew, as it is seriously affected with this pest at times. But when the summer growths are cut off the rain showers have a free chance to wash clean the fruit. Moreover summer pruning adds to the fertility of the branches to a greater extent, for if trees are so pruned that each has not more than ten or a dozen branches, the fruit will extend from top to bottom of each branch. E. M.

THE COMMON DRAGON.

As a border plant which is quite hardy Arum dracunculus is certainly very interesting if not particularly handsome. The unpleasant odour this plant gives off when the flowers are fading is almost overpowering when growing in a small house, and indeed it is scarcely a fit subject on that account to be accorded greenhouse accommodation. In the herbaceous borders is its proper place, where it grows about three feet high, and when once strong enough flowers freely every year. It is easily increased by division of the roots in the spring or after flowering is past. The spathes grow about fifteen inches long, and when first expanded are purple black, very glossy. When fading the colour of the flower becomes a dull purple. The leaves are deeply cut and the stalks are heavily spotted dull black on a pale green ground, which in the spring when growth is being made is very attractive. E. M.

GIANT FRENCH RANUNCULUS.

This is an improved form of an old florist's flower, and will be much appreciated by all who require plants for cutting from or for the adornment of the hardy flower border. Of a beautiful shape, great firmness of petal, and blooms of the diameter of a half-crown with long foot stalks, combined with a great variety of colour, which ranges from pure white to deep crimson, including various shades of yellow, and the fact that they will last in good condition in water for at least a week are merits sufficient to indicate their value. I have them planted out in clumps of fifty each in the herbaceous borders, which are always kept in good condition by ample manuring. After marking out the stations, the soil is taken out to depth of four inches and the bottom broken up a good spade deep; the tubers are then laid in about four inches apart and covered with about an inch of sand, and then the holes are filled up with the soil taken out.

The Gardens, Highfields, Uttoxeter. WILLIAM SMITH.

FOXGLOVES.

For the back of the herbaceous borders and amongst the shrubs these biennials are exceedingly showy subjects, and of very simple cultivation. The ordinary purple variety, known as Digitalis purpurea, is very showy, especially in the woods where the undergrowth is not too dense it succeeds capitally. In one part of the Crown property in Hants, near Wickham, about seven acres of oak plantation, from which the undergrowth of hazel has been cut during the last three years, is now thickly studded over with the common foxglove. Many of them have flower-spikes four feet long, and have a magnificent appearance, peeping over the hedge near the roadside where additional light is obtained. The varieties *ferruginea, maculata, superba,* and the dwarf yellow variety *grandiflora* are especially good for the positions named. The pure white *alba,* which is occasionally spotted, is one of the best for a position where dark evergreen shrubs are employed. No time should be lost in sowing seed in prepared beds on a west border. When the seedlings are large enough to handle they may be planted out into their permanent situation. E. M.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

GREENHOUSE PLANTS in bloom combine :—Agapanthus umbellatus; Aphelexis humilis rosea; Erica Aitoniana, E. candolleana, E. obbata; Kalosanthes Frederick Debois, K. Madame C. Winans; Fuchsias; Hydrangeas, Pimelia spectabilis; Pleroma elegans; Statice profusa; Zonal Pelargoniums.

THE HOUSE.

WINDOW BOXES, when judiciously filled, contribute so much to the adornment of the dwelling-houses that every effort should be made to maintain the plants with which they are occupied in the best possible condition. Regular watering is of prime importance, for a few days neglect will not make any decided mark on them as an immediate result, but the result will be sure, nevertheless. When they are again watered and appear to have recovered from the distress, they will suddenly cast off their leaves and flowers, and if the good management is continued they will recover by making new growth and throwing up new flowers. But there will be a loss of about three weeks in the continuity of bloom. It follows that, to keep things right, regular attention must be given them. As a rule, window plants want water daily now, but it should not be thrown about them carelessly, and, generally speaking, it will not be well to wet their leaves at all. If there is any appearance of debility in the growth—say, a want of colour, or some other indication of insufficiency of food—a little of some portable fertilizer may be used, and itwill be mere prudence to follow the directions that accompany it. At all events, whatever in the way of liquid manure is used should be well diluted. In dexterous hands window plants may be helped—if really needing help—by a very careful shift into pots one size larger than those they are now in, but an inexperienced person may be advised not to try the experiment, for although the plants may live through it, and do well, we really cannot afford just now to do anything that will stop their flowering, which is sure to happen if their roots are seriously disturbed, or any considerable increase of root space is given them. An experienced plant grower, noting that the window plants were a little wiry through being too long in the same pots, would carefully turn them out, remove a little of the old soil from about the roots, and replace them in the same pots with just enough fresh stuff to carry them through the season, and yet not enough to start them into a rank growth, which is always a death blow to free flowering. Generally speaking the plants used in window boxes and balconies are young and of the right age to flower delightfully, and regular attention is the one thing needed while high summer prevails.

CONSERVATORY AND GREENHOUSE.

ASPARAGUS to have abundance of water while throwing up flower spikes, and until the bloom is over; then to be shaken out and parted, and the strongest crowns selected for next year's bloom. Pot these singly in small pots, removing with a sharp knife any of the straggling roots that cannot be got into the pots. The soil should be sandy loam, rotten dung, and peat, equal quantities. Shut them up, and reshift as soon as the pots are full of roots. The small offsets and the fleshy roots may be used for increase of stock. Plant in shallow pans of sandy peat, and place in a gentle bottom heat for a fortnight; then separate them, and pot singly in sixties.

FUCHSIAS should be propagated now in quantity for the production of flowers early next year. The smallest cuttings make the best plants, and there is no need to cut to a joint. It is a saving of time in the end to put all cuttings singly in pots at this time of year, as they can be allowed to fill the first pots with roots, so as to grow strong from their first start. In preparing pots for the cuttings use small sixties; put a mixture of turf and old dung over the crocks, and fill up with half sand and half leaf-mould, in which the cuttings will root as quickly as in sand alone at this season, and have something to support them while filling the pots with roots. This is the best method for amateurs who are much away from home, as the single cuttings require less care than when dibbled into sand only in shallow pans.

PELARGONIUMS, as they go out of bloom, to be placed in a shady position for a week or ten days, and be then pruned; the young shoots to be cut back to the second or third joint.

FORCING AND FRUIT HOUSES.

MELONS that have borne good crops may be cut back, and set to work again with the help of linings to the beds. Keep these rather close after pruning in, and frequently sprinkle the sides of the frames and the surface of the beds, and give only moderate waterings at the roots. Never allow water to fall on the main stems. If the plants cut in appear rather poor, let them break moderately, and then remove a portion of the soil from one side of the roots, and replace with fresh turfy loam. When the roots have run into the new stuff do the same on the other side, and they will swell a second crop admirably.

PINES.—The bottom heat must be kept up, and there must be plenty of room between the plants for a free circulation of air. Maintain a moderate humidity among all advancing crops and young stock, and in giving air guard against drying winds and draughts by keeping one side close while the other is open.

VINES now require air night and day from the time the grapes are gathered, unless they are in a poor condition and the wood very green. If so shut up early, and in another eight or ten days the wood will be getting hard, and then there may be air on night and day. Grapes ripening not to be syringed, and to have a comparatively dry atmosphere and plenty ef air.

FLOWER GARDEN AND PLEASURE GROUNDS.

PHLOXES AND PENTSTEMONS may now be propagated in quantity, and the only satisfactory way is to take cuttings and get them rooted with as little aid from heat as possible. They may be multiplied in autumn and spring. The usual practice is to propagate pentstemons in autumn and phloxes in spring, but these last may be done in autumn with the others if young shoots can be obtained from the base. If the season is a dry one, however, very few can be obtained, but in spring phloxes throw up shoots from the root freely, and if these are taken off when a few inches long and potted round the sides of pots, and placed in a gentle heat they soon make roots, and must then be potted singly. Pentstemons generally produce plenty of nice shoots from the base in autumn, and if these are potted several together in a pot, and put in frames, they may remain till spring, and be planted out direct from the cutting pots to the places where they are to bloom.

KITCHEN GARDEN.

SOW cabbage, green curled endive, lettuce, round spinach.

WINTER GREENS to be got out in plenty now, as peas, potatos, and other crops are taken off. Collards, Brussels sprouts, and other quick-growing subjects that will mostly be used before Christmas, to be planted in manured ground; but those to stand till next spring, to furnish sprouts, not to be manured, as it renders them less able to withstand severe frosts. Continue to plant broccoli, Brussels sprouts, Scotch kale, and everything else of the kind from the seed beds.

VILLA FARM.

THE bees will now be gathering honey at a very rapid rate, and should have constant attention, so that every possible advantage may be taken of the harvest. Supers that are filled and the combs sealed should be removed, and at once replaced with others, and where bar-frame hives are employed and there is an extractor at hand, remove the bars containing the full combs, give them a few turns in the machine to extract the honey, which will be done most effectually, and return to the hives to be filled again. With the aid of either of the machines mentioned the whole of the honey may be taken without the destruction of a single bee or a comb broken, so that the combs are immediately available for refilling and the bees saved the trouble of having to build up new combs, a point of no small importance, when it is considered that the building of a pound of comb is equivalent to storing twenty pounds of honey. In using an extractor the frames are removed from the hive, the bees whisked off with a large feather or a light brush, and the capping of the cells shaved off with a thin sharp knife, and are then placed in the machine two at a time. A comparatively few turns will suffice to clear the honey from the cells on one side, they are then reversed and the honey is extracted in a like manner from the cells on the other side, and the comb is then ready to be returned to the hive for refilling It is essential to put two combs in the extractor at the same time to maintain a proper balance, and to turn the handle somewhat steadily; for when the combs are whisked round too rapidly they are liable to be broken, but a very moderate amount of practice will suffice to enable any one with an ordinary degree of intelligence to determine the proper rate of speed. The frames of hives that are well filled with honey may be taken away a few at a time and replaced with empty ones, if there is no machine available for extracting the honey, or when it is intended to retain the honey in the comb for sale or otherwise. When however it is desired to dispose of the honey in the comb the small supers for holding from one to two pounds each should be employed.

THE LUDA WEED EXTERMINATOR is a new candidate for public favour, recommended by Messrs. Clibran, of Manchester, Dicksons, Chester; Laing and Sons, London; Deverill, Banbury; and other firms, and likely therefore to be tried by many. The merits of these inventions are quickly determined by the public, and a good thing does not long wait for approbation. One thing is certain, it is that weeds are now having a fine time and will require a lot of killing.

THE STRAWBERRY.

By JAMES DOUGLAS.

IF the crop of strawberries in our garden be any index of the quantity and quality elsewhere, we must say that this is a good season. We have had sufficient moisture; what we want now is warm, sunny weather. We have been very successful with Pauline this year; it is an excellent early strawberry with pine flavour. I have not yet planted Noble, not being satisfied with the flavour of the fruit when I first became acquainted with it, for mere size can only be a secondary consideration when it has been determined to set out a plantation of strawberries. I saw it this week growing in a neighbour's garden, and the sight of three or four rows of them was something to feast the eyes at any rate. They looked about the right variety to fill the jam-pots. We still retain the Black Prince. It is certainly superior to King of the Earlies; it has a piquant, peculiar flavour, and the fruits are of a rich, dark red colour, and are excellent for preserving. But it is not even so early as Pauline, and certainly inferior to it as a dessert fruit.

New strawberries have been plentifully introduced during the last twenty-five years. I have tested large numbers of them, but have not found the work of proving new varieties very profitable, although there is always some interest attached to the fruiting of a new strawberry one has not seen before, just as there is much pleasure in anticipating the flowering of new seedlings of any kind. I am rather diffident in advising as to the best strawberries to plant; a variety that might succeed well in one garden might fail in another. It may therefore be good advice to say, look over the garden wall and see what your neighbour is doing; but if I were to replenish a new garden with strawberry plants, I would plant Pauline on a warm border, also Black Prince and Keen's Seedling. The last, when well managed, is an excellent variety; good everywhere, north and south. It was the favourite when I, as kitchen boy, used to gather them in Scotland. It has an ancient history, having been raised at Isleworth by a Mr. Michael Keen in 1806, from seeds of the large White Chili strawberry, and soon became popular as the best market variety. President I would plant for garden purposes in preference to Sir Joseph Paxton; also Frogmore Late Pine, and Loxford Hall Seedling.

The question is often asked as to the best cultural conditions. For various reasons the plants thrive best and bear fruits most freely in rich deep soil, especially in dry districts. My plan has been to trench up the ground from eighteen inches to two feet deep, and to incorporate with the soil a liberal proportion of farmyard manure. A good plan is to place a layer in the bottom of the trench, turn over on this a spit of soil from the next trench, shovel out the loose earth on to it also, then place another good layer of manure; next take out the bottom spit and the loose earth, also forking up the bottom of each trench. Proceed in this way until the quarter is finished.

The manner and time of planting must now be considered, and this is a point on which a mistake in method or time may mean the loss of a season. With good culture the best crop of strawberries may be obtained the first year after planting. This is seldom expected, but it may be counted upon with certainty if the following directions are attended to. As soon as the layers are formed, which may be from the middle to the end of June, or as late as July, let them be pegged into small pots containing rich soil. In two weeks, or three at the outside, they will be firmly rooted, and may be removed from the parent plants. When this is being done examine the under sides of the leaves, and if mildew or red spider is present, dip the leaves in a mixture of tobacco liquor and soft soapy water. Sulphur may be added for the destruction of mildew. Place the plants on an open piece of ground for a week or more, and at the end of that time they will be ready to plant out on the prepared ground at a distance of about two feet apart. Each plant should be set in a shallow depression, for if the weather is sultry and dry, the plants, being a trifle lower than the surrounding soil, can be watered without any waste of this necessary element. The main point is to get the layers early, and have them planted out by the end of July, and being in pots they can be planted without the least check to their growth. The roots will soon penetrate deeply into both layers of manure, and the result will be a vigorous development of leaves and runners; but it is most undesirable to allow the runners to extend. They should be pinched off once a week in order that the whole vigour of the plant may be concentrated in the formation of strong crowns by the end of the season. The Dutch hoe should be kept at work amongst the plants to keep down weeds, and if the soil is heavy the hoe prevents the ground cracking.

During winter and early spring they require no attention whatever, but if the season should prove to be a dry one early mulchings of the ground between the plants prevents excess of evaporation, and if a good soaking of water is necessary give it through the manure; the fertilizing effects will thus be carried down to the roots, and besides the manure acts beneficially in preventing the soil from cracking or forming a hard cake on the top impervious to air and water. Indeed it is always desirable to mulch with some light manure over the surface of ground requiring artificial water.

A tropical summer with abundant supplies of water is the best for the production of good strawberries. On the other hand it will be found that in wet seasons half the fruit will rot if it is left lying on the ground merely protected by straw or long litter. In a wet season the best way to ripen the fruit well and keep it sound for a few days after it is ripe is to stick short sprays of the twiggy part of branches of elm, hornbeam, beech, or similar wood around the plants. This is easily and quickly done, and the fruits can be made to hang over the branches. Strawberry protectors are also made of galvanized wire, by which the fruit rests on a circular level platform of network, but they are not nearly so convenient as the sprays, which cost nothing more than the labour to cut them out.

Preparation of the plants for pot culture, as well as for planting out, should be attended to at once. They are layered and treated in the same way, and planted into their fruiting-pots (which ought to be six inches in diameter) early in August. Place them in an open position on a hard bottom of ashes where they are exposed to the sun morning, noon, and night. Ample space should be left between the plants; they should be a foot apart at least. The potting compound we use consists of three parts loam and one of decayed manure, Except giving them plentiful supplies of water, they need no other attention but merely to pinch off the runners once in a week or ten days. About the middle of October remove the plants to frames or pits heated or unheated. Remove the lights altogether in fine weather, and give ample ventilation at all times. Remove the plants to the forcing-houses as they are required, and do not force too much at first; start with a low temperature, and increase it as the plants show signs of new growth.

EARLY AND SECOND EARLY POTATOS.

POTATOS which rightly come under the above heading play an important part in the kitchen garden supply of a gentleman's establishment. No vegetable meets with more favour than new potatos dug from the open ground, and when once these are commenced upon, if a good second early variety is not grown, the supply is sometimes at a standstill for a week or two. Therefore, it will be seen that the cultivating of sorts that will succeed the earliest is an important matter, and one that should be studied, as all varieties do not succeed alike in various soils. Flavour and cooking qualities with productiveness should have due consideration, for without these qualities, more especially flavour, a potato is scarcely worth the room it occupies. At one time we were enabled to dig our first outdoor potatos on the 28th of May, from a south border; one line was specially planted close to the wall.

I should say that our soil is not at all adapted to the growth of early vegetables, it being heavy and retentive of moisture, and consequently cold in the winter and spring—one of the worst kinds for growing early potatos in that it is possible to have. The variety we grew then was Early Rose, which at that period was in special request, but which was of quite a soapy and sweet tasted nature when cooked, and also quite pink in colour. This variety in my opinion is only worthy for one thing—extra earliness. We now depend upon Myatt's Prolific or the Old Ashleaf for our earliest outdoor supplies, and have only a few days longer to wait for digging time. The crop from this variety is always to be depended upon, whilst its cooking qualities are what most persons prefer—being mealy, dry, not soapy. The Old Ashleaf, by some called Walnut-leaf, is an excellent sort to grow for early use, differing but little from Myatt's. If more are needed than the two named above, Midsummer Kidney is good; the quality is quite of the first order, but it is very liable to be seriously affected with disease in some seasons, which makes the task of seed saving difficult.

Following upon either of the early sorts named, we depend upon Sutton's Seedling, which at the present time (June 28) is excellent both in crop and quality. I know of no second early variety which can equal this in all respects. The growth of the haulm is strong without being gross, and even in our soil the tubers turn out clean and bright in the skin, and large enough for any purpose where quality is a leading feature. I would strongly advise those who have not given this sort a trial to do so another season. I formerly grew Early Regent for the second crop, but as I am not a believer in growing many kinds of potatos I discarded the latter sort for Sutton's Seedling. With early and second early potatos, the same as with later sorts, I believe in allowing ample space for the haulm to develop thoroughly. Nor do I care to see many shoots coming through the soil from the sets. We rub off many of the sprouts where too thick before planting. Two, or at the most three, shoots are ample for each tuber. If these are strong and in proper condition—stout, and about half-an-inch in length, one of the three is removed. We deeply dig over the ground in the autumn, adding at that time a mixture of light stable manure or decomposed vegetable refuse and old hotbed manure, the whole being turned over together some time before using. At planting time—early in March for the earliest sorts, and about the 1st of April for the second early sort—the ground is forked over, breaking the soil as finely as possible, the whole depth of the fork. In the trench cut with a spade as digging proceeds the tubers are laid about ten inches apart. Over them is placed some sifted decayed leaves or potting soil refuse, which is much better for them to root into than our natural soil. Earthing up is done early to prevent the leaves or stems getting broken during the operation; the ground between the rows being deeply hoed a few days previous to the earthing up being done. There is, in my opinion, no manure so good for potato culture as that from the farm-yard, partly decayed; that from the stables being the most suitable for heavy soil, as it tends to lighten the natural staple.

E. MOLYNEUX.

TEA GARDENS OF ASSAM figure in the imagination as pleasant places where happy peasants find congenial occupation and the business men make money fast. These gardens cannot be such as with our present notions we should term paradisiacal. In the House of Commons on July 3, questions put to the Government on the health of the people employed in the production of Assam tea resulted in the information that the prevailing annual mortality reaches the astounding figure of 301 to 309 per 1,000. Mr. Gorst added that "no tea gardens have been closed in Assam since 1884, because, in the opinion of the sanitary officers, remedial measures which had been enforced were more efficacious than closure.

Calls at Nurseries.

MESSRS. BACKHOUSE AND SON'S, YORK.

THE seven or eight thousand visitors to the York Nurseries during the three days on which the great floral fête was held in the city, had unquestionably plenty to interest them. Then, as now, the beautiful rock garden was rich in attractions, the herbaceous borders were in their full summer dress, the richly furnished orchid houses were gay with colour, and the deciduous and other trees remarkable for the rich colouring of their leafage, in which the nurseries are particularly strong, fully asserted their claims for consideration. In addition there were the unique collection of filmy ferns and the collections of stove and greenhouse plants to engage attention, the latter being especially interesting, because of the indications of their regaining in some degree their wonted popularity.

Passing through the principal entrance, the visitor has immediately before him a broad walk upwards of four hundred yards in length, and flanked by borders ten feet or so in width, and devoted to herbaceous plants. These borders represent much judgment in their conception and not a little taste in their arrangement, and may well serve as models for both private gardens and nurseries. Within them are to be found nearly all the finest herbaceous plants that can be successfully cultivated in the open border, and each species or variety, as the case may be, has a position most suitable to its height and character of growth, and sufficient space for its full development; consequently, not only is a singularly beautiful effect produced, but visitors are able to see at a glance the character of any particular plant, and to determine without difficulty how far it will be suitable for the position they are desirous of devoting to it. With the perennials are associated a few evergreen and other shrubs, and a background to the border on either side is formed with coniferous and other ornamental trees. In the borders, when we saw them a few days since, were glorious masses of single and double pyrethrums and pæonies, Oriental and Iceland poppies, and German iris, with a host of other things in bloom. To refer in detail to the pyrethrums, pæonies, and iris is not necessary, but it must be said that all the finest varieties in commerce were well represented. One of the iris was made note of as being of exceptional excellence, and that was Iris germanica atropurpurea, an extremely beautiful variety, with large rich violet-purple flowers.

Amongst the miscellaneous plants in the borders were Achillea Mongolica, which obtained recognition at Westminster a short time since. It is regarded with much favour at York, and deservedly so, for it is free in growth and profuse in flowering, and the comparatively large pure white flowers retain their freshness for a considerable period after being cut; Chrysanthemum atratum is a welcome addition to the hardy summer-flowering kinds, and promises to attain to a high degree of popularity. The plant is vigorous in growth and about twelve inches in height, and the pure white flowere are freely produced. Very conspicuous were the large finely-flowered specimens of Geranium armenum and G. platypetalum, which have large purplish rose and blue flowers respectively. G. Lowi, also met with in the borders, claims attention for the elegance of its foliage, and its flowers, although less showy than those of the two other species mentioned, are by no means wanting in beauty. The sea hollies, with their varying shades of green and blue, were very attractive, more particularly Eryngium alpinum, now rapidly assuming the brilliant colouring for which it is distinguished. Differing widely from these is the Giant St. Bruno's lily, or, to be more exact, Anthericum liliastrum giganteum, which is a much finer form than the major variety, the flowers being produced in dense spikes, and at least half as large again as those of the type. Dictamnus fraxinella alba was represented by several large masses, and presented a beautiful contrast to the typical form. Another white flower specially deserving attention is Backhouse's variety of the peach-leaved campanula, known as C. persicifolia alba grandiflora. It has pure white flowers, remarkable alike for their large size and fine form, and is far superior to the old white form. The dwarf-growing and free-blooming C. Raineri was in perfection, and the large masses of rich blue flowers were very effective. Armeria Laucheana may be described as one of the best of the thrifts, both for the front row of the herbaceous border and for the slopes of the rockery. It is very free in blooming, the flower-heads rise to a height of about six inches, and the colour is a rich shade of rose-crimson. Mention must also be made of Veronica amethystina, a herbaceous species rising to a height of about nine inches, and producing a profusion of brilliant blue flowers. In the border also are large masses of various montbretias, not yet in bloom, but interesting as showing that these plants are perfectly hardy, and thoroughly at home in the mixed border.

In passing through the various enclosures devoted to bulbs and perennials, a host of interesting objects were met with. In one Lilium Washingtonianum was flowering with a freedom by no means common, and very beautiful was the effect produced by the numerous delicately-coloured and sweetly-scented flowers. Evidently not less well understood is the culture of Iris Kæmpferi. The great breadths of plants are in the most robust state of health, and promise to produce a profusion of flowers. Here they occupy a moist position, and have the advantage of a soil that has been liberally enriched with manure. The comparatively rare Primula reticulata was at its best, and the large umbels of soft yellow flowers presented an extremely beautiful appearance. This species comes near to P. Sikkimensis, but it is less difficult of cultivation, as when planted in strong loam and peat in a moist position, it grows with vigour and blooms freely.

The rock garden, for which these nurseries have long been famous, has been greatly extended during the past few years, and its interest and beauty materially enhanced. The latest addition is the glacial slope, of which the accompanying illustration represents a part, and, as indicating its extent, it may be mentioned that upwards of two hundred tons of rock were employed in its formation. This, whilst affording much additional space for the ever-increasing number of alpine plants, contributes much to the general effect. In the ravines and on the slopes within the garden are to be found suitable accommodations for almost all classes of plants, from the moisture-loving nymphæas to the sempervivums, which require but little beyond a ledge of bare rock for their subsistence. That the great diversity of sites and aspects thus afforded have been fully utilised follows, as a matter of course; and as the outcome the plants present on all sides the appearance of being thoroughly at home in their quarters. In the lower part of the ravines are various ferns and such moisture-loving subjects as Saxifraga peltata, growing with extravagant luxuriance, and high up on the slopes are great sheets of various pinks and veronicas that dazzle the eye with their brilliancy. The rock garden is,

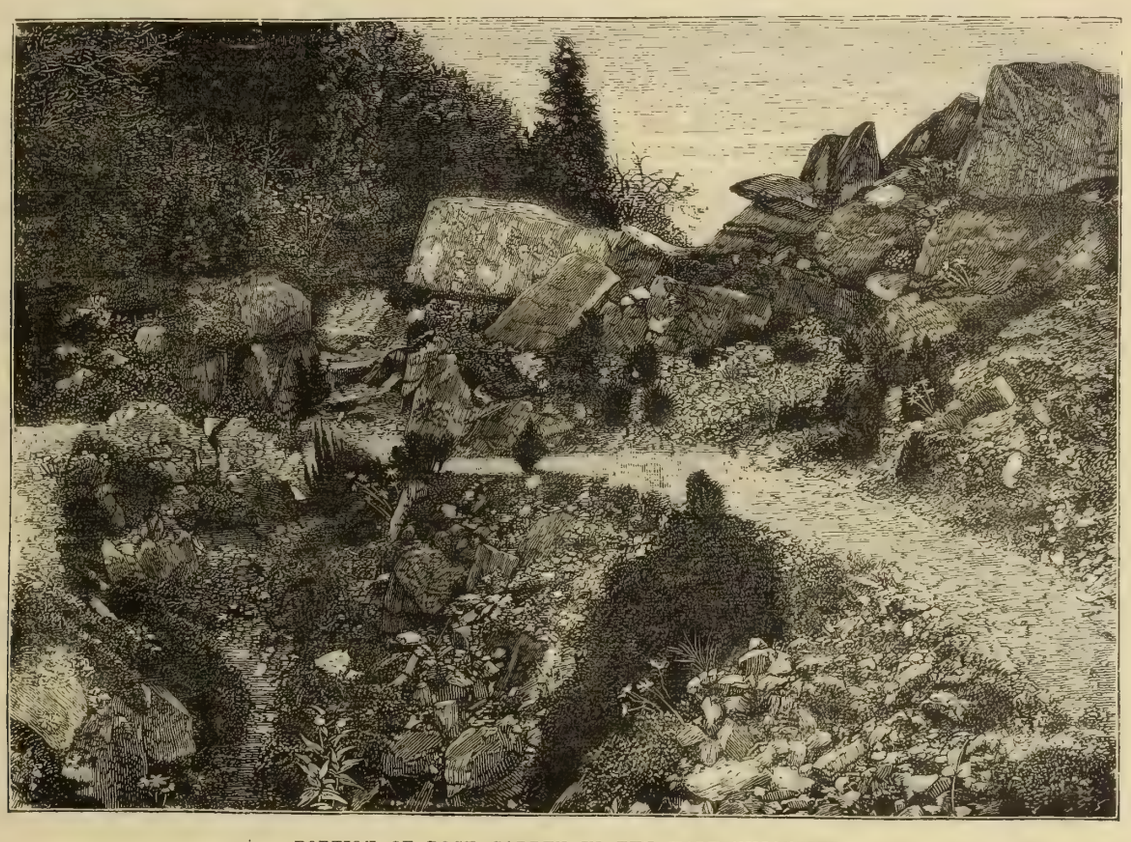


POLYPODIUM VULGARE TRICHOMANOIDES.

indeed, rich in surprises, one of the greatest being, perhaps, to meet with, the exquisitely beautiful Todea superba, growing on a northern slope without protection, with a luxuriance hardly surpassed by that of the harts' tongues and other Britishers near at hand. There are, probably, a dozen specimens on the slope, and although they have occupied their position for a considerable period, they are furnished with an abundance of old fronds in the most healthy state, and are now producing young fronds of exceptional size. In another part of the garden were specimens of Darlingtonia californica, better known perhaps as the Californian pitcher plant, which, judging from the size and fresh appearance of the pitchers, are quite at home in their quarters. Especially attractive amongst Alpine pinks that adorn the slopes and ledges of the rock garden are Dianthus integer, a charming species with elegantly fringed flowers, and D. cæsius and D. alpinus, which have pink and flesh coloured flowers respectively. Other conspicuous objects were Veronica rupestris, a trailing species, producing large sheets of flowers of the most brilliant blue, and Thymus serpyllum coccineus, which rapidly covers large spaces and forms during the summer sheets of bright crimson flowers. This thyme flowers very freely in the border, but it appears to the best advantage when planted high up on the rockery with plenty of space over which to spread. Highly interesting was the pretty little Saxifraga aquatica which is found at home in the snow streams on the Pyrenean mountains, whilst S. ceratophylla was flowering freely, and presented a remarkably attractive appearance. One other occupant of the rocky slopes must be noticed, and that is Eurybia gunniana, a small-growing shrub, ranging from one to two feet in height, and bearing a profusion of white aster-like flowers. Planted on the sunny ledges, it was blooming so freely that the foliage was quite hidden by the flowers. In the bogs were great masses of Cypripedium macranthum, and C. spectabile, the first named just past its best, and the other in perfection, the myriads of delicately coloured flowers presenting a charming appearance.

Much attention is given to the cultivation of orchids, and the several houses devoted to these plants presented an extremely attractive appearance. In the principal cattleya house, a spacious structure remarkable alike for its elegant appearance and adaptability to the culture of cattleyas and lælias, there was an immense display of colour. Amongst other kinds in bloom were Cattleya Mendeli, C. Mossiæ, and C. gigas, of each of which were several exceptionally fine forms. C. Reineickiana was flowering freely, and C. Gaskelliana was just coming into bloom and promising to maintain the house in an attractive condition far into the summer. Conspicuous also in the house was the stately Lælia purpurata, now rapidly approaching the end of its season. In other houses there was an abundance of cypripediums, odontoglossums, and masdevallias, amongst the latter being M. Backhousiana, a small-flowered and attractive species. One of the most interesting features in this department is to be found in the house devoted to disas, which are grown with singular success in these nurseries. Planted out in a low, partly-sunk span-roof house in a well-drained bed, the brilliantly-coloured Disa grandiflora grows with great vigour, and blooms most profusely, as proved by the great forest of flower spikes rising from the two beds flanking the central pathway. D. racemosa, a handsome species with purplish flowers, was also flowering freely. It may be useful to state that the several white forms of Lælia anceps are here grown with full exposure to the sunlight and a free circulation of air, and are found to grow with greater vigour and to bloom more freely than when grown under the conditions that usually obtain in the intermediate house.

The nurseries have long been famous for a unique collection of filmy ferns, and in a walk through the two houses devoted to these beautiful kinds, it becomes evident that the fame is not likely to be diminished. Grown in low span-roof structures, with but little fire heat, the whole of the large number of species and varieties present a luxuriant appearance, and even the most rare kinds are represented by huge specimens. Todea superba is grown in the general fernery and arranged to form an undergrowth to Cyathea dealbata. It presents a striking contrast to the silvery fronds of that handsome species. Out of doors the hardy ferns constitute an important feature, but to refer to them in detail is now out of the question. Mention must however be made of Polypodium vulgare trichomanoides, the most elegant of all the varieties of the common polypody. The arching fronds attain a length ranging from six to twelve inches, and the pinnæ are so finely divided as to form a beautiful plumose mass, as so well shown in the figure given herewith.



PORTION OF ROCK GARDEN IN THE YORK NURSERIES.

NEW DEPARTURE IN THE ABERDEEN FRUIT TRADE.

A CHANGE is being introduced in connection with the fruit trade in Aberdeen which promises to be of considerable importance alike to the growers of fruit and with regard to the business of distribution and the general business of the public. Hitherto there has been no regular means by which growers and consigners could immediately dispose of their produce at fair prices, while more or less difficulty has been experienced in the trade in obtaining the supplies to meet its daily requirements. This difficulty has been increasing as the city has been growing in size (it has now a population approaching 130,000) and the distributing agencies have been drawn increasingly from the centre towards the outskirts and suburbs. The great desideratum has been a central wholesale market at which retailers could get their wants promptly and satisfactorily supplied, and to which consigners could send their produce with the certainty of immediately getting it sold and paid for. A first step towards supplying this desideratum is now being taken by Messrs. George Pegler and Co., fruiterers to the Queen, who have started sales by auction for the wholesale disposal of fruit and vegetables. These sales are being held in the meantime twice a week—on Tuesdays and Thursdays—and the goods being sold include consignments direct from Paris, London, and different parts of England. One notable feature of these sales has been the dispersal through the trade of considerable quantities of strawberries from the south. To bring strawberries to Aberdeen seems a little like taking coals to Newcastle. The season for this fruit is later here, however, and thus it is that even in Aberdeen a market is found for imported strawberries at the beginning of summer. As the season advances much local produce may in turn be expected to come in, the auction sale affording a ready means of rapidly transferring commodities so perishable from the hands of the growers to those of the distributors.

THE ORIGIN OF THE CULTIVATED STRAWBERRY.

By Shirley Hibberd.

Read at a meeting of the British Fruit Growers' Association, June 27, 1890.

(*Concluded from page* 392.)

An important contribution to the history of this fruit will be found in the 9th volume of "Le Jardin Frutier du Museum," of M. J. Decaisne, published 1862 to 1875. The material for the article "Le Fraisier" in this work was in great part supplied by Madame Elisa de Vilmorin, but the classic work on the subject, by M. Duchesne, published 1767, has been relied on chiefly for matters lying out of the region of Madame Vilmorin's inquiries and observations. According to this authority there are seven species of strawberry.

The wood strawberry, *Fragaria vesca*, is described as freely scattered over Europe, Asia, and America. It is unknown in Africa, but otherwise is a free citizen of the world. The Alpine strawberry, *F. Alpina*, is considered by Decaisne a variety of the wood strawberry. The variety known as *monophylla*, the one-leaved strawberry, of which there is an example on the table, was raised by M. Duchesne in 1761 from the wood strawberry. It is of no special interest, as the fruit does not differ from that of the wild plant. In the year 1887 Messrs. Lovell, of Driffield, sent me plants of the popular Sir Joseph Paxton that had become one-leaved, but in the year following these plants produced leaves three-divided, according to the proper pattern.

The hautbois, *F. elatior*, belongs to Central Europe. It is well known to be partially diœcious, a fact that needs to be recognized by the cultivator; and one full of interest as a feature in the biology of the genus Fragaria. Miller's *F. muricata*, with green fruit the size of a plum, is a variety of the hautbois.

The green pine, *F. Collina*, described as a native of Germany, differs from others in some trivial peculiarities of the calyx. It is a variety of the hautbois, and has no proper claim to specific distinction.

Hagenbach's, *F. Hagenbachiana* is probably the produce of a cross between F. vesca and F. collina; in other words, a hybrid of the wood and hautbois strawberries.

The scarlet or Virginian, *F. Virginiana*, is described by Decaisne as introduced to Europe in the first half of the eighteenth century, but we have the testimony of Parkinson that it was in the country in the first half of the seventeenth century, so that Decaisne may be considered in error to the extent of a century in this matter. *F. Canadensis* is the Canadian form of this same scarlet strawberry.

The Chili, *F. Chiloensis* is reported by Decaisne as introduced to France in 1712, and he describes it as producing grand foliage and fruits that are sometimes as large as pullets' eggs. He adds that it often requires to be fertilized by other varieties of its own species. The first mention of the South American strawberry is by M. Frezier, who, in 1716, found it at the foot of the Cordillera Mountains, near Quito, and carried it home to Marseilles. The Spaniards reported that they obtained it from Mexico, and through them it may have reached Paris at a date anterior to its discovery by M. Frezier, which would perhaps justify Decaisne's date—1712. Mr. E. P. Roe, in his admirable book on "Success with Small Fruits," says, "From Mr. W. Collett Sandars, an English antiquary, I learn that seven plants were shipped from Chili, and were kept alive during the voyage by water which M. Frezier saved from his allowance, much limited owing to a shortness of supply. He gave two of his plants to M. de Jussien, who cultivated them in the Royal Gardens." In 1727 the Chili strawberry was introduced to England by Miller as cited above. He describes it as a bad bearer. Duchesne says later importations from America to England met with better success, for early in the present century new varieties of F. Chiloensis, as well as of F. Virginiana, became quite common, both in this country and on the Continent.

Decaisne adds that the varieties of the Chili strawberry make amends for the smallness of their number by their beauty and excellence. The pine, or great-flowered strawberry (*F. grandiflora*), he declares to be of unknown origin, but incontestably a garden hybrid.

Gray's, *F. Grayana*, and the Californian *F. lucida*, are forms of F. Virginiana. The last-named has some distinctive features of leafage, and is very decidedly diœcious, and commonly sterile.

Decaisne's seven species shrink to four when investigated, but we must not forget the diversity of opinion that prevails as to the limitations of species, and the French botanists usually lean on slender characters to make many species.

In the year 1818, when, on August 4, Mr. Thomas Andrew Knight, president of the Horticultural Society of London, presented his memorable paper on "The Variations of the Scarlet Strawberry," the three reputed species of American strawberries were fully established as garden plants, but there was nothing like a collection of varieties in existence. It is particularly interesting to observe that he sets out by declaring his belief that all the American strawberries are "varieties only of one species; for all may be made to breed together indiscriminately, and I have found that similar varieties may be obtained from the seeds of any of them; and upon the same evidence, I consider the wild strawberry of Canada, the Bath Scarlet, and the Black, and, in short, all our large strawberries, with the exception of the Hautboy, to be varieties of the same plant." In evidence of his command of facts as the basis of criticism, he reports that he had raised four hundred new varieties, "some very bad, but the greater part tolerably good, and a few, I think, excellent." He describes only eighteen varieties, in respect of which there is not much to be said. But mention should be made of No. 2, produced from a seed of the White Chili and pollen of the Black strawberry, one of the berries of which weighed 274 grains. The colour of the fruit was scarlet, the form conic, and not at all flattened or deformed."

That our garden strawberries, after much crossing and selecting, still represent the two American species need not to be enforced, for they carry the evidence in their characters. But there are points of importance in those characters that have obtained less than their due share of attention. One of these is the tendency to a diœcious habit of flowering. A perfect flower of a strawberry contains both stamens and stigmas after the proper fashion of a rosaceous plant. But it happens that under certain circumstances flowers containing only one set of organs are produced; those that have stamens in sufficiency to be hermaphrodite being termed *staminate*, and those from which the stamens are absent *pistillate*. This part of the subject has obtained more attention in America than with us, but English gardeners have always had to recognize the fact in the cultivation of the hautbois. This exhibits the diœcious tendency in so striking a manner that unless a plantation is closely watched, it in time becomes barren, because the male plants outrun the females, and take their place by sheer force of superior vigour. But it is a mistake to suppose that the staminate plants are absolutely necessary when the desire of the grower is to obtain strawberries as fruits without any regard to the vitality of the seeds that those fruits may carry. The prevailing indifference to this part of the subject is scarcely pardonable when the business in hand is the raising of new varieties; but for all the ordinary purposes of the cultivator it is certainly not of great consequence, because the varieties grown in this country and on the continent of Europe are mostly pistillate; but as they are all capable of varying in their sexual capacities, the cultivator cannot with impunity ignore the facts of nature. Our grand British Queen is often said to be fastidious in its requirements as to soil and climate, but in all probability it occasionally proves less fruitful than its wont through becoming staminate, for plants can change their sex to suit their circumstances, as I have proved in the case of the holly, and some other garden plants. The frequency of the staminate form, as the case is represented by Amerian culturists, is doubtless a consequence of certain peculiarities of the American climate, for their staminate kinds appear to become pistillate when removed, and the garden varieties that still rank nearest to F. Virginiana are with us as decidedly pistillate as any. Our wood strawberry is pretty constant in its floral characters, having five petals and four stamens to each. But the American strawberry in its original form often has five or six stamens to each petal; and occasionally there are seven petals and forty to forty-two stamens. On the other hand, the pistils of these staminate flowers are often incomplete or but partially developed, and there is a deficiency of fruit accordingly. The Chili species is often deficient of pollen, and, therefore, is advantageously grown with other varieties. Probably the best representative of the Virginian strawberry now in our gardens is the Crescent Seedling, an early, smallish, scarlet, sprightly, flavoured fruit, that appears likely to become popular for the first supply. I have examined many flowers of this variety, and have seen no indications of the predominance of either sex; in other words they appear to be normally hermaphrodite.

In the year 1861 I made an examination of the flowers in a collection of strawberries that were fruited under glass; and 100 blooms each on ten different varieties, making 1,000 in all were marked. The varieties were Scarlet Nonpareil, Black Prince, Carolina Superba, Oscar, Sir Harry, Empress Eugenie, Keen's Seedling, Belle de Paris, Eleanor, and Sir Charles Napier. From the 1,000 marked flowers, 887 berries were gathered. Those that failed appeared to begin life with equal conditions with the rest, but were impaired by insects, damp or shrivelling; in fact, they failed through what may be termed accidental causes, and not through any want of pollen to effect fertilization, or any absence of stigmas to receive it. This observation was reported by me in the Gardeners' Magazine for August 16, 1861. But although I do not urge the cultivator to watch narrowly for staminates and pistillates, I am certain that there are times when the subject should have more attention than it obtains; and I have noticed, and possibly you have also, a hot dry season is one of those times that certain shybearers appear to be more fruitful, when grown in close association with other sorts, as though pollen were sometimes deficient. But while we discuss the difference between European and American strawberries in respect of this question of stamens and pistils, it will be proper to keep in mind that the strawberries of Europe are mostly descended from the Chilian and Virginian stocks; while those of the United States are the progeny of the Virginian stock almost exclusively. And there is no shadow of whim or taste in the matter, for the South American race suit the European climates, and the North American race suit the North American climates; for in those states in which strawberries are in the greatest demand, the winters are too cold and the summers too hot for the progeny of Fragaria Chiliensis. Thus the question of staminates and pistillates is simplified, for the southern plants are more distinctly hermaphrodite than the northern; and this fact accounts for our indifference to the subject of sex in this fruit.

In view of these considerations it is remarkable that Decaisne in a list of 31 varieties, the parentage of which he attributes to F. Virginiana, should include such evident hybrids as Admiral Dundas, British Queen, Eleanor, Eliza, Elton Pine, Goliath, Grosse Sucrée, Jucunda, Keen's Seedling, Lucas, Marguerite, Oscar, Sir C. Napier, Sir Harry, and Wonderful. As "issues" of F. Chiloensis he names only Barnes's Large White and Chili Orange, both late varieties, fertile, and of good quality. He might now, perhaps, be enabled to recognize in the vigorous-habited Waterloo the influence of the South American strawberry; but it must be confessed that in garden varieties the species have been so much mixed, that to determine in any case which of the parents predominates is well nigh impossible. That our American friends are chiefly indebted to their own wild strawberry for the varieties they prize is admitted by all the authorities from Downing to Roe, and the fact differentiates F. Virginiana from F. Vesca, the first being capable of endless variation, and the second being apparently as immovable as the Britisher himself, and as incapable of quitting the groove scooped in the world for it by nature.

But our wood strawberry takes at least three forms, which may be designated the vesca, Alpina, and elatior forms. In like manner the American scarlet takes a Virginiana, an Illinœnsis, and a Canadensis form; while the South American appears in a Chiloensis, a Grandiflora, and a Carolina form. These several sub-species as they may be termed, may be regarded as connecting links that establish family relationships between the several species, and in the first instance reduce the reputed six species to an actual three, and the actual three to a possible one. Should we be enabled to trace the origin of the strawberry so far back as to unite the species, we might go a step farther, and entertain the notion that, to use the terms of the evolutionists, the plant originally produced dry carpels in the way of a potentilla, but adopted the ingenious device of adorning the carpels with a sweet and fragrant pulp to bribe the birds to disseminate the seeds. But you did not invite me to indulge in speculations, and I will therefore be content in having placed before you a few matters of fact that may prove serviceable in aid of practical work; for a knowledge of how a thing was made may serve as a guide to the process of improving it.

ROCK ROSES.

There are many kinds of Cistus suitable for growing on the rockery, and which make that part of the garden very attractive during the months of June and July. The dwarf growing yellow variety *Alyssoides* is one of the best of that colour. The common dark red and white kinds are very showy, flowering as they do in a mass. Cuttings strike easily in a cold frame in sandy soil if put in during September and kept close for a time. E. M.

Exhibitions and Meetings.

WANSTEAD FLORICULTURAL SOCIETY, July 3.

This old-established society fully maintained the high position it has so long occupied, by the exhibition held on the above date. The quality of the various productions was fully equal to the average of previous years, but there was so great an increase in the number of entries as to necessitate the erection of an additional tent for the accommodation of the collections in competition for the prizes. On this occasion the show was held in the beautiful grounds of Park Gate, Wanstead, and, as in previous years, the administrative ability of Mr. J. W. Simmons was evident on all sides.

In competition for the prizes offered for six stove and greenhouse plants in bloom, Mr. Barton, Walthamstow, was a capital first; Mr. Cade, gardener to Park Gate, Wanstead, was second; and Mr. Tween, Snaresbrook, third. The premier award in the class for four stove and greenhouse plants in bloom was made in favour of Mr. Runcieman, Wanstead. There was a very keen contest for the prizes in the class for fifteen flowering and ornamental-leaved plants, and in the result the prizes were awarded to Mr. Barton, Mr. Pocock, and Mr. Webb, in the order of their names. Equally brisk was the competition for the prizes for twelve plants, and the awards were made in favour of Mr. Runcieman, Mr. Webb, and Mr. Taylor. Mr. Barton occupied the post of honour for six, and Mr. Cade and Mr. Tween were second and third, each exhibitor staging an excellent collection. Ornamental-leaved plants were admirably shown, and in the class for six, Mr. Cade was first; whilst in that for four, Mr. Pocock obtained premier honours. Other successful exhibitors in these two important classes were Mr. Tween, Mr. Taylor, Mr. Barton, and Mr. Runcieman. Mr. Tween had the premier award made in his favour for six caladiums, the specimens of medium size and nicely coloured. In the corresponding class for coleus there was a very strong competition, and Mr. Tween, Mr. Cade, and Mr. Runcieman were first, second, and third respectively with large well-furnished specimens, in which the leaf-tints were highly developed. Begonias, distinguished by the beauty of their leafage, were staged in large numbers and in excellent condition. One exhibitor endeavoured to improve his specimens by laying the leaves down to a flat wire trellis, and thereby destroyed whatever chance he might have had of obtaining a place upon the prize list. Exceptionally good were the specimens from Mr. Cade, to whom the first prize was awarded; and the collections from Mr. Runcieman and Mr. Tween, who were second and third respectively, were of a high degree of excellence. The first prize for a single specimen plant in flower was awarded to Mr. Cade for an immense specimen of Rhynchospermum jasminoides, and Mr. Barton was second with an excellent fuchsia. In the corresponding class for ornamental-leaved plants, Mr. Webb was first with a good Latania borbonica; and Mr. Cade and Mr. Tween, who were second and third, also had palms.

The collections of exotic ferns were numerous and good, and in the class for six it was not a particularly easy task to determine the relative merits of the competing collections. In the result Mr. Barton was placed first, Mr. Cade second, and Mr. Tween third. Very good also were the collections of four, for which Mr. Runcieman and Mr. Webb were first and second respectively. For a single specimen fern Mr. Barton was first with a finely-developed example of Davallia Mooreana; Mr. Cade was second with Blechnum brasiliense; and Mr. Pocock third with Adiantum cuneatum. Mr. Cade and Mr. Webb were first and second with well-grown examples.

Chief amongst the soft-wooded plants grown for their flowers were the fuchsias, which were admirably shown by Mr. Cade and Mr. Barton, who were first and second for six. Single specimen fuchsias were exceptionally good, and the awards in the class were made in favour of Mr. Cade, Mr. Runcieman, and Mr. Barton. Tuberous begonias were represented by excellent collections from Mr. Cade, Mr. Runcieman, and Mr. Pocock. Mr. Taylor obtained premier honours in each of the two classes for zonal pelargoniums. Petunias were admirably shown by Mr. Tween and Mr. Taylor, and gloxinias were presented in splendid condition by Mr. Barton, Mr. Cade, and Mr. Tween.

There was a good display of cut flowers, although one or two of the rose classes were not so well filled as could have been desired. The most successful of the exhibitors in the cut flower classes were Mr. Runcieman, Mr. Barton, Mr. Muller, and Mr. Webb. This department of the exhibition was greatly strengthened by a large collection of remarkably fine roses from Mr. W. Rumsey, Waltham Cross.

There was an excellent representation of fruits and vegetables, the exhibitors being chiefly the same as those who distinguished themselves in the plant classes. Mr. Tween was first in each of the two classes for grapes with well-finished clusters of Black Hamburgh and Buckland Sweetwater. Mr. Muller occupied the first place in the class for strawberries with good fruit of President. Mr. Tween was first for a collection of vegetables, eight kinds. Mr. Taylor occupied a similar place in the class for six kinds; and the best baskets of salad were contributed by Mr. Barton, Mr. Tween, and Mr. Pocock.

The amateurs and cottagers were more strongly represented than for some years past, and their contributions added materially to the interest of the exhibition. Of the amateur exhibitors Mr. Richards, Mr. Dodds, Mr. Jones, Mr. Penny, and Mrs. Snell specially distinguished themselves.

The judges were Mr. D. Donald, Mr. J. Hudson, and Mr. George Gordon.

BATH ROSE AND STRAWBERRY SHOW, July 3.

The Bath Floral and Band Committee have on many occasions had to lament the inconvenience of inclement weather in connection with their numerous showdays, and storms of wind and rain again militated against the success of the Rose Show, held on the above date in the Sydney Gardens. True, the rain did not fall in heavy showers at the time of opening, but the whole night previous and early morn were wet and unpromising. The exhibition was smaller than usual, as several trade growers, including the great firms at Cheshunt and Bedale, wired that "owing to the inclemency of the weather," their roses were so far spoilt as to entirely debar them from exhibiting. The entries were unusually large, for although the season has not been too favourable to the development of rose-blooms, still most cultivators were in sufficient form to compete. There were 1,700 blooms staged, a large percentage large and clean, but many were a trifle rough and weatherstained.

As a background, or rather a dividing line between the boxes of colour, Mr. W. C. Drummond, Weston Nursery, Bath, had arranged choice specimen foliaged plants, for which he received a first prize; Messrs. W. Pumphrey, W. C. Drummond, and H. Jones taking the cards for twenty-five exotic ferns each.

Trade Classes.

Roses.—In the trade class for seventy-two single trusses, the silver cup or £8 8s. went to English Fruit and Rose Company, Hereford, for large, finely-developed flowers. Back row: Marie Baumann, Mrs. J. Laing, Senateur Vaisse, Etienne Levet, Constantin Tretiakoff, La France, General Jacqueminot, Mdlle. Susanna Radoconachi (premier H.P., and awarded N.R.S. silver medal), Alfred Colomb, Comtesse de Serenye, Countess of Oxford, Madame Eugenie Verdier, Earl Dufferin, Abel Carriere, La Duchesse de Morny, Lord Bacon, Marie Verdier, Maurice Bernardin, Lady Helen Stuart, Pride of Waltham, Madame Victor Verdier, and Alfred Dumesnil; middle row: Charles Lefebvre, Duchesse de Valombrosa, Star of Waltham, Souvenir d'Elise Vardon, Horace Vernet, Anna de Diesbach, Duchess of Bedford, Marie Finger, Reynolds Hole, Captain Christy, Madame Charles Wood, Heinrich Schultheis, Thomas Mills, Marguerite de St. Amand, Mdme Caillart, Maréchal Niel, John Stewart Mill, Viscountess Folkestone, Duke of Edinburgh, Souvenir d'un Ami, Baronne de Bonstettin, Madame Gabriel Luizet, Pierre Notting, and Queen of Queens; front: Prince Arthur, Lælia, A. K. Williams, Mdlle. Marie Cointet, Mrs. Baker, Le Havre, Baroness Rothschild, Silver Queen, Louis Van Houtte, Merveille de Lyon, Duke of Teck, Victor Verdier, Benoit Comte, Niphetos, Prince Camille de Rohan, Madame Bravy, Victor Hugo, Marquise de Castellane, Mons. E. Y. Teas, Dr. Andry, Catherine Mermet, Duke of Wellington, and Mdlle. Margaret Manion. The second card, £5, went to Messrs. George Cooling and Son, for an average arrangement, the best flowers being Arthur Dickson, Madame Eugenie Verdier, Ulrich Brunner, Her Majesty (extra fine), Earl Dufferin, La France, Duke of Albany, Merveille de Lyon, Captain Christy, Madame Hippolyte Jamain, Abel Carriere, Rubens, Alfred Colomb, American Beauty, Souvenir d'Elise Vardon, Madame Lambard, Madame de Watteville, François Michelon (grand), A. K. Williams, Alba Rosea, Souvenir d'un Ami, Reynolds Hole, and Star of Waltham.

Thirty-six Triplets.—In this class the English Fruit and Nursery Company had the leading, the choicest trios being Heinrich Schultheis, Horace Vernet, Marie Finger, General Jacqueminot, Anna de Diesbach, Captain Christy, Ulrich Brunner, Etienne Levet, Mrs. J. Laing, Marie Verdier, Thomas Mills, Baroness Rothschild, Alfred Colomb, Magna Charta, and Marie Van Houtte; Messrs. Cooling and Sons, were again second; their best bunches were La France, Niphetos, Madame Cusin, The Bride, Lady Mary Fitzwilliam, and Madame Lambard among the light flowers, the best darker forms being Xavier Olibo, A. K. Williams, and Earl Dufferin.

Eighteen Triplets proved a keener competition, Messrs. Keynes, Williams, and Co., Salisbury, leading, their best light flowers being Niphetos, Her Majesty, Marie Verdier, Eugene Verdier, La France, and Catherine Mermet; the heavier shades included fine blooms of Ulrich Brunner, La Rosiere, Horace Vernet, Marie Baumann, Alphonse Soupert, Abel Carriere, Earl Dufferin, and Roseriste Jacobs. Messrs. John Jefferies and Son, Cirencester, a good second; very choice were the developments of Gloire Lyonnaise, Duke of Edinburgh, Ulrich Brunner, Mrs. J. Laing, Viscountess Folkestone, Louise Van Houtte, Lady Mary Fitzwilliam (grand flower, slightly stained), François Michelon, Prince Camille de Rohan, Eugene Verdier, Souvenir d'Elise Vardon, Rubens, Etienne Levet, and Madame Isaac Periere. The third card fell to Messrs. Curtis, Sanford, and Co., Torquay, whose finest forms were La France, Baroness Rothschild, Mrs. J. Laing, Souvenir de Gabriel Drevet, Victor Hugo, Marie Baumann, Madame Joseph Desbois, Grace Darling, Ulrich Brunner, Abel Carriere, and Marquise de Castellane.

Thirty-six Singles.—Messrs. Curtis, Sanford, and Co., were well to the front with a nicely arranged collection; back row—Magna Charta, Merveille de Lyon, Marie Verdier, Heinrich Schultheis, Charles Lefebvre, Madame Clemence Joigneaux, Sultan of Zanzibar, Lady Mary Fitzwilliam, Horace Vernet, La France, Pride of Waltham, and Etienne Levet; middle row—A. K. Williams, Souvenir d' Elise Vardon, Abel Carriere, Souvenir de Paul Neyron, Beauty of Waltham, Mrs. J. Laing, Prince Arthur, Captain Christy, Prince Camille de Rohan, Innocente Pirola, Senateur Vaisse, and Catherine Mermet; front row—Victor Hugo, Queen of Queens, Amazone, Ferdinand de Lesseps, May Quennel, Jean Ducher, Ulrich Brunner, Niphetos, Duc de Rohan, Marechal Niel, Madame de Watteville, and Alfred Dumesnil; Messrs. Keynes, Williams, and Co., second, the pick of large well-formed flowers being Her Majesty, Ulrich Brunner, Eugene Verdier, Francois Michelon, Niphetos, Merveille de Lyon, Catherine Mermet, Earl Dufferin, Madame Alphonse Lavelle, Souvenir d' Elise Vardon, Madame G. Luizet, Dr. Sewell, The Bride, Alphonse Soupert, Captain Christy, Queen of Queens, Countess of Oxford, A. K. Williams, and Abel Carriere; Messrs. J. Jefferies and Son, third, the finest forms being Francois Michelon, Merveille de Lyon, Madame J. Desbois, Etienne Levet, Innocente Pirola, Lady Mary Fitzwilliam, Jean Ducher, Her Majesty, Heinrich Schultheis, Souvenir d' Elise Vardon, Marechal Niel, Duke of Teck, and Viscountess Folkestone; Mr. G. Prince, Oxford, obtained "a certificate of merit" for an unplaced box of clean blooms, among which was a magnificent specimen of Comtesse de Nadaillac, and, which was awarded the N. R. S. silver medal, as the best tea in the show.

Eighteen Teas or Noisettes.—This proved a very good class, the flowers fresh, full, and clean, Mr. G. Prince heading the list, his selection including Souvenir d'un Ami, Comtesse de Nadaillac, Innocente Pirola, Princess of Wales, Souvenir de S. A. Prince, Souvenir d' Elise Vardon, Souvenir de Paul Neyron, Madame Hoste, Catherine Mermet, Amazone, The Bride, Jean Ducher, Madame H. Jamain, Mons. Furtado, Niphetos, Francisca Kruger, Alba rosea, and Etoile de Lyon; Mr. John Mattock, New Headington, Oxford, second, with stout blooms of Souvenir d' Elise Vardon, Jean Ducher, Innocente Pirola, Souvenir de Therese Levet, Souvenir d'un Ami, Marie Van Houtte, Princess Vera, Comtesse de Nadaillac, Bougere, Cornelia Koch, Madame de Watteville, Rubens, Madame Lambard, The Bride, Francisca Kruger, Madame Bravy, and Catherine Mermet; J. Jefferies and Son, third, with a good level lot; very bright and full were Souvenir d'un Ami, Comtesse de Nadaillac, Innocente Pirola, Madame Lambard, Souvenir d' Elise Vardon, Souvenir de Paul Neyron, The Queen, Jean Ducher, Luciole, and Caroline Kuster.

Open Class.—For a dozen blooms of La France, the Cranston Company, Messrs. Curtis, Sanford, and Co., and Mr. G. Prince divided the honours in the order of their names. For twelve yellow roses, one variety, Mr. Prince was first with Jean Ducher; Mr. Mattock, second, with Comtesse de Nadaillac; and Messrs. Curtis, Sanford, and Co., third, with Marie Van Houtte; other forms staged were Francisca Kruger (2) and Maréchal Niel. For a dozen of any crimson rose, the Cranston Company led with A. K. Williams; Messrs. Curtis, Sanford, and Co., second, with Senateur Vaisse; third, R. N. G. Baker, Esq., Exeter, with Ulrich Brunner; the other boxes were A. K. Williams, Marie Baumann, and Ulrich Brunner (2). For a dozen of any variety, the Cranston Company were placed at the top with Ulrich

Brunner; R. N. G. Baker, Esq., second, for Mrs. John Laing; Messrs. Keynes, Williams, and Co., third, with Niphetos; the other varieties staged being Francois Michelon, Mrs. J. Laing, Merveille de Lyon (2), and Baroness Rothschild.

AMATEURS' CLASSES.

THIRTY-SIX SINGLES.—R. N. G. Baker, Esq., was assigned the post of honour, the cream of his extra fine varieties being Eugenie Verdier, Merveille de Lyon, Ulrich Brunner, Her Majesty, Charles Lefebvre, Etienne Levet, La France, Marquise de Castellane, Star of Waltham, Marie Verdier, Marshall P. Wilder, Marie Baumann, Marie Rady, and Clara Cochet; S. P. Budd, Esq., Gay Street, Bath, second. His premier blooms were La France, The Bride, Catherine Mermet, Victor Hugo, Madame Hoste, Marie Verdier, and Her Majesty.

The two last-named exhibitors shared the awards for eighteen triplet trusses, Mr. Baker leading; the pick of the box being Baroness Rothschild, Mrs. J. Laing, Ulrich Brunner, Etienne Levet, Alfred Colomb, Marie Verdier, and Marie Baumann; Mr. Budd's best examples included Innocente Pirola, Madame G. Luizet, Francois Michelon, Emilie Hausberg, Marie Finger, and Etienne Levet. For twenty-four single trusses, Mr. W. Narroway, Headington Quarry, Oxford, was placed first, having good bold forms of Baroness Rothschild, Francois Michelon, Innocente Pirola, Souvenir d'Elise Vardon, Madame H. Jamain, and La France; Thos. Hobbs, Esq., Bristol, second, very noticeable being Grace Darling, Anna Olivier, Souvenir d'Elise Vardon, Madame Lambard, Crown Prince, and Horace Vernet; Mr. A. Evans, Marston, Oxford, third, his finest forms being Etienne Levet, Marie Finger, and La France. For twelve varieties Mr. Sydney Smith, Warminster, led with a very clean level lot, La France, Ferdinand de Lesseps, Duke of Edinburgh, and Souvenir d'un Ami, being premiers; Thos. Hobbs, Esq., a good second, very prominent for form were Baroness Rothschild, David Pradel, Madame Lambard, and Marie Baumann. For twelve triplets, Mr. S. Smith proved the victor, full up to the average for form were Madame Gabriel Luizet, Ulrich Brunner, Beauty of Waltham, Marquise de Castellane, and La France; Mr. W. Narroway, second, his finest trios being La France, Madame G. Luizet, Duke of Wellington, Catherine Mermet, General Jacqueminot, and Madame de Watteville.

In the classes restricted to local amateurs, Mr. Budd displayed much cultural skill in his box of twenty-four single trusses; very choice were the examples of La France, Marie Finger, Etienne Levet, Charles Lefebvre, Gloire de Vitry, Ulrich Brunner, Mrs. J. Laing, Francois Michelon, Catherine Mermet, Dupuy Jamain, Madame G. Luizet, and The Bride; Alex. Hill Gray, Esq., Bath, second, very noticeable being Madame Cusin, Grace Darling, Alba Rosea, Francois Michelon, Exposition de Brie, Marie Finger, Belle Lyonnaise, Francisca Kruger, and Comtesse de Nadaillac; Executors of the late S. Tredwell, Esq., third. For twelve blooms the card went to Rev. E. Gardener; while for six, Rev. C. C. Layard, C. H. Dutton, Esq, and Mr. T. Evry, shared the awards.

AMATEURS' TEAS.—This section produced a good show of flowers, Rev. F. R. Burnside, Hereford, leading with a fine box of eighteen varieties, the flowers large, clean, but wanting a little more leafage with the buds; his selection was: Madame Cusin, Madame Bravy, Souvenir d'un Ami, The Bride, Anna Olivier, Innocente Pirola, Rubens, Francisca Kruger, Jules Finger, Souvenir d'Elise Vardon. Catherine Mermet, Hon. Edith Gifford, Devoniensis, Comtesse de Nadaillac, Marie Van Houtte, Niphetos, Madame de Watteville, and Comte de Paris; S. P. Budd, Esq., second, his best flowers being Catherine Mermet, Alba Rosea, Souvenir d'Elise Vardon, Madame Lambard, Innocente Pirola, Francisca Kruger, and Souvenir d'un Ami; Alexander Hill Gray, Esq., third, very fine examples were Marechal Niel, Souvenir de Paul Neyron, Princess of Wales, Comtesse de Nadaillac, Jules Finger, Souvenir d'Elise Vardon, The Bride, Bouquet d'Or, and Souvenir d'un Ami. For twelve varieties, Mr. W. Narroway occupied the first place, his premiers being Catherine Mermet, Innocente Pirola, Anna Olivier, Rubens, Souvenir d'Elise Vardon, Madame Lambard, Souvenir de Paul Neyron, and Marie Van Houtte; Mr. A. Evans, second, the pick of his box were Comtesse de Nadaillac, The Bride, Souvenir d'Elise Vardon, Hon. E. Gifford, and Rubens. For six triplets, Rev. F. R. Burnside led, his best trios being Souvenir d'un Ami, and Anna Olivier; S. P. Budd, second, very fair were Madame Cusin, The Bride, and Catherine Mermet. For six blooms of any newly-introduced rose, Keynes, Williams, and Co., were placed first for a box of climbing Niphetos; Mr. G. Prince second for Souvenir de S. A. Prince; Curtis, Sanford, and Co. third for a charming exhibit of Sir Rowland Hill.

BASKETS OF ROSES AND FOLIAGE arranged on tripod stands were very tasty, Cooling and Sons leading with a pretty arrangement of small buds of hybrid perpetuals, teas, fairy, and other fancy forms of the family; Executors of the late S. Tredwell, Esq., second; W. Pumphrey, Esq., third.

BOUQUETS OF ROSES AND ROSE FOLIAGE were a grand feature and a help to the display, Mr. Mattock first, and G. Cooling and Sons second, for twelve, Mr. W. Narroway taking the premier for six bouquets.

STRAWBERRIES.—Situated in the centre of a strawberry district the classes devoted to this useful fruit are always well filled, and the present occasion proved no exception to the rule. the examples submitted being very large and grandly coloured. For six dishes, Mr. G. Garraway, Bailbrook Nurseries, Bath, was first; his finest dishes were President, La Princesse, Sir J. Paxton, and Trollope's Victoria; Mr. W. Evry, Batheaston, second, with Waterloo, Sir C. Napier, Sir J. Paxton, President, and Clipper; Mr. W. G. Tyler, Bath Market, third, with Newbois Seedling, Sir J. Paxton, President, and Kitley's Goliath. For three dishes, Mr. Ponsford, Bath, led with Sir J. Paxton, President, and Eleanor; for one dish, Mr. George Garraway was first, Mr. W. Scott second, and Mr. W. G. Tylee, third, with Sir Joseph Paxton. For a dish of any new variety, Mr. G. Garraway submitted a grand exhibit of La Princesse.

Among the extras may be mentioned six dozen blooms of new white rose, *Souvenir de S. A. Prince*, staged by Mr. G. Prince; a basket of new seedling zonal geraniums from George Cooling and Sons; an interesting box of variegated rose foliage, *Sunray*, from W. Hannaford and Son, Teignmouth; and stands of fancy picotees and pansies, and white pink, Her Majesty, from Mr. F. Hooper Widcome Hill, the latter securing a certificate of merit.

The gardens and the show were well attended during the afternoon, a negro minstrel entertainment, with a display of fireworks, attracting thousands during the evening.

The following were judges: Messrs. R. N. G. Baker, Heavitree, Exeter: T. Hobbs, Lower Easton; W. J. Grant, Hereford; Jefferies, Cirencester; Williams, Salisbury; Sanford, Torquay; R. B. Cater, Bath; J. Hinton, Warminster; J. Bullock, Batheaston; W. Taylor, gardener to Alderman Chaffin; and R. Hooper Taylor, Bath.

NATIONAL ROSE SOCIETY, JULY 5.

THE exhibition of the National Rose Society at the Crystal Palace on the 5th inst., although by no means the best rose show that has been held at Sydenham was so good as to considerably exceed the expectations of the majority of rosarians present. The entries were sufficiently numerous to require the whole of the available space in the north nave and the central transept for their accommodation, and the greater proportion of the blooms staged were distinguished by their large size, excellent substance, and bright colouring. The dark varieties were especially well shown, the season having been highly favourable for their development, and the light flowers although considerably below the average in point of numbers were mostly presented in a fresh and otherwise satisfactory condition. As at the exhibition held at the Royal Aquarium in the week previous the teas and noisettes were strongly represented and formed an exceedingly beautiful feature. The low temperature which prevailed throughout the day upset the calculations of some of the exhibitors, for flowers that were cut with a view to their undergoing further development in the boxes remained stationary, whilst others that were so advanced when cut that under ordinary circumstances they would have been past their best by the time the prizes were awarded remained bright and fresh until the close of the exhibition. Both trade and private growers exhibited well, but as is customary the greatest proportion of the first class blooms were in the nurserymen's boxes.

NURSERYMEN'S DIVISION.

There were ten classes in which the competition was limited to nurserymen, and in each the entries were numerous and the flowers generally of high quality. In the great class for seventy-two varieties single trusses, the collections were so closely matched that the judges were not able to determine their relative merits until long after the opening of the exhibition. When the awards were declared, it was found that Mr. Frank Cant, Brayswick Nursery, Colchester, had been adjudged the winner of the challenge trophy and £6, offered as the first prize. His blooms were remarkable for their uniformity, and for their superb development. The varieties were Dupuy Jamain, Countess of Rosebery, Prince Arthur, La France, Victor Hugo, Francois Michelon, Etienne Levet, Catherine Mermet, Mrs. Baker, Her Majesty, Louis Van Houtte, Marie Van Houtte, Annie Wood, Madame de Watteville, Comtesse de Ludre, Lady Mary Fitzwilliam, Earl of Dufferin, Duchesse de Morny, Charles Lefebvre, Marie Verdier, Earl of Pembroke, Madame Lambard, Alfred K. Williams, Pride of Reigate, Pride of Waltham, Madame Gabriel Luizet, Duke of Edinburgh, Madame Isaac Pereire, Alfred Colomb, Marquise de Castellane, Madame Henri Pereire, Heinrich Schultheis, Duke of Connaught, Countess of Oxford, Grand Mogul, John Hopper, Maurice Bernardin, Merveille de Lyon, Duchess of Bedford, Baroness Rothschild, Madame Noman, Maude, The Bride, General Jacqueminot, Mrs. J. Laing, Madame G. Paul, Marie Finger, Crown Prince, Innocente Pirola, Ella Gordon, Mons. E. Dupuy, Lady Helen Stuart, Madame Bois, Duke of Teck, Niphetos, Star of Waltham, Marechal Niel, Mons. E. Y. Teas, Sir Rowland Hill, Marie Louise Vernet, Francois Louvat, Marie Baumann, Madlle. Eugenie Verdier, Camille Bernardin, Prince Camille de Rohan, Dr. Andry, Mons. Mat Baron, Horace Vernet, Sultan of Zanzibar, and Charles Darwin. The English Fruit and Rose Company, Hereford, were a close second, from which was selected the premier tea or noisette staged in the trade classes. Mr. B. R. Cant was third with good blooms; and Messrs. Harkness and Sons, Bedale, were fourth.

Not less important was the class for forty-eight varieties, three trusses of each, for the competition was characterized by its severity, and the blooms for their uniformly good quality. Here Mr. B. R. Cant, Colchester, was first with blooms not over large, but of fine quality. The varieties were Etienne Levet, Earl of Dufferin, Madame Lambard, Eclair, Merveille de Lyon, Camille Bernardin, Baroness Rothschild, Duc de Rohan, Madame Isaac Pereire, Victor Hugo, The Bride, Duke of Edinburgh, Pride of Waltham, Alford Colomb, Le Havre, Madame C. Joigneaux, Madame Gabriel Luizet, Sir Rowland Hill, Fisher Holmes, Comtesse de Nadaillac, Niphetos, Prince Arthur, Countess of Oxford, Heinrich Schultheis, Duke of Wellington, La France, Duchesse de Morny, Catherine Mermet, Innocente Pirola, Alfred K. Williams, Madame Cusin, Ulrich Brunner, Her Majesty, Dupuy Jamain, Madame Victor Verdier, Senateur Vaisse, Maurice Bernardin, Souvenir d'un Ami, Charles Lefebvre, Marie Finger, Mrs. John Laing, Beauty of Waltham, Louis Van Houtte, Star of Waltham, Madame de Watteville, General Jacqueminot, Marie Baumann, Francois Michelon. The Fruit and Rose Company followed closely for second place, and Mr. Frank Cant and Messrs. Paul and Son, Cheshunt, were third and fourth.

There were three classes in the second section of the nurserymen's division, and in these the prizes were contested with much spirit. There was a strong competition for the prizes for twenty-four varieties, three trusses of each, and Messrs. D. Prior and Son, Colchester, occupied the post of honour with triples of Viscountess Folkestone, Fisher Holmes, Merveille de Lyon, Madame de Watteville, Prince Arthur, Catherine Mermet, Louis Van Houtte, Madame Lambard, Madame Ducher, Duchesse de Morny, Countess of Oxford, Alfred K. Williams, Niphetos, Pride of Waltham, Dupuy Jamain, The Bride, Marie Baumann, Mrs. J. Laing, Duke of Wellington, Ulrich Brunner, Prince Camille de Rohan, Lady Mary Fitzwilliam, and Marie Verdier. In competition for the prizes for forty-eight varieties, single trusses, Messrs. J. Jefferies and Son, Cirencester, were first with blooms of exceptionally good quality, and Messrs. Curtis, Sanford, and Co., Torquay, were a capital second. Messrs. Keynes, Williams, and Co., Salisbury, and Messrs. D. Prior and Son were equal third, and Messrs. G. and W. H. Burch, Peterborough, were fourth. The awards for twenty-four varieties, single trusses, were made in favour of Mr. George Mount, Canterbury, who had a grand box of blooms; Messrs. G. Bunyard and Co., Maidstone, Kent; Mr. J. Mattock, New Headington, Oxford; and Mr. S. G. Rumsey, Rose Farm, Wrotham, Kent. The trade class for garden roses was well filled, and the prizetakers were Messrs. Paul and Son, Messrs. Bunyard and Co., and the English Fruit and Rose Company, in the order of their names.

AMATEURS' DIVISION.

The classes in which the competition was limited to private growers were broken up into four groups, and no exhibitor was allowed to show in more than one of the groups, an arrangement, which in the interest of the smaller growers has much to recommend it. There was a keen contest in the class for forty-eight varieties, single trusses, in which a challenge trophy and £6 were offered as the first prize, and the several stands contained some of the finest roses in the exhibition. The winner of the trophy and accompanying cash prize was Mr. E. B. Lindsell, Beaston, Hitchin, whose blooms were above the average in size and remarkable for their substance and bright in colour. The

varieties were Duchesse de Morny, Countess of Rosebery, Madame Victor Verdier, Marquise de Castellane, Victor Hugo, Catherine Mermet, Charles Lefebvre, Comtesse de Nadaillac, Earl of Dufferin, Niphetos, General Jacqueminot, Captain Christy, Alfred K. Williams, Pride of Waltham, J. S. Mill, Anna Olivier, Madame S. Rodoconachi, Her Majesty, Duke of Edinburgh, Baroness Rothschild, Duchess of Bedford, Marshall P. Wilder, Senateur Vaisse, La France, Ulrich Brunner, Viscountess Folkestone, Auguste Rigotard, Marechal Niel, Countess of Oxford, Maria Verdier, Beauty of Waltham, Lady Mary Fitzwilliam, La Rosiere, Madame Cassia, Horace Varnet, Heinrich Schulteis, La Havre, Merveille de Lyon, Alfred Colomb, Caroline Kuster, Duke of Wellington, Madame Gabriel Luizet, Zavier Olibo, Francois Michelon, Comte Raimbaud, Mrs. J. Laing, Prince Arthur, and Marie Van Houtte. Rev. J. H. Pemberton, Havering-atte-Bower, Romford, was a close second with blooms that did credit to his cultural skill. Rev. A. Foster Mellair, Sproughton Rectory, Ipswich, was a good third, and Mr. A. Slaughter, James Villa, Steyning, was fourth. The other class in the same section was one for sixteen varieties, three trusses of each, and the competition was so keen that the judges awarded equal firsts to Mr. Lindsell and the Rev. J. H. Pemberton; Mr. R. N. G. Baker, Heavitree, Exeter, was awarded the third prize.

There were two classes also in the second section, the most important being that for thirty-six varieties, three trusses of each. Here Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, was first with superbly finished blooms of Ulrich Brunner, Duke of Edinburgh, E. Y. Teas, Madame H. Jamain, Dr. Andry, Madame Gabriel Luizet, Xavier Olibo, Marie Baumann, Francois Michelon, Duchesse de Morny, Pride of Waltham, Louis Van Houtte, Duchess of Bedford, Charles Lefebvre, Her Majesty, Alfred Colomb, Merveille de Lyon, Countess of Oxford, Beauty of Waltham, Countess of Rosebery, Horace Vernet, La France, Barthelemy Joubert, Marie Verdier, Sultan of Zanzibar, Mrs. J. Laing, Auguste Rigotard, Alfred K. Williams, Heinrich Schultheis, Star of Waltham, Duke of Teck, Baroness Rothschild, Camille Bernardin, Etienne Levet, and Eclair. Mr. J. Brown, gardener to Mrs. Waterlow, Great Doods, Reigate, was a close second with blooms rather small but neat, and otherwise good. Rev. Hugh Berners, Harkstead Vicarage, Ipswich, was second; and Mr. W. H. Jackson, Stagsden Vicarage, Bedford, fourth. For twelve varieties, three trusses, Mr. J. Brown was first, and Mr. C. J. Salter, Rev. H. Berners, and Mr. W. H. Jackson were second, third, and fourth.

The classes in the third section were exceptionally well filled, and Mr. J. Gurney Fowler, Glebelands, Woodford, was successful in having the premier award made in his favour in that for twenty-four varieties, single trusses. The blooms were of high quality throughout, and the varieties were Louis Van Houtte, Countess of Oxford, Innocente Pirola, Mrs. J. Laing, Charles Lefebvre, Her Majesty, Etienne Levet, Madame Gabriel Luizet, Duchesse de Morny, Madame Lambard, Henri Ledechaux, Star of Waltham, La France, Marie Baumann, Duke of Wellington, Ulrich Brunner, Comte de Raimbaud, Pride of Waltham, Madame Victor Verdier, Captain Christy, Countess of Rosebery, E. Y. Teas, and Souvenir d'Elise Vardon. Mr. R. E. West, Reigate, was a very close second, Mr. E. M. Bethune, Denne Park, Horsham, was third, and Mr. G. Christy, Buckland Lodge, Westerham, fourth. There was no lack of competition in the fourth section, in which the most important class was that for eighteen varieties. Here Mr. E. Mawley was first with a fine box from which the premier hybrid perpetual shown by amateurs was selected; Mr. Budgeon, gardener to Miss F. Baker, Holmfels, Reigate, was second; Mr. H. Foster, Ashford, third; Rev. L. Garnett, Christleton Rectory, fourth. In the classes for twelve, nine, and six blooms, the most successful exhibitors were Mr. R. L. Knight, Bobbing Place, Sittingbourne; Rev. Alan Cheales, Brockham Vicarage; Mr. F. L. Wollaston, Dovers, Reigate; Mr. E. M. Bethune, Mr. G. Christy, Mr. R. E. West, Mr. G. Moules, Hitchin, Herts; Mr. E. Wilkins, Sutton; Mr. W. C. Romaine, Mr. J. Bateman, Mr. J. Rawlins, Cirencester; Mr. C. E. Cuthell, and Mr. Percy Burnand. Mr. Cuthell had the best collection of garden roses, and Rev. J. H. Pemberton and Mr. J. Mallenden were second and third.

Teas and Noisettes.

Trade Classes for tea scented and noisette roses were all well filled, and the blooms were of finer quality than those staged at exhibitions previously held this season. The post of honour was occupied in the class for twenty-four with exquisitely beautiful blooms of Souvenir d'Elise Vardon, Hon. Edith Gifford, Adam, Souvenir de S. A. Prince, Amazone, Alba rosea, Catherine Mermet, The Bride, Souvenir de Paul Neyron, Princess of Wales, Madame Margottin, Madame de Watteville, Comtesse de Nadaillac, Mons. Furtado, Francisca Kruger, Madame Cusin, Niphetos, Marechal Niel, Anna Olivier, Marie Van Houtte, Comtesse de Parnisse, Rubens, and Innocente Pirola; Mr. B. R. Cant and Mr. Frank Cant were second and third respectively. There were eighteen entries in the class for eighteen teas, single trusses, and the premier award was made to Messrs. Harkness and Sons, for finely-developed blooms of Jean Ducher, Anna Olivier, Devoniensis, Marie Van Houtte, Innocente Pirola, Jules Finger, Caroline Kuster, Souvenir d'un Ami, Madame Hoste, Etoile de Lyon, Niphetos, Madame Cusin, The Bride, Catherine Mermet, Souvenir d'Elise Vardon, Comtesse de Nadaillac. Mr. J. Mattock, Messrs. J. Burrell and Co., Cambridge, and Messrs. Paul and Son were awarded the remaining prizes in the class. For a similar number of varieties three trusses of each, Mr. G. Prince was first with excellent blooms of Rubens, Princess of Wales, Alba rosea, Madame Cusin, The Bride, Princess Beatrice, Adam, Souvenir de Paul Neyron, Francisca Kruger, Innocente Pirola, Marie Van Houtte, Catherine Mermet, Souvenir de S. A. Prince, Comtesse de Nadaillac, Hon. E. Gifford, Jean Ducher, and Souvenir d'Elise Vardon; Mr. B. R. Cant was a good second. In competition for the prizes for any tea or noisette, other than Marechal Niel, Mr. George Prince and Mr. Frank Cant were first and fourth with Comtesse de Nadaillac; Mr. B. R. Cant was second with Madame de Watteville, and Mr. J. Mattock third with Souvenir d'un Ami.

Amateurs' Classes contained so large a number of entries as to show that the cultivation of the teas and noisettes is rapidly extending in private gardens. Rev. F. Burnside, Burch Vicarage, Hereford, obtained premier honours in the class for twenty-four with a fine box, in which were represented Francisca Kruger, Madame Lambard, Comtesse de Parnisse, Rubens, Comtesse de Nadaillac, Souvenir d'Elise Vardon, Souvenir d'un Ami, Madame Bravy, Caroline Kuster, Hon. E. Gifford, Madame Cusin, The Bride, Catherine Mermet, Marie Van Houtte, Ethel Brownlow, Innocente Pirola, Anna Olivier, and Madame Hoste; Rev. Hugh Berners was a good second; Rev. F. Page Roberts, Scole Rectory, Norfolk, was third; and Rev. A. Foster Mellair, fourth. The prizes for twelve were awarded to Mr. G. Orpen, Hillside, West Brigholt, Colchester; Mr. J. Brown, Mr. E. N. Bethune, and Mr. W. H. Jackson, in the order of their names. Rev. H. Berners occupied the first place for the class for twelve triples; and Rev. F. Burnside, Mr. W. H. Jackson, and Mr. S. P. Budd, Bath, were second, third, and fourth. Rev. F. Burnside obtained premier honours in the class for nine trusses of Catherine Mermet; and Mr. Evans, Marston, was second. In competition for six trusses of any tea or noisette, Rev. A. Cheales was first, with Maréchal Niel; Rev. A. Foster Mellair, second, with Marie Van Houtte; and Rev. F. Burnside, fourth, with Anna Olivier.

Open Classes.

These were mostly for boxes of twelve trusses to consist of one variety. Messrs. Bunyard and Mr. B. R. Cant were first and second for twelve trusses of Marie Baumann. For Lady Mary Fitzwilliam Messrs. D. Prior and Son, Mr. Frank Cant, and Mr. H. Norton, Louth, were the prizetakers. The prizes for Alfred K. Williams were awarded to Mr. B. R. Cant, and Mr. G. Prince, and the Fruit and Rose Company; for Niphetos to Mr. B. R. Cant, Messrs. Keynes, Williams and Co., and Mr. Frank Cant, and for Her Majesty to Messrs. Paul and Son and Mr. Frank Cant. In competition for the prizes for any hybrid perpetual Mr. Frank Cant was first with Mrs. John Laing, and Messrs. G. Bunyard and Co. were second with Ulrich Brunner. For twelve trusses of any yellow rose Mr. Prince and Mr. B. R. Cant were first and second with Comtesse de Nadaillac, and Mr. F. Cant was third with Francisca Kruger. The first prize for twelve trusses of any white rose was awarded to Mr. J. Mattock, who had Rubens, and the remaining awards were made in favour of the English Fruit and Rose Company, Mr. B. R. Cant, and Messrs. Keynes, Williams, and Co., all of whom had Merveille de Lyon. For twelve trusses of any crimson rose, Mr. B. R. Cant and Mr. S. P. Budd were first and second with Alfred Colomb, and Mr. Frank Cant was third with General Jacqueminot. For twelve trusses of any variety crimson rose, Mr. B. R. Cant occupied the first place with Prince Arthur. Mr. Frank Cant was second with Victor Hugo, and Messrs. Curtis, Sanford, and Co. third with Prince Camille de Rohan.

New Roses.

New roses were sufficiently numerous to form a very interesting feature. In competition for the prizes for twelve varieties introduced since the autumn of 1887, Messrs. Paul and Son were first with good blooms of *Comtesse B. de Blacas*, H.P., a globular flower of rather large size and fairly good form; promising. *Germain Caillat*, H.P., pale pink; poor as shown. *Lady A. Hill*, H.P., glowing rose; promising. *Ernest Metz*, T., cream colour tinted rose, flowers large and full, with fine petal; a decided acquisition. *J. D. Pawle*, H.P., glowing crimson, flowers large and of fine form; an excellent variety. *Sir Rowland Hill*, H.P., crimson purple, a medium-sized flower; useful for its distinct shade of colour. *Mrs. James Wilson*, T., cream colour; a beautiful flower. *Edouard Michael*, H.P., purple-rose, globular, small. *Mons. Trievoy*, H.P., light rose, with bright carmine centre. *Marchioness of Lorne*, H.P., crimson-purple; a large, finely-formed flower. Mr. B. R. Cant was second with a stand containing *Ernest Metz*, T., remarkably good. *Henriette Beauveon*, T., bright yellow flowers of medium size and of good form; very promising. *Comte Henri Rignon*, H.P., blush-tinted pink in the centre, flowers large, full, and of good form. *Cleopatra*, T., flesh colour; good. *Gloire de Margottin, H.P.*, brilliant crimson; now well known and generally appreciated. Messrs. Curtis, Sanford, and Co. were third, and showed a fine bloom of *J. D. Pawle*, H.P., and a good flower of *Maid of the Mist*, H.P., which has much the appearance of Lady Alice. For twelve trusses of any new rose Mr. Prince was first with *Souvenir de S. A. Prince*, T.; Messrs. Curtis, Sanford, and Co. were second with *The Queen*, T.; and Messrs. Paul and Son third with *Dowager Duchess of Marlborough*, H.P.

Messrs. William Paul and Son, Waltham Cross, were awarded the gold medal for *Salamander*, a magnificent hybrid perpetual, which will prove a valuable addition to the many beautiful roses introduced by the firm. The flowers are large, full, and globular, with fine petal, the colour brilliant crimson. The variety is robust in growth, with stout ample leafage and very free in blooming, the blooms being produced in large clusters. The same firm also exhibited *Spenser*, a beautiful pink hybrid perpetual, and *Crimson Globe*, a valuable crimson moss rose, both of which have been described in these pages. Messrs. Paul and Son, Cheshunt, exhibited *Mrs. Paul*, a superb bourbon, which has been already described, and were awarded the gold medal. This variety has also a vigorous habit, and is profuse in blooming, and will be found a great gain both for the exhibition stage and the garden. Mr. H. Bennett, Shepperton, exhibited a box of blooms of *Captain Hayward*, a beautiful crimson hybrid perpetual, which promises to prove a valuable addition to its class and line of colour.

Premier Blooms.

As in previous years, four silver medals were offered for premier roses, two in the amateurs' division and two in that in which the competition was limited to nurserymen. In the amateurs' classes the premier tea was Catherine Mermet, shown by Rev. F. Burnside, and the premier hybrid perpetual Ulrich Brunner, exhibited by Mr. E. Mawley. Both medals in the trade classes were awarded to Messrs. Harkness and Son, the premier tea being Catherine Mermet, and the premier hybrid perpetual Mrs. John Laing.

Miscellaneous Contributions.

The contributions to the miscellaneous class were of much importance and greatly enhanced the attractions of the exhibition. Messrs. William Paul and Son exhibited an immense collection of cut roses, all of which were of so high a quality that they would have done good service in a close competition. The collection was arranged with much taste in front of the great orchestra, and produced an exceedingly beautiful effect. Messrs. H. Cannell and Sons, Swanley, had a collection of gloxinias equally remarkable for the high quality of the flowers and the cultural skill that had been brought to bear upon the plants. Messrs. J. Laing presented a large collection of cut flowers of double begonias, which obtained the attention it so well deserved, and Mr. C. Turner, Slough, exhibited a collection of strawberries. Messrs. R. Beale and Co., New Southgate, exhibited samples of their peat and loam and the various horticultural sundries to which they devote special attention. Hardy flowers were also well shown by several cultivators.

GLOUCESTER ROSE SHOW, July 8.

Since changing the *locale* of the show from Moreton-in-Marsh to the city of Gloucester, the county society has very largely increased its sphere of influence, as witnessed by the very extensive "feast" spread in the Corn Exchange on the above date. The number of rose-blooms staged in competition reached 2,600, and taking into account the stormy weather of the previous eighteen days manifested general high quality throughout. The

schedule provided twenty-eight classes, seven open to nurserymen, six to amateurs, and three to all comers; while county trade growers had two classes reserved, and amateurs five, the remaining classes being open for baskets of rose-buds, &c. The competition was exceeding keen, there being nine, ten, and even twelve exhibits in certain classes. Fortunately the rain had ceased and a fine bright afternoon succeeded a period of leaden clouds. Perhaps the finest collection of blooms was to be found in the nurserymen's.

Seventy-two Single Trusses.—The English Fruit and Rose Company, Hereford, secured the champion award, £8, with large, fresh, and clean flowers, the arrangement being—back row; Alfred Colomb, La France, A. K. Williams, Mrs. J. Laing, Earl Dufferin, Comtesse de Serenye, Madame C. Wood, Madame E. Verdier, Senateur Vaisse, Heinrich Schultheis, La Duchesse de Morny, Maurice Bernardin, Lælia, Etienne Levet, Her Majesty, Mrs. Baker, Capt. Christy, Madame V. Verdier, Pride of Waltham, Pierre Notting, Countess of Oxford, Charles Lefebvre, Madame Caillot—middle row; Star of Waltham, Hippolyte Jamain, Eclair, Belle Lyonnaise, Harrison Weir, Madame Desir, General Jacqueminot, Pride of Reigate, Ulrich Brunner, Marie Finger, Madame Lavallée, Marguerite de St. Amand, Prince Arthur, Alba rosea, Horace Vernet, Francois Michelon (extra fine form) Auguste Rigotard, Elie Morel, Madame Isaac Pereire, Merveille de Lyon, Madame Gabriel Luizet, Louis Van Houtte, Comte Raimbaud, Madame Hippolyte Jamain—front row; Madame C. Crapelet, John Hooper, John S. Mill, Catherine Mermet, Marechal Vaillant, Madame Susan Rodoconachi, Dr. Andry, Devoniensis, Prince Camille de Rohan, Marshall P. Wilder, Duke of Wellington, Lady Sheffield, Beauty of Waltham, Baroness Rothschild, Le Havre, Marie Van Houtte, Dupuy Jamain, Marie Verdier, Alphonse Soupert, Marie Baumann, Caroline d'Arden, Mons. Benoit Comte, Marie Verdier, Francois Levet, and Devienne Levet. The second place, £5, was well sustained by Harkness and Sons, Bedale, Yorkshire, whose premier blooms were Ulrich Brunner, Baroness Rothschild, Merveille de Lyon, Souvenir d'un Ami, Souvenir d'Elise Vardon, Marie Verdier, Dupuy Jamain, Pierre Notting, Madame Isaac Perriere, Innocente Pirola, Madame C. Wood, Roseriste Jacobs, Francois Lacharme, Catherine Mermet, Mrs. J. Laing, Sir Rowland Hill, Madame G. Luizet, Rubens, Horace Vernet, and Jean Ducher.

Twenty-four Trebles.—This class was represented only by the English Fruit and Rose Company, the specimen blooms being shapely and large, the best triplets being Etienne Levet, Mrs. J. Laing, La Duchesse de Morny, General Jacqueminot, Earl Dufferin, Ulrich Brunner, Comtesse de Serenye, Francois Michelon, J. S. Mill, A. K. Williams, La France, Heinrich Schultheis, Madame C. Wood, and Alfred Colomb.

Thirty-six Singles.—Nearly three hundred flowers were staged in this class, the card falling to J. Jefferies and Sons, Cirencester, whose exhibits well sustained the reputation of the Cotswold cultivators. The cream of the first prize lot were Baroness Rothschild, Mrs. J. Lane, Madame E. Verdier, Niphetos, Francois Michelon, Marie Verdier, Senateur Vaisse, Mons. E. Y. Teas, Belle Lyonnaise, Madame H. Jamain, Charles Lamb, Victor Hugo, and Marechal Niel. Mr. George Prince, Oxford, second; very choice were Madame G. Luizet, Viscountess Folkestone, Marie Baumann, Comtesse de Nadaillac, Lady Arthur Hill, Souvenir de S. A. Prince, Xavier Olibo, Souvenir d'Elise, Prince Arthur, Marie Van Houtte, Marie Verdier, Duke of Wellington, and Duke of Edinburgh. The third prize was awarded to Messrs. George Cooling and Sons, Bath, whose best blooms were Her Majesty, Captain Christy, Baroness Rothschild, Louis Van Houtte, Madame Debois, Earl Dufferin, Mrs. J. Laing, Abel Carriere, Alfred Colomb, Souvenir d'Elise, Marie Verdier, Duke of Albany, Francois Michelon, La France, and Alfred Colomb.

Twelve Trebles.—A keenly contested class, in which big flowers predominated, J. Jefferies and Sons leading with fine developments of Countess of Oxford, Marguerite de St. Amand, General Jacqueminot, Queen of Queens, Magna Charta, Etienne Levet, Marie Baumann, and Viscountess Folkestone. Mr. G. Prince a close second; noticeable for colour and size were Madame G. Luizet, Souvenir de S. A. Prince, Merveille de Lyon, Comtesse de Nadaillac, Alfred Colomb, Souvenir d'Elise, Mrs. J. Laing, and Duke of Edinburgh; Messrs. Cooling and Sons third, the pick being Francois Michelon, Ulrich Brunner, La France, Madame E. Verdier, and Madame Isaac Periere.

Eighteen Teas proved a good class, with scarcely an inferior flower staged, Mr. G. Prince leading; his collection included prime specimen buds of Maréchal Niel, Souvenir d'Elise, Madame de Watteville, Comtesse de Nadaillac, Niphetos, The Bride, Hon. E. Gifford, Catherine Mermet, Princess of Wales, President, Souvenir d'un Ami, Marie Van Houtte, and Anna Olivier. Mr. J. Mattock, New Headington, Oxford, second; very choice were Etendard de Jean d'Arc, Souvenir de Therese Levet, Madame H. Jamain, Madame Lambard, Hon. E. Gifford, Souvenir d'Elise, Caroline Kuster, Catherine Mermet, Niphetos, and Adam. Messrs. J. Jefferies and Sons third; very attractive were the buds of Madame Lambard, Marie Van Houtte, Catherine Mermet, Souvenir de Paul Neyron, Francisca Kruger, Caroline Kuster, Maréchal Niel, Madame Willermoz, Innocente Pirola, and Bouquet d'Or. For twelve, Messrs. Harkness and Sons were accorded the post of honour for a box including clean large blooms of Souvenir d'Elise, Souvenir d'un Ami, Niphetos, Innocente Pirola, Catherine Mermet, Madame Bravy, Madame Hoste, Francisca Kruger, and Rubens. Mr. G. Prince second; in this lot were found Cleopatra, Amazone, and Mons. Furtado.

Twelve Trusses, one Variety.—Three hundred trusses were staged in this section. For a dozen light roses, Messrs. Harkness and Sons were first with La France (perfect models); S. P. Budd, Esq., Bath, second, with Francois Michelon; and Messrs. Cooling and Sons, third, with Merveille de Lyon. For dark roses, the best twelve were matchless examples of Louis Van Houtte from the English Fruit and Rose Company; S. P. Budd, Esq., second, with the same variety; Messrs. Cooling and Sons, third, with Earl of Dufferin. For a dozen of any variety, the cards went to the English Fruit and Rose Company for Alfred Colomb; Messrs. Harkness and Sons second, for Ulrich Brunner; S. P. Budd, Esq., third, for Alfred Colomb. The varieties unplaced were Ulrich Brunner (three boxes), Merveille de Lyon (three), La France (three), A. K. Williams, Captain Christy, Francois Michelon, Souvenir d'un Ami, Mrs. J. Laing, Marie Baumann, and Baroness Rothschild (one dozen each). The only other open class was for twelve triplet teas. Messrs. Prince, Mattock, and Jefferies and Sons, taking the prizes in the order of their names, the varieties much as in the classes aforenamed.

Amateurs' Division.

The principal prize, £5, was awarded to E. B. Lindsell, Esq., Bearton, Hitchin, for Thirty-six Singles, the order of arrangement was—back row; Ulrich Brunner, Pride of Waltham, Horace Vernet, Her Majesty, Marie Baumann, Mrs. J. Laing, Charles Lefebvre, La France, Francois Michelon, Madame G. Luizet, A. K. Williams (awarded the N.R S. silver medal for the best H.P. in amateur class), and Marie Verdier—middle row; Dupuy Jamain, Merveille de Lyon, Madame S. Rodoconachi, Louis Van Houtte, La Duchesse de Morny, Lady Sheffield, Lady H. Stewart, Niphetos, Alfred Colomb, Baroness Rothschild, Duke of Wellington, and Captain Christy—front row, Roseriste Jacobs, Innocente Pirola, Countess of Rosebery, Le Havre, Dr. Andry, Madame Cusin, Duchess of Bedford, Souvenir d'un Ami, Etienne Levet, Victor Hugo, Mons. E Y. Teas, and Heinrich Schultheis; Rev. J. H. Pemberton, Havering-atte-Bower, Essex, second. His premier flowers were Ulrich Brunner, Comte Raimbaud, Marquise de Castellane, Pride of Waltham, Madame V. Verdier, Marie Baumann, Eugenie Verdier, Charles Lefebvre, Countess of Oxford, Countess of Rosebery, Auguste Rigotard, Merveille de Lyon, Louis Van Houtte, General Jacqueminot, Madame Lambard, Dingee Conard, Souvenir de Paul Neyron, Madame G. Luizet, Harrison Weir, and Francois Michelon; S. P. Budd, Esq., third; the best being Her Majesty, Charles Lefebvre, La France, Star of Waltham, Madame H. Jamain, Earl Dufferin, Horace Vernet, Souvenir d' Elise, Catherine Mermet, Louis Van Houtte, Duke of Edinburgh, Alfred Colomb, and Madame Eugenie Verdier. For twenty-four single trusses, E. B. Lindsell, Esq. was again first, his best three flowers being Horace Vernet, Dr. Andry, and Marie Verdier; Rev. J. H. Pemberton, second. The choicest triples were Charles Lefebvre, Louis Van Houtte, and Duke of Wellington; W. D. Bosley, Esq., Red. Marley, third; very showy being Madame Sophie Fropot, La France, Pride of Reigate, Horace Vernet, and Duke of Wellington. In the next class for twelve triplets Messrs. Lindsell, Pemberton, and Budd shared the awards.

Eighteen Teas.—A keenly-contested class, and for amateur cultivators, the size and quality was a full average. The premier card went to Rev. F. R. Burnside, Birch Vicarage, Hereford, whose blooms were arranged on tall stalks a trifle deficient in accompanying foliage, the varieties being Souvenir d'un Ami, Innocente Pirola, Catherine Mermet, Marie Van Houtte, Comtesse de Nadaillac, Madame Cusin, Madame Bravy, Jules Finger, Rubens, Anna Olivier, Madame de Watteville, Francisca Kruger, Devoniensis, Souvenir de Paul Neyron, Souvenir d'Elise, Caroline Kuster, Hon. E. Gifford, and Jean Ducher. S. P. Budd, Esq., second, with a very fresh lot of flowers, the best development being The Bride (awarded the silver medal of N.R.S.), Comtesse de Nadaillac, Francisca Kruger, Caroline Kuster, Madame Hoste, Souvenir d'un Ami, Catherine Mermet, Souvenir de Therese Levet, Anna Olivier, Jean Ducher, and Moire. J. Pulley, Esq., Hereford, third, premier buds being Reine Marie Henriette, Perle des Jardins, Homere, Jean Ducher, Hon. E. Gifford, and Madame de Watteville. For twelve, Rev. Burnside, S. P. Budd, Esq., and Mr. W. Narroway divided the honours; the last-named had fine forms of Madame de Watteville, Alba rosea, and Madame Willermoz. For twelve trebles, Messrs. Burnside, Budd, and A. H. Gray, Esq., Bath, shared the awards with replicas of their other stands, Mr. Gray's box having very choice buds of The Bride, Marie Van Houtte, and Comtesse de Nadaillac.

For eighteen varieties (local amateurs), the cards went to Mrs. Gambier Parry, Highnam Court, and Conway Jones, Esq., Hucclecote, for well-balanced arrangements, the former having very choice examples of La France, Maréchal Niel, and Magna Charta, and the latter La France, Xavier Olibo, and Reynolds Hole. For twelve distinct, T. A. Washbourne, Esq., Hucclecote House, was placed first, his best blooms being Baroness Rothschild and Emilie Hausberg; J. Libby, Esq., New Milk House, Stroud, his premier being a fine Marquise de Castellane, Hon. Miss Rice, Watson House, third, the best flower a rich-toned Prince Arthur. Six varieties were represented by about twenty exhibits, J. Rawlins, Esq., Cirencester, first, for high quality developments, including Marie Verdier (awarded silver medal), A. K. Williams, Baroness Rothschild, Louis Van Houtte, Marquise de Castellane, and Francois Michelon; W. L. Cooke, Esq., second; and T. Durrett, Esq., Hatherlie, third. The corresponding class for cultivators within the city boundaries not being far behind the full exhibition standard, the cards going to first T. Thorpe, Esq., Hillrop; who had a prime Marie Baumann, and Duke of Edinburgh; second, Mrs. Walker, Wootton House, her premier being Gen. Jacqueminot; Mrs. Pike, Wootton, third, her box containing a lovely La France (awarded silver medal). For six teas, J. Rawlins, Esq., T. A. Washbourn, Esq., and Conway Jones, Esq., took the cards. In these winning stands were very fine forms of Catherine Mermet, Comtesse de Nadaillac, The Bride, Francisca Kruger, and Madame Lambard.

The class for county nurserymen was not strong; J. Jefferies and Sons, leading with an excellent collection of twenty-four varieties; Messrs. Heath and Sons, taking the second card.

Baskets of roses were numerous. In the open traders' section, Mr. J. Mattock was first, and Mr. C. Roberts, Northgate Street, Gloucester, second. The prizes in the amateurs' class to J. Rawlins, Esq., Cheltenham, Mr. W. Narroway, Oxford (a tripod wicker stand), and Mrs. Pike.

Miscellaneous exhibits were limited to fifty blooms of Mr. Prince's new white rose, Souvenir de S. A. Prince.

Strawberries in fine style came from the English Fruit and Rose Company, and included punnets filled with varieties known as James Veitch, The Countess, La Grosse Sucree, The Premier, Empress Eugenie, The Amateur, Black Prince, Stirling Castle Pine, King of the Earlies, Comte de Paris, Alexander, II., Laxton's Noble (very fine), President, Alpha, Laxton's Pioneer, Duc de Magenta, Auguste Nicaise, Sir Joseph Paxton, Vicomtesse Hericart de Thury, Captain, and Rivers' Eliza.

The awards were made by Rev. H. H. D'Ombrain, Rev. J. H. Pemberton, A. Hill Gray, Esq., Messrs. W. J. Jefferies, E. Prince, and W. J. Grant.

WINCHESTER HORTICULTURAL SOCIETY, July 8 to 11.

The summer exhibition of the Winchester Horticultural Society, held during the past week in conjunction with the meeting of the Royal Counties Agricultural Society, was eminently successful throughout, and very properly regarded as the finest of the summer shows held under the auspices of the society. Stove and greenhouse plants, for which liberal provisions were made, were strongly represented; roses formed a large and very attractive feature, and fruit and vegetables were plentiful and of high quality throughout.

Cut Roses had nearly twenty classes set apart for them, and as the competition was keen and the exhibitors included the leading trade and amateur growers, the display produced was distinguished by its extent and high quality. There was a brisk contest for the prizes for forty-eight varieties, single trusses, and the post of honour was occupied by Mr. B. R. Cant, Colchester, with superbly developed blooms of Thomas Mills, Marshall P. Wilder, Charles Lefebvre, Le Havre, Her Majesty, Dupuy Jamain, Madame E.

Verdier, Sultan of Zanzibar, Madame Bravy, Camille Bernardin, Francois Michelon, Eclair, Duchesse de Morny, Madame Prosper Laugier, Souvenir d'un Ami, Marie Baumann, Marie Verdier, Horace Vernet, Madame Isaac Pereire, Sir Rowland Hill, Madame de Watteville, Merveille de Lyon, Earl of Pembroke, Lady Helen Stewart, Madame S. Rodoconachi, Prince Camille de Rohan, John Hopper, Earl of Dufferin, Niphetos, Beauty of Waltham, Madame C. Joigneaux, Comtesse de Serenye, Annie Wood, General Jacqueminot, Prince Arthur, Edouard Herve, Ulrich Brunner, Madame Gabriel Luizet, Victor Hugo, Alfred Colomb, and Alfred K. Williams. Mr. Frank Cant, Braywick Nurseries, Colchester, was second with blooms of medium size and good quality. The exhibitor last named obtained premier honours in the class for twenty-four varieties, three blooms of each with splendidly-developed blooms; Mr. B. R. Cant was a capital second, and Messrs. Keynes, Williams, and Co., Salisbury, were third with blooms of great excellence. For twenty-four varieties, single trusses, Messrs. Keynes, Williams, and Co. were first with finely-developed blooms of Marie Verdier, Madame Victor Verdier, Alfred K. Williams, Beauty of Waltham, Ulrich Brunner, Madame E. Verdier, Marshall P. Wilder, Alphonse Soupert, Charles Lefebvre, Catherine Mermet, Senateur Vaisse, Madame de Watteville, Etienne Levet, Mrs. J. Laing, Louis Van Houtte, Her Majesty, The Bride, Francois Michelon, and Heinrich Schultheis. Messrs. Perkins and Son, Coventry, were a close second with good flowers.

Tea-scented and noisette roses were admirably shown, and in the open class for eighteen varieties, single trusses, Mr. B. R. Cant was first with large fresh blooms of Catherine Mermet, Marie Van Houtte, The Bride, Innocente Pirola, Comtesse de Nadaillac, Luciole, Jules Finger, Madame Hoste, Madame Cusin, Madame Margottin, Souvenir d'Elise Vardon, Francisca Kruger, Devoniensis, Madame Lambard, Niphetos, Souvenir d'un Ami, Madame de Watteville, and Maréchal Niel; Mr. Frank Cant and Messrs. Keynes, Williams, and Co. were second and third with capital boxes. Mr. B. R. Cant was first also for twelve varieties, three trusses of each; and Mr. Frank Cant and Messrs. Keynes, Williams, and Co., were second and third. In competition for the prizes for twelve blooms of any one light hybrid perpetual, Mr. Frank Cant, Mr. B. R. Cant, and Messrs. Perkins and Son were first, second, and third with Mrs. John Laing. In the corresponding class for dark hybrid perpetuals, Messrs. Perkins and Son were first with Alfred K. Williams; Mr. B. R. Cant second with Prince Arthur; and Messrs. Keynes, Williams, and Co., third, with Ulrich Brunner. For twelve trusses of any tea or noisette, Mr. B. R. Cant was first with Madame de Watteville; and Messrs. Keynes, Williams, and Co. were second with The Bride.

The entries were numerous, and the blooms generally of high quality in the classes set apart for amateur rosarians. Mr. P. Burnand, Wray Park, Reigate, was first for twenty-four varieties, with a fine box; Mr. F. W. Flight, Esq., Cornstiles, Twyford, was a very close second, with superb blooms; and R. E. West, Esq., Reigate, was third. Rev. C. Eddy, Bramley Rectory, obtained premier honours in the class for twelve blooms, three trusses of each; and F. W. Flight, Esq., and R. E. West, Esq., followed very closely for second and third places. Rev. C. Eddy was first also for twelve varieties, single trusses; and Mr. D. Seaton, Rutland Lodge, Bitterne, was second; and Chaloner Shenton, Esq., The Glen, Colden Common, Winchester, third, the blooms being good throughout. The teas were well represented in the amateurs' section, and in the class for twelve varieties F. W. Flight, Esq., was first, with an excellent box, the varieties being Souvenir d'Elise Vardon, Madame Cusin, The Bride, Madame de Watteville, Marie Van Houtte, Catherine Mermet, Innocente Pirola, Madame Lambard, Caroline Kuster, Rubens, and Comtesse de Nadaillac; Mr. C. Carr, gardener to W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke, was a good second. F. W. Flight, Esq. was again first for six teas, three trusses of each; and Chaloner Shenton, Esq. was second; and Mr. J. Gosney, gardener to Captain Mitchell, West Highlands, Winchester, was third. For twelve blooms, to comprise equal numbers of teas and hybrid perpetuals, Mr. P. Burnand, F. W. Flight, Esq., and Mr. J. Allen, Andover, were the prizetakers in the order of their names. Messrs. G. Jackman and Son, Woking, staged, not for competition, seven or eight boxes of finely-developed blooms.

Groups arranged for effect were admirably shown, and formed one of the most attractive of the many good features. There were four entries in the open class for a group to occupy a space ten by twelve feet, and the awards were made in favour of Mr. J. Currey, gardener to Colonel Pepper, Milford Hill, Salisbury; Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton; and Mr. W. Peel, gardener to Miss Todd, Sidford Lodge, Salisbury, all of whom had tasteful arrangements. There were seven competitors in the class for groups occupying a space ten by eight feet, and Mr. E. Carr was first with an exceedingly beautiful arrangement. The other prizetakers were Mr. T. Lownes, gardener to F. C. Birch, Esq., Clovelly, Winchester; Mr. E. Wills, and Mr. Peel. Mr. Hillier, Winchester, contributed, not for competition, a very beautiful group of flowering and fine foliage plants.

Stove and Greenhouse Plants, grown for their flowers and remarkable for their foliage, were contributed in such large numbers as to occupy nearly the whole of the space in one of the largest of the tents. In the open class for twelve, of which six were to be in bloom, Mr. E. Wills was first with huge well-finished specimens of Statice profusa, Kalosanthes coccinea, Erica Vernoni, Cycas revoluta, Croton Queen Victoria, and other good things. Mr. J. Currey was a good second, one of his best specimens being that of Bougainvillea glabra. In the class for eight, to comprise equal numbers of flowering and fine foliage plants, Mr. J. Currey was first, Mr. E. Wills second, and Mr. Peel third, with collections differing but little in relative merit. Mr. Wills was first for a specimen ornamental leaved plant, with Cycas revoluta. Mr. W. Barrow, gardener to W. B Simmonds, Esq., was first for six coleus with well coloured pyramids, and Mr. Carr was a good second. There was a brisk contest for the prizes for ferns, and the most successful exhibitors were Mr. Peel and Mr. T. Lowns.

Softwooded Plants in bloom were well represented. Mr. Lowns and Mr. Astridge had the best fuchsias. Mr. Lowns, Mr. F. Smith, gardener to Mrs. Barrie Dorling, Rathmines, Winchester, and Mr. Astridge were the prize takers in the class for tuberous begonias. Mr. F. Smith, gardener to Lady Wodehouse, Mr. Astridge, and Mr. J. Jaines had the awards made in their favour in the class for six zonals. Mr. Carr and Mr. Lowns were first and second for gloxinias with admirably flowered specimens.

Fruit was staged in large quantities and in a condition that did much credit to the cultural skill of the several exhibitors. The competition was especially severe in the class for collections of six kinds, and in the result the premier award was made in favour of Mr. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, who had excellent black and white grapes and strawberries, and one of the finest dishes of Royal George peaches that has been placed upon the exhibition stage. Mr. J. Budd, gardener to F. G. Dalgety, Esq., Lockerby Hall, Romsey, was second with a collection in which the figs and black and white grapes were of exceptional excellence. Mr. Sunnack, gardener to F. Christy, Esq., was third. The prizes for black grapes were awarded to Mr. N. Molyneux, and Mr. F. Cawte; and for white grapes Mr. Cawte and Mr. N. Molyneux were first and second. Mr. Inglefield obtained premier honours in the class for a dish of peaches with good fruit of Violette Hative, and Mr. J. Allen was second. Mr. Inglefield was first also for two dishes of strawberries, staging President and Sir Joseph Paxton in excellent condition; Mr. Lownes was second. Two classes were provided for melons, and Mr. Inglefield, Mr. J. Allen, and Mr. Budd, were the principal prizetakers, Hero of Lockinge being shown by all the successful competitors.

Vegetables were of a high degree of excellence, and proved remarkably interesting. There were eight or nine collections in competition for the prizes offered by Messrs. Sutton and Sons for six kinds, and all were more or less meritorious. The awards were made in favour of Mr. J. Allan, Mr. R. Lye, gardener to W. H. Kingsmill, Esq., Sydmonton Court, Newbury; Mr. Inglefield, and Mr. N. Molyneux, gardener to J. Carpenter, Esq., Rookesby Park, Wickham. T. G. Shenton, Esq., was first for a dish of tomatos with large finely coloured fruit of Perfection; and Mr. Allen was second. Mr. Shenton was also first for two dishes of peas. In competition for the prizes for a brace of cucumbers, Mr. J. Allen and Mr. J. Kaines were first and second with Telegraph.

Bouquets and Table Decorations were largely shown, and as they were all more or less tasteful, they contributed liberally to the attractions of the show. Messrs. Perkins and Son were first in each of the two classes for bouquets with superb arrangements, and Mr. Hillier, High Street, Winchester, was second in each case with bouquets evincing much taste. In the open class for a stand for the dinner table Miss Flight was first with a beautiful arrangement, and Miss Smith and Miss Owen were second; and in the ladies' class for a stand for the dinner table, Miss Smith and Miss]A. Flight were first and second with tasteful epergnes. F. W. Flight, Esq., was first for a collection of hardy flowers, and in the other classes for cut flowers Mr. Budd, Mr. Ladham, Shirley; Mr. J. Gosney, and Mr. Sunnack, were the most successful competitors. Mr. Ladham staged a large collection of hardy flowers not for competition.

The arrangements were admirably carried out by Mr. Chaloner Shenton and Mr. F. W. Flight, assisted by other members of the executive committee. The prizes were awarded by Mr. G. Gordon and Mr. J. Wright.

EALING HORTICULTURAL SOCIETY, July 9.

As the competition was on this occasion confined to cultivators within the parish of Ealing, the exhibition was hardly equal to the most successful of those previously held under the auspices of the society. Some of the plant classes were indifferently filled, more particularly those set apart for plants in bloom. Cut flowers were fairly good, and fruit was well represented. One of the most important of the features was that formed by the vegetables, which have for many years past been shown in large quantities and excellent condition by the cottagers. The show was held in the grounds of the Royal Indian Asylum, and under most unfavourable conditions in the matter of weather, for it rained more or less throughout the day.

One of the most attractive features in the tent devoted to plants was that formed by the groups which were very numerous, and remarkable alike for the high class condition of the plants, and the taste that had been brought to bear upon their arrangement. In the most important of the two classes provided for groups the premier award was made in favour of T. A. Gledstanes, Esq., Gunnersbury Lane, Acton, who had an exceedingly beautiful group, in which the orchids and crotons were employed with good effect. Mr. Roberts, gardener to J. Harris, Esq., Ealing, was second with an effective group, and Mr. G. Viner, gardener to R. Dawes, Esq., Ealing, was a good third, and Mr. Long, gardener to E. P. Oakshott, Esq., Orchardene, Ealing, fourth. Exceedingly beautiful groups, not for competition, were exhibited by Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing; Messrs. Fromow and Sons, Gunnersbury, and Mr. J. Reynolds, gardener to the Messrs. De Rothschild, Gunnersbury Park, Acton, the latter having the white and red forms of Souvenir de la Malmaison carnation in capital condition. Mr. Reynolds also had well bloomed examples of Pride of Penshurst carnation, the soft yellow flowers of which presented a pleasing contrast to the other flowers with which it was associated. One of the most satisfactory contributions to the plant classes was the collection of six fuchsias from Mr. Long, the specimens being large, of excellent contour, and finely flowered. The second and third prizes were awarded to Mr. S. Wigmore and Mr. Simmonds. In competition for the prizes for a specimen fuchsia, Mr. Long was again first, and Mr. Wigmore, gardener to F. Hicks, Esq., Oakhurst, Ealing, and Mr. A. Jones, gardener to E. Hyde, Esq., Hill Crest, Ealing, were second and third. Several good collections of caladiums were staged, and the awards for these attractively coloured plants were made in favour of Mr. Wigmore, Mr. A. Jones, and Mr. H. Viner, The Gardens, Edmondscote House, Ealing. Two classes were provided for ferns and in each the competition was spirited and the majority of the specimens well developed. For six Mr. W. R. Copestake, gardener to J. Boosey, Esq, Mount Avenue, Ealing, was first with an admirable collection in which Cibotium Scheidei was well represented. Mr. A. Gibson, gardener to T. Nye, Esq., Oakville, Ealing, was a close second. The successful competitors for four ferns were Mr. A. Jones, Mr. Wigmore, and Mr. Davis, gardener to E. Tautz, Esq., Colombe Lodge, Ealing, all of whom had good collections. The principal prize-takers for six stove and greenhouse plants in bloom were Mr. Long and Mr. Wigmore, and for six ornamental leaved plants Mr. Wigmore and Mr. Viner were first and second respectively. The exhibitor last named obtained premier honours in the class for a specimen plant in bloom with a neat example of Bougainvillea glabra, and in the corresponding classes for plants with ornamental leafage Mr. Gledstanes was first with a well-furnished Cycas revoluta. Begonias with ornamental leafage were well shown by Mr. A. Gibson and Mr. C. Edwards. Contrary to the practice which so generally obtains at horticultural exhibitions, but few, if any of the plants were named, and the exhibition was thus deprived of much of its interest and usefulness. This matter should have the attention of the committee and the rule stipulating that "all productions must be named" be enforced at future exhibitions.

There was a brisk competition in the majority of the cut flower classes, and the display produced was very attractive. Mr. Gledstanes was first in the class for twelve bunches of flowers of stove and greenhouse plants with a collection rich in orchids; and Mr. E. Chadwick was second with a capital collection, in which the beautiful Dipladenia amabilis was conspicuous. There was a keen contest for the prizes for eighteen roses, and the premier award

was made in favour of Mr. Long, who had finely-developed blooms of Francois Michelon, Marie Baumann, Prince Arthur, Ulrich Brunner, Marie Finger, Madame H. Jamain, La France, Marie Rady, Marie Verdier, Alfred K. Williams, Duke of Edinburgh, Baroness Rothschild, and Madame Victor Verdier; Mr. A. Jones was second; Mr. Davis third; and Mr. Slatter, gardener to J. Moore, Esq., fourth. The last-named occupied the post of honour in the class for eighteen teas; and in the class for twelve roses, Mr. Jones, Mr. C. Long, and Mr. Slatter were the principal competitors. Messrs. C. Lee and Son and Messrs. J. Veitch and Sons exhibited collections of roses, equally remarkable for their extent and the high quality of the blooms. Dinner-table decorations were exceptionally beautiful, and the most successful competitors were: Miss Lilian Hudson, Gunnersbury House, Acton; Mr. E. Chadwick; Mr. Merriden, gardener to F. Gerlock, Esq.; Miss Colely, and Miss Slade.

The fruit classes were mostly well-filled, and in that for a collection, Mr. E. Chadwick was first with excellent grapes, peaches, and nectarines; Mr. Wigmore and Mr. Salter were second and third. Mr. Viner and Mr. Edwards were first and second for black grapes, and Mr. Wigmore and Mr. Viner were first and second for white grapes. Mr. Chadwick was first for a dish of peaches, for two dishes of peaches, and for two dishes of cherries in each case with fruit of high quality. Mr. Wigmore and Mr. Chadwick were first and second for nectarines.

The arrangements were admirably carried out by Mr. G. Cannon, who was elected acting secretary at the beginning of the year.

BRIGHTON ROSE SHOW, July 9 and 10.

The rose show held under the auspices of the Brighton Horticultural Society on Wednesday and Thursday was considerably in advance of that of last year, the entries being more numerous and the flowers generally of higher quality. Both amateur and trade growers were well represented, but the finest flowers were contributed by the nurserymen. Additional interest was given to the exhibition by the competition for the prizes for groups of plants arranged for effect and the contributions to the miscellaneous class.

The principal open class was that for forty-eight varieties, single trusses, and the first place was occupied by Mr. Frank Cant, Brayswick, Colchester, who had blooms somewhat above the average in size, and very bright in colour; Messrs. Paul and Son, Cheshunt, were a close second with an excellent collection; and Messrs. Perkins and Son, Coventry, were third. Mr. Frank Cant also obtained premier honours in the class for twenty-four trebles, and Messrs. Paul and Son and Messrs. Perkins and Son, were second and third, the blooms being throughout of good quality. Messrs. Paul and Son were first for twelve teas, three trusses of each, and also for twelve bunches of moss and provence roses. Messrs. W. Balchin and Son, Hassocks Gate, had the premier award made in their favour for a collection of garden roses with a box of blooms at once interesting and attractive. Mr. F. Cant was awarded a first for twelve blooms of any one variety, and the second and third awards were made in favour of Messrs. Paul and Son and Messrs. Perkins and Son. Messrs. Ewing and Co. exhibited remarkably well in the class for moss roses, and were awarded the second prize, and the firm was first for sprays of roses. Messrs. Perkins and Son were first for a basket of roses, and also for a bouquet, with arrangements evincing much taste. Mr. F. Wollard, Cooksbridge Nurseries, Lewes, was second in each class.

The most successful of the exhibitors in the classes in which the competition was limited to amateurs was Mr. E. M. Bethune, Denne Park, Horsham, who was first for forty-eight varieties, single trusses, twelve hybrid perpetuals, twelve teas or noisettes, and six trusses of any one rose. Mr. A. Slaughter, Jarvis Villa, Steyning, was also very successful in the amateurs' classes, being first for twenty-four triples, and second for twelve hybrid perpetuals, twelve teas, and six blooms of any one variety. Mr. R. E. West, Reigate, also occupied a prominent position amongst the prizetakers. Mrs. Slaughter was first for a basket of roses, and the first prize for a vase or epergne was awarded to Mrs. Duddell, Queen's Park, Brighton. The groups of plants were arranged with much taste, and formed a pleasing feature. Mr. G. Miles, Victoria Nursery, Brighton, was first with a beautiful arrangement, and Mrs. Armstrong, Woodslee, Withdene, Brighton, was second. In competition for the prizes for plants suitable for the decoration of the dinner table these exhibitors changed places, and in the class for a group of ferns Mr. G. Miles received the premier award. The dinner table decorations were characterized by much taste, and the first and second prizes for three stands were awarded to Mr. A. S. Cully, Burgess Hill, and Mr. G. Miles. Begonias were well shown by Mr. Good, Burgess Hill, and Mrs. Armstrong, and carnations by Miss Shiffner, Lewes. Mr. J. F. Mould had a good group of flowering and fine foliage plants, and Messrs. J. Cheal and Son, Crawley, exhibited an attractive collection of hardy flowers.

TRADE CATALOGUES.

W. Duncan Tucker, Timber Merchant and Horticultural Builder, Lawrence Road, Tottenham.—*Diagrams of Purlins, Plates, Rafters, and other Constructive Details.*

Ant. Roozen and Son, Overveen, near Haarlem, Holland.—*Dutch and Cape Bulbs.*

John Crowley and Co., Meadow Hall Works, near Sheffield.—*Horticultural Implements.*

Merryweather and Sons, 63, Long Acre, London.—*Fire Engines, Hydraulic Forcing Rams, Windmill Pumps, Garden Engines, Hose, &c.*

J. E. Barnes, 9, Exchange Street, Norwich.—*Vegetable and Flower Seeds.*

Obituary.

Mr. Patrick Barry, of the well-known firm of Ellwanger and Barry, Rochester, New York, died recently at his home in Rochester. He was a prominent authority on plants and fruits, and wrote much of importance concerning them. Mr. Barry was Vice-President of the American Pomological Society, and for more than twenty years was President of the Western New York Horticultural Society, U.S.

We have to record the death of Mr. John Stewart, who for twenty-five years was secretary of the Royal Caledonian Horticultural Society, and in that office won golden opinions. His age was 76 years.

On the 5th, at East Sheen, Sir Edwin Chadwick, the veteran sanitary reformer. By the devotion of his life to a noble cause he augmented the sum of human happiness, and added to the length of days of every member of the community. His age was 90 years.

Replies to Queries.

J. S.—We do not know the firm inquired for.

Asparagus.—M.D.: It is undoubtedly desirable to remove the seed while green, as it prevents the growth of seedling plants between the rows, which only make work to weed them out.

G. H.—Your seedling carnation Duke of Fife appears to be of high quality as a show flower, having a good petal, a clear ground, and rich and regular colouring. But a seedling cannot be fairly judged by means of one flower sent in a paper box, and not seen until after two days' drying under close cover. These things must be judged at exhibitions, and the best we can do is to advise you to show it.

Propagating Ivy.—Novice: This is a good time for propagating many hardy shrubs from cuttings of this season. Old hard growths of ivy will not root freely, but young shoots of this season will not fail if handled with reasonable care. Make the cuttings three to four inches long, remove the lowest leaves, plant firmly in pots or pans, and shut up in a frame and keep only moderately moist. If no frame, insert the cuttings in a shady border.

Cucumber Seed.—S. B., Burnley: The cucumber plants are suffering from the disease produced by the action of nematoid worms. There is not, as far as we are aware, any effectual remedy for this troublesome disease, and you cannot do anything except to destroy the plants and commence again with a fresh stock. Previous to replanting, the whole of the soil must be removed and replaced with fresh compost. Care must be taken to remove the whole of the soil, and the walls enclosing the bed should be washed over with hot lime.

Names of Plants.—R. Park: Your composite is Coreopsis trinerva.—T. R.: Your self-sown tree is Cerasus padus, the bird cherry.—Fraser: 1, Calycanthus occidentalis, the Western allspice; 2, A cistus not in flower. Your letter and postal order escaped notice, as we could not look at the plants immediately on their arrival; they have been handed over to the publisher, and will be attended to.—A. S. B.: Verbascum Chaixi.—F. Addison: 1, Commelina cœlestis; 2, Hosackia Purshiana; 3, Cimicifuga Americana; 4, Pinguicula lutea.—Biarritz: They are all forms of Anemone stellata.—H. R.: Andryala cheiranthifolia.

Delphinium Seed.—R. M.: Some care will be necessary to avoid loss in harvesting the seed of your choice delphiniums. If you allow the spikes to remain upon the plants until the whole of the seed is ripe you will lose a considerable proportion. The proper course to take to ensure the whole of it being saved is to take a dry bell glass and stand it open end upwards on a flower pot in a sunny greenhouse. Cut the seed stems just before the pods burst, and put them in the bell glass. The sun will finish the ripening process, and the seed is all shed into the clean glass. The sowing should be made as soon as the seed has ripened, to give the seedlings time to acquire a moderate degree of strength before the winter. Sow in pans under glass, prick into boxes, and plant out when strong enough.

Raising Palms from Seed.—H. G.: The palm seed should be sown in shallow pans filled with a mixture of loam, leaf-mould, and sand. Provide a liberal drainage and fill the pans to within about three-quarters of an inch of the rim with the prepared compost, and make it moderately firm and level on the surface. Then sow the seeds thinly and cover with a little of the finer portion of the mixture. To promote the rapid germination of the seed, place the pans in a structure in which a brisk temperature is maintained, a cucumber house being in every way suitable. It is not advisable to be in a hurry to disturb the seedlings, but they should be potted off before they attain so large a size as to suffer from overcrowding. It is a good practice to prick them off into five-inch pots, and when they are becoming crowded to pot them off singly.

Table Decorations.—Inquirer asks what plants he should purchase, and how should he arrange them in a competition he proposes to enter. As regards the plants, a certain lightness of style is to be desired. Aralia filicifolia and A. Veitchi, Asparagus plumosus, the small-leaved Crotons, Cocos Weddelliana, Grevillea robusta, are suitable plants. But large-leaved plants are sometimes used with singular effect, as Acalypha macrophylla, for example. The matter of arrangement is fully as important as that of material. A number of colours in about equal proportions results in an unhappy effect. It is of great importance to keep down the tone and to avoid vulgarity. A vulgar tone often results from the use of the spathes of Anthurium Scherzerianum, which is too daring for such delicate work as table decoration. Flowers that are highly fragrant are objectionable. Inquirer will have to observe and reflect, and occasionally try his hand in arrangements, for the winners of prizes in this line have to work up to the winning point; they do not usually reach it through the aid of a few words of advice. The *Garden Oracle* for 1874 contains some admirable designs for dinner table decoration.

Striking Roses from Cuttings.—Amateur Rosarian: There is no special difficulty in striking cuttings of roses at this season of the year, but the work requires closer attention than when the cuttings are struck in October. The cuttings may be taken and inserted with satisfactory results any time during the current month, but it is advisable there should not be any unnecessary delay. In proceeding with the work, have in readiness a suitable number of five-inch pots, filled with a light sandy mixture, and surfaced with silver sand. Shoots of medium size and moderately firm make the most suitable cuttings, and in preparing them take off a few inches of the soft wood at the top, and then cut them into lengths of three or four joints each. Remove the lower leaves, and at once insert them round the sides of the pots, and give them a liberal sprinkling to settle the soil about them. Place in an unheated frame, and keep rather close and shaded until the cuttings are callused and able to bear exposure without flagging of the leaves. It is important to avoid keeping them too moist, and it is a good plan to water in the evening, when the lights can be withdrawn for a short period without distressing the cuttings.

Clove Culture.—The clove tree was introduced into Zanzibar about the year 1830, and its cultivation now forms the chief industry of the islands of Zanzibar and Pemba. The chief supply of cloves is obtained from these islands. Consul Pratt, who has lately written a report on the clove culture of Zanzibar, says that a ten-year-old plantation should produce an average of 20 lbs. of cloves to a tree. Trees of twenty years frequently produce upwards of 100 lbs. each. Mr. Pratt reports that the yield of the present season will probably exceed that of any previous season, and amount to 13,000,000 lbs., averaging a local value of 10 cents per pound.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
20	S	**7th Sunday after Trinity.**	4 7	6 5	8 4	7 20	10 2	3 55	4 13	1 4	1 20	63·4
21	M	Robert Burns died, 1796.	4 9	6 9	8 3	8 28	10 19	4 31	4 47	1 38	1 56	63·4
22	Tu	*St. Mary Magdalene.*	4 10	6 11	8 2	9 37	10 35	5 4	5 21	2 12	2 29	63·4
23	W	Ghuznee taken, 1839.	4 11	6 13	8 0	10 46	10 50	5 39	5 58	2 46	3 4	63·4
24	Th	Window Tax abolished, 1851.	4 12	6 15	7 58	11 56	11 6	6 17	6 38	3 23	3 42	63·4
25	F	*St. James.* ☽ First Quarter.	4 14	6 16	7 56	After.	11 24	7 1	7 24	4 3	4 26	63·4
26	S	*St Anne.*	4 15	6 16	7 54	2 27	11 48	7 51	8 18	4 49	5 16	63·4

Orchids in Flower.		Day of Yr.
		1890
Cattleya Mossiæ	Venezuela.	201
Dendrobium chrysanthum	Nepal.	202
Epidendrum Friderici Guilielmi	S. America.	203
Lycaste cruenta	Guatemala.	204
Masdevallia Veitchiana		205
Miltonia Moreliana	Mexico.	206
Thunia Marshalliæ	India.	207

ROYAL AQUARIUM, WESTMINSTER.

JULY 29TH AND 30TH.

GREAT SUMMER SHOW: CARNATIONS, PICOTEES, BEGONIAS, etc.—Miscellaneous Exhibits specially invited, for which a number of Cash Prizes and Medals are reserved.

Schedules and all details from Frampton Park Nurseries, Hackney, London. WILLIAM HOLMES.

RIPLEY, NEAR DERBY.—ROSE SHOW.

Held SATURDAY, AUGUST 2ND, 1890.

36 Roses, Cut Blooms, Distinct. Open to All England. 1st prize, £5; 2nd, £3; 3rd, £2; 4th, £1. 24 Roses, Cut Blooms, Distinct. Open to All England (Amateurs). 1st prize, £3; 2nd, £2; 3rd, £1; 4th, 10s.

For further particulars and schedules apply to S. BAILEY, Secretary.

THE ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON.

28TH ANNUAL GREAT SUMMER SHOW, AUGUST 2 AND 4.

£250 in prizes. Entries close July 28th.

Heckfield House, New Alma Road. C. S. FUIDGE, Secretary.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, JULY 22.—TIBSHELF ROSE SOCIETY.—Annual Exhibition.

TUESDAY, JULY 22, AND WEDNESDAY, JULY 23.—ROYAL HORTICULTURAL SOCIETY.—Carnation and Fern Show and Conference at Chiswick. Floral and Fruit Committees first day.

WEDNESDAY, JULY 23.—LUTON HORTICULTURAL SOCIETY.—Annual Exhibition.

WEDNESDAY, JULY 23, AND THURSDAY, JULY 24.—SURREY FLORICULTURAL SOCIETY.—Annual Exhibition.

FRIDAY, JULY 25, AND SATURDAY, JULY 26.—BROUGHTY FERRY HORTICULTURAL SOCIETY.—Annual Exhibition.

SATURDAY, JULY 26.—ROYAL BOTANIC SOCIETY.—General Meeting.

Auction Sales for the Ensuing Week.

TUESDAY, JULY 22.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

WEDNESDAY, JULY 23.—Messrs. Protheroe and Morris, at Seeger and Tropp's Nurseries, East Dulwich; Orchids.

FRIDAY, JULY 25.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

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The Gardeners' Magazine.

SATURDAY, JULY 19, 1890.

THE MANAGEMENT OF EPPING FOREST is a matter of the highest public importance, for as a recreation ground it is one of the newest, as it is also one of the largest and most beautiful that in recent years have been wrested from neglect and spoliation to be secured for the free enjoyment of the people for ever. The Corporation of London, after many sacrifices and costly conflicts to secure this great demesne for dedication to its present uses, placed it under the management of a committee, and appointed as general superintendent Mr. Alexander McKenzie, a successful landscapist and experienced operator in matters pertaining to the economy of parks and woodcraft. Under his direction and the authority of the committee, various works of improvement were carried out, with the twofold object of increasing means of access to the more beautiful scenes and the redemption of those scenes from the accumulated results of long neglect and reckless damage. Roads were opened, marshes were drained, and clearances were made in the interests of the thousands who resort to the forest to make holiday, but only as stern necessity compelled was anything done that should interfere in the least with natural characteristics of the forest. A very important work of improvement consisted in the clearing out of rubbish that gave rise to destructive fires. And another not less important was the removal of mutilated, decrepit, and overcrowded trees to promote production of healthy and beautiful timber. These and other works have been from time to time reported on by us, and we have been enabled to testify, as the result of observation, that the greatest care has been taken to preserve and improve the forest as a forest, and not to convert it into a park or diminish unnecessarily the natural wildness that gives the place its special attraction and lasting charm.

While the public have had the best of service in this way, certain parties have persistently and inconsistently reported against the whole proceeding as destructive, and consequently injurious to public interests. The newspapers have been loaded with letters misrepresenting the facts, and abusing the committee, in some degree, and the superintendent altogether. It might have been inferred from the statements in the public prints that the forest was being improved out of existence, and the site prepared for formal avenues of pruned trees, and sharp, cardboard, mile-long rows of genteel villas. The clamour came to a climax when a steam sawmill was started at Theydon Bois for cutting up the sticks of beech that had been felled to improve the conditions for the more promising young trees there. Such dreadful things were said that we visited the spot, and reported what we saw in our issue for May 10 of the present year.

The matter will probably take another complexion now that the Epping Forest Committee has spoken in its own defence in an official report to the Common Council. The report is a crushing condemnation of those newspaper critics, who, knowing nothing of forest management, evolve out of their ignorance a special system, and make amends for absence of reasons by rash assertions and injurious accusations. The report will be valued by all who are interested in the management of similar properties, and we hope it will obtain their immediate attention.

Only those who have known Epping Forest many years can fairly appreciate what has been done and yet needs doing for its preservation and improvement. It is scarcely an exaggeration to say that for centuries it was the prey of the spoiler. The trees were annually lopped, not for their good, but for the supply of fuel; and over large tracts of woodland the trees were pollarded, not to improve their beauty, but because the growth removed had a marketable value. In all the parts adjacent to towns and villages and properties, a process of illegal enclosure was systematically carried out until it became a question if a single acre or even a tree would be left to tell what had been. And yet, for all this, considerable tracts of beautiful woodlands remained; for the enemy could only advance in a way that attracted the least attention, and when the entire forest was taken over for the public good, it was a matter of great concern to restore so far as circumstances would permit the natural characteristics of the parts that had been the least interfered with. The aim of the management has been to clear out the rubbish that originated destructive fires, remove worthless trees to make room for spear trees to rise and assert their claims to admiration, and generally to promote cleanliness and order, and restrain the destroyers, whether gipsies, gentlemen, or riotous makers of holiday. The Corporation has in view to afford opportunities for the expansion and development of the natural beauties of those five thousand acres, and an essential part of the business is careful thinning out, followed, as a matter of course, by economical disposal of the thinnings. Each annual thinning is spread over about five hundred acres, the revision of the whole extending over ten years. No blackthorn or undergrowth is cut except where necessary as protection against fire, or for the felling of pollard trees. Young, healthy seedlings are sought, and a sufficient space is cleared about them to encourage natural and healthy growth that there may be developed

above the thicket and the monotonous pollards free-growing, healthy trees of natural form and proportions.

The districts that were first operated on are now so much more beautiful than they were, and withal so much more safe since mountains of dry, combustible matter have been removed that it seems beyond belief, though it is unfortunately true, that the whole business has been wantonly misrepresented, and much personal abuse added to reckless accusations of vandalism. We will hope that the report of the committee will silence the detractors and encourage plain people who do not profess to understand forestry to look around and measure the means by the results where time has been allowed for Nature to take advantage of improved conditions. There are not wanting in this world of fallible humanities those who expect a dozen plants to thrive where there is room for only one. Persons of this class easily put shallow sentiment in the place of knowledge, and esteem words as better than deeds in regions of activity to which they are unaccustomed. It is a large class, and one likely to lose its way in amateur foresting.

Mr. A. Dodd has been engaged as gardener to C. Campion, Esq., The Frenches, Redhill, Surrey.

Mr. E. H. Mustow has been engaged as head gardener at The Grange, Bishops Stortford, the residence of John Barker, Esq.

Rose Fair at Croydon Show produced £15 11s. in aid of the Gardeners' Orphan Fund.

Proposed Enlargement of Peckham Rye makes favourable progress. The Parks and Open Spaces Committee of the London County Council have recommended that the sum of £18,000 be voted towards buying the 47 acres of land it is proposed to add to the Rye.

Memorial to the late Mr. B. S. Williams.—We are hoping that a meeting will be held on Saturday next at the offices of the Gardeners' Benevolent Institution, but at this moment no definite announcement is possible, the movers in the business having a heavy succession of engagements.

British Fruit Growers' Association will hold its first provincial meeting at Leicester on August 5, in conjunction with the great flower show to be held in the Abbey Park on that date. The chair will be occupied by James Ellis, Esq., M.P., and amongst those who will take part in the conference are: Mr. T. F. Rivers, Sawbridgeworth; Mr. W. Ingram, Belvoir; and Mr. H. A. Pearson, Chilwell.

United Horticultural Benefit and Provident Society progresses satisfactorily. At the quarterly meeting on Monday last Mr. Hudson reported that he had invested £200 in consols. A member died during the past quarter, when the amount standing to his credit (£25 10s.) was paid to his widow. There is now one sick member on the books.

The Physic Garden, Chelsea, where the late Mr. Thomas Moore officiated as Curator many years, is nearing the end of its career as such. In view of its possible conversion into building land, the Earl of Meath is making an effort to secure its dedication to the public as a recreation ground. It would be nothing less than a calamity for this spot to be covered with houses.

Improved Weather has made an immense difference in the general tone of public affairs, and, as a matter of course, has advantageously influenced the growing crops and all rural industries. It is commonly reported that St. Swithin came without rain. This is an error, for in London certainly there was heavy rain on the 15th at four a.m., and again about seven a.m., but as the day advanced the skies cleared, and in the end St. Swithin's day proved to be the first day of summer.

The Flowers used at Mr. Stanley's Wedding were such as might be expected on an occasion of so public a nature, and withal so joyous in its general features and ultimate purport. But the flowers were made to strike a note of noble sadness of a quite exceptional, though most appropriate kind. Two great wreaths were laid upon the grave of Livingstone; one from Mr. Stanley and Miss Tennant, the other from officers of the recent Stanley expedition. Not often is the lesson so emphatically read as by this association of happy auguries with mournful remembrances, that "in the midst of life we are in death."

National Dahlia Society's Exhibition at the Crystal Palace on September 5 and 6 will be on a similar scale to the shows held in previous years, as liberal provisions have been made in the schedule for the whole of the sections. Show and fancy varieties will be staged together, excepting in the smaller classes set apart for amateurs. The society has published with the annual report the papers read by Mr. Shirley Hibberd and Mr. J. T. West at the conference held last year, and, it is to be regretted, the other two papers read are not given that members may have had a complete report of the conference in a convenient form for reference.

A Machine for Budding, the invention of Mr. W. M. Rowell, Fort Meade, Florida, is reported upon in the *Garden and Forest*. The budder, it appears, being "loaded" with a bud ploughs under the bark, a pull of the trigger drives the bud in, and it is left in the proper position for binding. Mr. Rowell claims that 12,000 buds can be inserted in a day with his budder, and that a child can learn to use it in a quarter of an hour. This implement is in some respects like a seed dropper. The part that holds and inserts the bud is made of different sizes or numbers adapted to different sizes of buds and stocks. By changing the points it may be used on stocks ranging from one-eighth of an inch to one inch in diameter.

Summer or Winter?—January: At 9 a.m. on the 6th the thermometers registered 50 deg., with a minimum (night) temperature of 47 deg., and on the 23rd recorded 53 deg. (day) and 51 deg. (night) temperatures respectively. July: At 9 a.m. on the 5th the same instruments registered 50 deg., with a minimum (night) temperature of 48 deg., and on the 11th recorded 56 deg. (day) and 48 deg. (night) temperatures respectively.

A Better Berry than the Strawberry might have been made, but was not made. This bit of wisdom was spoken by Dr. Boteler, and is cited as applicable to the recreation of angling by Izaak Walton in his immortal book, part 1, ch. 5. Here is the passage which immediately precedes that delightful song "The Angler's Wish": "Indeed, my good scholar, we may say of angling, as Dr. Boteler said of strawberries, 'Doubtless God could have made a better berry, but doubtless God never did'; and so (if I may be judge) God never did make a more calm, quiet, innocent recreation than angling." The "Dr. Boteler" referred to was Dr. William Butler, an eminent physician, the inventor of a medical drink that was sold at houses where the doctor's head was held out as a sign. There was a Butler's head in Ivy Lane, and another in an alley out of Coleman Street.

Campbell's Fumigating Insecticide, offered by Messrs. Clibran, of Oldfield Nurseries, Altrincham, brings a new idea into the vermin-killing business. When all the insect exterminators have been tried there remains a balance of evidence in favour of fumigating in one way or another, and then the question arises of the best way. The inventor of the new method has hit upon what he considers the best way, and certainly there is much to be said in favour of it. The bad quality of much of the tobacco paper sold has urged many to seek a substitute, and the inventor of the one now under consideration has combined safety to the plants with death to the insects and perfect ease to the operator. A prepared roll is lighted and hung up in the house, and then all is closed up and the smoke does its work. We advise a trial of this having much faith in it for efficacy.

Chiswick Horticultural Society has had the misfortune to disconcert the reporters for the local papers, and the result is that instead of publishing reports of the exhibition held in R.H.S. Gardens on the 10th, they have published protests against what they consider bad behaviour on the part of Mr. G. G. Hartland, the honorary secretary. It appears that the reporters, according to custom, applied to Mr. Hartland for copies of the prize list, and they met with other than a welcome in Mr. Hartland's tent. Unpleasant words arose consequent on the secretary's indisposition to accommodate the applicants, and there followed acts of incivility, the end of it being that the reporters retired in a body, resolved to make no report on the Society's proceedings until Mr. Hartland made a public apology "for his insults to us." Endeavours were made by other officials, and by Mr. Hartland himself to close the breach, but as no public apology was offered, the local papers substituted a protest for a report. The event, much to be regretted, brings into view the difference between horticultural and local reporting. Reporters for horticultural papers do not usually apply to secretaries for any information whatever; finding all they want in the tents. In their case the plants, flowers, fruits, &c., are of the first importance, and they need no help in reviewing them. But with the local reporters, the material is of less importance than the persons, a full list of these and their winnings being the chief end in view, and necessitating on the part of the reporters, the aid of the secretary for the supply of needful particulars. The elements of the case are understood by all, and generally speaking, the business flows smoothly, because common sense is usually at the command of all the parties. Of Mr. Hartland we know absolutely nothing, and probably have never even seen him. Of what he has to say in reply to the complaints of the reporters, we are equally ignorant. As regards the quarrel, therefore, we have no right to form an opinion, but we will express a hope that the "yawning gulf" that unpleasant words have made may be speedily bridged over, for possibly a touch of temper has given an ugly look to something that is nothing after all. Time does wonders in such cases, and good feeling commonly discovers how to smooth away jagged edges and rough surfaces to the level that serves for mutual co-operation and good will.

RHODODENDRON ARBOREUM.

In the Gardeners' Magazine for June 28th, you refer to a communication of mine in which I make mention of Rhododendron arboreum. In the remarks of yours to which I refer, you say that I appear to be unconscious that in the North of England this species of rhododendron is treated as a half-hardy plant. Allow me to say that I make no claim to have cultivated these rhododendrons anywhere except in the West of England. What their behaviour may be in the Midlands or the North I have no means of knowing, but from what I have seen of them during my quarter of a century's residence in the west, I am not disposed to look upon them as plants that require any protection, so far as the plant itself is concerned. The flowers, I know are sometimes injured by early spring frost, and so are some other plants injured in the same way that are considered hardy, notably Dielytra spectabilis. But the growth of the arboreum section of rhododendrons I believe to be as hardy as any of the hybrid varieties. After being many years sheltered by surrounding growth, I know of a plant bearing rosy red coloured flowers, that was fully exposed to 26 degrees of frost the following winter which was unharmed, while another plant situated in a low lying situation within a few yards of a stream of water, and which was planted many years before I knew the place, was never injured by the severest winter. I therefore cannot regard them as half-hardy plants in the sense I meant when referring to them. I do not advise any one to plant this section of rhododendrons in gardens of limited extent. But where the pleasure grounds extend over considerable space and the soil is suitable, a sheltered spot should be found for a few of them, as only those who have seen them are able to realize how effective they are, as they flower at least a month in advance of the main body of the hybrid varieties. J. C. C.

Reports on Fruit Crops, 1890.

STRAWBERRIES.

Aberdeenshire.—An abundant crop of excellent fruit is reported from most districts.

Mr. R. Farquhar, Fyvie Castle writes: We have a heavy crop, especially of Black Prince and Rivers' Eliza.

Antrim.—An average crop in most districts.

Armagh.—An excellent crop on all sides.

Mr. W. H. Baker, Tynan Abbey, reports: An abundant crop of first-class fruit, the season having been most favourable for strawberries.

Ayrshire.—Variable, and on the whole the crop is light.

Mr. W. Priest, Eglinton Garden, Irvine, remarks: We have a thin crop, the late frosts having destroyed a large proportion of the flowers. Sunny weather is much needed to ripen the fruit, which is very late. Garibaldi and President are the principal varieties grown.

Banffshire.—A heavy crop in most districts, but much injured by the heavy rains.

Bedfordshire.—Fruit abundant, and generally of good quality.

Berkshire.—Crop heavy, but the fruit rather below the average in quality in consequence of the heavy rains.

Mr. George Stanton, Park Place observes: Our best varieties are Noble and Captain for size; Sir Joseph Paxton and President for general crop, and British Queen for superior flavour. Jubilee looks promising for a late kind.

Buckinghamshire.—A good crop generally, but somewhat damaged by the rains.

Mr. G. T. Miles, Wycombe Abbey, reports: In low damp places much of the bloom of tender kinds was destroyed by frost.

Cardiganshire.—An abundance of fruit, but in many instances deficient in flavour.

Mr. R. C. Williams, Crosswood Park, states: Very heavy crops; the early varieties were of good flavour, but the later sorts suffered from the rains. The best varieties are Noble, James Veitch, President, and The Captain. The earliest to ripen was King of the Earlies, followed closely by Noble.

Carmarthenshire.—A heavy crop is reported from all districts.

Cheshire.—An abundance of fruit, but in consequence of an excess of moisture the quality is below the average.

Mr. W. Whitaker, Crewe Hall, writes: The crop is above the average, but the fruit was much injured by the continuous wet weather at the time when the fruit was ripening. Pauline, Noble, and La Grosse Sucree are the earliest; President, Sir Harry, and Sir Joseph Paxton, the best for mid-season, and Helena Gloede, the most useful for late supplies.

Clackmannanshire.—An average crop in most districts, heavy in others.

Cork.—An abundance of fruit in all but a few districts.

Mr. W. Beswick, Bessborough Court, says: Crops good generally, but in some places blossom suffered from the storms. Noble is very good, and President, Vicomtesse Hericart de Thury, Sir Joseph Paxton, and Elton Pine are the most generally grown. British Queen does well planted in bog land.

Derbyshire.—An abundant crop is the burden of the several reports.

Mr. E. Wilson, Hardwick Hall, Chesterfield, remarks: Vicomtesse Hericart de Thury is the best all-round variety for this district, and Black Prince is the best for jam making, and also the earliest.

Devonshire.—Crops generally heavy, but much damaged by the rain.

Mr. George Baker, Membland, Plymouth, reports: Strawberries are bearing a heavy crop, but a large quantity of fruit has been rendered useless by the continued rains and cold nights. I am forking out Noble, King of the Earlies, and The Captain, all being deficient in flavour. We are gathering James Veitch, very fine; but Waterloo beats all for size and high colour, being red all through, firm in flesh, and of good flavour. Soil too light for British Queen.

Dorsetshire.—Crops remarkably heavy in all districts, but the fruit is deficient in flavour.

Mr. W. G. Pragnell, Sherborne Castle, remarks: We confine ourselves to the following varieties: King of the Earlies, President, Elton Pine, and Loxford Hall Seedling.

Dumfriesshire.—A heavy crop in all districts.

Mr. C. Blair, Burnfoot, Langholm, reports: A most abundant crop, considerably above the average, and the fruit, although late, promises to be of excellent quality. This district being late, the strawberries were not injured by the late frosts which did so much damage elsewhere. Black Prince, Wilson's Albany, Sir J. Paxton, and Prince Arthur are probably the best varieties.

Durham.—A heavy crop, but the fruit generally wanting in flavour.

East Lothian.—One of the heaviest crops obtained of late years.

Mr. R. P. Brotherston, Tyninghame Castle, observes: Enormous crops. Keen's Seedling, President, Vicomtesse Hericart de Thury, and Elton Pine are the varieties most generally grown.

Essex.—An abundance of fruit, but much damaged by the rains.

Mr. J. Douglas, Great Gearies, states: Strawberries were most promising even to the point of ripeness. Fruit of Pauline on a south border was superb, but on the quarters in the open garden a cloud of mildew came all at once and spoiled much fruit. Fruits of James Veitch, Auguste Nicaise, and Sir J. Paxton were very fine. The fruit for preserving has been much injured by heavy rains.

Fermanagh.—Abundant, and the fruit generally above the average in size.

Mr. R. Elworthy, Crom Castle, describes the crop as exceptionally good.

Fifeshire.—Crops generally heavy and good.

Mr. C. Smith, Dysart House, remarks: Sir Joseph Paxton, Garibaldi, President, and Frogmore Late Pine have been very fine.

Glamorganshire.—A heavy crop is reported from all districts, and several correspondents complain of the damage done by the rains.

Mr. A. Pettigrew, Cardiff Castle, reports: Strawberries are plentiful, and very fine. We grow a large number of varieties here, but there is not one to equal President as a good all round variety. It is a sure and heavy cropper, and succeeds well in most localities.

Gloucestershire.—Abundant in quantity and poor in quality in most districts.

Hampshire.—A heavy crop in most districts.

Mr. E. Molyneux, Swanmore Park, reports: Strawberries are producing heavy crops of very fine fruit. Noble is now grown in large numbers, the fruit large and bright in colour, but moderate in flavour. Sir Joseph Paxton forms the staple crop for market growers in this district. The travelling qualities combined with its freedom in growth and productiveness, placed the "Joes," as the variety is called, at the head of all the others. Vicomtesse Hericart de Thury has been splendid in crop, and by far the best in flavour. President and Sir Charles Napier are also very good. Captain, although a shy "setter," bears large highly-coloured fruit, firm in flesh, and of a pleasing brisk flavour.

Herefordshire.—A heavy crop of excellent fruit, although somewhat below the average in quality.

Mr. T. Randall, Holme Lacey, Hereford, says: Strawberries are extra good this season. We gathered our first dish of Laxton's Noble on June 10, and since then we have had large quantities of very fine fruit.

Hertfordshire.—Plentiful, but deficient in flavour is the general verdict.

Huntingdonshire.—A heavy crop, but in some places the fruit has been damaged by the rains.

Mr. T. Filbrook, Houghton, writes: Abundant crop in this neighbourhood, and the fruit is very fine. I am growing about five acres of strawberries. The best varieties are Prince Teck, President, Sir Joseph Paxton, British Queen, Elton Pine, and Bicton Pine.

Kent.—Crops heavy on all sides, the fruit large, but somewhat below the average in flavour.

Mr. George Bunyard, The Old Nurseries, Maidstone, remarks: Strawberries better in character than for many years. Noble stands out as the best for early crops. Aromatic, Lucas, Countess, Dr. Hogg, and British Queen very fine. It was noticeable that King of the Earlies, Vicomtesse Hericart de Thury, and Keen's Seedling were finer than usual, and of grand flavour.

Kilkenny.—Crops above an average in quantity, but below an average in quality.

Mr. W. Clarke, Bessborough Park, writes: The crop is rather heavy, but the weather was so dull and cold that much of the fruit was spoilt. The varieties we grow are Commander, James Veitch, President, Waterloo, and The Captain.

Lancashire.—Crops are generally heavy, but in the majority of districts more or less injured by rains.

Mr. G. Middleton, Rainford Hall, remarks: I never saw British Queen better. We have lost a quantity of fruit in consequence of the rains.

Londonderry.—Fruit plentiful, and generally good.

Longford.—A good crop, but later in ripening than usual.

Monmouth.—Crop above the average.

Mr. J. Loudon, The Quinta, Chirk, observes: Fine crops of good flavour, Waterloo is decidedly an excellent fruit in every way.

Nairn.—A full crop but quality below the average.

Mr. J. Maitland, Cawdor Castle, says: Garibaldi, Duke of Edinburgh, and Elton very good, Noble has a handsome appearance, but the flavour is poor.

Norfolk.—Crops heavy on all sides, but much damaged by wet.

Mr. William Orr, Stow Hall, Downham Market, reports: Crop and size of fruit immense, both larger than I have previously seen. Unfortunately the fruit has been spoilt by rains and slugs. President is the variety most grown hereabouts, but I believe that Noble, when better known, will run it very close.

Northumberland.—Plentiful, but generally not equal to the average in flavour.

Mr. George Harris, Alnwick Castle, observes: Fruit abundant, but we have had too much rain and not sufficient heat to ensure a high flavour. John Ruskin proves to be the earliest variety yet tried, Noble is a large fruit, but I cannot speak in praise of its flavour this season, Garibaldi, Sir J. Paxton, President McMahon, Helena Gloede, are the best here for regular cropping; Elton Pine is grown largely for preserving for the trade.

Pembrokeshire.—Variable, and in some districts below the average.

Mr. W. B. Fisher, Stackpole Court, reports: Poor crop; there was an abundance of bloom, but it set very badly. The weather during May and June was cold and sunless here.

Perthshire.—An abundance of fruit is reported from all districts, but the quality is described as below the average.

Mr. P. W. Fairgrieve, Dunkeld House, writes: We have a splendid crop, but the weather is very unfavourable for ripening the fruit, being so wet and sunless.

Mr. James Lawrie, Murtly Castle, says: The crop is very heavy, but the fruit is poor in flavour. Unless the weather improves, half the crop will be lost.

Mr. James Brown, Abercairny, Crieff, remarks: A fine crop, but from ten to fourteen days later than last year.

Rutland.—An excellent crop is reported from all districts.

Mr. H. Clark, Ayston Hall, observes: The crop is heavy and the fruit fine.

Surrey.—An abundance of fruit, and generally of excellent quality.

Mr. J. G. Dean, Titsey Park, says: I do not think strawberries ever were finer. Plenty of fruits of President have weighed an ounce each, and fruits of James Veitch exceeded that weight. Sir Joseph Paxton and Dr. Hogg are heavily laden with fruit. Unfortunately much damage has been done by the weather, the fruits having rotted as fast as they ripened.

Mr. T. Osman, Ottershaw Park, reports: The crop good, and the fruit of large size. The following varieties are extra good, namely: Vicomtesse Hericart de Thury, Noble, British Queen, Keen's Seedling, James Veitch, and Loxford Hall.

Sussex.—Crops generally heavy, and the majority of our correspondents complain of the fruit having been injured by the rains.

Mr. J. Rust, Eridge Castle, says: Strawberries most excellent, the showery weather suits them well. Noble was first to ripen, and the fruit was of poor flavour. Then came Black Prince, next The Captain, a good kind, followed by James Veitch, Keen's Seedling, Vicomtesse Hericart de Thury, President, Bicton Pine, Helena Gloede, Victoria, Loxford Hall, and Frogmore Late Pine.

Staffordshire.—Crop generally above the average, and the fruit of large size, here and there poor in flavour.

Suffolk.—Abundant, and generally of good quality.

Mr. George Palmer, Drinkstone Park, remarks: We have a heavy crop of fine fruit. Strawberries appear to be good on all soils and in all situations.

Mr. J. Sheppard, Wolverston Park, observes: Strawberries are good generally. The favourite with market growers is John Powell, which bears freely and stands carriage well.

Westmeath.—Variable, heavy crops in some places, light in others.

Westmoreland.—Crops generally heavy, and the fruit of large size.

Mr. D. Leslie, Appleby Castle, remarks: Crops good, and the fruit large in size. In exposed places strawberries suffered from frost, many of the flowers being blackened, but even on these plants many good fruit will ripen. Generally crops above the average.

Yorkshire.—Crops heavy in all districts, but as in other counties the quality is in some instances below the average.

Mr. J. Allsopp, Dalton Hall, states: An abundant crop, and very fine fruit where the plants were watered when in flower. Keen's Seedling, Sir Joseph Paxton are our favourite varieties.

Mr. T. Lambert, Burton Constable, observes: Strawberries good, especially Laxton's Noble.

Mr. J. B. Riddell, Castle Howard, writes: Strawberries I have not seen in greater abundance, Laxton's Noble, The Captain, and Sir Joseph Paxton being exceptionally good. Bothwell Bank Seedling also promises well. It is about a fortnight later than the above varieties, and therefore valuable for succession.

Literature.

Walks in the Ardennes. By Percy Lindley. (125, Fleet Street.)—Although an Englishman is like a cat, and falls on his feet anywhere, the scenery and the amusements of the Ardennes would prove agreeable to a very considerable proportion of business men when in a mood for a holiday. The botanists and horticulturists amongst them may find some happy hunting grounds on the romantic heights, and the rivers are not less attractive in their way, while they add the attractions of fishing and boating. In the grand rocky and rugged country of which the city of Liege is the centre will be found the finest ivy garden in Europe, and the geologists have much to be thankful for that nature has scooped out a lot of caves to puzzle them. Mr. Percy Lindley has provided a delightful little guide book to this region, and we hope many will dip into it.

Ladies' Gazette of Fashion for July is called a "floral number," a designation justified by a number of fanciful floral designs for the decoration of ladies' heads, and the more directly floral figure of Prince Camille de Rohan rose, with tastefully-dressed window boxes and fireplaces, dining tables, and the like.

The Art Interchange, published fortnightly at 21, Bedford Street, London, W.C., is a handsome folio devoted to the interests of art amateurs and students of art generally. It treats at length of various branches of art work and study, both as to first principles and applications, and its teachings and proposals are freely illustrated in an effectual though inexpensive manner. The handling of floral subjects for decorative purposes by artists contributing to this work is singularly successful. But a certain happy spirit pervades all the designs, as, for example, the decorations for the nursery at page 175 of the number for May 24, where a grotesque style of merriment is subordinated to perfect taste to give life and interest to the art work in aid of the teaching the young idea how to shoot. It is with pleasure we recommend to students of art, and especially to painters of flowers and the like, this useful "Art Interchange."

Birmingham Gardeners' Association has published in a neat octavo form a series of papers read at the meetings of the association during the autumn session of 1886 and spring of 1887. It is important to note that in this collection occur the papers by Mr. E. Tonks on Plant Food; by Mr. W. B. Latham on Carnivorous Plants; Mr. E. Cooper on the Cattleya; Mr. J. R. Petch on the Grape Vine; with other papers by Messrs. J. Hughes, J. Crook, G. Page, J. Pope, C. H. Herbert, T. H. Horton, and W. Jones. The publishers are Cornish Brothers, 37, New Street, Birmingham.

GARDEN FLOWERS.

Clematis recta, native of Southern Europe, is a handsome flowering shrub for wilderness and wild garden. It forms a dense, rigid bush with dark green abundant foliage, and at the present time is adorned with a profusion of white flowers. It is not far removed from our C. vitalba, but is distinct in its rigid and compact habit, being no rambler, but quite a stay at home.

Thalictrum parvum is a beautiful member of the meadow-rue family. It grows four feet or more, with sharply cut leaves and a head of creamy-toned yellow flowers, forming a fine feathery plume. Equally good and sufficiently distinct is *T. glaucum*, with dark glaucous foliage and pale yellow inflorescence.

Aconitum lycoctonum is a somewhat unattractive monkshood that merits more than a hurried recognition. It is the whitish-yellow wolfsbane of Parkinson's "Paradisus," p. 214. It is of robust habit, making a growth of five to six feet. The flowers are described as yellow, but they really are of no colour at all, or say a kind of yellowish grey. The interest is to be found in the form of the flowers, the hood being pinched and pulled out, giving the flowers a singular expression. It is not figured in any of the books to which we usually refer for figures of hardy plants, although it has been in the country fully three hundred years. The only figure we can now refer to is in "Florae Austriacæ Icones," IV., t. 380.

Mutisia decurrens is flowering freely on the front wall of Museum No. 1, in the Royal Gardens, Kew. This handsome hardy climber is but rarely seen, and those who see it at Kew may note one reason why in the bed of small coke that is spread over its roots. To be sure the coke is not the cause of its rarity, but the need for it is this plant being one of the most difficult to protect against the all-devouring slug. As fast as new shoots push up the slugs devour them and thus the plant is eaten out of existence. The coke prevents this mischief, for slugs and snails cannot travel over it. As regards beauty, the flowers of this mutisia are not far removed in appearance from those of Gerbera Jamesoni, but are a trifle less choice in character. It was figured some five-and-twenty years ago in the *Florist and Pomologist*, and the figure is worth hunting up by those who are interested in first-class hardy wall plants.

Spiræa Lindleyana is now in its best exhibition trim and declares itself a grand plant for isolation on a grass lawn. In leafage it is a distinguished beauty and worth a place for that reason alone, even were it to produce no flowers. But these adornments are now profusely displayed and declare this spiræa to be one of the noblest summer flowering hardy plants we possess. The flowers are white in noble terminal panicles.

Senecio macrophylla brings a majestic feature into a region where we do not usually look for it. The great spathulate glaucous toned leaves and the deep orange coloured head of flowers combine to form an example of rustic magnificence for which many a more fashionable beauty might be exchanged with advantage.

Erythræa diffusus is one of the sweetest little rockery plants of the season. It forms a close tuft with neat bright green foliage, over which is now spread a sheet of neat flowers of a rich, sparkling, rosy red colour. It is equal to any androsace or alpine primula; it is, in fact, a perfect model of a tufted plant in which pleasing details of structure are combined with a delightful display of glowing colour.

Salvia virgata represents a group of showy plants that we do not need to have often repeated, but cannot well be without entirely. It forms a round, compact, dense bush of neat growth, above which at this time is a close head of spiky inflorescence, the flowers being full blue mixed with the rich brown of the unopened buds and the stems that bear them. It is attractive and peculiar, and decidedly showy.

Ligustrum sinensis, better known as the Chinese privet, is of more importance than is commonly represented as a hardy garden shrub. It differs greatly from all other privets in its small leaves and spreading habit, forming a large head of quite elegant form, and at the present season presents a dense sheet of white flowers in small crowded racemes. Its proper place is on the lawn, standing apart to form a head in its own way. When mixed with other shrubs it has no beauty, because its individuality is destroyed.

Tilia parvifolia is a kind of bijou lime, very dense in habit, and dwarf, forming a round head and producing flowers in such profusion as to be quite creamy looking with them. When the sun shines it is full of music because full of honey. This is the true British lime, a tree scarcely known to planters, for the one commonly planted is *Tilia grandifolia*, of South American origin.

Calls at Nurseries.

MESSRS. J. PEED AND SON'S, TULSE HILL.

For some years past gloxinias have received special attention at the hands of the Messrs. Peed, and as the result of the judgment and skill that have been brought to bear upon the work of improvement, their strain has reached a surprisingly high state of perfection and become widely known amongst cultivators. Concurrently with the improvement in the form and colouring of the flowers, there has been an extension in the collection grown in the Roupell Park Nurseries, and it has now assumed such immense proportions as to form a feature of great importance and surpassing beauty.

How many structures are devoted by the firm to the culture of those flowers we are unable to say, but the specimens in bloom are sufficient in number to fully occupy the whole of the available space in a house over one hundred and fifty feet in length and fully ten feet in width, and, at the same time, to indicate in some degree the extent to which the gloxinias are cultivated. The diversity of colouring afforded by the flowers of this immense number of plants is simply marvellous, and ranges from the purest white to deep purple marone on the one hand, and to the most brilliant scarlet crimson on the other, the high-coloured flowers being singularly effective. Especially beautiful are the flowers lightly tinted with pink, rose, and lavender on a pure white ground, and the spotted flowers showing a remarkable variation in the colour of their markings are exceedingly attractive, and enjoy a high degree of popularity. In some cases the whole of the flower is spotted, in others the flowers have a crimson, purple or rose-coloured limb with spotted throat, and in a few instances the flowers are rose or crimson, with clearly-defined white margin profusely spotted with rose, crimson, or purple, as the case may be, the spots closely following the general colour of the blooms. Flowers with high-coloured centres and light margins are plentiful, and at once arrest attention by reason of their beauty, and there is a considerable number of varieties having pure white flowers with a sharply-defined margin of colour, one of the finest of these being that known as Mrs. Peed. This variety has large flowers with white throat and rose-lilac margin, and is one of the most beautiful of the many fine forms in the collection. Whilst it is evident that every effort has been made to obtain as great a diversity of colouring as possible, it soon becomes apparent in walking through the exhibition house that the importance of form and size has not been overlooked. The flowers are, on the whole, somewhat above the average in size, and they are so perfect in shape as to suggest the idea to those who have not paid special attention to the gloxinia that but little further improvement, in the matter of form, is possible.

A few of the finest varieties have been named, and of those with names mention may well be made of A. Luff, an effective flower of a brilliant vermilion hue; Darkness, marone purple, with finely spotted throat; Black Prince, another handsome dark flower; Blanche, a large flower marked with with a pink band on the limb, and spotted with rose; Dorothy Tennant, white copiously marked with rose-pink spots; General Gordon, marone crimson, with rose-coloured margin; Effie, white, freely spotted with rose; D. M. Russell, velvety crimson, rich in colour and very effective; H. M. Stanley, crimson lake with white margin; John Peed, a bold flower of the largest size, the colour crimson, with white margin; Princess of Wales, white, spotted French grey; and Sweetest, white, spotted with pink. It may be mentioned as a point of some interest that the collection consists exclusively of varieties with erect flowers, and that the principal part of the plants now in bloom were raised from seed sown in January, 1889. Those raised last January are just commencing to bloom, and promise to produce in succession an abundance of flowers until the autumn.

Another important speciality of the Roupell Park Nurseries is the collection of anthuriums, which is remarkable both for its extent and the cultural skill that has been brought to bear upon it. The typical form of Anthurium Scherzerianum is of necessity strongly represented, and very brilliant is the effect produced by the numerous spathes. Conspicuous was the fine form certificated at the metropolitan exhibitions in the spring under the designation of A. Scherzerianum atrosanguineum. This has spathes of immense size and a rich crimson colour. Worthy of attention also is a seedling raised by the firm with spathes of large size and exceptionally brilliant in colour, in the latter respect surpassing the finest of the forms now in cultivation. A. Rothschildianum, A. Andreanum, A. Ferrierense, and other good kinds grown for the beauty of their spathes are also well represented. The collection of sarracenias is remarkable for its extent, and the numerous structures devoted to stove and greenhouse plants and ferns are so well furnished as to afford abundant interest. The vineries are especially deserving of attention, for in some are remarkably fine crops of Alicante, Muscat of Alexandria, and other of the best grapes, and in others young vines which show that they are enjoying the conditions favourable to a vigorous growth.

AMONGST THE ROSES.

By J. C. Clarke.

William Allen Richardson.

It is much to be regretted that this beautiful rose should be so disappointing in some places. But that it is so, the reports regarding its behaviour from widely different places only too surely prove. Seeing that it is not altogether a tender rose, and that it is not influenced by climatic conditions as some other varieties of climbing roses, it is the more difficult to account for its objectionable behaviour. In my own case I cannot get it to grow in a satisfactory manner in the open air. It only makes growth a few inches long in the course of the year, while planted out in a border of good soil in a house only heated to keep out frost it grows and flowers as well as one could wish. But I happen to know that it does very well on an open wall not many hundred yards from where I write, so that, as I have said before, it is difficult to determine the conditions it requires. On the whole, I think it will be found that as regards making growth in the open air, it is more likely to grow too much instead of too little. When such is the case I know it does not flower freely, and sometimes not at all, until the plants are six or seven years old. But that is a difficulty that can be got over by patience. Plants that grow too strong and that do not flower should have the roots lifted in the autumn. This, under ordinary circumstances, will check excessive vigour and cause the plants to bloom freely.

Its failure to make growth in some cases is not its only fault. It is unfortunately a very sportive rose, many flowers coming almost white in colour, which is very disappointing. So far as I know there is no help for this, as the same plants do not behave every year alike in this respect. It is, however, a little beauty when it comes in its true form, with its rich deep orange coloured flowers. Everyone then admires it. I have grown this rose in pots ever since it was first distributed, but I have not known it to be so sportive as when its roots are not restricted. Perhaps our editor will not think I am very complimentary when I say there is another rose, named *Shirley Hibberd*, which sports in just the same way as W. A. Richardson. But it is so, and I know I felt rather vexed the first time I detected the white flowers where I should have had flowers a deep apricot colour. There is very little difference in the colour of these two roses, although the variety named Shirley Hibberd was never widely known.

Climbing Devoniensis.

I mention this rose here because I saw it recently in Mr. Baker's garden at Heavitree, Exeter, and the glorious condition the plants were then in supports what I have said before in these pages, that we must go to Devonshire to see this rose in a satisfactory condition. The general complaint against this rose is that it makes too much growth and produces but few flowers. This I know to be true outside the mild and genial climate of Devonshire. But surely if it is so satisfactory in the last-mentioned county it would behave nearly as well in many gardens along the south coast. I am sure that many fail to get this rose to flower properly because they give the roots too much space and too rich soil, and will persist in pruning it in the winter or spring. What pruning is necessary should be done as soon as the first lot of flowers have appeared. The growth made after that should be nailed or tied to the wall, as it is those shoots for the most part that give the greatest number of flowers. These are the lines on which it is treated in the garden I have referred to, and a more beautiful sight amongst climbing roses I never saw than the plant in Mr. Baker's garden. True, the principal part of the growth was near and at the top of the wall, but the number of flowers upon it surpassed everything I have seen of this rose before. Those who know this variety are aware that the colour of the blossoms is not striking, but their exquisite form and delightful fragrance are singularly pleasing.

As a rose for personal decoration there is not one more universally admired. I have a plant associated with other roses on one side of a span roof house, that has been more or less in flower since the beginning of April, and none are more valued. The fact that the flowering season extends over several months further enhances its value.

Maiden's Blush Rose.

There is some difference of opinion as to which is the true Maiden's Blush, but I do not think there is any doubt about the matter. The Maiden's Blush, as it has been known in cottage gardens for many years past, is a hardy, free-flowering plant, which, if trained to a wall, will reach to a height of six feet, but if left alone grows in the form of a low spreading bush. The leaves are somewhat glaucous in colour, and the flowers are produced in clusters. These are only slightly cupped with a faint tinge of flesh colour pervading the centre of the flower. This description will, I hope, enable the reader to trace the character of this rose. I have taken some trouble to find it out. I should not refer to it now only I know that when correspondents have sent to a nursery for it they have not always obtained what they wanted. I have before me as I write flowers of a rose of quite a different character that was sent to a reader of the Gardeners' Magazine for the Maiden's Blush, but which in no way is like it. I do not wish to be understood as recommending your readers to plant this rose in preference to any other. I am only concerned about their getting it true if they want it. As to its merits, all I can say in its favour is that it is a hardy, free-flowering kind that flowers only once a year, but it will thrive where some of the better forms refuse to grow.

In Mr. Hibberd's "Amateurs' Rose Book" he speaks of the Maiden's Blush as a good stock to work dwarf-growing roses on, as it may be propagated to any extent from cuttings, and as a stock affords a capital basis for the formation of neat bush roses that make a short jointed growth and flower profusely.

Hardy Yellow Roses.

Many people profess to have a great liking for yellow roses, yet they ignore altogether the hardy and free flowering *Austrian Briers*. Whether it is that they do not know of their existence, or that they are not fashionable enough, I do not know; but I do know that no one who has a garden need be without a yellow rose that will endure any amount of frost, will grow in any ordinary soil that is fairly rich, and will bloom every year with certainty. If the owner will only let the plants grow their own way and not prune them they can have abundance of flowers. They can have single flowers or double ones, as well as different shades of yellow. They may also have them as standards or dwarf plants, or if desired, they may be trained to walls or fences that do not exceed six feet in height and they will cover those fences in a few years. Surely I need say no more as to the merits of these hardy yellow roses, although I have not said a word too much. I may, however, add that those bearing single flowers are the strongest growers. The *Austrian Yellow* is the best in that respect. This is a striking variety when in flower, the colour being a clear lemon yellow. The *Austrian Copper* is perhaps more singular than beautiful; anyway there is something very pleasing in the coppery tone of yellow that pervades the flowers.

There are two forms bearing double flowers. The *Persian Yellow* is in my opinion the best. My plants of this sort commenced to flower at the end of May and have now, as I write (July 7th), still some blooms upon them. The flowers are large and double, of a deep golden yellow colour. *Harrisoni* is a free flowering rose with light orange-coloured double flowers. This variety makes a good standard or low spreading bush. If the plants are left undisturbed for a few years they make a good number of suckers, and the stock can be increased in that way if the suckers are carefully taken up.

EXHIBITING VEGETABLES.

By Edwin Molyneux.

From this time onwards for about two months vegetables will form an important and very interesting part of the many exhibitions held throughout the country. It is in the form of collections that vegetables make the most pleasing display at any show; at the same time it is a tax on the ability of the exhibitors to present the specified number of kinds in the best possible condition. Visitors go to horticultural exhibitions to see the finest of everything. For this reason I am not in harmony with those persons who believe in large collections of vegetables as required by schedules. Seldom, indeed, can one man stage as many as twelve distinct kinds in the finest condition to make up the required number. He is driven to the necessity at times to put up a dish of some kind or other that is not up to exhibition standard, but, perforce, must go in to make the number of dishes or sorts. Whereas if a smaller collection was stipulated for all might be perfect dishes of their kind, and it is perfection in such things that is attractive, and not mediocrity. I consider nine varieties as being sufficient for the ordinary collections. Where it is a matter of seeing how many can be staged it is different, because all are not then expected to be of the highest class.

Much from time to time has been written about the fashion of showing extra large vegetables, and much truth there is in it, as we see ponderous cauliflowers, turnips, and even potatos, that cannot possibly be of good quality. Take, for instance, the first-named; it would not be possible to cook a cauliflower as large as is sometimes seen at exhibitions without its being cut into sundry parts, and who would think of sending such produce to a gentleman's table? Extra large turnips are very often woolly; what use, then, are such as these? The greatest mistake, perhaps, occurs in staging such ungainly specimens of potatos. Some exhibitors consider the largest are the best irrespective of form or any other point of excellence; and very often it is that such monstrosities would be found with a large hole in the centre of each if cut in halves. It is for the benefit of those exhibitors, or those intending to be, that these few lines are written. Those who have had considerable experience in the exhibition tent find out the true bearings of the case in good time.

Amongst the inexperienced there is a disposition to err on the side of bigness in selecting the various specimens to make up a collection of vegetables of any number. Societies of any pretensions have, or always should have, two classes for collections of vegetables, one for the largest cultivators and one for their less favoured brethren, and they should be so arranged that they are proportionate in numbers, and also that an exhibitor in the largest class cannot compete in the smaller, and *vice versâ*. Of course, it is not necessary for me to explain here why a small grower cannot compete with his greater neighbour in large classes with the same amount of expectation of success. The reason is obvious; it is quite a case of "numbers will tell." Classes for six and nine varieties answer very well for exhibitors, and make a good show—perhaps better than where twelve kinds or dishes are stipulated for, because such a class may bring more competition, and this is what is needed at all horticultural exhibitions. Comparison can be fairly made between produce from districts wide apart, as there is a better opportunity of their being more diverse in kind and quality from widely spread districts. New ideas also may be more freely gleaned by exhibitors themselves than when the competition is limited to a few persons year after year, and from nearly the same area.

This world is full of copyists in some form or other, and by this means we are all enabled to learn and formulate fresh ideas from copying others. While on the subject of large vegetables I omitted to say that I had often heard heavy wails against large vegetables at exhibitions by visitors, and some of which were undoubtedly uttered in ignorance. For instance, I overheard a gentleman remark, when

looking at some extra fine peas, "Ah, they are no use; large peas are not nearly so good as small ones." Here was a case of condemning in ignorance. Who would think of showing specimens of William the First in preference to those of Duke of Albany, I would ask, for table use? These two varieties perhaps represent as well as any two sorts in opposition, for size of both pods and peas. Expressions of opinions on such subjects should be given in a guarded manner by those ignorant of such matters. I am aware that there are cases where large-podded kinds of peas do not fill nearly with peas. No one with any knowledge would think of staging such kinds as those in competition; neither would they take up space with them in the garden when there are plenty of sorts good in all respects giving quality and size combined.

I will note the kinds which exhibitors should endeavour to stage in two collections, placing them in order of merit as near as possible. This, of course, is only a matter of opinion, as the ideas of preference depend very much upon the requirements of certain families as compared with others. My classification may serve as a guide. I will leave a margin for selection by adding a few extra varieties to choose from, as it sometimes occurs that through various reasons every exhibitor is not enabled to stage what he would prefer.

Potatos shall take the lead in the selection, as I hold they are the most important of all vegetables; no one, whether nobleman or cottager, would think of dining without this esculent, although I have seen collections of vegetables staged without them, and by persons who ought to know better. Certainly the exhibitor would lose weight by such a selection, and in cases of close competition must miss the premier award. I am also aware that very bad potatos would carry less weight than an excellent dish of some other kind, therefore in cases of close competition are better left out, except of course they required to be included. The printed classes in the prize lists must be strictly adhered to by exhibitors, in the absence of which competitors run a chance of disqualification, a circumstance to be avoided at all times.

With regard to the number of dishes allowed in collections of vegetables, the schedule of prizes nearly always specifies if they are to be one or two, generally two are allowed—round and kidney—in collections of twelve varieties and one in a less number of dishes. Taking the largest number first I should advise the following potatos: clean white kidney, not too large, but perfect of their kind in shape and clearness of skin. If the variety is of good repute as a cooking sort so much the better, good judges will always give preference to quality in this respect than they will (and rightly so), to those sorts that are good in appearance only, but of bad quality otherwise.

Tomatos stand next to potatos in degree of importance. They should be even in size, should be large, quite round, free from corrugation, and of a bright colour, which denotes perfection in ripening and consequently full flavour.

Cauliflowers when in thorough condition, that is, not too large, close in the flower, quite circular in form, and pure in colour, which should be white, free from caterpillar markings. No variety is as good for exhibition at any time of the year as Veitch's Autumn Giant, for this sort combines all the qualities named.

Peas constitute a strong dish in any collection when in good condition, especially so if they are not generally plentiful at that time, and in some seasons they are not in all districts owing to a superabundance of moisture and too little sunshine, that the pods cannot fill evenly. Sometimes the reverse case happens of too little moisture, which causes inequalities in the shape of the pods and a corresponding reduction in their size. Well known good kinds cannot be too large in the pod, providing they are shapely, full of peas, which are not too old for table use, so that the full measure of flavour is retained. The "bloom" on the pods should be perfect, free from markings caused by rough usage in gathering the pods.

Onions form a strong dish in any collection if of good quality. For July and August shows Tripoli varieties are the best, as in these large size is obtained. Some people prefer spring sown kinds, but in the case of onions it is more a matter of size than anything else, provided they are perfect in form, hard and heavy, clear in colour, and devoid of roughness in any shape. So much weight cannot be obtained in spring sown onions as in autumn ones, therefore most judges give the preference to Tripoli sorts, of which White Elephant is as good as any and much superior to many others. White skinned varieties carry more weight as a rule than do other colours.

Carrots, on account of their general usefulness are accredited a prominent position, they should be of fair length in proportion to their thickness, quite clean in the skin and free from irregularity of growth, and of rich colour. For July shows Nantes Horn stands well to the front, but for later use some of the improved forms of Intermediate are superior, as they have both size and quality on their side as compared with the former sort.

Beans come next in point of order of merit. The three kinds—broad, kidney, and runners—are all good in their season. French or kidney are preferable during July, being generally more favoured by the greatest number of persons. Canadian Wonder is still the best kind, being of large size and, at the same time, of good quality. The selection should consist of those only that are straight, long, even in all respects of length, width, and colour, and, what is still more important, they should be tender; if by taking hold of each end, bending in the middle, they quickly snap in two, instead of bending toughly, they are all right. Broad beans, when in good condition—long, deep green in colour, not too old—are an important dish in a large collection during the early part of the month. Any of the long podded sorts, of which Seville and Leviathan are types, are the best. For August shows runner beans are preferable to any other both for their appearance and quality. The longer the pods the better. Ne plus Ultra or Girtford Giant are the best sorts to grow.

Turnips in some seasons constitute a very strong dish, especially in such years as 1887, when, owing to continued drought, good turnips were exceedingly scarce. The necessary qualities are fair size—certainly not larger than a cricket ball—tapering root, clean in the skin, which should be white, and quite free from wire-worm depredations. Snowball stands at the head of the list of varieties for general quality and appearance. Turnips should bear the test of close examination, as they are in close competition liable to be cut, and if found in the least degree "woolly" they cannot be classed as good.

Globe artichokes make an imposing dish in a large collection. The green variety is the best and most generally depended upon by exhibitors, although some of the coloured kinds are sometimes staged. The heads should be as large as possible consistent with crispness, which is best known by the colour, which should be deep green. Any signs of paleness denote advancing age, which should be avoided in selecting.

Cucumbers, when in the best condition, always command their full share of points. They should be even in size, about two inches in diameter, and not less than twelve inches long, well matched in shape, and of a dense green, with the "bloom" perfect all over the skin, and not in any way rubbed by rough usage. Telegraph is to be depended upon for supplying the above requirements. Although there are many others now as good, some perhaps better, so much depends upon how they are grown.

Vegetable marrows in July are important in a large collection, especially if at all scarce. Long white is still to be preferred to the majority of others. They should not be more than nine inches long and five inches in diameter, at this size they cannot well be considered old. Tenderness is the point to consider in selection, along with evenness of size.

Beet always counts heavily during August when perfect. The roots should not be large, say not more than three inches in diameter, and about nine inches long, the tap root should be undisturbed, the skin of a deep colour and quite clear, any roughness being a defect.

Celery carries much weight during August, especially towards the latter end of the month, and rightly so when it is considered the difficulty there is in obtaining it perfect at that early season. White kinds are the most telling in appearance, the sticks should be thick, quite solid, free from "pipiness" and well blanched, not less than nine inches in length. Solidity, colour, and cleanliness are the essential points to observe in celery.

Leeks form a strong dish at the end of August and afterwards, certainly much preferable to moderate dishes of any other sort of vegetable. The chief points are the size and blanched properties of the stems, which part should not be less than nine inches long. Lyon and Prizetaker are good sorts to grow for the purpose.

Round potatos form the last of my selection; where stated that they may be staged, they should have a place in collections of twelve, as this forms an important dish when in the best condition, without which they should not be used, They should be even in size, and perfect in shape, clearness of skin is important. Throw out all those tubers with scabby parts, preferring only those that are clear of such imperfections. Reading Russet is a good type of a round potato.

A capital selection for six dishes would be the following:—Potatos, tomatos, cauliflowers, peas, onions, and carrots.

I fear I have trespassed now too long on your space, but knowing the difficulty that some exhibitors have in making a selection of kinds for a collection best suited for the purpose I have ventured to give advice in a full manner, and in another article shortly I hope to give a few hints upon preparing, carriage of same, and staging of vegetables at shows.

AN EARLY CROP OF MELONS.

THE earliest crop of melons I have seen this season in pits or frames is at Mansfield House, Taunton, where I saw some ripe fruit on July 3, the sort being Golden Perfection, and the structure in which they were growing an ordinary two-light brick pit. I refer to this successful example of early melon culture for two reasons. One is to state that I have always found Golden Perfection to be the best and earliest melon for frame or pit culture; the other reason is that this particular crop had been grown with but very little bottom heat. To say that they had none would not be quite correct, but the plants had no hot-bed made for them in the ordinary way. There being no horses kept on the place Mr. Wills, the gardener, told me that to afford the roots a little warmth he got together all the rubbish from the garden such as broccoli stumps and leaves, and placed it in the pit with some scavengers' sweepings, all of which was trodden together firm. These materials he tells me generated a little warmth for a time, but it was not near so much as would be obtained from a hotbed made in the ordinary way from manure and leaves. The result, as I have already explained, is that a splendid crop of melons has been obtained much earlier in the season than we usually see them where the best materials and appliances are at command. It will perhaps occur to the practical reader that this instance demonstrates the superiority of brick pits over the ordinary frame. If a hotbed had been made up on level ground with the same materials, the same satisfactory results as regards earliness could not have been obtained, as the materials would not have furnished the same degree of warmth. Much of it would have been blown out of the bed by the wind, but as it was confined in a brick pit the melon plants had the benefit of all the heat that was generated.

J. C. C.

Notes of Observation.

NEW PEA "REPORTER."

In 1886, a reporter to one of the Oxford papers received from Sutton and Sons half pint of a new pea called Eckford's Magnificent, of which a few fell into the hands of Mr. Richard Ryman, an enthusiastic plodding market gardener, of Barton, Headington. These were dibbled in two inches apart, and, liking the appearance of its habit, Mr. Ryman saved the whole stock of seed. Whilst developing its growth he noticed a plant about one third the height of the rest bearing freely. This had finished its work just when the remainder were beginning to pod. The idea occurred to him that the variety would save half the amount requisite for stakes. His friend, the reporter, also had a similar plant amongst his bulk, but the greater portion of the produce from it he had consumed. However, what was left, Mr. Ryman became possessed of, and, in 1887, he sowed them, and found several tall peas among them, which were pulled up. In 1888, he sowed again, and still they were not all true, though there were fewer tall ones than the previous year. In 1889, the first pod that ripened in 1888 was sown (eight peas) in four 60 size pots, in a cold pit. The mice however had one half. The four which survived found their way into a 32-pot, and then into an eight-inch pot. The produce was saved for seed, and planted this year, and on Monday, July 7th, the writer saw them growing. A prettier picture could not well be drawn. The growth robust, about three feet, branching from the very bottom, and the peas in pairs hanging, as we say, like a rope of onions from end to end of the row. Counting the peas on individual plants from 60 to 80 pods were found, with more to follow. Mr. Ryman is anxious to obtain an opinion if the variety is worth cultivating for marketable or exhibition purposes. He claims not to have *raised* a new variety, but simply to have *rescued* one.

Oxford. Wm. Greenaway.

[A prolific pea with the substantial appearance that carries weight in the market. The plant is robust, the pods full green, and tightly filled with large peas of excellent table quality. So far good; we will hope that in due time this will be appreciated, and bring to Mr. Ryman the commercial results he is entitled to for the care he has bestowed in securing it. But we are bound by all that is decent in journalism to say that if he hopes to put this pea on the market within a reasonable time, he must make a stock before he sends away quantities to obtain opinions on its merits. He can ill afford, we are sure, at this early stage in the business to send us—as he has done—about half a peck of pods and a portion of a plant that we may have the privilege of tasting it. There can be no breach of politeness in objecting to the gift in such a case as this, for we speak in the interest of Mr. Ryman and all others in the like situation. The first stages in making stock of a new thing are slow and uncertain, but when a certain bulk has been secured, there may be allowed a judicious distribution of samples to ensure approval and publicity.—Ed.]

CHRYSANTHEMUM GOLDEN SHAH.

Blooms of this fine early-flowering chrysanthemum received from Mr. W. Piercey, of West Road, Forest Hill, ten days ago are still quite fresh and brilliant in colour, and proclaim our praise of it to have been well bestowed. Mr. Piercey, in a letter dated July 9, reports that the plants from which the flowers were taken have been grown entirely in the open, and exposed to all the recent storms without any detriment to their flowering or their beauty. Plants from last autumn struck cuttings were flowering early in June, but the spring-struck plants dating only from March last were in flower in the first week of this month of July. The flowers of Golden Shah are of fair size, the florets broad and stiff, the colour rich deep yellow, passing to orange-yellow in the centre. As yellow flowers are not plentiful now, they are of special value whether to enrich the garden or to cut for decorative purposes.

Other fine varieties flowering now include Pierre Verfiel, Jacintha, Nanum, Salter's Blush, L'Avenir, Precocité Japonaise, L'Ami Conderchet, Duchess of Fife, and Piercey's Seedling.

HONEYSUCKLE-LEAVED ST. JOHN'S WORT.

Hypericum caprifolium, is one of the most showy varieties of the St. John's Wort family at the present time in flower, and what is more, the plant is of compact growth. We have it growing at the back of a low rockery, and well it suits the position in which it is located. The blooms are bright yellow, and at the same time upon the same truss there are numbers of berries in different stages of colouring, some dark red, which renders the whole truss striking and interesting at the same time. The foliage is a deep green which contrasts nicely with the red bark upon the young growth. Altogether this variety is deserving a place in either the rockery or amongst other shrubs. E. M.

STRAWBERRY NOBLE.

This is proving a grand variety here for early use out-of-doors, for it is ripe sooner than any other sort. From small runners planted at the end of September we are now (June 20) gathering fruit, each weighing one and a-half ounces. The growth, too, is robust, and evidently well suited to our soil, which is not naturally of the best kind for the growth of good strawberries. Being heavy in character, our soil retains the moisture rather too much during the winter and spring, rendering the soil too cold at the latter time, when strawberry roots ought to be more active than they can be in a soil of this kind. This, so far, has not been a season to enable one to test the flavour thoroughly of any kind ripened out-of-doors. We have had too much showery weather and too little sunshine. So far the flavour of Noble has been very deficient. As compared with Viscountess Hericart de Thury, for instance, that of Noble has been both woolly in taste and actually sour. Owing to absence of sun the fruit has not had a fair chance to obtain so good a flavour as with weather more favourable to ripening. E. M.

SUTTON'S RINGLEADER POTATO.

Herewith I send you a fair average sample of the above. This I consider a valuable early sort. Planted side by side with Sharp's Victor, it proved equal to that variety for productiveness, at the same time being six or seven days earlier. Its greatest recommendation, however, is the splendid quality of the tubers from the time they are large enough for use. Thomas Cummings.

The Elms, Banbury, July 7, 1890.

[A beautiful sample of white kidney potatos, in form mostly equal oblong, but sometimes pretty celt-shaped; the skin clear, eyes few and inconspicuous, table quality excellent. Ten tubers received July 8 weighed 2 lb. less 1 ounce.—Ed.]

EARLY PEAS IN THE MIDLANDS.

An opportunity has been offered me of inspecting the early pea trials in the testing grounds of the well-known Leicester firm, where my attention was attracted to a large number of Mr. Laxton's seedlings. The entire stock of each of these, I am informed, has been purchased by the firm, but as they are not yet in commerce, and are only going through their preliminary trials to test their characters, which in some instances are not permanently fixed, it will be undesirable to enlarge upon their merits at present; still however, as far as appearances go, there are several very promising kinds that bid fair to supply the hardy and early varieties that are so much desired, and which at a future time will no doubt cause a great demand to arise among pea growers generally for them. They will probably suit equally well the professional gardeners who aim at the highest quality for their employers' tables, as market growers who go in for quantity and quality, combined with hardy constitutions and great productiveness.

Among the vast numbers of pea trials here, the early varieties at the present time naturally occupy the first place. It should be understood they are grown here upon a very open and exposed piece of ground under much the same circumstances they would experience if grown by a market grower in an open field. If any difference, they do not receive so much attention in their cultivation as the former would, the market gardener's object being to get as early as possible for sale, while the object aimed at by the seed merchant is to test purity of stock and the comparative earliness of one sort with another, all being sown at the same time and on the same ground. How frequently do we see notices in the horticultural press of the earliness and great merit of some particular variety, grown with the greatest care and skill, in some gentleman's or amateur's garden. This is all very well in its way, but it does not prove that this particular kind is any better than many others would be, if grown under the same conditions. Our judgment can only be properly exercised when we see them growing side by side and subjected to the same treatment in the trial ground of some noted seed establishment like the Leicester firm. The trial peas were all sown April 2, and inspected June 20.

The variety that takes the lead here is the "Harrison's Early Eclipse," a blue round selected from Laxton's Harbinger and which it has entirely superseded. It is grown more extensively than any other early pea, both for the metropolitan and provincial markets, and is in special request throughout the Worcestershire gardening districts, the demand for it being very great. It is also a great favourite with the Middlesex and Surrey growers.

The following were all sown on the same day, and on my visit the appearances they presented were as follows, each row representing a sample from the bulk sent in by the different growers:

Early Eclipse.—Eighteen rows (representing a total of over 500 quarters). Considering the small variation in height and appearances, although coming from parcels grown in different counties and on various soils, the firm may be commended on the purity of their stocks; height, 2 to 2¼ feet; well-podded and fit for picking, containing from six to nine peas in each pod.

Harbinger.—One row; Kentish grown; similar to above, but not quite so early or dwarf; 2½ feet.

Earliest of All.—Two rows; few still in bloom; 2 feet; rather uneven in growth.

Alaska.—Five rows; still in bloom; an inferior stock of Eclipse; 2¼ feet.

Kentish Invicta.—Two rows; 2½ feet, in full bloom.

Blue Peter.—Two rows; 12 inches; dark foliage, with fine broad pods; in bloom.

First of All.—Eighteen inches; several days later than Eclipse; not quite out of bloom.

The above are all blue rounds.

Extra Early (Harrison's).—Early white round; 2 feet; nearly as early as Eclipse; a greatly improved Sangster's No. 1; out of bloom; very productive.

First and Best.—Two feet; few days later than Extra Early; white, round.

Lightning.—Two feet; very much like the old Ringleader; slender growth; not a suitable pea for market purposes; this, with the two preceding were out of bloom.

Sangster's No. 1. (*Improved*).—Two feet; strong hardy grower and very prolific, the next best to Extra Early; podding and in bloom.

Improved Early May.—Early white round; seem very similar to the old early May grown thirty years ago; in bloom.

American Wonder.—Four rows; blue wrinkled; 12 inches; podding and in bloom a fortnight later than the Eclipse.

William Hurst.—Four rows; 9 inches; blue wrinkled; deep green foliage; podding and in bloom; a capital variety for forcing in pots, very prolific with fine large pods.

Little Gem.—Two rows, 18 inches; few days later than the two preceding; very even and true samples. R. H. L.

Lilium giganteum has been holding a *levée* in Mr. G. F. Wilson's garden at Wisley, and the sketch of the flowering plants published in the *Daily Graphic* of July 10 suggests that the master of the lilies has effected a crowning triumph in the management of this least-accommodating of all the tribe. The sketch shows at least a dozen giant stems in one clump, each with its terminal cluster of funnel-shaped flowers, a sight to repay anyone for a long day's march.

COWLEY MANOR AND THE SEVEN SPRINGS.

Cowley Manor, as it now appears is one of the many adornments of art that testify to man's appreciation of a beautiful tract of undulating woody country. Many a great town is belted round with noble houses and parks and gardens, because busy men must often be near the scenes of activity. But in the Cotswolds the case is different, for nature gives the irresistible invitation, and a house on the hills more often implies the exercise of choice than compliance with necessity. Cowley Manor is an example of the adaptation of art to its surroundings, as contrasted with instances in which nature is interfered with to suit man's convenience, and the true belongings of the locality are set at nought because void of all special attractions. From the breezy Cotswolds flow many streams, for these hills may be said to be full of water, and as every dip has its rill, so every dale has its brook; and the highest heights can boast of gushing springs that tell to far-off lands of the sparkling fountains of Gloucestershire.

The cotswold is the woody woodland or the forestal forest, the first syllable being the Celtic *coit* for wood, and the second the Saxon *weald*, also for wood; the name therefore expresses in two languages the special character of the district, the soil and the air being alike favourable to the growth of trees, and nature having taken full advantage of her opportunities. The boundaries of the Cotswold are generally reckoned from Broadway to Bath and from Birdlip Hill to Burford, an area of about 300 square miles, or near upon 300,000 acres. The range of hills of which this weald consists is considerably above the level of the sea; the air is bracing, the harvests late; but there are softer climates in the vales, and the range of productions includes more especially, in addition to timber, wheat, barley, fruit, and mutton. The main features of the country have been in great degree modified by man, and many of the picturesque peculiarities that attract us in books have passed away in consequence of the improvements of roads, the intrusion of railways, and the increase of populations accompanied, as a matter of course, by the growth of towns and villages. Shakespeare, in "Richard the Second" (II., 3), speaks of the "high wild hills and rough, uneven ways" that "draw out the miles and make them wearisome," but this is not often felt by the traveller in the present day, except in a few of the more mountainous parts of the district. On the higher wolds corn and woodland give place to pasture, and the Cotswold sheep are as renowned as any, although in the present day the breed is less cared for than in ancient times, for wherever the conditions are favourable, the Southdown sheep obtain the preference as making better meat and more money.

Much of this tract has been enclosed only a century or little more, for up to the close of the seventeenth century much of it was open pasture, and what Tusser speaks of "champion." But in the eighteenth century Lord Bathurst set an example of enclosure on a tract of downs near Cirencester, and towards the end of the century enclosures became general, and with them an improved system of farming that has resulted in an enormous increase in the productiveness of the land, and some amelioration of the climate. The production of beef and mutton on these pastures now reaches a large figure, for at Cirencester Market every spring as many as 20,000 fat sheep are sold. Drayton speaks of the whiteness of the wool, and thus summarizes the general characteristics of the Cotswold sheep and their weight of wool:

> "A body long and large, the buttocks equal broad,
> As fit to undergoe the full and weighty load."

The hills were always renowned for rural sports. It is to the coursing matches that in the "Merry Wives" Slender refers when he asks Page, "How does your fallow greyhound, sir? I have heard say he was outrun on Cotsall;" and Ben Jonson wrote—

> "The Cotswold with the Olympic vies
> In manly games and goodly exercise."

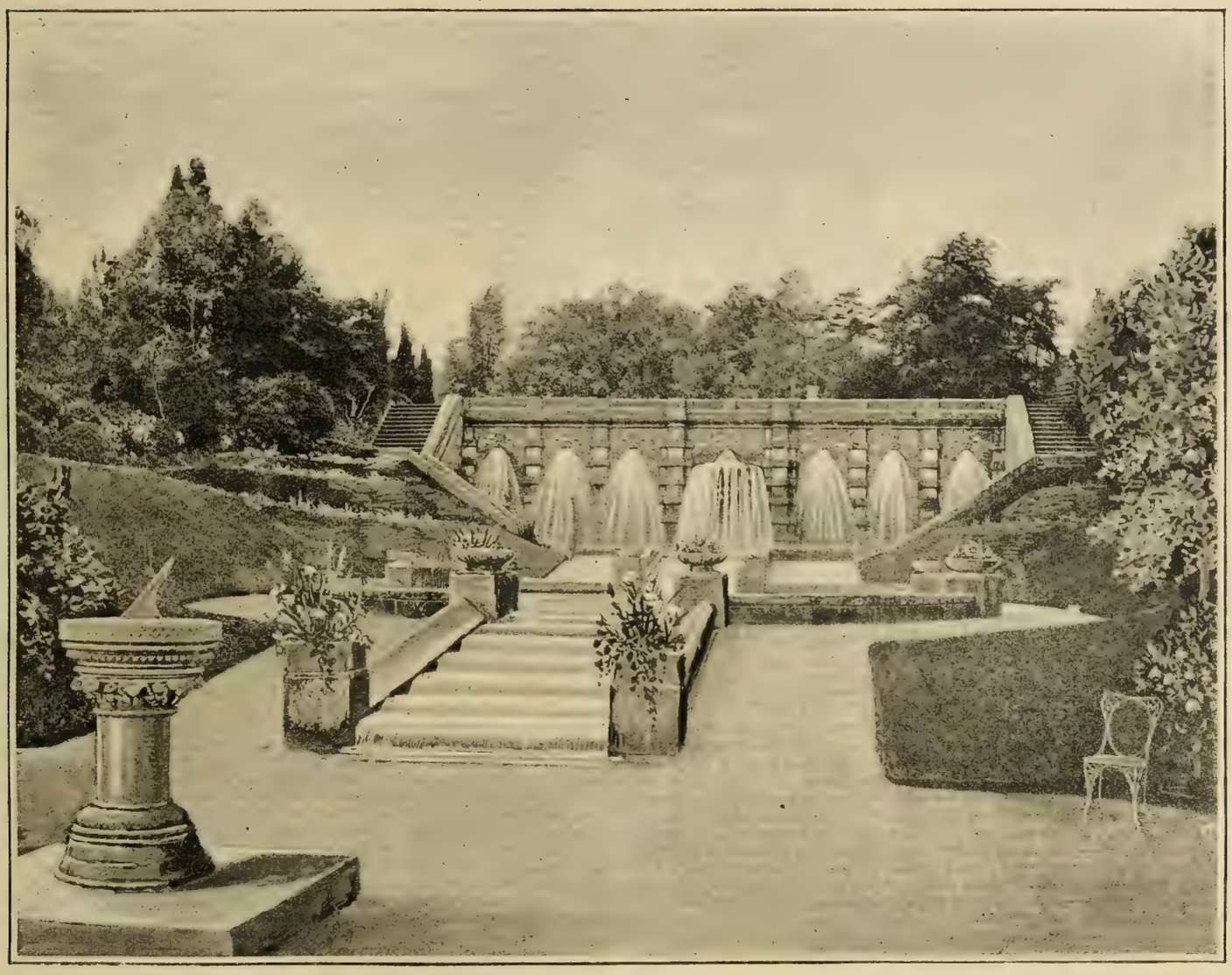


COWLEY MANOR, near Cheltenham, and the first head water of the River Thames. View of the house from the Terrace.

It is only in the more sheltered lower levels that fruit is grown in the Cotswolds. The proper fruit districts are those known as the Vale and the Forest, in which loamy soils occur, alternating with tracts of red sandstone, that produce little else than coppice, but in the lower levels of the Cotswolds, where soil washed from the hills has accumulated, every kind of farm and garden produce may be seen, although the best climates for fruit are not here, but northward towards Evesham and dispersedly in Worcester and Herefordshire. In the forest district and the Vale of Severn much cider is grown, and the people hold firmly to the belief that late flowering and abundant fruiting are inseparably connected. They say—

> "When apple-trees blossom in March,
> For your barrels you need not search;
> When they blossom in April,
> Some of them you may chance to fill;
> But when they blossom in May
> You may drink cider all day."

Amongst the streams that have their origin in these hills there is none more famous than the Thames, and one might indeed say that from a little pool by a green wayside in one of the sweetest nooks of the Cotswolds there issues the most important river in the world, and one of no small consequence even in respect of magnitude. It is not, however, for its size, but for its history and political and commercial relations that the placid Thames is one of the most renowned of all rivers. There are great rivers in which it might be lost a thousand times, but they have not witnessed such changes in human history, nor do they even at this hour carry on their tides the like of the wealth and the social greatness that make a burden for the Thames and one that it bears with dignity in its stately course from the green hills to the open sea. The source of the Thames is one of the simplest bits of nature in the world, but to see it stirs the spirit more deeply than its own waters are stirred, where, in a pool that as regards extent, could be well accommodated in the Guildhall of the City of London, there gushes forth from fissures in the limestone rock, a cold clear spring which appears at seven



COWLEY MANOR, near Cheltenham. The Seven Fountains of the Thames uniting in a cascade below the Terrace, and above the Lake.

distinct openings, as though from separate sources, and from this circumstance takes the name of SEVEN SPRINGS.

There are three reputed sources of the river Thames. One is known as Thames Head. It is in Trewsbury Mead, three miles from Cirencester, but it rarely shows water because a steam pump lifts the spring before it reaches the surface, for the supply of the Severn Canal. Another is at Ullen Farm, near the root of Leckhampton Hill, three miles south of Cheltenham. The third is the one that now more especially claims our attention. It is about a mile distant from the last named, on the road that runs through Charlton Kings, due south from Cheltenham, in the midst of a beautiful country having the parish of Cowley for its nearest point of reference. It is the little pool above referred to, a spot sacred to the deities that preside over such scenes, because the springs are as nature made them and appear in their rude simplicity as fissures in the rock, while overhead the green trees rustle and the sweet birds sing. The few who visit the place are choice spirits guided thither by an inward light, for there are no attractions whatever to gratify a crowd. These springs are by all authorities regarded as having the best right to be regarded as the birth place of the Thames. Mr. James Thorne, in his admirable "Rambles by Rivers" says, "from its situation and the greater quantity of water that constantly flows from it, Seven Springs seems fairly entitled to the name of the 'Very head' of Thames; and it is as lonely, quiet, and overflowing as we could wish the head of Thames to be. The cool clear water flows on, gathering force from other springs and soon forming a little river called the Churn, this name suggesting a stream of a lively character, presently it enters the beautiful property known as Cowley Manor and there expands into a beautiful lake, to be again augmented by another spring as will be seen presently. From the lake with its emerald shores and swans and sylvan surroundings it tumbles over a weir with merry sound to pursue its way as the Churn, and in due time it reaches a more level country and becomes the Isis, and eventually is known as the Thames. But it is one and the same river from first to last. The "Churn" is an ancient local name; the "Isis" is a classical invention of the scholars and is not a proper name at all, having no sanction from either history or tradition. It follows that when we are at Seven Springs we witness the birth of the stream that made London, and that opens a watery way from the heart of England to the wide wide world. Please observe over the pool, about which enough has perhaps been said, this inscription:

Hic Tuus
O Tamesine Pater
Septemgeminus Fons.

Now we turn to Cowley Manor, with its expansion of the "Churn" making a grand water scene, and a spring of its own which formerly earned its living by turning a mill. The mill has been suppressed, and in its place is an engine for lifting water to supply the mansion on the higher land overlooking the sparkling waters. This spring now wells up into a circular pool on one side shaded by trees, and the waters nourish a bed of vegetation of the most intense metallic green colour, comprising confervoids and water mosses of a perfectly sublime character. Here the two British species of Fontinalis will be found in a fine state of development.

The flow from this romantic spring is conducted into a stone basin on the terrace, and forms a fine architectural adornment. When the head of water is sufficient it is allowed to flow through seven orifices in the retaining wall of the basin, and thence forms a cascade which flows on to feed the lake, and thus we have the SEVEN SPRINGS finely developed in ornate architecture, form-

ing a beautiful spectacle at all times, but particularly attractive in full summer sunshine when the world is richly green around, or when sparkling with frost and all the stonework fretted with lace-work in crystals, and wherever the winter wind blows the spray making wonders that none could describe or paint or imagine, and so it would be sheer nonsense now to adopt the hackneyed phrase, "more easily imagined than described." Each of these seven founts is fashioned as a grotesque human head adorned with the horns of Cotswold rams, and the open mouth is the orifice through which the water passes. These are the Seven Fountains of the Thames. The scheme is complete, superbly appropriate, and forms a fitting centre to a noble property. The lake that in one sense is an expansion of the Churn is truly, as the geography will prove, the first head-water of the river Thames.

Cowley Manor, the residence of W. B. Bingham, Esq., is richly wooded, and commands a variety of scenery over its own farms as well as towards the thinly turfed hills that gather the water for its adornment. The mansion is stately and of quite English expression, a fact enhanced by the proximity of the parish church, the tower of which, in some views, combines with it as apparently a part of the structure. There is a public road through, but for any kind of exploration permission would be required, as the church and the road do not invalidate private rights and reserves. The grounds have been enlarged and added to at various dates, and have a kind of miscellaneous character, everywhere pleasing, but in the vicinity of the water alone commanding any special admiration. That, however, is enough, for the water scenes arouse sentiment, and with such help every feature becomes poetical.

Amongst many appropriate accessories mention should be made of an agreeable rootery formed in a series of rustic grottoes with arches of bark and banks of ferns and ivies, and such other vegetation as the nymphs and dryads that hold revel here may properly delight in. Mr. Clapham constructed some of these grottoes; others have been fashioned by the skill of the place, and all are beautiful, and as befits the spot, are heavily shaded with green trees, such as "a cooling covert make 'gainst the hot season," which alas! in this green isle does not often come. The conservatory attached to the mansion was fitted with rock work by Messrs. Pulham, but is too small to serve as illustration of their capacity in such work. Live stock from pedigree horses and horned cattle to singing birds and curious quadrupeds divide attention with horticulture here, and at some points take precedence in the likings of the family, and the economy of the home garden, no less than of the outlying lands. Peacocks so abound that the gardeners have to resort to strange devices to exclude them from the flower beds.

Coniferous trees do not thrive here, nor any trees that need a kind climate. There are some thrifty Wellingtonias of close columnar growth; a fine Pinus excelsa, and yews appear perfectly happy. In the last week of May, in a general look round we noticed a grand example of Ilex aquifolium Scotica, a twisted-leaved holly; the tree is of the male persuasion and bears no berries, but at the time of our visit was crowded with male flowers. The fragrance was worthy of the beauty. We have not seen the free-flowering Laurifolia in a better state than this specimen of the usually shy flowering Scotica. The kitchen garden and the glass department are ample in extent, and in capital keeping by Mr. C. Tolley, the able head gardener here. Ripe peaches and nectarines were plentiful in the month of May; a house of early grapes had been consumed, and the vines were finishing for a rest, while other houses containing only the very best varieties, were coming on in succession to maintain the supplies to the latest date; and all were in perfect health and fruitfulness. On every hand are interesting objects, but one only shall now be mentioned. It is an extra fine plant of Stephanotis in a warm house. It furnishes twenty-four wires, some of the growths extending the full length of the house, and was so rich in reward for care bestowed upon it that it may be safely averred that it showed more flowers than leaves.

GARDEN STRAWBERRIES.

By Mr. J. Wright.

Read at Conference of British Fruit Growers' Association, June 27, 1890.

"Doubtless God could have made a better berry than the strawberry, but doubtless God never did." Thus wrote a quaint old doctor many years ago. He loved strawberries when there were no such varieties as we have now, and it may be fairly assumed if he could be with us to-day he would be in the seventh heaven of delight. He has a large heritage of lovers of the luscious berries, and though all the millions of strawberry eaters cannot be expected to agree that it is the best of all fruits, yet no other that grows and ripens in our gardens is so popular during its period of use in June and July. It is without a doubt the prince of hardy dessert fruits of early summer, and may be grown in every garden in the land, large or small, in town or country, that is capable of producing good crops of peas and potatos. The strawberry is, indeed, a better town plant than either of the familiar kinds just mentioned, at least the varieties with broad, glossy, recurving leaves are, such as Keen's Seedling, but those with woolly or downy foliage, and more or less cupped for catching the smuts, are best in the pure air of the country. The strawberry, then, is a good town and suburban garden fruit, and might be grown in hundreds of small enclosures from which it is now absent; and I am not aware that so much that is good can be obtained in an equally limited space as from a well-grown and heavily fruited plant of the strawberry. As I should like the greatest possible number of persons who have the necessary means to have a few strawberries of their own growing, I direct attention to the adaptability of the plant to the smallest gardens in which fruit of any kind can be cultivated.

The strawberry is naturally and essentially a midsummer fruit, and in the great majority of gardens the crops are over all too soon. By special effort and adequate means strawberries can be had during every month in the year, but I am not one of those who think an all-the-year-round supply of any kind of fruit generally desirable. The appetite does not grow with what it feeds upon when it feeds continually on the same kind of fruit. It is the periodical breaks in the supply, and the change consequent thereupon, that give zest and enjoyment of that which is produced at the different periods of the year. Forced strawberries can be had in February, March, April, and May, then comes the great natural feast in June and July. Alpines can be had in August and September, and in the last-named month second crops may be produced from early forced plants, duly cared for and planted out. These continue in October. Others of the forced plants, but later, can be made to bear second crops in pots in November, December, January, and I have seen them in February. Thus is the strawberry chain linked round the year. But some of the links are very weak, and cost a great deal more than they are worth in producing. British gardeners, however, like to accomplish feats of skill, and the endeavour is most worthy. Give them the means, and I believe we have men in our ranks who can achieve anything that is possible in the art of cultivation.

It is not my intention to dwell on the manner in which exceptional "feats" are performed under exceptional circumstances by exceptional men, for only a few can dance on the gardening tight rope creditably, and the great majority can spend their time more usefully in other ways. I prefer, then, to dwell on the more useful aspects of strawberry growing, with the object of eliciting information relative to the best methods of providing the best supply of fruit over the longest period in a natural way; or, in other words, we will try, if you please, to keep in view the requirements of the many rather than the fancies of the few in the production of a satisfactory supply of this much coveted and delicious fruit.

The great desire of the majority of gardeners and owners of gardens is to have a plentiful supply daily of fine well-flavoured fruit from the earliest possible date to the latest in the strawberry season. In endeavouring to attain this object four questions arise for consideration—namely, 1, choice of varieties; 2, sites for the plantations; 3, soil and its preparation; 4, methods of cultivation.

Early Strawberries.

More than thirty years ago I gathered peas sown and grown in the open 150 miles north of London on the 25th of May. Since then at the least a dozen varieties have been introduced as a week earlier than their predecessors. If they had maintained their precocity we should have a gain of about three months in earliness. But they did not. It is a question if more than a week has been gained in time during that period, but there has been a good gain in size and quality. How stands the case with strawberries? I am inclined to think it is much the same. Have we gained more than a week in earliness by new varieties during the same period of time? If we have gained a week it is a good advance. I doubt if we have gained more, except perhaps with one variety. In those far past days I gathered ripe fruit of Black Prince on the 2nd day of June. Has anyone here gathered outdoor strawberries a week before that date, and if so, where, and what variety? But we have gained distinctly in both size and quality, and Black Prince is practically obsolete. We have made good progress therefore, and now the question that the great scattered community of strawberry growers want answering is this, Which are the best, most reliable, and distinctly early strawberries? Can the collective wisdom of this assembly answer that question.

If I were compelled to limit myself to one early strawberry I should not hesitate to choose Laxton's Noble. Some person may possibly object because it is not of the highest quality. It is good enough for me to begin with, and it is good enough for a noble lord who likes strawberries; but he likes money too, and his gardener is expected to make as much as he can by selling the best produce, supplying the house with "seconds." Several lords do this sort of thing nowadays. It seems fashionable. In the garden of the most noble in question was a bed of the Noble strawberry this year. The fruit was splendid, and the gardener thought he was going to make a little fortune by it, for he, very properly, has "commission" you know. But his lord and master showed that he liked fine strawberries better than money, for he would not have a pound of them sold, or it would have brought him 2s. It was of no use telling him the fruit was only of second quality. It was the first and the finest, and as there was none for comparison it was the best at the time, and as I have said good enough to begin with, and as the richer sorts followed they would be enjoyed the more. I place Noble, then, first on my list as the most useful early strawberry, and reliable in being such a good grower and bearer, even when the plants are small and the soil not rich. Noble was raised from Forman's Excelsior, and I saw fruits of it in 1886 that measured upwards of seven inches in circumference round the shoulders.

Totally different in character is the next to be named; indeed, it is of a different race, and so far as I know it is the earliest strawberry in cultivation in this country. It is an American introduction, and has been mentioned in the Press as the Crescent and Crescent Seedling; but Mr. Rivers, I believe, though I have not asked him, received it under the name of Crescent City. An award of merit was recommended for some berries of it from Messrs. Paul and Son, Cheshunt, by the Fruit Committee at the last meeting of the Royal Horticultural Society. The fruit is small, but not trashy. It is very bright and of good quality. It may be described as an enlarged form of the Grove End Scarlet, and the best descendant of the old Scarlet Virginian strawberry that has found its way to our gardens. It is a free grower at Chiswick, and produces fruit bountifully in large clusters or panicles. Mr. Barron mentions as a peculiarity of this strawberry, which may be regarded as a merit, that the fruits hang on the plant after they are ripe longer than those of any other variety. It is essentially a garden strawberry, and not likely to be a profitable market variety. The correct name of it is, I suspect, Crescent Seedling. It has been grown under that name in America for some years, and was raised by Mr. Parmalee, of New Haven, Connecticut. This is what an American author and fruit grower, Mr. Roe, said about it in 1880: "It is a very distinct and remarkable variety, and I think will fill an important place in strawberry culture. In productiveness on many soils it will exceed any variety with which I am acquainted. The young plants are small and the foliage is slender and delicate, but they have the power to live and multiply beyond that of any other variety I have seen. It thrives under the sun of Georgia, and cares naught for the cold of Canada; it practically extends the domain of the strawberry over the continent, and renders the laziest man in the land who has no strawberries without excuse." Please to remember that is what an American says, not what I say, and he figures a fruit 1½ in. in diameter. The variety is sure to be tried in many gardens in this country, but how it will answer time only can tell. What we know is that it is the earliest of all in the Chiswick collection.

The best in quality probably of all early strawberries is Laxton's King of the Earlies, and in soil that suits it the plants grow and bear well. The fruits are small to medium size, or in other words, small in poor soil, medium-sized in good soil. It is useless for light and impoverished soil, as the plants will not grow. It may, perhaps, be described as one of the worst varieties for bad strawberry soil, as Noble is one of the best. They practically ripen at the same time, and nearly a week after Crescent Seedling.

One other distinctly early strawberry may be named—Pauline, but it is exceedingly capricious. In one garden I find large fruits of it ripe with King of the Earlies; in another they are small and unshapely. It is a variety to be tried experimentally, and where it succeeds it will probably be increased, for in the best form the fruit is good in size and quality.

On warm sandy soils and sheltered positions Marguerite ripens early and produces magnificent fruit, but is not to be relied on in cold soils and districts. I may refer to it again.

Late Strawberries.

We will now pass to the late strawberries, and if the best of these can be determined by experienced cultivators their verdict will be acceptable to the less experienced, who desire to extend the strawberry season, but are in doubt as to which varieties to plant. Bear in mind that profit is not the object, but pleasure—the pleasure of gathering good dishes of fine strawberries when the crops have been over a fortnight in a neighbour's garden. I think I never saw a clergyman so pleased as when in this position, and it was not a selfish pleasure, for he gave most of his fruit to his friends, the sick poor having the first claim to his produce. The variety was Eleanor (sometimes, I believe, called Oxonian). It is the largest late strawberry I have grown, though I am not sure it is the best and most useful, when handsome fruits of Elton Pine are remembered at the same time, and perhaps a little later.

Frogmore Late Pine lingers long in the beds, but, like Pauline, the variety seems to have peculiar preferences, and in some gardens is of little or no value.

Waterloo is a strawberry to plant for succeeding the midseason sorts. It is not the latest, but the largest and darkest, and the only late strawberry I know that is wanted before it is ready. This is the Chiswick experience, and those who "take" the fruit from there anxiously wait for the great crimson-purple berries of Waterloo, and wonder they are so long in coming. As pointing to a well marked distinction between early and late strawberries, it may be stated that when the crop of Crescent Seedling was ripe this year at Chiswick the plants of Waterloo were expanding their flowers.

Loxford Hall Seedling is one of the latest, and where it succeeds one of the best. I have seen it succeed admirably, but am bound to add that I have also seen it fail disastrously.

Trial rows of strawberries form an interesting feature in gardens, and cost little; while if a few varieties fail the knowledge gained affords abundant compensation. I know of no other method of determining the varieties which will give individual cultivators such complete and permanent satisfaction.

The varieties suggested for trial for affording the earliest and latest supplies then stand thus :—

Early.	Late.
Noble.	Elton Pine.
Crescent Seedling.	Eleanor.
King of the Earlies.	Waterloo.
Pauline.	Frogmore Late Pine.
Marguerite.	Loxford Hall Seedling.

If I were limited to six out of the ten varieties named I should take the first three in each case; but should like them all to be tried in gardens in which they have not hitherto been grown. The best early and late sorts settled, a good and varied midseason supply is easily produced.

Midseason Strawberries.

Some years ago, an election of strawberries was conducted by the late Rev. C. P. Peach. Several growers in various parts of the country voted for what they considered the best varieties. The returns showed that Sir Joseph Paxton headed the poll, but with President almost an equal first. If a poll were taken now I suspect they would maintain their positions. They are two of the most useful in cultivation. Then we have the thoroughly serviceable, hardy, and free Vicomtesse Hericart de Thury. Sir Charles Napier is a standard variety at Chiswick—perhaps the most serviceable there of the midseason sorts, but it fails in some cold soils and districts. Countess, one of Dr. Roden's varieties, is a thoroughly good strawberry, growing well, and bearing excellent fruit in abundance. Lucas is a large handsome fruit, and the plant is vigorous and prolific. The good old Keens' Seedling is still worthy of a place in limited collections. British Queen must be grown where it will thrive, and where it will not Dr. Hogg should be tried; where both grow and bear both should be cultivated. James Veitch usually bears bountiful crops of large fruit, and is a favourite in many gardens. La Grosse Sucrée is decidedly useful, and Hammonia is perhaps not so much grown as its merits deserve as a large, solid, good-flavoured variety, and not the less useful in being rather late. A dozen midseason strawberries are named from well proved varieties, and I leave others to supplement the list. If I were to choose six from the twelve for linking the earlier with the later they would be the first six in the following list :—

1. Sir Joseph Paxton.
2. President.
3. Countess.
4. Dr. Hogg.
5. James Veitch.
6. Hammonia.
7. Vicomtesse Hericart de Thury.
8. Sir Charles Napier.
9. La Grosse Sucrée.
10. Keens' Seedling.
11. Lucas.
12. British Queen.

They are not placed in the order of merit, but the two last in each six are placed there because they connect the midseason with the late varieties. Dr. Hogg is placed in the first six because it succeeds in many gardens where British Queen fails. Vicomtesse Hericart de Thury is rather small, but if a cottager were to confine himself to just one variety, this would, perhaps, be the most serviceable. Twenty-two varieties are named, five early, twelve midseason, five late. Reducing them to selections of twelve and ten for succession they stand thus :—

First Twelve.	Second Ten.
1. Noble.	1. Pauline.
2. Crescent Seedling.	2. Marguerite.
3. King of the Earlies.	3. Vicomtesse Hericart de Thury.
4. Sir Joseph Paxton.	4. Sir C. Napier.
5. President.	5. La Grosse Sucrée.
6. Countess.	6. Keens' Seedling.
7. Dr. Hogg.	7. Lucas.
8. James Veitch.	8. British Queen.
9. Hammonia.	9. Frogmore Late Pine.
10. Elton Pine.	10. Loxford Hall Seedling.
11. Eleanor.	
12. Waterloo.	

They are not exactly arranged in the order of ripening, but endeavour has been made to place in the first twelve those which combine the essential qualities of earliness and lateness with good size, quality, and productiveness in the majority of gardens, though there are a few sorts in the second ten that may excel in some. Still further reducing, we have two good half-dozens for succession in the following :—

First Six.	Second Six.
1. Noble.	1. King of the Earlies.
2. Sir Joseph Paxton.	2. Vicomtesse Hericart de Thury.
3. President.	3. Keens' Seedling.
4. Dr. Hogg.	4. Sir C. Napier.
5. Waterloo.	5. British Queen.
6. Elton Pine.	6. Eleanor.

If I were asked to nominate the three most useful varieties for small gardens, they would be Noble, Sir Joseph Paxton, and Vicomtesse Hericart de Thury.

It is open to cultivators to make better selections than the above, and I shall be very glad if they will do so.

I should like to know something about Dr. Livingstone strawberry. A grower of it in Scotland states he has had "basketfuls of equal sized fruits of it eight and ten to a pound." I presume he does not mean eighteen. He further says, "No strawberry will grow under trees as well as this does," and from rich new soil he "pulled 4 lbs. of fruit from each yearling plant." He has also recorded that he has had fruits of Coxcombs 4 oz. and 1 grain each. This is strawberry-growing extraordinary, and I, for one, have still something to learn.

Of Laxton's Latest of All, A. F. Barron, Auguste Nicaise, Duchess of Edinburgh, Crown Prince, Souvenir de Kieff, Oscar, and Princess Frederick William something may perhaps be said by gardeners who have grown them. Of the first-named especially it would be interesting to know if it justifies its name. Mr. Gibson, of Draycot, finds Princess Frederick William one of his best earlies, ripening in May, and this and the Vicomtesse are perhaps the best for yielding second crops in the autumn from plants that have been forced in spring. I have more than once found Newton Seedling my sheet-anchor during a wet strawberry season in the fruits having remained firm when most others were rotting on the ground.

I must say a word on behalf of the very distinct, richly flavoured, and much-neglected Hautbois strawberry. Years ago it was grown in most well-furnished gardens, and enjoyed by their owners. It is now almost as scarce as the delightful Frontignan grapes. There is a variety of the Hautbois at Chiswick, more prolific than any I have seen, and richer than any other strawberry in the garden. Mr. Laxton should cross it with Noble, combine the virtues of both, and give the world a treat.

In some of the "best families" the Grove End Scarlet or Roseberry have to be specially grown for preserving. They are planted about nine inches apart in beds, and grow into a mass. They are forms of the Virginian strawberry. The last-named was raised near Aberdeen—a chance seedling that came up under a rose bush—hence the combination of rose and berry—Roseberry. For that little "tip" I am indebted to my friend Mr. Barron.

Passing to sites for plantations of strawberries, we arrive at an important practical matter in connection with a prolonged supply of fruit. This cannot be in the best manner secured without choosing the warmest positions, such as south borders (for some at least of the first early sorts), and north borders, or the coolest available positions, for the latest varieties. I have found this method of appropriation of the greatest possible advantage, and have practically doubled the length of the strawberry season over what it was and must be when only midseason varieties are grown in an open position, or in the same quarter of ground. Yet this is still the practice in many gardens. I have recently seen a good example of the method advocated. On a south border Noble was first gathered on the 3rd of this month, and the beds cleared and the runners layered on the 23rd. In the same garden later varieties, but not the latest, are now (June 27th) flowering on the cool north border. If all had been grown in the middle of the garden, the ripening of the early variety would have been retarded and the later advanced, thus shortening the season by at least a fortnight. For a steady family supply of fruit, surely adapting varieties to sites on the principle suggested is the better way.

Soil and its preparation can only be briefly referred to. Strong soil is considered by many persons to be an absolute necessity for the production of good crops of strawberries. That is perhaps the popular view, but it is a popular fallacy. It does not matter how light the land may be, provided uniform moisture is maintained in it, and it also contains the manurial constituents that strawberries need, for the best of crops and the finest of fruits will then be produced. Potash is the chief mineral food of the strawberry, constituting nearly half the bulk. So it is of peas, and if the soil is made capable of producing first-rate crops of peas it will grow first-rate crops of strawberries, only these require more moisture. If strong soils shrink and crack, out goes the earth moisture, and down go the leaves of the plants; then all is over. Cracking rarely occurs in light soil, and if it is deep it can be kept moist by heavy mulchings applied either in the autumn or very early spring. This work is often done too late. I do not say that strawberries cannot be grown in strong soil, for they can. I have had to grow them in soil strong enough for brick-making, but did not like it half so well as a much lighter free-working medium. Make light soil firm, keep it moist and charged with fertility, and though strawberry plants will not grow luxuriantly they will bear fine fruit abundantly. If anyone doubts this let him go and see Mr. Sharpe's culture near Virginia Water. His field is a bed of sand—nothing but sand, and if not covered would blow away under strong wind in dry weather. I have travelled far, and visited gardens in most counties, but nowhere have I seen the equal of Mr. Sharpe's crops of Marguerite, and the splendid fruits have taken first prizes at scores of shows. I am positive I have seen two to three pounds piled up round a plant, the trusses reaching quite beyond the small hard-looking leaves. No manure is used. When it was applied it increased the growth of leaves at the expense of the fruit, and as fruit-growing paid Mr. Sharpe better than leaf-growing he ceased manuring his strawberry ground. What is the secret of the remarkable success? Moisture—regular, constant, uniform moisture. Water is not far below the surface, two or three feet perhaps, and rises to the roots in the form of vapour under the influence of the sun. If you move the dusty surface you find the moisture. It reminds of the sandy fields in Holland in which bulbs are grown, where the Dutchmen level down the elevations to bring the surface nearer to the water below. The sandy strawberry ground has no doubt been a sea beach at some remote age, and there may have been considerable marine deposits. Be that as it may, there are grown every year some of the finest and most valuable crops of strawberries in some of the lightest sandy soil in Britain, if soil it can be called. I have not said much about soil preparation. Heavy land must be made friable, and light land nearly let alone for strawberries. Digging this, especially in dry weather in spring, is worse than labour wasted, and all the manure that it needs after the plants are established should be applied on the surface.

I have yet to say a little, and it can only be a little, on methods of cultivation. I am a strong believer in what I call the annual system, though it is strictly biennial, of growing strawberries, especially the earliest crops, on south borders. Subject to certain reservations for any special purpose, let the border be practically devoted to three crops—and no three are more important—early potatos, strawberries, and peas, but chiefly the two former. After the potatos are cleared off level the soil, but if of a light nature do not dig it. If dry scoop out some hollows and fill them with liquid manure, more than once if needed. Have ready sturdy young strawberry plants with bushy fibrous roots, which plant carefully and well 15 to 18 inches apart, water them and mulch. By the autumn they will produce hard nut-like crowns, and in the spring earlier and finer fruit will be produced than from old plants. Immediately the crop is gathered clear away most of the mulching, spread a couple of inches of free soil containing much vegetable refuse, leaf-mould, and wood ashes between the rows; press down the runners in it with flat stones, and by the end of July you will have the best of young strawberries for planting, and when they are inserted dig the parents up at once and crop the ground, if you like, with winter spinach. In this way a stock of vigorous early strawberry plants is maintained, very different from those from enfeebled parents. I have planted in the open early in August for two years fruiting, placing them together in triangles 2½ feet from row to row and a little closer in the lines, and the following season gathered 2 lbs. of fruit from each clump, but 1 lb. is nearer the average, and not a bad crop in the time. Hundreds of persons may do the same without difficulty when they once get in the way of it and have rather light and fertile soil.

For preventing the deterioration of some strawberries in some gardens it is absolutely necessary to procure plants occasionally from vigorous stocks. In no other way could I grow the British Queen in one particular garden. Plants propagated from the home stock became weaker yearly, and so it is with others if long grown in certain soils and positions that are not naturally adapted for producing well-constitutioned plants.

In reference to the durability or profitable period of fruitfulness of strawberries, that is a question of soil mainly. Some soils will sustain the plants for several years, others will not. Generally speaking, perhaps, the second year's crop is the best in the majority of light soils; the third year's in soils of a more holding nature. By thinning the crowns and surface manuring, profitable crops have been afforded for seven years, and I have seen a productive strawberry bed fifteen years old; but this is exceptional, and as a rule stout early young plants that mature quickly are the most satisfactory in gardens, and a suitable number for increasing the fullest supply of the finest fruit should be planted every year, a corresponding number that have yielded their maximum crop being chopped up immediately after fruiting.

Another practical point to bear in mind is this, a greater breadth both of the very early and very late varieties should be planted than is customary. Owners of gardens usually wish for more strawberries than they get when the first fruits commence ripening, and gardeners cannot produce as many dishes of strawberries late in the season as are wanted, unless they plant suitable sorts freely, for the crops of very late strawberries are not nearly so heavy as those of midseason varieties. But I must stop.

I began with the remark of an old doctor, and will conclude with the observation of another, pertaining to the use of strawberries, and the good effect they had on an eminent man, whose name is familiar to gardeners throughout the world. It was the custom of a physician to terminate his spring course of lectures by a strawberry festival. "I must let the class see," he said, "that we are practical as well as theoretical. Linnæus cured his gout and protracted his life by eating strawberries."

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Hardy Plants in bloom comprise:—Carnations, Coronilla varia; Larkspurs, Delphinium alopecurioides, D. Madame Rougier; Gentiana asclepiadea; Lupinus polyphyllus; Liliums; Pansies; Picotees; Herbaceous Phloxes; Veronica corymbosa, V. amethystina.

THE HOUSE.

The flower garden being now brilliant with colour the plants most suitable for the decoration of indoor apartments are those with ornamental leaves and ferns. Amongst the plants with massive leafage, the Indian rubber plant is simply invaluable, as it is at once most easily grown and remarkably effective. One of the most useful of the variagated leaved plants for the window is Aspidistra lurida variegata, which is quite hardy and may be grown in a room for an indefinite period, as, unlike many other subjects, it increases in size very slowly and may be readily kept within bounds by dividing it when it is becoming too large. Of those with green leafage, exclusive of the palms, special mention must be made of the well-known Acacia lophantha, which is readily raised from seed and can be kept in excellent health in positions where it has but little light, and it is exceedingly elegant. Some of the palms are of special value, the most generally useful being Chamærops humilis, Corypha australis, and Rhapis flabelliformis, amongst those with fan-like leaves, and Kentia australis, K. Balmoreana, Areca lutescens, Phœnix rupicola, and Seaforthia elegans, of those with plumy foliage. These are mentioned because of their being comparatively hardy in constitution and well able to withstand without material injury the adverse influences to which plant life is subjected indoors. Green-leaved and variegated Dracænas form a splendid group from which to select for indoor decorations, and as all are suitable it is not necessary to make a selection. The hardiest perhaps is D. congesta, a bold and elegant species with dark green leaves.

CONSERVATORY AND GREENHOUSE.

Conservatory will now need a revision and a general change of occupants. Liliums and tuberous begonias will now come in and make a fine show with first-class annuals and fuchsias. Specimen trees and climbers to be stopped and trained in to assist ripening of the wood.

Herbaceous Calceolarias.—Sow the seed of these without loss of time, if not already done, using light rich soil. Place the pans in a cold frame and keep shaded.

Saving Seed.—Many choice plants are now ripening their seeds, and whatever is required must be secured in time. Generally it is safest to gather the seed before it is dead ripe, as in many cases the pods open and the seed is scattered and lost. Cut off the flowers with a portion of the stem attached, and spread them on cloths, under cover, to dry for a day or two, and then put them in the full sun to harden. A shelf in a greenhouse is the best place, because there is less fear of their being scattered by wind. Label all seeds when gathered to prevent mistakes.

FORCING AND FRUIT HOUSES.

Melons need a brisk bottom heat to ripen the fruit, and to be kept rather dry. Those swelling fruit to be encouraged with a lining and a moderate amount of atmospheric moisture. Keep the vines regularly trained, so that the leaves are exposed to light, as wherever they are crowded the fruit will be found to damp off.

Peaches ripening off to be kept as cool as possible; hot sunshine and close air will spoil the flavour and cause the fruit to fall. Where the supply is larger than can be used directly the fruit may be kept hanging longer by shading it with leaves; a few boughs of privet or fir hung up so as to screen off the sun from the branches on which the fruit hangs, and free ventilation day and night, will retard the final ripening and prolong the season of supply. Trees from which the whole crop has been gathered to be liberally watered and syringed, to keep the foliage fresh till it has done its work.

Pines to be encouraged with a brisk temperature and plenty of moisture. Those swelling fruit to have the help of a humid atmosphere by watering the paths and the surface of the tan, &c., amongst the plants till the fruit begins to change colour, then keep the atmosphere rather dry. Young stocks to have air cautiously; the suckers rising from old stools to be earthed up, and have a brisk heat and plenty of water.

Vines.—Late grapes require artificial heat to ripen them properly, for if the ripening is long about the berries will have thick tough skins, and will not keep well. Keep the houses dry where grapes are hanging, and those from which the crop has been gathered take off the lights.

FLOWER GARDEN AND PLEASURE GROUNDS.

Bedding Plants.—Begin at once to make up lists of sorts likely to be required next year in order to have time to propagate. Put in zonal pelargonium cuttings in plenty; an open border suffices for them, but keep them regularly watered until they begin to make roots.

Roses may now be struck in any quantity to secure fine plants on their own roots. Make up a few frames, if with gentle bottom heat all the better, but that is not indispensable. There must be six inches of light rich soil in which to dibble the cuttings. Choose short half-ripe shoots for the purpose, and keep them shaded and frequently sprinkled.

FRUIT GARDEN AND ORCHARD.

Strawberries to be potted as soon as rooted, as they make roots faster in pots than in the open ground; and should we have a chilly autumn a few of the best of the plants can be kept under glass to ripen their crowns. Lay a few more of the best runners in pots, cut away all weak runners, and supply water liberally to runners and old stools.

KITCHEN GARDEN AND FRAME GROUND.

Celery.—Early planted out crops may now be earthed up, but do this when the plants are quite dry.

Cauliflowers and Broccolis can be got out now on ground cleared of peas and beans. Trench deep, and mix the manure with the soil, so that it is evenly distributed throughout the mass.

Endive to be sown again, and strong plants in early seed beds to be planted out.

Onions lifted may in a few days be taken up and laid in the sun to dry. If the weather is wet spread them in a shed or on some dry mats in spare frames. In some country places they finish off the onions for storing by placing them in a baker's oven after the bread is drawn. This is a very good plan, and a pretty certain remedy for bull-necks and a green soft condition.

Shallots should be taken up as soon as the bulbs are ripe; if left in the ground they will be injured by the autumnal rains. This remark applies especially to damp and low-lying soils.

Spinach.—Make ready a sufficient number of beds for the winter crop as soon as possible, in order to be ready to sow early in August. The soil should be rich, and the position chosen if possible should lie high and dry.

VILLA FARM.

On the chalk, and calcareous soils generally, sainfoin is one of the most valuable fodder crops, as it will produce a large amount of fodder, even on soils so light and thin that hardly any other crop will make a satisfactory growth. It is, moreover, remarkably nutritious, both in a green state and when converted into hay. It may be cultivated with success on all soils containing lime, but it is quite unsuited to clays, and its cultivation on them ought not to be attempted. There are two kinds, one of which is known as the common and the other as the giant, and the first-mentioned is the best when the land is intended to be devoted some years to its cultivation, but for two or three years' lay the giant form is preferable, because of the larger yield obtained. In the preparation of the land for sainfoin great care should be taken to clear it of weeds, and this cannot be too strictly attended to. The usual practice is to sow down the sainfoin with the barley after turnips; but in so doing it is necessary to be very particular as to the hay fed with the turnips, as seeds of the hay, if too ripe when cut, as well as those of weeds, will germinate and render a large amount of additional labour necessary. The yield of the crop mainly depends on the condition in which it is sustained. If mown and carried off year by year, as is too commonly the case, the plant soon becomes weaker, the indigenous plants increase and rapidly displace the others, and the land becomes a mass of weeds. If, however, it be kept regularly pastured down or mown for hay, and fed upon afterwards with corn or cake, the condition of the land will be kept up and the plant maintain a vigorous growth. It is important to avoid feeding for the first year's growth, because of the risk of the root action being checked before the crop has become thoroughly established. In order to protect the crop as much at possible from the natural grasses, harrow the young plant in early spring, thus displacing the shallow-rooted weeds, and then add manure to encourage the growth of sainfoin.

Bulb Crops in Holland are now being harvested, and the various reports agree in describing the bulbs of hyacinths, tulips, crocuses, and narcissi as considerably above the average, both in size and solidity.

Exhibitions and Meetings.

TUNBRIDGE WELLS FLOWER SHOW, July 9.

Excepting in the matter of weather, which was decidedly unfavourable, the exhibition held by the Tunbridge Wells Horticultural Society on the above date was a great success, surpassing in its chief features the flower shows held in the town for several years past. Four spacious marquees were required for the accommodation of the collections in competition for the prizes, and plants, flowers, fruits, and vegetables were all well represented.

Stove and Greenhouse Plants in bloom have long formed an important feature of the Tunbridge Wells shows, and it was satisfactory to find that they were presented in larger numbers and in finer condition than at the past two or three exhibitions. Very attractive were the admirably flowered specimens of Allamanda Hendersoni, and its near relative, A. nobilis, Phænocoma prolifera, Statice profusa, Bougainvillea glabra, Ixora coccinea, I. Williamsi, Dipladenia Brearleyana, D. amabilis, and various heaths. The open class for eight was well filled, and at the head of the competitors was Mr. T. Portnell, gardener to Sir A. Ashburnham, who had a collection that did much credit to his cultural skill; Mr. A. Offer, gardener to J. Warren, Esq., Handcross Park, Crawley, was second with well-developed specimens; and Mr. S. Pope, gardener to J. Barrow, Esq., Langton, was third. The exhibitor last-named obtained premier honours in the open class for four, Mr. Offer was again second, and Mr. Portnell was third. There were two classes—one for six and the other for four—in which the competition was limited to subscribers residing within a radius of six miles, and in both the first place was occupied by Mr. S. Pope, who thus well maintained the high position he has long occupied as a cultivator of hardwooded plants; Mr. Offer was second with six.

Ornamental-leaved Plants were numerous, and, generally speaking, represented cultural skill of the highest class. Mr. Offer was especially successful in the classes for these plants, as proved by the fact of his having taken a first in the open class for eight and in that for six in which the competition was limited to cultivators within the six-mile radius. Mr. Pope was second in each class. Cycads, crotons, and palms predominated in the several collections, the crotons being mostly richly coloured, and the palms and cycads remarkable for their freshness. Table plants were well shown by Mr. L. Dupond, Mr. J. Wilkins, and Mr. G. Hickmott, who were awarded the prizes in the order of their names. Mr. J. Allan, gardener to G. H. Field, Esq., Ashurst Park, Tunbridge Wells, was first for six caladiums with medium-sized and well-coloured specimens.

Ferns were staged in considerable numbers, and the majority of the specimens were of large size, and remarkable for their freshness. Mr A. Offer was first in the open class for eight kinds, having finely-developed specimens of well-known kinds, and also in that for six. Mr Dupond was second for eight and third for six, and Mr. F. Allfin was second for six. The class for a group of ferns was a very good one, and the first and second places were occupied by Mr. L. Dupond and Mr. G. Hickmott, gardener to Mrs. Allnutt, Tunbridge Wells.

Soft-wooded Plants in bloom formed a bright feature. Classes were provided for show and fancy pelargoniums, but it was too late to see these two important sections at their best. Nevertheless, they were fairly represented. The first prize for six show varieties was awarded to Mr. J. Allan, and in the corresponding class for fancy varieties, Mr. J. Wilkins, gardener to F. V. Williams, Esq., Shirley, Langton, occupied the first place. Zonal pelargoniums were of a high degree of excellence, the best collection of single varieties being shown by Mr. E. Eade, gardener to J. Tillard, Esq., Penshurst, and the best doubles by Mr. J. Wilkins. Mr. J. Allan also exhibited well in these classes. Achimenes and gloxinias were well represented, and the principal prizes were awarded to Mr. J. Allan, Mr. J. Smoker, gardener to Mrs. Hall, Brathay House, Mr. J. Wilkins, and Mr. E. Eade.

Cut Flowers were plentiful, and comprised a good proportion of roses, which are liberally encouraged at Tunbridge Wells. In the great open class for roses, Mr. J. Brown, gardener to Mrs. Waterlow, Great Doods, Reigate, was first with splendidly developed blooms; Mr. B. R. Cant, Colchester, was a good second, and Messrs. G. Bunyard and Co, Maidstone, were third. In competition for the prizes in the open class for teas, Mr. B. R. Cant, Mr. J. Brown, and Messrs. J. Cheal and Sons, Crawley, were first, second, and third. In the amateurs' classes for roses, Mr. E. West, Reigate; Mr. P. Burnand, Reigate; Mr. J. Allan, Mr. G. Elms, Mr. G. Ladbrook, and Mr. R. Buston, were the most successful of the competitors. The class for hardy flowers contained several interesting and beautiful collections, and the prizetakers were Mr. G. Clark, Dover, Mr. Charlton, Tunbridge Wells, and Messrs. Bunyard and Co. The first prize for a collection of miscellaneous cut flowers eighteen kinds was awarded to Mr. T. Portnell; and in the class for twelve varieties, Mr. G. Hickmott and Mr. Eade were first and second. Table decorations were as usual remarkably good, and materially enhanced the attractions of the exhibition. For three stands, Mr. Fennell, gardener to W. Cazalet, Esq., Fairlawn, Tunbridge Wells, was first with beautifully dressed epergnes; and Mrs. Hatton, Sevenoaks, and Mr. W. Searing, Oak Lodge, Sevenoaks, were second and third with stands evincing much taste. Bouquets were well shown by Mrs. G. Newman, Bromley; Miss Passmore, Mr. H. Collyer, Mr. W. Searing, and other exhibitors.

Fruit constituted a great feature. There was a brisk competition for the prizes for twelve dishes, and the awards were made in favour of Mr. T. Hopgood, gardener to Sir Julian Goldsmid, Bart., M.P., Tonbridge; Mr. G. Fennell, and Mr. G. Hickmott. Mr. Osman, gardener to W. L. Baker, Esq., Ottershaw Park, Chertsey, obtained premier honours in the class for a dish of black grapes, and in that for white grapes Mr. J. Friend, Godstone, was first. Other successful competitors in these classes were Mr. S. Pope, Mr. T. Moorhouse, gardener to J. W. Temple, Esq., Groombridge; Mr. G. Clinging, gardener to W. Greenwell, Esq., Marden Park, Caterham Valley; and Mr. F. Morris, St. Leonards. Peaches were especially well shown by Mr. G. Fennell, Mr. T. C. Moorhouse, and Mr. F. Dunn, gardener to Sir F. Truscott; and the most successful competitors for the prizes for nectarines were Mr. Moorhouse, Mr. Wilkins, and Mr. Hopgood. Mr. Hopgood was first for cherries and strawberries, and the prizetakers in the class for melons were Mr. J. Friend, Mr. Moorhouse, and Mr. Searing.

The duties appertaining to the office of secretary were admirably carried out by Mr. W. E. Brampton, and the prizes were awarded by Messrs. J. Allan, T. Gilbert, W. Knight, S. Pope, J. Rust, and H. Scammell.

NATIONAL CHRYSANTHEMUM SOCIETY, July 14.

A meeting of the general committee of the National Chrysanthemum Society was held at Anderton's Hotel, Fleet Street, on Monday evening. R. Ballantine, Esq., occupied the chair, and there was a large attendance to welcome Mrs. Marianne Thrower, the representative of the Northern Horticultural Society of Tasmania. The minutes of the previous meeting having been read and signed,

The Honorary Secretary read an address of welcome to Mrs. Thrower, who, in reply, expressed the gratification she felt in being present as the representative of the Northern Horticultural Society of Tasmania. She also referred to the fact that the cultivation of the chrysanthemum had extended in Tasmania at a very rapid rate during the past few years, and that the exhibition held in Launceston in March last was the largest that had ever been held in the colony. The competition in the class in which the gold medal of the National Chrysanthemum Society was offered as the premier award created much interest, and the entries were more numerous than were those in the corresponding class at previous shows. It was eventually decided that the address of welcome should be entered on the minutes.

Mr. W. Holmes then read letters from the Duke of Westminster, Lord Rothschild, Right Hon. Joseph Chamberlain, and other noblemen and gentlemen, who had consented to become vice-presidents of the society. He also read letters from the secretary of the Auckland and Wellington (New Zealand) Societies with reference to affiliation and supplies of catalogues, and from the secretary of the Victoria Horticultural Society with reference to the visit of their representative to England. The following societies were received into affiliation:—Bacup, Batley, Bexley Heath, Bradford, Cardiff, Cheshunt, Eccles, Surrey, Watford, Wells, West Kent. Twenty-three fellows and members were elected.

Messrs. L. Castle, G. Gordon, and C. Harman Payne, who have charge of the arrangements for the conference to be held on two days of the centenary festival, presented a report of the preliminary arrangements they had made. They suggested that the conference be held on the first and second day of the festival, instead of the second and fourth days, as announced in the schedule, and they gave the titles of the papers to be read. On the reasons having been given for suggesting an alteration in one of the two dates, the quibble was raised as to the general committee being the proper body to receive the report, and after much talk about the having "no power" to deal with it, the question was shelved.

At the close of the ordinary business, the question of the annual outing of the society was discussed, and it was decided to have an excursion as in former years, and to leave the arrangements in the hands of Mr. Holmes. Friday next was mentioned as a suitable date, and it was proposed that the party proceed by train to Reading, and thence proceed to Henley-on-Thames by river, and visit some garden within a convenient distance of the town.

The proceedings terminated with a vote of thanks to the honorary secretary and chairman.

CHISWICK HORTICULTURAL SOCIETY, July 10.

Some of the old glories seemed to cluster round the Royal Horticultural Society's Garden on the occasion of the Chiswick Horticultural Society's exhibition on the above-mentioned date. The day was simply perfect as to weather, and a great crowd thronged the gardens and tents to see the various examples of horticultural skill brought together and to listen to the band of the Grenadier Guards. All this must have been gratifying to the several members of the executive.

In the open class for a group of plants arranged for effect, Mr. W. Brown, St. Mary's Nursery, Richmond, and Messrs. W. Fromow and Sons, Chiswick, were awarded equal first prizes for charming arrangements, Mr. Brown's being somewhat the lightest in style. In the gardeners' group class there was only one exhibitor, this being Mr. A. Wright, gardener to E. H. Watts, Esq., Devonhurst, Chiswick, who—as he usually does—arranged a model group, and was deservedly awarded the first prize. In the class for six stove and greenhouse plants, admirable specimens were staged by Mr. W. Bates, Poulett Lodge, Twickenham, and Mr. A. Wright, and the prizes were awarded in the order named. For six fine-foliaged plants, Mr. Wright was first, followed by Mr. J. Huckelsby, gardener to B. Hardy, Esq., Gordon House, Chiswick. For six exotic ferns, Mr. Wright was again first, staging well-developed specimens, and Mr. Huckelsby was second. In the class for three fuchsias, Mr. Wright staged well-flowered plants, and gained first honours; Mr. Huckelsby was second. Six grandly-bloomed zonal pelargoniums gained Mr. G. Watts, gardener to Henry Little, Esq., Baronshalt, Twickenham, a first prize; Mr. Davis, gardener to E. Tautz, Esq., Ealing, was a good second. For zonals, Mr. Huckelsby, first. In the class for tuberous-begonias, Mr. Watts was first with superbly-flowered specimens, and Mr. Huckelsby was second with good examples. For twelve gloxinias, not less than six varieties, Mr. Wright was first, and for six gloxinias, Mr. Huckelsby was first. Mr. J. C. Waite, gardener to Colonel Talbot, Glenhurst, Esher, staged plants for table decoration in prime style, and gained the premier award.

Considerable interest centred in the competition in the class for twenty-four roses, distinct varieties, three blooms of each. The first prize was a very handsome silver challenge cup, value 25 guineas, generously offered by J. Mantell, Esq., a member of the committee, which has to be won three times, not necessarily consecutively. To this prize the society added £3 in cash. As in previous contests elsewhere this year, Mr. Frank Cant, Brayswick Nursery, Colchester, was simply unapproachable, and secured the trophy. Mr. B. R. Cant, St. John's Street Nursery, Colchester, was a good second, and Messrs. Paul and Son, Old Nurseries, Cheshunt, were third. Mr. W. Rumsey, Waltham Cross, received a high commendation. For twelve cut roses, Mr. W. Langdon, Ealing, was first, Mr. Davis was second, and Mrs. Rust, St. Magnus, Kew Gardens, Kew, third. Messrs. James Veitch and Sons, Chelsea; Messrs. C. Lee and Son, Hammersmith; and Mr. W. Tayler, Hampton, sent admirable collections of cut roses, not for competition, which formed an attractive display. These exhibits were highly commended. As showing the signs of the times, it was pleasing to see a very gay lot of herbaceous flowers staged by Messrs. C. Lee and Son (highly commended). In competition for the prizes for three bouquets, Mr. J. R. Chard, The Nursery, Stoke Newington, obtained premier honours. For six buttonholes, Miss Hudson, Gunnersbury House, Acton, first; Miss G. Bray, 46, George Street, Richmond, second; and Miss T. Bray, third. For a single stand of flowers, suitable for table decoration, Mr. T. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, Chertsey, was first with a very beautifully-arranged stand, light and elegant; Miss G. Bray second; and Miss L. Hudson third. For the special prizes offered by his Grace the Duke of Devonshire for three stands there were three competitors, the nine stands

forming a very attractive display. Mr. J. R. Chard was first with arrangements that were as near perfection as we can imagine; Miss L. Hudson second; and Mr. E. Chadwick, gardener to E M. Nelson, Esq., Hanger Hill House, Ealing, third. The Marquis of Bute offered very liberal prizes for York and Lancaster roses, and these were awarded to Mr. Davis, Mr. A. Wright, and Mr. E. Chadwick in the order of their names. The special prizes offered by Lady George Hamilton for nine tuberous begonias, open only to gardeners in the Ealing Parliamentary division, were taken by Messrs. Wright, Huckelsby, and Davis.

Of fruit there was a very fair display. For a collection of six distinct kinds Mr. T. Osman was first, his grapes and pine being of high quality; Mr. W. Bates was second; and Mr. G. Clinging, gardener to W. Greenwell, Esq., Marden Park, Caterham Valley, third.

Black and white grapes, two bunches of each, were well shown by Messrs. Osman, Bates, Clinging, and Waite. Strawberries were staged in admirable condition by Messrs. Osman, Chadwick, Wright, Bates, and Waite.

A first-class certificate was awarded to a strawberry named Collis's Seedling, sent by Mr. Collis, market gardener, Acton Green. The fruits are large, richly coloured, of good flavour, and firm. The latter quality will doubtless cause it to be valued as a good traveller, and therefore a good market kind. Mr. J. Hudson, Gunnersbury House, Acton, sent an excellent collection of fruit not for competition, which was highly commended.

For the society's prizes for a collection of vegetables, nine dishes distinct, there was only one competitor, Mr. E. Chadwick, to whom the first prize was deservedly awarded. In other classes for collections of vegetables Mr. C. J. Waite, Mr. T. A. Beckett, Cole Hatch Farm, Amersham; Mr. J. T. Hoar, Twickenham; Mr. E. Chadwick, and Mr. W. Peasey were the most successful competitors.

In the cottagers' classes for plants, flowers, and vegetables there was a very spirited competition. The competition in the children's classes for cut flowers and plants was also very spirited, there being nearly five hundred entries.

Very admirable groups of plants not for competition were contributed by Mr. M. T. May, gardener to the Marquis of Bute, Chiswick House; Mr. Reynolds, gardener to the Messrs. de Rothschild, Gunnersbury Park; Messrs. C. Lee and Son; Messrs. W. Fromow and Sons; and Mr. C. Turner, Slough, each being highly commended.

TEDDINGTON FLOWER SHOW, July 9.

The annual exhibition of the Teddington Horticultural Society in common with other horticultural gatherings held in the neighbourhood of the metropolis on the same date suffered from the unfavourable weather which prevailed during the greater part of the day. The show was about equal to those held in previous years, and the exhibitors who have taken leading positions at former shows again occupied prominent positions on the prize list.

Chief amongst the competitors in the class for groups was Mr. J. Reeves, of Temblemere, Oatlands Park, who had a collection remarkable alike for the excellent condition of the plants and the taste with which they were arranged. The finest of the begonias staged were those in the collection of Mr. G. Watts, gardener to Henry Little, Esq., Baronshalt, Twickenham, the specimens being of large size and superbly flowered; Mr. Coombes, gardener to W. Furze, Esq., Roselands, presented admirably-grown lilies, and distinguished himself in several other classes, more especially in that for coleus. Achimenes were admirably shown by Mr. Gregory, and good gloxinias came from Mr. Hillitch. Cockscombs carrying good heads were staged by Mr. Osborne. Cut roses constituted as usual one of the most attractive of the several features, and in competition for the prizes for these flowers Mr. Warwick, gardener to J. P. Kitchin, Esq., Hampton; Mr. Avens, of Teddington; and Mr. Goddard, of Shepperton, were the most successful. Mr. W. Taylor, of Hampton, sent several good boxes of blooms not for competition.

The miscellaneous contributions were more numerous than usual and formed an important part of the show. Messrs. Puttock and Shepherd, of Kingston, exhibited a large and exceedingly beautiful group of flowering and ornamental leaved plants; and Mr. Osborne, gardener to W. Howard, Esq., The Grove, Teddington, sent a group of orchids, which proved highly attractive to the visitors. There was an abundance of fruit and vegetables, the cottagers contributing liberally to the classes for esculents.

WOLVERHAMPTON HORTICULTURAL EXHIBITION IN THE PUBLIC PARK, July 15, 16, and 17.

The second great Horticultural Exhibition in the Wolverhampton Public Park on Tuesday, Wednesday, and Thursday last, was the second of its kind and by so much greater than the first held last year that it is but reasonable to anticipate that the summer show in this town will become a settled institution. A more complete success could scarcely have been desired, for not only was the show characterized by high merit, but the weather was on its best behaviour, giving the affair the advantage of three sunny days, and the vast throngs that attended added pleasantly to the exchequer for the satisfaction of the promoters. It should be understood that the public park of this town is a fine open space under the control of the corporation, which has legal power for closing it against the public for such an occasion as the present, very much to the advantage of the town, which thus secures a grand three days' festival. To the horticultural show was added a great entertainment of music, bolloons, tumbling and juggling, fireworks, and extensive illuminations. We know of no parallel example, and in Wolverhampton it is commonly believed that the power to close a public park, so that money might be taken at the gates is peculiar to this place, and is unique as an incident of municipal economy.

The exhibition filled a series of five tents, one of them being 200 feet in length by 40 feet wide, and three others 150 feet in length by 40 feet wide. All classes of exhibitors were invited. In the All England section there were 71 entries; in the Gardeners' section, 107; Amateurs, 98; Cottagers, 233. The nursery and seed trades came up in great force, and some surprisingly fine groups of plants, flowers, and fruits were among the results.

In the Open class Mr. Cypher, of Cheltenham, led off in the first place (£20) with sixteen stove and greenhouse plants (orchids excluded), with a grand lot comprising the cream of exhibition specimens from his great collection; a good second (£15) was made by Mr. J. Marriott, third (£10) Colonel Pepper. The best tree ferns came from Mr. Cypher, the best exotic ferns from Mr. Marriott, second H. Lovatt. Mr. Cypher was again first for six plants in flower, second J. Marriott, third Mrs. Marigold. These exhibitors also shared amongst them the prizes for fine foliage, exotic orchids, and six palms. Groups of plants arranged for effect filled one great tent, and made a splendid exhibition. Rich and tasteful was the group from Colonel Pepper, for which the first prize was awarded; nor were richness and good taste wanting in the groups from Mr. G. H. Kenrick, second, and Mr. W. H. Fowler, third.

Cut Roses gave a certain character to this show, the quantity being great and the quality excellent. Mr. Frank Cant, of Colchester, stepped to the front in the important class for 48 single blooms; Messrs. Cranston second; Messrs. Perkins and Son third; Messrs. Prior and Son fourth; the differences between these lots being but slight, and demanding the most careful discrimination of the judges. First 36 single, Messrs. Cranstons; second Mr. Frank Cant; third Messrs. Perkins and Son; fourth Messrs. Dicksons (Limited). The 24 had for winners: Mr. F. Cant, Messrs. Cranstons, and Messrs. Perkins and Son. A splendid 12 of Alfred Colomb was put up for first in the one variety class by Messrs. Cranstons, and the same exhibitors presented the best 12 teas. Bouquets from Messrs. Perkins and Son were in their usual sumptuous style, but Messrs. Pope and Son came close in two classes, taking seconds admirably.

Amateurs made it evident that proximity to the "black country" does not render horticulture impossible, for their plants and flowers were mostly of high quality, and contributed greatly to the attractions of the exhibition. Messrs. Stanton, Jones, and Jevons presented the best collections of plants, and the fine foliage plants from Messrs. Stanton, Jones, and Davis were just such plants as give tone to small collections, where, as a rule, weedy subjects often find too much favour. Such subjects as pandanads, palms, and crotons are far to be preferred over such as coleus and other of the soft plants that make a cheap show and have no character. Fuchsias were poor; exotic ferns good, Mr. Webb and Mr. Stanton showing beautiful specimens: British ferns good; Mr. Darby first, Mr. J. Whitehouse second. Zonals and mignonette were not of much account.

A beautiful lot of twelve bunches of cut flowers, was put up for first by Mr. Stanton; second Mr. T. Kean; third Mr. J. Whitehouse. Twelve bunches of hardy, first Mr. J. Whitehouse; second Mr W. Davis. Cut roses from Messrs. Eggington, H. A. Perks, and B. S. Stanton, excellent. Pansies from Mr. Eggington, good. Best bouquet for the hand from Miss E. Blakeway, a tasteful arrangement; second B. Stanton; third J. Whitehouse. Best stand of flowers for the drawing room, Miss E. E. Green; second Miss E. E. Beebee; third B. Stanton. A delightful bouquet of wild flowers—we doubt if we have seen a better—secured a most honourable first for Miss E. Blakeway, and but one shade less in merit was the second from Miss E. E. Green; third J. Whitehouse; fourth Miss A. B. Burnett.

Gentlemen's gardeners classes were well filled, the best stove and greenhouse plants from Mrs. Marriott, J. Marriott, and H. Smith. Orchids, G. H. Kenrick, J. Marriott, and H. Smith. Other classes were led by Mrs. Marigold, Major Williams, W. H. Fowler, W. Rudge, and R. Willock. Cut flowers were liberally supplied and there was no lack of fine vegetables.

Fruit classes were conspicuously interesting. There were noble grapes from O. Makin, the Duke of Sutherland, Major Williams, H. Lovatt, and Mrs. Marigold. Peaches, Duke of Sutherland, W. H. Fowler, and H. Smith. Nectarine, Duke of Sutherland, Major Williams, and W. H. Fowler. The best ten dishes of fruit, distinct, from the Duke of Sutherland; second Major Williams; third W. H. Fowler. Six dishes, Duke of Sutherland.

The cottagers filled a great tent, and their contributions were characterized by variety, beauty, and generally speaking, considerable excellence.

DUTCH HORTICULTURAL SOCIETY.

The recent meeting of the floral committee of the Dutch Horticultural Society was, as usual, highly interesting to those engaged in horticultural pursuits.

One of the most important contributions was the collection of pæonies from Messrs. Ant. Roozen and Son, of Overveen. The collection comprised well-developed blooms of about one hundred and fifty varieties, and proved very attractive. Messrs. E. H. Krelage and Son, of Haarlem, submitted Allium cæruleum atro cæruleum, a distinct form with dark blue flowers. Mr. W. J. Van Lansberge, Heelsum, exhibited well-bloomed examples of Masdevallia coccinea, and other good things. From Mr. C. G. Van Tubergen, Haarlem, came Eremurus Bungei; from the Zoological Gardens, Rotterdam, Cattleya Mossiæ Madryæ, a distinct variety, remarkable for the large size and rich colouring of the flowers; and from Mr. J. A. Sanberg, Cochlearia Armoracia variegata. A certificate of the first-class was awarded to each of the exhibitors.

Other contributions to the meeting included Epidendrum prismatocarpum, Cattleya Mossiæ superba, Odontoglossum sceptrum, O. Pescatorei, and O. Roezli album, from Mr. W. J. Van Lansberge; a finely developed specimen of Orchis latifolia, from Mr. H. W. Dros, Bennekom; a specimen of Cyrtomium falcatum, from Mr. H. J. Van Heyst; and each exhibitor received the compliment of honourable mention. Votes of thanks were accorded to Messrs. E. H. Krelage and Son for a collection of iris, ixias, and other bulbous and tuberous rooted plants, comprising nearly two hundred species and varieties; to Mr. M. Rodenburg, for seedling weigelias; to Mr. C. G. Van Tubergen, for Calochortus Nuttali, C. albus, C. pulchellus, Allium pedemontanum, Lilium Thunbergianum; to Mr. H. J. Van Heyst, for a finely developed spike of Lilium Szovitsianum, and various ferns and hard-wooded plants; and to Mr. C. G. Van der Hoef, for herbaceous pæonies.

LAMBETH FLOWER SHOW.

By permission of the Archbishop of Canterbury, the annual Lambeth Flower Show, organised for the purpose of promoting window-gardening amongst the working classes of the parish, was held on Tuesday in the Lambeth Palace grounds. The exhibits, which were rather above the average of previous years, numbered about seven hundred, and were displayed in a large marquee. Considering the disadvantages under which the plants were reared, the show was decidedly creditable. There were numerous miscellaneous attractions, including performances by the bands of the A (Lambeth) Division of Police, and of the Norwood parochial schools. The show was visited by between 10,000 and 12,000 persons. The prizes were distributed by General Fraser, V.C., M.P.

The Larvæ of the May Bug do an immense amount of damage in French gardens by eating the young roots of grasses, strawberry and other delicate-rooted plants. Their destruction has become a matter of such importance, it appears from the *Revue Horticole*, that during the year 1889, the Department of Seine-et-Marne paid no less than 113,000 francs in prizes for the destruction of the beetles, which were collected to the amount of more than 500,000 pounds. They are trapped by suspending lights over shallow vessels of water. The beetles fly against the glass covering of the lamps and drop into the water below, and are then collected and destroyed.

NATIONAL ROSE SOCIETY, EXHIBITION AT BIRMINGHAM.

July 17.

The exhibition of the National Rose Society at Birmingham, on Thursday, was so great a success as to fully justify the opinion so generally expressed by the experts that it was the best show that has yet been held by the society in the provinces. With but one or two trifling exceptions, the whole of the classes were remarkably well filled, and the blooms were staged in a condition that has not been surpassed at any of the previous gatherings of the current season. Both hybrid perpetuals and teas were of a high degree of excellence, and the latter were wholly free from the weather stains which have disfigured so many of the blooms staged at the exhibitions. As on the occasion of the society's previous visit to Birmingham, the show was held in the Botanical Gardens, which are now in their full summer dress, and reflect much credit upon Mr. W. B. Latham, the able curator.

Trade Division.

The competition was very severe in the whole of the classes open to trade growers, and the blooms had to be much above the average to enable the exhibitors to obtain places upon the prize list. In the Jubilee class for thirty-six blooms, in which the premier award consisted of the fifty-guinea challenge trophy and £3 in cash, there were thirteen entries, the whole of the collections being more or less good. Messrs. Harkness and Sons, Bedale, who were the winners of the trophy in the three previous years, occupied the post of honour with blooms of large size, bright in colour and highly finished. The varieties were Ulrich Brunner, Madame Gabriel Luizet, Star of Waltham, Duchesse de Morny, Charles Lefebvre, Madame C. Kuster, Camille de Bernardin, Souvenir d'Elise Vardon, Alfred K. Williams, Mrs. John Laing, General Jacqueminot, Comtesse de Nadaillac, Barthelemy Joubert, La France, Duke of Wellington, Niphetos, Alfred Colomb, Madame Cusin, Marie Baumann, Her Majesty, Le Havre, Captain Christy, Marie Rady, The Bride, Etienne Levet, Innocente Pirola, E. Y. Teas, Mdlle. Eugenie Verdier, Horace Vernet, Princess of Wales, Countess of Oxford, Catherine Mermet, Madame Haussman, Lady Mary Fitzwilliam, John Stuart Mill, and Merveille de Lyon. Messrs. Cranston and Co., Hereford, were a close second with a remarkably good collection, in which Alfred Colomb, Louis Van Houtte, Maurice Bernardin, Dupuy Jamain, Alfred K. Williams, Comtesse de Serenye, and Charles Darwin were exceptionally well represented. Messrs. A. Dickson and Sons, Newtownards, co. Down, were third; and Mr. Frank Cant, Brayswick Nursery, Colchester, fourth, both staging blooms of a high order of merit.

There were five entries in the class for seventy-two varieties, single trusses, and Messrs. Harkness and Sons, Bedale, were first with blooms of medium size and remarkable for their freshness and finish. The varieties forming the collection were: Francois Lacharme, Madame Montet, Madame Clemence Joigneaux, Lady Mary Fitzwilliam, Barthelemy Joubert, Marie Cointet, Marie Verdier, Devoniensis, Ella Gordon, The Bride, Alfred Colomb, Emilie Hausburg, Harrison Weir, Pride of Waltham, General Jacqueminot, Madame Isaac Pereire, E. Y. Teas, Viscountess Folkestone, A. K. Williams, Innocente Pirola, Duchesse de Morny, Her Majesty, Charles Lefebvre, Francisca Kruger, Ulrich Brunner, Madame Hippolyte Jamain, Constantin Fretiakoff, Captain Christy, Fisher Holmes, Etoile de Lyon, Marie Baumann, Catherine Mermet, Beauty of Waltham, Merveille de Lyon, Horace Vernet, Queen of Queens, Benoit Comte, Niphetos, Camille Bernardin, Heinrich Schultheis, Lord Macaulay, Madame Cusin, Victor Hugo, Jean Ducher, Exposition de Brie, Mrs. John Laing, Etienne Levet, Princess Beatrice, Madame Alphonse Lavallée, Violette Bouyer, Charles Darwin, Mdlle. Eugenie Verdier, Marie Rady, Anna Olivier, Duke of Connaught, Souvenir d'Elise Vardon, Alphonse Soupert, Baroness Rothschild, Mrs. Jowitt, Madame Bravy, Alfred Dumesnil, Souvenir de Paul Neyron, Dupuy Jamain, La France, Duke of Edinburgh, Madame de Watteville, Lady Sheffield, Caroline Kuster, Duchess of Bedford, Paul Neyron, Le Havre, and Marie Van Houtte; Messrs. Cranston and Co., Hereford, were a close second, with a collection remarkable for the uniformity and high quality of the blooms; Mr. B. R. Cant, Colchester, was a good third; and Messrs. Paul and Son, Cheshunt, were fourth with flowers of excellent quality.

The class for thirty-six varieties, three trusses of each, was a very strong one, the entries being numerous, and the collections good throughout. Messrs. Cranston and Co. had the premier award made in their favour for splendidly-developed blooms of Alfred Colomb, Lady Sheffield, E. Y. Teas, La France, A. K. Williams, Jean Ducher, Marie Baumann, Marie Finger, Duke of Edinburgh, Silver Queen, Maurice Bernardin, Heinrich Schultheis, Ulrich Brunner, Comtesse de Serenye, La Rosiere, Her Majesty, Merveille de Lyon, Duke of Wellington, Madame Clemence Joigneaux, Marie Verdier, Charles Darwin, Dupuy Jamain, Camille Bernardin, Earl of Dufferin, Madame Gabriel Luizet, John Stuart Mill, Duchesse de Morny, General Jacqueminot, Baroness Rothschild, Francois Michelon, Benoit Comte, Etienne Levet, Madame Alphonse Lavallée, Mrs. Charles Wood, and Countess of Oxford; Mr. R. B. Cant was second with medium-sized blooms of high quality; Mr. George Prince, Oxford, was a close third; and Messrs. Paul and Son were fourth with an excellent collection. There were six entries in the class for thirty-six varieties, single trusses, and the post of honour was occupied by Mr. H. Merryweather, Southwell, Notts, who had superbly-developed blooms of Ulrich Brunner, Fisher Holmes, Alfred Colomb, Prince Arthur, Madame G. Rodoconachi, Dupuy Jamain, La France, Camille Bernardin, Merveille de Lyon, Marie Rady, Baroness Rothschild, General Jacqueminot, Violette Bouyer, Marshall P. Wilder, Her Majesty, Horace Vernet, Viscountess Folkestone, Madame Victor Verdier, Etienne Levet, Countess of Rosebery, Senateur Vaisse, Maurice Bernardin, Marie Finger, Gloire de Margottin, Heinrich Schultheis, A. K. Williams, Captain Christy, Duke of Edinburgh, Lady Mary Fitzwilliam, Marquess de Castellane, and Francisque Rive. Messrs. Perkins and Son, Coventry, were second with a fine lot of blooms. Messrs. Jefferies and Sons, Cirencester, were third with blooms of excellent quality; and Mr. W. Rumsey, Waltham Cross, was fourth with a good collection.

In competition for the prizes for eighteen varieties, three trusses of each, Messrs. J. Jefferies and Sons occupied the first place with large and otherwise well developed blooms of La France, A. K. Williams, Comte Raimbaud, Marie Verdier, Her Majesty, Marie Baumann, Baroness de Rothschild, Horace Vernet, Merveille de Lyon, Alfred Colomb, Prince Arthur, Captain Christy, Charles Lamb, Mrs. John Laing, Marie Finger, Ulrich Brunner, Viscountess Folkestone, Countess of Oxford. Mr. H. Merryweather was an uncomfortably close second with an exceptionally fine collection, Marie Baumann, Camille Bernardin, and Madame Gabriel Luizet being particularly good. Messrs. Perkins and Son were a good third; and Mr. S. G. Rumsey, Wrotham, Kent, was fourth.

Amateurs' Division.

The Jubilee class for twenty-four varieties, single trusses, was well filled both in point of numbers and the quality of the blooms. The fifty-guinea challenge trophy and £3, offered as the first prize, were awarded to Rev. J. H. Pemberton, Havering-atte-Bower, Romford, who won the trophy last year. The collection consisted of large superbly-finished blooms of Ulrich Brunner, Alfred K. Williams, Madame Lambard, Marie Van Houtte, Lady Mary Fitzwilliam, Exposition de Brie, Magna Charta, Auguste Rigotard, Her Majesty, Madame Charles Crapelet, Marie Van Houtte, Lady Arthur Hill, Heinrich Schultheis, Marie Baumann, Baroness Rothschild, Charles Lefebvre, Souvenir d'un Ami, Comte Raimbaud, Francois Michelon, Madame Victor Verdier, Mrs. John Laing, Duchess of Bedford, Countess of Rosebery, Innocente Pirola. Mr. E. B. Lindsell, Beadon, Hitchin, was second with blooms somewhat unequal, but on the whole remarkably good. Rev. H. A. Berners, Ipswich, and Mr. C. Williams, gardener to J. Pulley, Esq., Hereford, were third and fourth respectively. The competition for the prizes in the amateurs' class for thirty-six varieties was very keen, and Rev. J. H. Pemberton was first with blooms large in size, bright in colour, and fresh in appearance. The varieties represented were Etienne Levet, Charles Lefebvre, Marie Verdier, A. K. Williams, Grandeur of Cheshunt, Auguste Rigotard, Countess of Oxford, Victor Hugo, Francois Michelon, Louis Van Houtte, Baroness Rothschild, Mrs. Baker, Magna Charta, William Warden, Caroline Kuster, Marie Baumann, Her Majesty, Le Havre, Ulrich Brunner, Duchess of Bedford, Souvenir d'un Ami, Dr. Andry, Lady Mary Fitzwilliam, Duchess de Morny, Heinrich Schultheis, Duke of Edinburgh, Merveille de Lyon, Lady Helen Stewart, Mrs. John Laing, Devienne Lamy, Pride of Waltham, Madame Victor Verdier, La France, Madame Charles Crapelet, Madame S. Rodoconachi, Comte Raimbaud. Mr. E. B. Lindsell was second with an excellent box of blooms, and Mr. S. P. Budd, Bath, was third.

In the class for twenty-four varieties, single trusses, a silver cup of the value of ten guineas was offered by Mr. A. Griffiths as the first prize. There was a keen contest, and in the result the cup was awarded to Mr. A. Whitton, Aiskew, Bedale, who had a superb box of blooms, the varieties being Ulrich Brunner, Souvenir d'Elise Vardon, Duke of Edinburgh, Mrs. John Laing, Duchess of Bedford, Lady Sheffield, Marie Baumann, Innocente Pirola, Le Havre, Catherine Mermet, Dr. Andry, Captain Christy, Charles Lefebvre, Jean Ducher, Prince Arthur, Merveille de Lyon, Dupuy Jamain, Violette Bouyer, Etienne Levet, Mons. Noman, Marquise de Castellane, Marie Verdier, E. Y. Teas, and Baroness Rothschild. Mr. A. Slaughter, Steyning, Sussex, was a capital second, his box containing a superb bloom of Marshall P. Wilder; Rev. A. Foster Mellair, Sproughton Rectory, Ipswich, was a good third, and Mr. W. Boyes, Bank House, Derby, was fourth. The class for twelve varieties was a remarkably good one, and Mr. E. Mawley, Berkhampstead, occupied the post of honour with superb blooms of Her Majesty, Duke of Edinburgh, Ulrich Brunner, J. Stuart Mill, Mary Finger, Sir Rowland Hill, La France, E. Y. Teas, Duke of Teck, Marie Rady, Baroness Rothschild, and Star of Waltham; Mr. W. Whittle, Belgrave, Leicester, was second; Rev. F. Page Roberts, Scole Rectory, third; and Mr. R. Ramsden, Knole, fourth. For twelve varieties, three trusses, Rev. J. H. Pemberton was first with finely developed blooms of Duchess of Bedford, Ulrich Brunner, Alfred K. Williams, Captain Christy, Magna Charta, Beauty of Waltham, La France, Madame Victor Verdier, Francois Michelon, Auguste Rigotard, Lady Mary Fitzwilliam, and Marie Baumann; Mr. E. B. Lindsell was a close second with a box in which the teas were particularly good, Jean Ducher, Comtesse de Nadaillac, Niphetos, and Grace Darling being especially well represented.

Mr. T. W. Girdlestone, Sunninghill, Berks, was successful in winning the ten-guinea cup offered for the best collection of moss roses. The flowers were tastefully arranged, and included beautiful bouquets of Celina, Crested Moss, Little Gem, Common Moss, Captain Ingram, Comtesse de Murinais, Gloire de Mousseux, Blanche Moreau, and White Bath.

There were six entries in the amateurs' class for twelve, in which the competition was limited to cultivators resident within six miles of the Town Hall, Birmingham, and the post of honour was occupied by Mr. Booker, gardener to A. H. Griffiths, Esq., Edgbaston, with superb blooms; Mr. J. Rickards, Edgbaston, was a close second; and Mr. H. James, gardener to W. C. B. Cave, Esq., was third. For six in the same division, Mr. R. Austin, King's Heath; Mr. J. Smith, Hail Green; and Mr. H. Bloomer, King's Norton, were the prize takers in the order of their names.

Teas and Noisettes.

Teas and Noisettes were presented in large numbers and excellent condition, and produced a beautiful display. In the trade class for eighteen Mr. G. Prince occupied the post of honour with large and remarkably fresh blooms of Catherine Mermet, Innocente Pirola, Rubens, Alba rosea, Hon. E. Giffard, Souvenir d'un Ami, Madame Cusin, Madame Hoste, Comtesse de Nadaillac, Souvenir de S. A. Prince, Anna Olivier, Marie Van Houtte, Princess of Wales, Maréchal Niel, The Bride, Souvenir d'Elise Vardon, Niphetos, and Sunset. Messrs. Harkness and Son were a capital second; Mr. Frank Cant was third, and Mr. B. R. Cant fourth.

In the trade class for twelve, Messrs. Harkness and Son had the premier award made in their favour. The varieties comprised Souvenir d'Elise Vardon, Caroline Kuster, Madame Willermoz, Catherine Mermet, Anna Olivier, Jean Ducher, Souvenir d'un Ami, The Bride, Innocente Pirola, Comtesse de Nadaillac, Marie Van Houtte, Madame Cusin; Rev. F. R. Burnside, Birch Vicarage, Bedford, was a very close second; Mr. B. R. Cant was third with a collection in which Luciole and Madame Lambard were represented at their best; Mr. G. Prince was fourth.

In the amateurs' class for twelve, Rev. F. R. Burnside occupied the post of honour with finely-developed blooms of The Bride, Comtesse de Nadaillac, Hon. E. Gifford, Francisca Kruger, Catherine Mermet, Marie Van Houtte, Innocente Pirola, Souvenir d'Elise Vardon, Souvenir d'un Ami, Madame Cusin, Madame Hoste, Anna Olivier; Mr. A. Whitton, Rev. H. Berners Harkstead; and Rev. F. Page Roberts were second, third, and fourth with excellent stands.

The class for six teas was well filled, and the prizes were awarded to Mr. A. Whitton, Rev. F. S. Taylor, Mr. E. Mawley, and Rev. J. H. Pemberton.

Open Classes.

In competition for the prizes for twelve trusses of any one yellow rose, Messrs. Cranston and Co. were first with fine blooms of Marie Van Houtte. Mr. George Prince was second with Francisca Kruger; and Mr. B. R. Cant third with Madame Hoste. There were fourteen or fifteen entries in the class

for twelve trusses of any one crimson rose, and Messrs. Cranston and Co. were first with large, highly-finished blooms of Alfred Colomb. Messrs. Robert Mack and Son, Catterick Bridge, Yorkshire, were second with A. K. Williams; and Messrs. D. and W. Croll, Dundee, were third with E. Y. Teas. For twelve trusses of any velvety-crimson rose, Messrs. R. Mack and Son were first with Duke of Wellington, in a high state of development; Messrs. D. Prior and Son, Colchester, were second with Fisher Holmes; and Mr. B. R. Cant was third with Charles Lefebvre. There were fourteen or fifteen competitors for the prizes for twelve trusses of any white rose, and Rev. F. R. Burnside was first with Innocente Pirola, Messrs. D. and W. Croll second with Rubens, and Mr. B. R. Cant third with The Bride. There was a keen competition in the class for six blooms of any hybrid perpetual and six blooms of any one tea. Messrs. Harkness and Son occupied the first place with good blooms of Horace Vernet and Innocente Pirola; Messrs James Cocker and Son, Aberdeen, second with La France and Madame Bravy; and Messrs. Cranston and Co. were third with Alfred Colomb and Catherine Mermet.

The contributions to the class for twelve new roses were highly interesting, and the premier box was staged by Messrs. Paul and Son. It contained good blooms of Jules Desponds, Ernest Metz, Lady Arthur Hill, Lady Alice, Edouard Michael, Mrs. James Wilson, John D. Pawle, Souvenir de S. A. Prince, Scipion Cochet, Comtesse B. dé Blaœus, Marie Margot, and Dowager Duchess of Marlborough. Messrs. A. Dickson and Son, Newtownards, were second with a good box, in which was a fine bloom of T. W. Girdlestone, a promising hybrid perpetual in the way of Ulrich Brunner. Mr. B. R. Cant was third. The gold medal offered for the best new rose was awarded to Messrs. A. Dickson and Son for Margaret Dickson, a beautiful hybrid, of which the parents are Lady Alice and Catherine Mermet. It is somewhat similar in general character to the last-named of the two varieties, but the flowers are larger and of finer form, the colour white tinted in the centre with flesh pink. Unquestionably one of the finest new varieties introduced for some years past.

The premier roses were Her Majesty, shown by Mr. E. B. Lindsell, and Innocente Pirola, exhibited by Mr. A. Whitton.

Correspondence.

BRITISH FERNS AT EXHIBITIONS.

As a sort of self-appointed champion of our beautiful British ferns, and especially of their charming varieties, ranging, as they do, through the entire gamuts of leafy delicacy, I am impelled to enter a strong protest against the award of prizes at local exhibitions, simply and solely because someone possessing a few plants of no merits whatever has ventured in where experts, perhaps, have feared to tread, and thus gained priority. In such priority there is just as much or little merit as in the case of the little fellow at school who stood top boy of his class, which consisted only of himself and a little girl who headed him. A few days back I went down to Chiswick in connection with the forthcoming Fern Conference and Exhibition to be held there by the R.H.S., and strolling round the marquees, had plenty of scope for admiration of some capital exhibits of exotic ferns and foliage plants, all of which, not only by their arrangement, but by their condition generally, bore evidence of the most careful culture and study. Presently I came across six large pots arranged in a semi-circle, and containing as many weather-beaten and unsightly specimens of hardy British ferns. One was a common lady fern which had been allowed to multiply its crowns and crowd up the pots obviously for years; equally obvious it had not received the slightest care or shelter, for with these, common as the fern is, its normal delicacy will assert itself and make it worth looking at. Next it stood a kindred mass of Lastrea filix-mas Bollandiæ, a good form enough, but another wretched example of neglect and crowding; then followed a ragged shield fern, a rogue variety only worthy of a dust-bin; a common broad buckler fern, wind-battered and torn; and two other plants of equal value. In short, had the exhibitor dug up wild plants direct from the most exposed and wind-swept moor in Britain, they would probably have presented a much better appearance.

Judge, then, of my astonishment when I found that the first prize had been allotted to the group as representing six hardy ferns, while the second prize had gone to half a-dozen smaller specimens, which nevertheless bore evidences of greater care.

Now I contend that to award prizes in this manner is absolutely wrong. They are offered, I take it, to stimulate and improve the culture of the plants concerned, and not as mere rewards for trouble in carting plants, good or bad, to the show place. This must have a simply maleficial effect upon the minds of those of the visitors who do not know the truth. On one side they see charming specimens of exotic vegetation, carefully arranged and bearing ample evidence, in their delicacy and beauty, of the most scrupulous care in their culture. On the other side, unsightly masses of green stuff, as attractive as so many bunches of seedling cabbages, are labelled, or libelled, as "hardy ferns," and having been awarded apparently high honours by presumed judges, are naturally accepted by outsiders as fair representatives of our native beauties.

As there will be some really fair representatives of our native ferns on the same spot on July 22 and 23, I trust their real merits will then be so taken to heart that in future good forms, good culture, and handsome plants generally will alone qualify exhibitors for prizes, and if these qualifications be absent, that no prizes be awarded at all, and the reasons stated. C. T. D.

Replies to Queries.

R. N.—Amy Furze Chrysanthemum is classed as a Japanese Reflexed.

Sweet Peas.—J. M.: The two sweet peas about which you inquire are known as the White and Invincible Carmine.

Fruit Culture.—J. K., Manchester: The best of the small manuals on fruit culture is "Profitable Fruit Growing," by Mr. J. Wright. It is published at 171, Fleet Street, E.C.

Apple Api, &c.—F.: This apple is known in this country as the Lady Apple. The cochineal lives chiefly upon Opuntia cochinillifera. The common and Wych elms are the two best kinds for planting in the situation mentioned.

W. B.—The diseased plants show only such symptoms as are consistent with a waterlogged soil and excessive atmospheric humidity. We therefore conclude that your plants have been seriously injured by the excessive rainfall, and that your land is in some degree insufficiently drained.

Evergreen Climbers.—T. C. R., East Riding of Yorkshire, writes: I have two blank walls, each twenty feet in length and twenty feet in height, which I am desirous of covering with plants (excepting ivy) that will retain their foliage throughout the year. The aspect is due south. Will any of your contributors kindly advise me through the columns of the Gardeners' Magazine as to what to plant to cover the spaces as quickly as possible.

[The evergreens suitable for clothing large wall spaces that are sufficiently hardy to be successfully grown in the North of England are comparatively few in number, Cydonia Japonica, of which there are now eight or nine beautiful varieties, although not strictly evergreen, retains its foliage during the greater part of the twelvemonths, and commences to bloom early in the year, will probably prove suitable. Cratægus pyracantha and P. Lelandi are both evergreen, and produce heavy crops of brilliant orange-red berries. The last named is very free in fruiting, producing heavy crops of berries at a comparatively early stage.—Ed.]

Coleus.—J. M.: The following varieties are suitable for exhibition specimens; Countess of Dudley, Cloth of Gold, Lord Rothschild, Lord Rosebery, Mr. G. Simpson, and Mrs. Sharman. The principal points in the cultivation of coleus are to employ a moderately rich soil, and pots of medium size, and to keep them near the glass. Eight or nine inch pots will be quite large enough for medium-sized specimens, and the plants should occupy a position near the glass fully exposed to the sunlight from the time they are potted off until they are of a suitable size for the exhibition stage. Use turfy loam, to which small proportions of leaf mould and silver sand have been added.

Law.

TRACING AN ANCIENT HEDGE-ROW.

In the Queen's Bench Division, July 10, before Mr. Justice A. L. Smith, without a Jury, Fisher v. Henwood was a question of boundary between the two parties—owners of adjoining land at Chingford, near Walthamstow, in Essex. The parties had respectively purchased two fields which adjoined, the boundary between which had originally been indicated by a hedge and a ditch on the field of the defendant. That is, the former owner of the defendant's had, as is usual in setting up the hedge, dug to the limit of his own land—and, of course, inside his own field—to its uttermost limit, had dug a ditch, and thrown up the earth along the line of boundary, and on that bank set up the hedge, so that the ditch, of course, would be inside his land and would belong to him, and hence the rule of law which the learned Judge alluded to as well established, that when there is a hedge and a ditch along the line of boundary the ditch is taken to belong to the party whose land is on the ditch side of the hedge. This hedge, however, was old, and though it had as usual, been formed of thorn-bushes, which are very long-lived and difficult to eradicate, it had in the course of years become nearly destroyed; while, on the other hand, the ditch had become half full, it was said, through earth falling down from the bank, and, at the same time, the flow of drainage through the ditch having for certain reasons ceased, it had become shallowed as well as widened, and so had become nearly so far obliterated that it was now difficult to trace either hedge or ditch, and so disputes arose between the parties as to the real boundary between their fields, and the plaintiff conceived that the defendant had all along the line of the boundary encroached about 2 ft. on the land of the plaintiff. In the meantime, the land becoming more valuable for the purpose of building, and it being intended to build, and with that view a fence being put up, the dispute as to the boundary took an acute form, and hence the present action, in which the plaintiff complained of the defendant for trespassing upon his land, and the defendant denied that he had so encroached.

Mr. Cooper Willis, Q.C., and Mr. J. H. Dolby were for the plaintiff; Mr. Finlay, Q.C., and Mr. C. C. Scott were for the defendant.

The case occupied two or three hours on the 10th inst., and a hour and a-half on the following day. Witnesses were called on both sides, and they differed on the vital point whether the old hedge and ditch could now be traced. It was observed by the Judge that the value of a strip of land 2 ft. wide could not be much, as to which, however, it was said that land in the neighbourhood was worth £400 an acre, but this was disputed. On the part of the plaintiff it was insisted that the ditch had widened from 2 ft. or 3 ft. to 8 ft.

The learned Judge, in giving judgment on the 11th inst., said the value of the land in dispute could not be more than £5—and such was the case which had occupied the Court four hours. Moreover, there was the question of the costs, which had been alluded to the other day in a report of a case in the *Times* as "the fruits of litigation"—though not pleasant to the suitors. The law was undoubted that where there was a hedge and ditch between two adjoining pieces of the land—the party on whose land the hedge abuts—his land goes into the ditch outside the hedge. The reason of this was clear—that the party making the hedge had made it at the uttermost edge of his own land, first digging the ditch and throwing up the bank on which the hedge is set up. Now the hedge which had been here—it was a very old hedge, and, indeed, it was now nearly gone, though some of the old thorn bushes still existed there. The first question was whether the site of the old hedge and ditch could be traced. On one side it was asserted that it could, and on the other side that it could not be traced. His own opinion was that it could be traced, for thorn bushes lasted for generations, and it would be almost impossible to obliterate them. A plan had been put in evidence, however, which showed where the old hedge stood, and in his judgment it had been truly described. It was not shown who put up the old hedge, but it was shown that the ditch was on the land of the defendant, and it could not be supposed that he would have set up the hedge on the land of the plaintiff, as that would have been a trespass. The hedge had disappeared, and the ditch had become by degrees filled up. But it appeared that the plaintiff had not made out his case, and so judgment would be for the defendant, with costs.

Obituary.

We have to record the death of Mr. William Kitchen Parker, F.R.S., formerly Hunterian Professor of Comparative Anatomy at the Royal College of Surgeons, in his 67th year. He contributed largely of original memoirs on anatomical and physiological subjects to the Royal, Zoological, and Linnean Societies, but, unfortunately, while his matter is of the highest value, his manner, or, rather, his style of exposition, is unsuited for the grasp of ordinary intelligence, and his labours are but little known to the world at large.

On the 14th inst. at Penzance, Mr. John Ralfs, the botanist and microscopist, author of the "Flora of West Cornwall," and an authority on diatoms and desmids. His age was 83 years.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Sonths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
27	S	**8th Sunday after Trinity.**	4 17	6 16	7 53	3 46	—	8 50	9 26	5 43	6 15	63·3
28	M	Robespierre guillotined, 1794.	4 19	6 15	7 51	5 6	0 18	10 2	10 37	6 51	7 27	63·3
29	Tu	Battle of Beylau, 1832.	4 21	6 13	7 50	6 21	0 58	11 14	11 49	8 2	8 39	63·3
30	W	Battle of Plevna, 1877.	4 23	6 11	7 49	7 23	1 55	—	0 22	9 14	9 47	63·3
31	Th	○ Full Moon.	4 24	6 8	7 47	8 12	3 6	0 51	1 19	10 26	10 44	63·3
		AUGUST.										
1	F	*Lammas Day.*	4 25	6 5	7 46	8 47	4 32	1 47	2 13	11 12	11 38	63·2
2	S	Battle of Blenheim, 1704.	4 26	6 1	7 44	9 14	6 1	2 38	3 4	—	0 3	63·2

Orchids in Flower.		Day of Yr.
		1890
Cattleya superba	Brasil.	208
,, crispa	,,	209
,, labiata picta	,,	210
,, violacea	,,	211
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Dendrobium alba sanguineum	India.	213
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ROYAL AQUARIUM, WESTMINSTER.
JULY 29TH AND 30TH.
GREAT SUMMER SHOW: CARNATIONS, PICOTEES, BEGONIAS, etc.—Miscellaneous Exhibits specially invited, for which a number of Cash Prizes and Medals are reserved.
Schedules and all details from
Frampton Park Nurseries, Hackney, London. WILLIAM HOLMES.

MAIDENHEAD HORTICULTURAL SOCIETY.—The ANNUAL SHOW of this Society will be held in the grounds of CURTISFIELD, MAIDENHEAD, on THURSDAY, AUGUST 14, 1890. Entries close on August 7.
Schedules and particulars from the Secretary, O. KING, Esq., Ray Park Cottage, Maidenhead.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, JULY 29, AND WEDNESDAY, JULY 30.—ROYAL AQUARIUM.—Great Summer Show.
SATURDAY, AUG. 2.—RIPLEY (DERBY).—Rose Show.
SATURDAY, AUG. 2, AND MONDAY, AUG. 4.—LIVERPOOL HORTICULTURAL ASSOCIATION.—Summer Exhibition.

Auction Sales for the Ensuing Week.

TUESDAY, JULY 29.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.
THURSDAY, JULY 31.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Leasehold Property, known as Wright's Nursery, Lee.
FRIDAY, AUGUST 1.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

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The Gardeners' Magazine.

SATURDAY, JULY 26, 1890.

A MEMORIAL OF THE LATE MR. GEORGE DEAL was inaugurated at the annual meeting of the supporters of the Gardeners' Orphan Fund, July 18, and was liberally assisted—even to completion *pro formâ*—at the dinner subsequently held in the Cannon Street Hotel. We use the term "*pro forma*" advisedly, because it would be unjust to exclude from participation in providing for seven orphans, as a testimony of remembrance of our dear departed friend, any who, not being in the dinner party, may seem to be excluded by their position as outsiders. We hear that friends of the fund, who were friends also of Mr. Deal, and now regard his work as of priceless importance in the interests of humanity, would have taken part in the institution of the memorial had they been informed in good time of what was to take place. As regards their absence from the festive board, that is their own affair, and they will not of course complain that a team of horses was not sent to drag them to the table. But as regards the memorial, they have but to add their names and the amounts they are prepared to give, and by one stroke of the pen they will be on an equality with the rest in testifying to their admiration of the eminent services of Mr. George Deal to this useful and advancing charity. A full list of subscribers will, as a matter of course, be published, and the happy diners will, in the end, have no special advantage over those who, on the 18th were, happily we hope, dining elsewhere.

A few considerations may, we think, be, with some advantage, submitted to our readers. In the first place, then, this, like the Wildsmith memorial, exhausts itself in the devotion of the money subscribed to the end for which it is given. The subscriptions do not culminate in votes at future elections. The object in view is to place seven orphans on the Fund, in addition to the ten provided for by election in the ordinary working of the institution. We beg, therefore, that subscribers will not anticipate a power of voting concurrent with the amounts subscribed, in accordance with the plan of the orthodox rules and regulations. Whatever they subscribe to the general fund will have representation in votes at elections; but moneys given for a special purpose are disposed of for ever when that special purpose is accomplished. In other and familiar words, "You cannot have your cake and eat it too."

Other matters of importance will demand attention in connection with this memorial, and one of the first, apart from the strictly business view, is its peculiar appropriateness. The late Mr. George Deal, with all his gifts and qualities, was never seen by the world to better advantage than when giving of his strength and time and talent in the interest of the orphans of gardeners. He had, with his customary cheerfulness and *bonhommie*, given of his peculiar talent in aid of the United Horticultural Benefit Society, the safety and success of which are due in the main to the "nest egg" provided by a few earnest workers who organized the exhibitions in the City of London, and to the excellent scheme of assurance sanctioned by Mr. Finlayson, in the framing of which Mr. Deal played an important part. Could we but imagine our friend now capable of looking on, we feel assured he would be gratified, beyond all ordinary measure, in the provision made for the maintenance of seven orphans over and above the number provided for by the ordinary resources of the institution, as a testimonial of our respect for his name and appreciation of his work. Nor is that all. The Wildsmith memorial, so happily completed under the secretaryship of Mr. Turton, gave a precedent of quite a new and unique character. The man who, when living, laboured for orphans, may, when dead, be honoured by the dedication to his memory of orphans specially provided for by friends who would thus keep his name in remembrance. Let it be so. It is enough for the present that a precedent has been established, seeing it is one we would not weaken, but we rather would strengthen, and having the Deal memorial before us, invite our readers to rejoice with us that the orphans of gardeners who have been so unfortunate as to leave their children unprovided for may find in this fund a kindly barrier against sheer destitution. The pension is but a small one, and, as pointed out by the chairman at the dinner, there are often half-a-dozen children in the family where only one is named as a candidate for the charity; and, therefore, provision for that one is only a mitigation of the miseries of a family, the head of which has been untimely taken. Surely every gardener who can put by something will do his part, that his children may not become chargeable to this excellent charity.

MR. JAMES MOORE has been engaged as gardener and steward to Lord Longford, Summerhill House, Enfield, co. Meath.

MR. CHARLES SLADE has been engaged as head gardener at Clumber, Worksop, the seat of the Duke of Newcastle.

COMMITTEE OF GARDENERS' ORPHAN FUND has accepted the offer made by the Rev. H. H. D'Ombrain of the use of the rooms of the Horticultural Club, Hotel Windsor, for its meetings.

APPLES IMPORTED last month show a falling off as compared with June 1889. The quantities imported were 8,798 bushels and 15,552 bushels respectively.

ONIONS IMPORTED last month amounted in the aggregate to 171,880 bushels, as compared with 112,657 bushels imported in June, 1890.

ROYAL AQUARIUM SUMMER SHOW, on Tuesday and Wednesday next, promises to be particularly strong in begonias, carnations, and decorative plants and flowers.

Mr. J. Boyd has been engaged as head gardener to G. C. White, Esq., Stewartlea, Ayr.

Intensely Hot Weather is again reported from New York and other Eastern states, and some points in the West. Deaths from extreme heat are, of course, not to be desired, and it is painful to hear of them. But contrasting our freezing summer with the case on the other side of the Atlantic does not augment our contentedness, and we are tempted to ask how the Americans secure this apparent monopoly of caloric?

London Purple was discoursed upon by Mr. Blandford at a recent meeting of the Entomological Society. He said this arsenical compound was a waste product, and one-tenth the cost of Paris Green; it was more soluble and more easily applied. He believes arsenical compounds do not greatly affect sucking insects, such as the aphides, the ordinary kerosine preparations being more suitable for their destruction.

Lovers of Nature Visiting North Wales are recommended to obtain Darlington's handbook of the "Birds, Wild Flowers, Ferns, Mosses, and Grasses of Bettws-y-Coed and Neighbourhood." It is published at Llangollen by R. Darlington, and at London by Roper and Drowley, 11, Ludgate Hill. The plants are arranged in natural orders with notes on habit, season of flowering, and other such matters of useful detail. It is not without errors, but they are self corrective, and do not in the least diminish the usefulness of the book.

Excursion of National Chrysanthemum Society on Monday next, July 28, will have for its chief object a visit to Park Place, Henley-on-Thames, described in our issue for May 31. The party will leave Paddington at ten a.m. for Reading, and proceed thence by steam launch to Henley, and having visited the grounds of John Noble, Esq., will return to Henley to dinner. Subsequently a visit will be paid to Marlow, and the party will be due at Paddington at ten p.m.

A Handy List of Chrysanthemums has been issued for the advantage of the members of the Agricultural and Botanical Society of Ghent. It is entitled *Liste Descriptive des Chrysanthèmes d'Hiver*. It is in substance a reproduction of the catalogue of our National Chrysanthemum Society translated into French by O. de Meulenaere. The form of the book is convenient for the pocket, and the arrangement is alphabetical throughout with no class or other divisions. The publisher is A. D. Hoste, Rue des Champs, Ghent.

Clarence Peak, Fernando Po, has been explored by M. Rogozinski, who has reported on his adventure to the Paris Geographical Society. He found forests of tree ferns and rubber trees, and in open places where there were no large trees there were acres of arbutus. During the descent a collection of plants, including many orchids, was made for the University of Lemberg. Fernando Po is an island on the West African coast in the Bight of Biafra, lat. 3·35, long. 8·46.

Potato Disease as reported from many quarters is unmistakably apparent, though as yet not in serious force. From the North of Ireland the most disquieting reports have come, a general failure of the crops being feared. Only dry, warm weather can save the growth of the season, but the Jensen moulding may mitigate the calamity if practised with reasonable skill and without loss of time. The Jensen system consists mainly in moulding high and bending the shaws to one side of the ridge, so that spores washed from the leaves fall on the ground between the ridges at a comparatively safe distance from the tubers.

The Chiswick Meeting of R.H.S. on Tuesday and Wednesday last must be pronounced a brilliant success. Two great tents were filled; one with carnations and subjects submitted to the committees, the other with ferns, each distinct exhibition being of the highest merit. Amongst the ferns, the interest rose to the highest in the beautiful contributions of E. J. Lowe, Esq., who is great in scolopendriums, and C. T. Druery, Esq., who is great in lady ferns. Amongst the rare varieties were many that literally "fixed" the pteridologists by their startling distinctness, and we might almost say incredible loveliness. The weather was delightful, and visitors were many.

The Illustrated Paper, "A 1," which is well filled with matters suitable for "family reading," contains in its issue for July 19 an admirable paper by Mr. D. Dewar, of Kew, on "Rockeries and Rock Plants." It is suitably and tastefully illustrated. Papers of this kind, written by experts, who can teach without pedantry and adapt their teachings to the requirements of amateurs who are not "born gardeners," are of great service to the public, and directly tend to advance a taste for genuine horticulture. How much more entertaining in many an amateur's garden would be a modest rockery, with a few good plants of the proper rockery pattern, than the lines of golden feather and blue lobelia that in so many places are regarded as sufficient, and perhaps as a quite superior kind of embellishment?

On St. Swithin's Day we met our friends agreeably on the exhibition ground at Wolverhampton. At four that morning heavy rain had fallen in London, and rain occurred again at seven. In the first greetings at Wolverhampton the visitors from London remarked that sunshine was much wanted, which the Midlanders admitted, but added, "We want first a good twenty-four hours' rain." It was said seriously, and observation proved it to be true. For many miles around that centre the rainfall has been but slight, and the crops, which look well, were really in need of rain on the 15th, but have had some since, and probably enough for the present. There are two or three spots in the eastern counties where it is said "it almost never rains." A report on the rainfall of the season at such places would have some interest just now. Will some observant East-Anglian inquire into this matter for us?

Gardeners' Orphan Fund dinner was advantaged by liberal decorations and supplies of fruit. A magnificent lot of palms was placed around the room by Messrs. Wills and Segur, John Laing and Sons, H. Cannell and Sons, James Veitch and Sons, Sander and Co., and Monro, of Covent Garden. The tables were richly dressed, under the direction of Mr. James Hudson. The fruit was abundant, various, and of the most excellent quality, many choice things accompanying the more substantial pines, grapes, and strawberries.

A Memorial of the late Mr. Benjamin Samuel Williams was inaugurated at a meeting held on Monday last, Mr. Harry Veitch presiding, supported by Mr. J. A. Laing, Mr. Shirley Hibberd, Mr. Baker (of Bankside), Mr. B. Wynne, Mr. A. Outram, Mr. E. R. Cutler, Mr. Lewis Castle. A resolution of sympathy and condolence with the family of the late Mr. B. S. Williams was adopted in the first place, and then it was determined to form a large committee to carry out the objects of the meeting, Mr. Shirley Hibberd being named as the chairman. After much discussion of various projects, that which found favour took the form of a memorial fund to provide money prizes and certificates for the encouragement of the cultivation of stove and greenhouse plants and orchids. It was held that as we have not in this country a form of certificate really creditable to horticulture one of high artistic merit should be obtained for this purpose, thus affording to winners of the money prizes a beautiful memento of the eminent horticulturist in whose honour this organization has been projected. Mr. John A. Laing, Forest Hill, and Mr. A. Outram are appointed honorary secretaries, and to either of them, or to Mr. Shirley Hibberd, Kew, near London, communications on the subject may be addressed. A meeting of the committee will be held at 50, Parliament Street, at three p.m. on Friday next, August 1.

Prices Paid for Books Relating to Botany and Horticulture, &c., at the sale of the Hartree Library by Messrs. Sotheby, Wilkinson, and Hodge, which came to a close on Saturday last, may interest our readers. Loddiges' (C.) Botanical Cabinet, coloured plates, £22 10s.; Sowerby's English Botany, coloured plates, £13 5s. (cost Mr. Hartree £35); Sweet's British Flower Garden, both series, £6 6s.; Walton and Cotton's Complete Angler, Pickering, 1836, £15 15s.; Captain Flinder's Voyage to Terra Australis, maps and plates, £13; Hooker's Botany of the Antarctic Voyage of her Majesty's Discovery Ships Erebus and Terror, coloured plates, 1844-47, £13; Mrs. Hussey's Illustrations of British Mycology, both series, £12 (cost £8 10s.); Maximilian, Prince of Weid's Travels in the Interior of North America, translated by H. E. Lloyd, coloured plates, £12 (cost seven guineas); Hasted's History of Kent, maps and plates, £20; Sir R. C. Hoare's North and South Wiltshire, £12; Manning and Bray's History of Surrey, £28; Martius (C. F. P. de) Historia Naturalis Palmarum, coloured plates, £21 10s.; Meyer's British Birds, coloured plates, £19 10s.; Morant's County of Essex, additionally illustrated, 1768, £15 5s.; Nash's Mansions of England in the Olden Time, original issue, lithographic plates, £11 10s.; Nash's Worcestershire, with additional plates, £12 (cost £8 10s.); J. Nichols's County of Leicester, large paper, portraits, maps, and plates, with the "original" Hundreds of West Goscote and Guthlaxton, nearly all the copies of which were burned in Nichols's fire, £111; Ormerod's County Palatine and City of Chester, large paper, £297; Hakluytus Posthumous or Purchas his Pilgrimes, £25 10s.; Selby's British Ornithology, coloured plates, original copy, £27 10s. Sowerby's English Fungi, with supplement, £12 5s. (cost £7 15s.); Surtees' County Palatine of Durham, £18; Whitaker's History of Richmondshire, £10 15s.; Wolf's Zoological Sketches, both series, 1861-97, £17.

The Capacity of Leguminous Plants for collecting and keeping nitrogen is advantageously illustrated by the experimental cultures that have been carried out at the Station Agronomique, Grignon, and reported on in the "Annales Agronomiques." They were carried out by M. Dehérain on a number of plots which had been in grass for a dozen years, and had furnished abundant crops of forage, whilst the soil had been very considerably manured. The experimental plots, which had been under lucerne, were dealt with in four different ways, viz.: (1) without manure; (2) dressed with farmyard manure; (3) nitrate of soda; and (4) sulphate of ammonia. During the first three years of the experiments beet-root was grown, maize in the fourth, and at the end the soil of all the plots was found to be very poor in nitrogen, having lost at the rate of 413 kilos. per hectare per year, in addition to the 150 kilos. per annum taken out by the crops. Whilst the soil was in this condition, it was decided to crop with sainfoin, to ascertain if it would bring back the lost rate of nitrogen. For three years the sainfoin flourished, after which it became infested with various gramineous plants, and it cannot be maintained at Grignon with advantage more than five years. The crops were best on the plots manured with farmyard manure, and paid for the outlay. The question now arose, had the soil become enriched with nitrogen. Of this there was an irrefutable proof, the soil during the first three years becoming slightly enriched, and notably so during the last two of the five. The appearance of inferior grasses in the sainfoin diminished the quality of the forage, resulting in a loss on the cost of manure and harvesting. The transformation thus appeared at first sight a financial disaster, and therefore it became necessary to ascertain whether an enrichment of the soil would be found to compensate for the loss in the other direction. Analytical examinations showed that such had taken place. The parcel which received manure during the first three years increased in nitrogen under the influence of the grass. The parcel which remained without manure was also considerably enriched, gaining in three years about half the quantity lost since the beginning of the experiments. It was thus established that the grass (sainfoin) had caused an augmentation of nitrogen in the soil, and the experimenter expressed his agreement absolutely with Sir John B. Lawes upon the amelioratory action of pastures.

ROYAL HORTICULTURAL SOCIETY, July 22.

Floral Committee.

Present: William Marshall, Esq. (in the chair); and Messrs. Shirley Hibberd, R. B. Lowe, C. T. Druery, James Walker, H. Herbst, G. Nicholson, T. Baines, W. C. Leach, R. Dean, W. Goldring, George Paul, and W. Holmes.

The most important of the miscellaneous contributions was the large and extremely beautiful collection of cut roses from Messrs. Paul and Son, Cheshunt. The collection was thoroughly representative and the blooms were throughout of high quality. Chief amongst the new varieties were Lady Helen Stewart, a fine hybrid perpetual with finely formed flowers of a glowing crimson colour. Dowager Duchess of Marlborough, a beautiful hybrid perpetual, the flowers of average size and good form and delightfully fragrant, the colour purplish rose; especially deserving of attention for its perfume. Bruce Findlay, a brilliant crimson hybrid perpetual of high quality. Cheshunt Scarlet, a valuable garden rose, the flowers of medium size and produced in great profusion, the colour bright crimson scarlet, one of the most valuable garden roses of recent introduction. T. B. Haywood, a promising hybrid perpetual, the flowers large, full, and globular, the colour rich crimson, somewhat similar in build to Alfred Colomb, but different in colour; and Clothilde Soupert, a new polyantha rose evidently of much value, the blooms comparatively large, quite full and of good form, the colour creamy white, bright rose carmine in the centre. The firm also sent a large collection of hardy flowers and several boxes of carnations arranged in medium-sized bouquets with foliage. Mr. T. S. Ware, Hale Farm Nurseries, exhibited a collection of border carnations, and Messrs. J. Veitch and Sons, Chelsea, staged a collection of carnations and picotees, comprising several hundred blooms, all of high quality and representing the finest show, self and fancy varieties at present in cultivation.

Mr. Reynolds, gardener to the Messrs. de Rothschild, Gunnersbury Park, Acton, exhibited a large group of the red and pink forms of Souvenir de la Malmaison carnation, which arranged in conjunction with ferns and palms presented a very pleasing appearance. Messrs. H. Cannell and Sons, Swanley, exhibited several seedling begonias and a box of blooms representing a series of remarkably fine double varieties. From the Royal Gardens, Kew, came cut specimens of Solanum Wendlandi, a remarkably handsome species bearing large pale blue flowers; S. Seaforthianum, a beautiful species bearing large clusters of medium-sized bright blue flowers; Eucomis bicolor, one of the finest of these handsome Cape bulbs; Mesembryanthemum falciforme, an extensively beautiful species, bearing a profusion of large flowers of a soft mauve pink hue; Æschynanthus speciosus, one of the finest of those brilliantly coloured stove plants; Nerine curvifolia, a beautiful species with brilliant scarlet flowers; and Zephyranthus robustus, a beautiful species with large flowers of a delicate pink hue.

Orchid Committee.

Present: Sir Trevor Lawrence, Bart., M.P. (in the chair); and Messrs. J. O'Brien, C. Pilcher, E. Hill, J. Dominy, H. J. Veitch, and W. B. Latham.

A few orchids were shown, Mr. F. Sander and Co., St. Albans, exhibited a good specimen of Cattleya Schofieldiana, a distinct species, the flowers of medium size with green and brown sepals and petals, and white labellum painted with rose; Masdevallia Rolfeana, Dendrobium chrysolobum, a dwarf-growing species, bearing short dense spikes of rose-coloured flowers. Messrs. Pitcher and Manda, exhibited Cypripedium Hyeanum, a handsome form with greenish yellow flowers. Messrs. B. S. Williams and Son, Upper Holloway, exhibited a distinct unnamed orchid, rather tall in growth and bearing terminal racemes of flowers about an inch in diameter, the sepals and petals white spotted with rose, and the labellum purple with yellow column. Messrs. J. Veitch and Son and Sir Trevor Lawrence also exhibited orchids.

Fruit Committee.

Present: T. F. Rivers, Esq. (in the chair); and Messrs. J. Cheal, P. Crowley, P. C. M. Veitch, H. Balderson, W. Warren, G. Wythes, and J. Hudson.

On this occasion prizes were offered for peas by Messrs. C. Sharpe and Co. For six kinds Mr. W. A. Cook, gardener to Major Heneage, Compton Bassett, Calne, was first with good dishes of Telephone, Empress, Jubilee, Duke of Albany, and Prodigy. In competition for prizes for three dishes, Mr. J. Wilkinson, Merrow, Guildford, was first with excellent examples of Sharpe's Queen, Triumph, and Victory. Mr. R. Nicholas, Castle Hill, South Molton, exhibited three exceptionally large and finely ripened fruits of the Queen pine and was awarded the silver Banksian medal. Mr. W. C. Leach, Albury Park, Guildford, sent fruit of the Hornet raspberry, a large fruited and evidently free cropping variety.

Novelties.

First-class certificates were awarded as under:—

To Messrs. Paul and Son for

Clematis erecta fl. pl.—A double form of this well-known herbaceous species. The flowers are greenish white, and produced in elegant clusters.

To Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, for

Epidendrum sp. ?—A handsome species evidently closely allied to E. falcatum. The growth is dwarf with long, stout leaves, and the flowers are between three and four inches in diameter; the sepals white tinted rose, the petals creamy white, and the labellum white with small lemon-coloured blotch at the base.

Oncidium rhysorrhapis.—A distinct and handsome species, bearing dense panicles of small flowers, the sepals and petals yellow, marked with transverse lines of marone, and the labellum bright yellow.

To Mr. J. Barkham, Longford House, Ryde, for

Melon Barkham's Seedling.—A scarlet-fleshed variety, the fruit rather large, globular, the skin pale green, finely netted, the flesh thick, firm, and richly flavoured.

Awards of merit were made as under.

To Mr. R. Dean, Ealing and Bedfont, for the undermentioned carnations:—

Rosalind.—A dwarf growing variety, producing a profusion of medium-sized bright crimson flowers.

Rowena.—A distinct and beautiful variety, the flowers of medium size, with elegantly fimbriated petals, the colour pale pink.

To Messrs. H. Cannell and Sons, Swanley, for

Begonia H. M. Stanley.—A handsome tuberous variety; the plant dwarf in growth, the flowers very large and finely formed, the colour glowing crimson.

Begonia Lafayette.—A neat growing and profuse blooming variety; the flowers about an inch and a-half in diameter, perfectly double and regular in outline, the colour brilliant scarlet.

Gloxinia Mrs. Stanley.—A beautiful erect variety, the flowers large, finely formed, and profusely spotted with purple on a pale ground.

To Messrs. Paul and Son for

Rose L'Ideale.—A distinct noisette introduced a few years since. The flowers are of medium size, and produced in large clusters; the colour a rich apricot, effective in the garden and useful for the supply of flowers for indoor decorations.

To Messrs. F. Sander and Co. for

Grammatophyllum multiflorum.—A distinct species of bold growth, and bearing erect spikes rising to a height of about two feet. The flowers are about two inches in diameter, and closely arranged on the spike; the colour bright green with dull brown blotches.

Masdevallia Rolfeana.—A dwarf growing species, with rather large flowers of a deep marone crimson colour.

A botanical certificate was granted to Messrs. J. Veitch and Sons for

Masdevallia elephanticeps.—A distinct species, remarkable more for its interest than its beauty, although by no means wanting in attractiveness. The plant is dwarf, and the flowers are comparatively large and borne on stalks two or three inches in length. The colour of the inner side of the flower is deep crimson, and of the outer side bright yellow.

FERN EXHIBITION AND CONFERENCE.

July 22 and 23.

The exhibition of ferns held by the Royal Horticultural Society at Chiswick, on Tuesday and Wednesday, in conjunction with the annual show of the National Carnation Society, was unique in the number of the species and varieties, but those who expect that it was a great exhibition of lofty tree ferns and mighty specimens misapprehend the character of the gathering. The number of kinds brought together was simply marvellous, and that they included many novelties is made sufficiently evident by the certificates awarded. The number of exhibitors was not large, but they all contributed so liberally that the several collections occupied the whole of the large exhibition tent, and much of the space in the spacious marquee in which the carnations and picotees were arranged. The principal trade exhibitors were Messrs. W. and J. Birkenhead, Sale; Messrs. J. Veitch and Sons, Chelsea; and Mr. H. B. May, Edmonton; and the private growers who contributed to the exhibition were: E. J. Lowe, Esq., Chepstow; C. T. Druery, Esq., Fernholme, Forest Gate; and Mr. H. Wright, gardener to J. A. Whitard, Esq., Streatham. The awards made were: the gold medal to Messrs. J. Veitch and Sons and to Messrs. W. and J. Birkenhead, the silver gilt Flora medal to Mr. Druery and Mr. H. Wright, and the challenge cup presented by N. N. Sherwood, Esq., for the best collection of hardy ferns, to Mr. Lowe, whose collection of varieties of British species formed a feature of much interest and great importance.

Mr. E. J. Lowe's collection of varieties of species indigenous to the United Kingdom was remarkable alike for its extent, the number and beauty of the varieties, and for the development of the specimens. The collection contained a few of the older forms now in general cultivation, but the majority of the specimens represented varieties that have been raised by the exhibitor, and are distinguished not less by their rarity than by their great beauty. The varieties of the Lady fern represented included finely-developed examples of Athyrium filix-fœmina acrocladon, the finest of all the dwarf crested forms; A. f.-f. plumosum Willsi, an erect-growing form of the most elegant character; A. f.-f. cruciatum stemma, a fine variety with long, narrow cruciate fronds; A. f.-f. cruciatum calomelanos, a remarkably handsome tasselled variety; A. f.-f. laceratum excelsum, a beautiful form with broad and elegant fronds; A. f.-f. cruciatum gracile, a form of Victoriæ with fronds of medium width; A. f.-f. cristata Jonesi, one of the best of the several crested varieties; A. f.-f. Fortuna, an extremely elegant variety with narrow fronds, in the way of Frizelliæ, but differing in the short pinnæ being finely cut; A. f.-f. uneum cruciatum, a distinct variety with narrow dark green fronds; A. f.-f. plumosum clarissimum, a light and elegant form; A. f.-f. cristatum Olympia, a beautiful variety with large fronds, having the whole of the pinnæ finely crested; A. f.-f. grandiceps coronans, a bold growing variety, the fronds densely crested at the apex; A. f.-f. cruciatum lineare, a beautiful variety with long narrow fronds; A. f.-f. cruciatum Rhea, a handsome form with fronds of great length, and rather narrow; one of the best of its class; A. f.-f. congestum Grantæ, an erect-growing and finely-crested form. The lastreas included Lastrea filix-mas crispatum, similar to the well-known Cristata; L. paleacea subcristata, a variety of this form of the male fern with broad fronds, having the points of the pinnæ slightly crested; L. p. crispatum, the fronds slightly crisped; L. filix-mas grandiceps, a good type of this fine old variety; and L. f.-m. Bollandiæ, an old variety, somewhat plumose in character. Polypodium vulgare Cambricum astræa, must be mentioned as the most handsome of the forms of the Welsh polypody, the fronds being of great length and breadth, and very finely divided. The collection was particularly rich in polystichums, chief amongst them being Polystichum angulare plumosissimum, light and elegant; P. a. grandiceps, a finely-crested form; P. a. cluens, a beautiful variety with narrow fronds; P. a. frondosum, an exquisitely beautiful form, with broad dense fronds; P. a. grandiceps coronum, light and elegant, with good crests; P. a. plumosum coronare, the fronds moderately plumose with huge crests; P. a. decompositum plumosum, a handsome form with broad, dense fronds; P. a. divisolobum plumosum densum imbricatum, a variety of such great beauty as to deserve a less cumbrous name; P. a. latifolium grandiceps, a robust grower with broad fronds crested at the apex; and P. angulare conspicuilobum Jonesi, a tall-growing variety of the most elegant character; and P. aculeatum hybridum and P. a. nepos, two elegant forms of especial interest as representing crosses effected between P. angulare and P. aculeatum. The Hart's tongues included numerous crested varieties and a series of forms of the Crispum type, of which the greater proportion had certificates conferred upon them. The collection also contained several variegated varieties, which were remarkable more for their interest than for their beauty, and a few varieties of Adiantum capillus veneris.

Messrs. W. and J. Birkenhead's collection was distinguished by its comprehensive character and the excellent condition of the plants, and whilst contributing greatly to the interest of the exhibition, it served to show in a remarkable manner the immense extent and success with which ferns are grown by the firm. It contained upwards of six hundred species and varieties, and stove, greenhouse, hardy exotic, and British kinds were equally well represented. Amongst others that were conspicuous were Lastrea filix-mas fimbriata cristata, an exceedingly beautiful form of the crested male fern

certificated at the Temple show, and fully described in these pages at the time; Polypodium vulgare trichomonoides and P. v. elegantissimum, two of the most beautiful of the several forms of the common polypody; Athyrium filix-fœmina setigerum cristatum, an extremely elegant and finely-crested form; Pteris aquilina grandiceps pendens, a remarkably distinct form; P. aquilina cristata, distinct variety, with prettily-crested fronds; Athyrium filix-fœmina Frizelliæ coronans, a beautiful form, with rather short, heavily-crested fronds; Hymenophyllums, trichomanes, todeas, and other filmy ferns in great variety; Gleichenia dichotoma and G. dicarpa longipinnata, two of the most beautiful of these elegant ferns; Pellæa calomelanos, a slender-growing species of the most elegant character; Nothochlæna sinuata, a beautiful species with long slender fronds; Gymnogramma Pearcei robusta, and G. schizophylla gloriosa, two of the most exquisitely beautiful of the stove ferns, and differing from the specific forms in being of larger growth and having a better constitution; G. Wettenhalliana, G. elegantissima, G. Alstoni, G. chrysophylla grandiceps, four of the most beautiful of the gold ferns; and G. Peruviana argyrophylla, still the finest of the silver ferns. There were at least one hundred species and varieties of adiantums in the collection, and all the finest of the maidenhairs were, as a matter of course, well represented. Especially noteworthy were Adiantum manuatum, a very distinct form of the A. cuneatum type, with finely-cut pinnules; A. Collisi, a light and elegant form of special value for cutting; A. Lawsonianum, an elegant kind with finely divided fronds; A. mundulum, a dwarf and elegant species, especially useful for supplying fronds for buttonhole bouquets; A. digitatum, a distinct kind with large and elegant fronds; A. rhodophyllum, A. Victoriæ, and other dwarf-growing hybrids of recent introduction. Davallias were especially well represented, and included D. fijiensis plumosa, which in elegance is perhaps unsurpassed by any other species included in the genus; D. tenuifolia stricta, and D. parvula, a very small-growing and exceedingly beautiful species. The firm also presented a representative collection of selaginellas, comprising about thirty distinct kinds, all of which were represented by examples large enough to show their distinctive characteristics, and in the most robust state of health.

Messrs. J. Veitch and Sons' collection was remarkable alike for its extent, the number of species and varieties it contained, and the taste shown in the arrangement. The firm exhibited in addition to the general collection a large group of todeas which attracted much attention, and they had also a group consisting of crested forms of Pteris serrulata. The following are the species and varieties forming this important collection, namely: Acrostichum auritum, Actinopteris radiata var. australis, Adiantopsis radiata, Adiantum amabile erectum, A. anomalum, A. asarifolium, A. Bausei, A. Birkenheadi, A. capillus veneris, A. c. v. cornubiense, A. c. v. daphnites, A. c. v. grande, A. c. v. fissum, A. c. v. O'Brienianum, A. c. v. Maraisi, A. c. v. Vallerandi, A. caudatum, A. Collisi, A. concinnum, A. cuneatum deflexum, A. c. dissectum, A. c. elegans, A. c. grandiceps, A. c. gracillimum, A. c. Lambertianum, A. c. Lawsonianum, A. c. Legrandi, A. c. Luddemannianum, A. c. Pacotti, A. c. strictum, A. curvatum, A. Daddsi, A. decorum giganteum, A. dolabriforme, A. Edgeworthi, A. excisum, A. e. Leyie, A. e. multifidum, A. e. nanum, A. farleyense, A. f. alcicorne, A. fissum, A. Flemingi, A. fragrantissimum, A. grandiceps, A. gracillimum, A. gratum, A. Lambertianum, A. Lathomi, A. Lawsonianum, A. lunulatum, A. macrophyllum striatum, A. mundulum, A. Oweni, A. pedatum, A. Reginæ, A. reniforme, A. rhodophyllum, A. rubellum, A. schizophyllum, A. scutum roseum (May's), A. scutum roseum (Baron's), A. strictum, A. trapeziforme, A. Versaillense, A. Victoria, A. Waltoni, A. Waltoni diffusum, A. Weigandi, Aglamorpha Meyeniana, Anemia phyllitidis, Asplenium attenuatum, A. ferulaceum, A. lanceum, A. laxum pumilum, A. nidus avis, A. obligum, A. palmatum, A. palmatum cristatum, Asplenium pterioides, A. scandens, Athyrium filix-fœmina Clarissimum, A. f.-f. crispata cristatum, A. f.-f. curtum multifidum, A. f.-f. depauperatum, A. f.-f. eroso cristatum, A. f.-f. formosum cristatum, A. f.-f. Frizelliæ, A. f.-f. grandiceps, A. f.-f. interrupta cristatum, A. f.-f. Kalothrix, A. f.-f. trichomanoides, Blechnum brasiliense, Ceratopteris thalictroides, Ceterach aureum, Cheilanthes vestita, Cibotium regale, Cyrtomium falcatum pendulum, C. falcatum Fensomii, Davallia alpina, D. elegans polydactyla, D. heterophylla, D. Mooreana, D. parvula, D. pedata, D. scabra, D. tenuifolia, D. tenuifolia stricta, D. tenuifolia Veitchiana, Dicksonia Lathamii, Dictyogramma japonicum, Didymochlæna truncatula, Dipteria Horsefieldii, Doodia aspera multifida, Dryopteris hastata, D. nobilis, D. palmata, D. pedata, D. sagittæfolia, Elaphoglossum rubiginosum, Fadeyna prolifera, Gymnogramma chrysophylla Alstoni, Gymnogramma chrysophylla grandiceps, G. chrysophylla Laucheanum, G. decompositum, G. Mayii, G. Muelleri, G. Parsoni, G. Pearcei, G. Pearcei robusta, G. rufa, G. schizophylla gloriosum, G. schizophylla argentea, G. schizophylla aruncata, G. trifoliata, G. Wettenhalliana, Gymnopteris quercifolia, Hemionitis cordata, H. palmata, Hymenodium crinitum, Hypoderis Brownii, Hypolepis Bergiana, Lastrea fragrans, L. fluctuosa, L. filix-mas grandiceps, L. f. m. Iveryana cristata, L. f. m. lineare, L. f. m. pumila, L. f. m. ramulosissima, L. lepida, L. patens, L. patens superba, L. tenericaulis cristata, L. Richardsii multifida, Lepicystis sepulta, Litobrochia robusta, Lomaria discolor bipinnatifida, L. gibba, L. gibba rosea, L. L'Herminiere, Lomarioptsis buxifolia, Lonchites pubescens, Lycopodium hippurus, Marattia Cooperii, Meniscium oligophyllum, Microlepia hirta cristata, M. platyphylla, Nephrodium molle corymbiferum, Nephrolepis Bausei, N. cordata compacta, N. davallioides, N. davallioides furcans, N. Duffi, N. exaltata plumosa, N. neglecta, N. philippinensis, N. rufescens tripinnatifida, Niphobolus lingua corymbifera, N. rupestris, N. species? (from Japan), Nothochlæna chrysophylla, N. nivea, N. trichomanoides, N. sinuata, Osmunda japonica corymbifera, O. javanica, O. regalis cristata, Pellæa geranifolia, P. tenuifolia, P. Wrightiana, Pleopeltis fossa, P. xiphias, Pæciopteris flagellifera, Platycerium alcicorne, P. alcicorne major, P. biforme, P. grande, P. Hilli, P. stemmaria, P. Willinckii, Polypodium appendiculatum, P. angustifolium, P. crassinervum, P. incurvatum, P. lucidum, P. nigrescens, P. percussum, P. Scouteri, P. tripartitum, P. refractum, Polystichum angulare cristatum, Pteris arguta (Latham's var.), P. Bausei, P. cretica Mayi, P. c. nobilis, P. serrulata cristata compacta, P. s. c. major, P. s. c. Naylori, P. s. c. parvula, P. s. c. projectum nanum, P. tremula grandiceps, P. t. flaccida, P. t. foliosa, P. t. nana, P. tricolor, Rhipidopteris peltata, R. p. gracillima, Scolopendrium vulgare crispum, S. v. endivæfolium, S. v. cristulatum, S. v. grandiceps, S. v. Kelwayi, S. v. spirale, Selliguea caudiforme, Thyrsopteris elegans, Todea grandipinnula, T. intermedia, T. plumosa, T. superba, Vittaria lineata, Woodwardia radicans cristata.

Mr. H. B. May's collection consisted exclusively of exotic species and varieties, and was remarkable for its extent and the excellent condition in which the plants were staged. Some 300 distinct kinds were represented, and chief amongst the comparatively new forms were Gymnogramma Mayi, a form of G. Peruviana, of great beauty and more vigorous in growth; Pteris leptophylla princeps, a handsome form, with crested pinnæ; P. cretica nobilis, a densely-crested variety of much value for decorative purposes, and one of the best of the crested ferns for rooms; P. serrulata densa, a charming variety of dwarf growth.

The collection from Mr. C. T. Druery was distinguished by the large number of varieties it contained of Blechnum spicant. It was also rich in varieties of Lastrea filix-mas, Anthyrium filix-fœmina, and Polystichum angulare. Especially noteworthy was the example of Anthyrium filix-fœmina Victoriæ from the original find, which is very different to the forms of this variety in general cultivation, being much taller and lighter in appearance. Very attractive also was the fine specimen of the crested Male fern. Mr. Wright's group consisted chiefly of large specimens of well-known kinds, chief amongst them being the example of Platycerium grande.

First-class certificates were granted by the Fern Committee to Mr. E. J. Lowe, for *Athyrium filix-fœmina cruciatum columnare, A. f.-f. c. calomelanos, A. f.-f. c. gracile, A. f. f. cristatum magnificum, A. f.-f. grandiceps coronare, Trichomanes radicans crispum cristatum, Adiantum capillus veneris autumnale, Lastrea paleacea pendens, L. p. globosum, Lastrea spinulosa spectabile, Polystichum angulare plumosum foliosum, P. a. polydactylum variegatum, P. a. latifolium grandiceps, P. a. remota decurrens, P. a. divisilobum plumosum, P. a. d. plumosum imbricatum, P. a. d. plumosum Baldwini, P. a. flabellipinnatum, P. a. decompositum frondosum, P. a. plumosum coronare, P. aculeatum pulcherrimum, P. a. hybridum, P. a. Nepos, P. a. Albolæ, P. a. plumosum plumosissimum Scolopendrium vulgare undulatum Synthesina, S. v. u. muricato spirale, S. v. crispum reflexum, S. v. c. grandiceps, S. v. c. Cowburni, S. v. c. robustum, S. v. c. angustatum, S. v. variegatum aureolum, S. v. v. luminare, S. v. projectum capitatum, S. v. perafens Rosetta, S. v. inæquale cristatum Pericallis, S. v. ramosum Alexandræ.* To Mr. C. T. Druery for *Athyrium stipatum angustatum, A. f.-f. percristatum, A. f.-f. plumosum superbum, Lastrea montana cruciatum gracile, Blechnum spicant ramo cristatum, B. s. concinnum, B. s. plumosum, Polypodium vulgare pulcherrinum, Scolopendrium vulgare crispum.* To Messrs. H. Stansfield and Son for *Scolopendrium vulgare fimbriatum luteum, S. v. grandiceps fimbriatum, S. v. g. f. cristatum.* To Mr. H. B. May for *Gymnogramma chrysophylla grandiceps superbum.* To Messrs. W. and J. Birkenhead for *Pteris aquilina depauperata grandiceps pendens, Athyrium setigerum per cristatum, A. f.-f. Frizelliæ coronare, Adiantum manuatum.* To Messrs. J. Veitch and Sons for *Todea pellucida fœniculaceum, Pteris serrulata cristata parvula.*

CONFERENCE.

A conference was held on Wednesday afternoon. The chair was occupied by Dr. Masters, who, in his opening remarks, urged upon those present the importance of devoting attention to the nomenclature of ferns, and making an effort to reduce the number of so-called species. The papers read were as follows: "The Systematic Relations of Ferns," by Professor Bower; "The Cultivation of Exotic Ferns," by Mr. W. H. Gower; "Hybrid Ferns," by Mr. E. J. Lowe; "Plumose British Ferns," by Mr. C. T. Druery; "Hardy Ferns and their Cultivation," by Mr. J. Birkenhead.

MEMORIAL TO THE LATE MR. B. S. WILLIAMS.

I AM pleased to hear that something is likely to be done in connection with this matter, and trust that some well matured plan will be devised before action is taken. A committee will, I should hope, be formed in London, and I would suggest that the same be done in Manchester and Edinburgh. If this plan is adopted, I have permission to say that the chairman of the Council of the Manchester Horticultural Society (Mr. Joseph Broome) will kindly undertake the duty of chairmanship of a committee that would be formed in this city. My earnest desire is that something should be done worthy of the occasion. The effort of course must be a united one. There is no occasion for haste, therefore better wait for a week or two in order that some united understanding be come to before the public appeal is made. I think that a memorial medal and the Gardeners' Orphan Fund should form features of the undertaking. This is a young institution, and is calculated to do a vast amount of good; besides which, it appeals to the sympathies of all. I know that there is the Gardeners' Royal Benevolent Institution, which has done, and is still doing excellent work, and in which I have for many years taken a lively interest; but the appeals of late have been so numerous in connection with this institution, that my fear is that if it is mixed up with this appeal it would weaken the cause we are all anxious to support.

Manchester. BRUCE FINDLAY.

ENEMIES IN THE GARDEN.

THE blackbirds and thrushes eat my fruit; the sparrows devour my peas, and the mice nibble my pinks. Is there another body of men so pestered by devouring creatures as we gardeners are? Surely not. If there is let me hear from them. I shall believe then that we do get a little sympathy shown us sometimes, but I think it is rather a small lot. With regard to my present trouble, I should like to say that I do not mind the birds having a share of my fruit and peas, but I do protest against the mice eating my pink pipings, especially as they were new and choice sorts, which cost me something to secure them. Someone will perhaps say that I must have been careless in treating them, but I shall not admit it. I put the pipings very carefully round some six-inch pots, and placed them in a cold frame, as I thought secure from all depredators. I was, however, mistaken, for the following morning, when I went to the frame I found all my choice pipings had been eaten down to the soil by mice. I was not in doubt as to what was my enemy, as I knew that the little brown field mice will eat pinks in the open ground. I therefore set up some traps and have since caught one of them. I need hardly say it will not devour any more pinks. I shall not have written this note in vain if it should act as a caution to any of your readers who may have choice pink pipings to be careful not to place them within reach of such an enemy as I had. To be forewarned is to be forearmed, which I hope everyone who reads this will be, if valuing pinks as I valued mine. J. C. C.

THE KEW COLLECTION OF BRITISH FERNS.

By Charles T. Druery, F.L.S.

Fashion in matters horticultural, as well as in others, has much to answer for. At one time she lavishes her favours so profusely on her floral pets that they become pampered and artificialized out of all that original simple beauty which constitutes their legitimate charm; and at another, she persistently turns her back upon claims of equal or greater merit in defiance of all that can be done or said or written to gain for them their due share of popular regard.

Thus it has been for many years with our lovely British ferns, and especially with those charming varieties which nature, in her freakish moods, has, in some occult fashion, created and planted for the benefit of the variety hunter here, there, and yonder in the ferny nooks and lanes and about the moors of Devon, Dorset, and Somerset especially, but also in most of the counties where the climatal conditions are favourable to the growth of the common forms. Thirty or forty years ago they were fashion's favourites, and the existence of these curious and beautiful sports, tasselled, plumose, &c., was fully recognized. There was indeed much such a rage for them then as there is now for orchids, and to our minds with fully as much justification, for there is beauty of form of foliage as well as beauty of colour in the flowers and in the study of the delicate tracery and manifold shades of verdure in fern fronds, the "harvest of a quiet eye" is inexhaustible. Dame Fashion, however, lacking discrimination, as she frequently does, an accumulation resulted of an unlimited number of forms, many of which were simply odd and eccentric, and hence unworthy of culture, satiety ensued and a reaction, and eventually they fell altogether out of popular notice. A vivid recollection of this would be advisable among our seedling raisers of to-day as a corrective.

No taste, however, dies out altogether where real merit and true natural beauty form its foundations, and hence, though nurserymen with few exceptions followed the popular taste in new directions, and ceased altogether to grow British ferns, yet not only were a few choice private collections kept up in various parts of the country, but their owners, true and constant fern lovers and, what is more, fern hunters, continued their researches far and wide for new forms, succeeding so well that a large number of new and surpassingly beautiful varieties gradually supplanted the inferior forms, and so vastly improved their collections.

Furthermore, these collections were swelled by the acquisition of a considerable number of choice forms by selective propagation from spores of the best of the wild finds, and after a time a step further was taken by the practical demonstration of the possibility of crossing one variety with another, and thus producing plants embodying very charming combinations of different types of variation. The artificial or horticultural varieties are, however, still in the minority, and it is mainly due to the singular capacity of our native ferns for "sporting" under purely natural conditions that we owe the wealth of lovely and curious forms of which so fine a representative collection may now be seen at Kew.

For a long time it was felt as a natural reproach by those who were fully alive to the manifold beauties of our British Filices, that our National Botanical Gardens at Kew practically ignored them, though affording every encouragement in the way of careful housing and skilful culture to all branches of the exotic flora, exotic ferns included. Many, indeed, of the standard works on ferns emanated from the Kew authorities, but no prominence was given to the varietal features of our British species, striking as they are, and all the forms, even the most beautiful, were classed as "monstrous," and therefore beneath the notice of the scientific botanists.

Now it has been a standing puzzle to us why such a term as "monstrous" should embrace perfectly symmetrical and constant forms, created by Nature herself and altogether independently of human selection and human taste, the results of which, in some cases, might merit such a stigma. We can quite understand and approve a rigid line being drawn by men of science at those purely horticultural productions which fill our nurserymen's catalogues. Beautiful as many of them are, their name is legion, and their multiplicity would obviously swamp research; but we contend that to include under such a ban the purely spontaneous productions to which we allude, is to ignore a field of study in which much may be learnt, since it is precisely in this area of freakish variation that the origin of many now existing species would probably be found could we only go back far enough to trace it.

We could even go a step further and forgive the application of the term "monstrous" to the cristate forms, assumed by so many species, since, charming as they are, there seems something weird and unnatural in the formation of tassels more or less ornate and heavy at the apices of the fronds and pinnæ, but surely it is absolutely inapplicable to the lovely plumose and decomposite forms in which the pure normal outline is fully maintained, and Nature seems only to be bent upon surpassing herself in delicate and elaborate refinements of the normal type.



PACHYSTOMA THOMSONIANUM (Sepals and petals white, lip greenish spotted with purple.) (See page 446).

With the object of removing the reproach aforesaid, a memorial to the Board of Works was signed some years back by a few of the leading fern lovers, advocating the formation of a national collection embodying the best types, and as the result a money grant was made for the purpose. The late Colonel A. M. Jones (of Clifton), Mr. E. J. Lowe, Mr. E. F. Fox, and others, then contributed some of their choice varieties, and formed the nucleus of a good representative collection. Mr. W. C. Carbonell, of Usk, who for some years had devoted his attention to our British varieties and formed one of the finest collections in the kingdom, then died, bequeathing his plants to Kew, and thus, in conjunction with those already given, forming a collection which was fully worthy of the capital accommodation provided for it by the Kew authorities. As the general public have thus a splendid opportunity of judging for themselves the wealth of delicate beauty and singularity of form which has been evolved, mainly by Nature, from the few species of ferns indigenous to the British Isles, we purpose giving a general sketch of the collection, and indicating for their guidance the locality of the plants of special interest and beauty. It is obvious from the great number of varieties that only the cream can be thus indicated, and in point of fact it is desirable to concentrate our attention upon these rather than attempt to examine the whole, many necessarily being sub-varieties, a good proportion of which might, in our opinion, be eliminated with advantage. All these we absolutely ignore, as well as many duplicates. Our list consequently may be taken as embracing only the most noteworthy, and as all the plants are very legibly labelled we think there should be no difficulty whatever experienced in following us through the collection.

(To be continued.)

THE FRUIT CROP IN 1890.

By James Douglas.

The present season is remarkable, as far as our garden here is concerned, in the almost total failure of the plum crop. The pear crop is almost as bad, and the apple crop is a partial failure. I have no doubt that the main cause of this calamity was the severe frost of March last, when Fahrenheit's thermometer fell as low as 10 deg., or a register of 22 deg. of frost. The blossoms of the trees were not expanded, but they were sufficiently advanced for the extreme cold to penetrate the unexpanded blossoms, and make sad havoc of the stigmatic portion of them. Close observers of the characteristics of fruit tree blossoms in an expanded and unexpanded condition are well aware that the stigma is the easiest injured of any part by extreme cold; it is the best protected certainly, being surrounded by the stamens in the unexpanded state of the blossom, and the petals wrap it around very closely indeed; but one may see the petals intact, the stamens underneath them perfectly sound, and in the centre of all the stigma utterly destroyed. This has been the case during the present year, and the total failure of the plums has not been so thorough since I entered into my present situation in the year 1863. These are shy bearers, of course, that one does not look for a crop upon them except in good seasons, but I cannot recollect the season that we did not get a fair crop from Denyer's Victoria, but even that prolific sort is a failure now. It is in seasons such as this when one daily passes rows of healthy trees, and sees nothing but leaves upon them, that thoughts of an orchard house runs in the mind, and the certainty of a crop therefrom. The roughly built house of deal boards, unheated, the rafters and glass of the commonest description, is altogether better than trusting the trees in the open air, but a house with a double row of four-inch pipes in it may almost be said to bid defiance to the rigour and uncertainties of our insular climate. Those of us who can remember the first unheated orchard houses can testify to their value in protecting fruit trees when in blossom from frost, but we found in the course of years that real safety could only be obtained in heated houses. I well remember the late Mr. J. R. Pearson, of Chilwell, Notts, one of our best pomologists, writing confidently in a contemporary of the perfect safety of the trees in an unheated house, and it was stated that hot water pipes were quite unnecessary for the protection of the trees. I advocated the heating of the houses as not only guaranteeing the safety of the fruit blossoms during severe frosts, but also as aiding their fertilization during the cold dull weather we have early in the year, even when the frost is not very keen; and as it happened that very season Mr. Pearson failed with his peaches, nectarines, and plums, while we in our heated house had plenty. An unheated house is but little use for protecting tender plants in the winter; but if there is just sufficient hot water piping to keep out the frost, the value of the house is increased far beyond the mere cost of the hot water pipes.

We do not now hear so much of orchard houses, but in seasons like the present, when good dessert fruit such as the best plums, &c., are in demand in an establishment, it is necessary to consider what can be done to obtain them, and as far as I know there is nothing better than glass, and the two best arrangements would be glass wall cases or a span-roofed house in which trees in pots can be grown. I certainly have no hesitation in deciding for the span-roofed house, and the cultivation of trees in pots. I had to attend to such an orchard house for a long period, and can truly say that if the heart is in the work the cultivation of the trees is a source of real pleasure, and the quality of the fruit which may be produced is of the best. One may obtain as good plums from a wall as any that could be grown under glass, but pears from an orchard house, grown in pots, are certainly superior to out-of-doors cultivated specimens, wherever they may be grown. It is much safer and better in all respects to grow peaches and nectarines under glass in orchard houses. The advantage of them is found in the large number of varieties that can be grown in a small space, and pot trees give the cultivator greater command over the roots. Overgrowth can readily be restrained by withholding surface dressings, and any lack of vigour can be made good by the application of a handful of rich compost to the surface of each pot. There is always a difficulty in keeping fruit trees clean; such as plums, peaches, nectarines, and cherries on walls, but when they are grown under glass the black aphis is readily destroyed by fumigating the house with tobacco smoke, and all gardeners know that cleanliness from parasites is essential to the full development, perfect ripening, and good colour of the fruit.

One point much in favour of pot culture is the early age at which they begin to bear. Take a "maiden" tree, as they are termed in the trade, that is one that has made a single growth in a season from the bud or graft; let this tree be planted in a nine, ten, or eleven-inch pot, according to its size, say in November. It is a good plan to go early in the autumn to the nursery and select the trees in a growing state; it is better to pay a trifle more to obtain strong, healthy, well-rooted examples. I use to pot them in a compound of loam four parts, decayed manure one part, with a nine-inch potful of half-inch bones to each barrow load of the potting soil. The trees may be pruned before they start into growth in the spring. Let them be placed in a light, open position in the orchard house; to be well syringed daily to keep the leaves clean, and with careful culture and judicious pinching of the young shoots they will grow into handsome bearing trees by the end of the season. The following season each tree ought to produce a good crop of fruit of high class quality. I well remember gathering six peaches from one of these two-year old trees—that is, in the third year of the tree's growth—and winning first prize with them at the Crystal Palace Autumn Show against fifty-three competitors. From a nectarine tree of the same age we won the second prize with six fruits at the same exhibition in a good competition. Plums and pears can be obtained of the same excellent quality. It would all depend upon the care bestowed upon the culture of the trees, but no good results can be obtained in the culture of anything unless great pains is bestowed upon it, and as much genuine pleasure can be obtained from the culture of fruit trees in pots as from the culture of orchids or any other flower. What the trees do require is unremitting attention from the time they begin to flower until the fruit is gathered; if they suffer for lack of water at the roots they will not produce first-class fruits. I never gave any of the trees manure water, but they had a handful or two of rich surface dressing spread on the top of the soil three times between the setting of the fruit and its beginning to colour. If it comes to the question of whether it will pay to grow fruit for market from such trees as I have alluded to I cannot say, but for the use of a private family they give ample satisfaction. There is great variety, good quality, and a long period during which the fruit is in use.

DELPHINIUMS.

I never saw the single forms of this family in finer condition than they have been during the last two or three weeks, and considering the ease with which they can be grown it is a wonder that they are not more extensively cultivated. For the back part of a wide herbaceous border or amongst evergreen shrubs, given a fairly open position, they succeed admirably, and tend to lighten up that part of the garden with their many shades of blue. Probably there is no other flower which can compare with delphiniums in their range of this all too rare tint in flowers. So extensive is the range of shades of blue and grey, and so diverse the forms of the flowers and the spikes in plants obtained easily from a packet of seed, that really there seems to be no necessity to trouble with named kinds. With new varieties, faultless in colour and producing spikes of blossom three feet long, on plants clothed with handsomely-cut foliage, we ought to be satisfied. Still for those who fancy named kinds in preference to seedlings there is ample choice in the several lists, so that there need be no doubts what to expect when flowering time comes round. It is in this uncertainty of perhaps securing some real gems from the seed packet that makes seedling raising so pleasant to some. The single varieties are the earliest to open their blooms, and are also the more numerous, although some few double kinds expand during the month of June. One especially which deserves well for extended cultivation is *Pompon Brilliant*, dwarf-growing, with a densely set spike of rosette-like flowers of a bright glossy indigo-blue. Another double variety, which I fail to find in any catalogue—*Prince of Wales*—is especially vigorous in habit, producing numerous spikes of pale blue-coloured flowers, many of them measuring nearly three feet long. If left for two or three years undisturbed at the roots the plant itself grows six feet high. Where the soil is wet and cold during the winter months it is better to delay the parting of the roots until the middle or end of March, according to the weather, when the number of any kind is to be increased, in preference to autumn propagation. About the time named I find it necessary to go round the old roots removing the surface soil about the stems which are on the move about that time, and dust them thoroughly over with soot, returning the soil. This checks the ravages of slugs, who appear to have a particular fancy for the tender morsels of shoots at that time. So much do they injure the crowns that if neglected in this respect here, the season's crop of blossoms is considerably reduced, consequently a little extra attention is well employed in this way.

The best way I find of raising seedlings is the following. Sow the seed in well-drained pans of sandy soil during the early part of April, placing the pans in a gentle heat until the seedlings show above the soil, when they are removed to a cold frame to induce a stout growth. Directly the seedlings are large enough to handle they are pricked off into a cold frame; the soil used for this purpose is mainly composed of old potting refuse with the addition of some leaf soil; under this is a layer, two inches thick, of exhausted mushroom bed materials, into which the roots run, enabling the plants to be lifted with a good ball

of earth attached. When the roots have taken well hold of this preparation the plants are put out on an east border, where they stay until the following spring, when they are removed to their final quarters, or they may be planted there at once out of the frame if the position is an open one, so that the first growth does not become drawn up weakly. While in the seed pan slugs are partial to the tender leaves, therefore a close watch should be kept on them. E. M.

RHODODENDRON NILGARICUM.

The representation of this rhododendron, with accompanying description, on page 381 of the Gardeners' Magazine, having a very peculiar and pleasing interest for me, I am induced to offer a few remarks on the beautiful tree as it is found growing wild on the Nilgiri range of mountains in South India.

At the outset there would seem to be room for the exercise of just a little more "common sense" in the naming of this plant. To call Rhododendron Nilgaricum the Nepal Rhododendron seems not a little strange and absurd. The reason may be obvious enough to the initiated, but not quite clear to the rest of mankind. On the Nilgiri hills the tree is called by the natives Poo-Chidi in the Tamil language, and Hoo-Chidi in Canareese, which simply means the flowering tree, a meaning not so very far removed from that of our botanical term of rhododendron, whilst at the same time it is a term of the most appropriate description, being amongst its companions of the forest a veritable queen in floral magnificence, a sight once seen never to be forgotten. The rhododendron tree is never found associated or mixed up with the trees of the numerous detached woods or sholas that are scattered over the extensive plateau of the Nilgiri range, but grows in clumps or singly on the grass hills surrounding the wooded patches. It is often found in clumps nestling in sheltered hollows by the sides of the sholas, but not infrequently on the bare hill slopes and grassy ridges exposed to the fullest influence of the sun and the fierce blasts of the south-west monsoons. It seems to stand aloof from common tree life, preferring to bear with the burning sun and the raging wind in order the better to display its crown of crimson glory as each successive Christmas tide comes round.

The tree is never found at a lower elevation than 5,000 feet above sea level, which is above fever range, so that it is always safe for the sportsman to spread his mattress and blankets and turn in for the night under the gnarled and spreading branches of a grand old rhododendron tree. The writer has occupied this position on many occasions between the months of November and January, when the Poo-Chidi was dressed in its crimson glory and the climate all that could be wished for. Another experience of not quite such a pleasant nature was undergone in sitting up all night long in the branches of an old rhododendron tree watching for the coming of a tiger that had left the dead body of a buffalo near the foot of the tree the evening previous. The tiger came not, however, and I descended from the branches when daylight appeared, stiff and cold.

Mr. Molyneux, in his very interesting article on rhododendrons in natural soil, page 379 of Magazine, says: "Where the natural soil is of a calcareous nature, rhododendrons of any kind, Ponticum or otherwise, will decline to exist." It is therefore probable that the plant in a wild state, no matter in what part of the world it is found, is never found growing in a soil of this nature, at any rate. This is true so far as the rhododendron Nilgaricum is concerned, for not a trace of lime is to be seen on the plateau of the Nilgiri range of hills, which the English and native residents know to their cost, every particle of lime for building purposes having to be brought from the Coimbatore plains many miles distant. A curious circumstance was once pointed out to me by the late Mr. W. G. McIvor, then superintendent of Government Chinchona plantations. It was the fact that wherever on these hills lime had been applied to the ground, accidentally or otherwise, white clover immediately made its appearance and flourished, although the plant was on no part of the hills found wild. The question arises, Where did the seed come from? Echo answers, Where!

The geological formation of the Nilgiri Mountains is of the primitive igneous order—no limestone, as I have already said. There is no such thing as peat—as the term is understood by English gardeners—to be found on the Nilgiris. There are some bogs, from which turf is cut for fuel, but in these the rhododendron does not grow, neither is it found on the deep, rich soil of the isolated woods or sholas, but always on the grassy hillsides and ridges, where the land is well drained, shallow and poor and without a trace of peat. One would suppose from this that there should be little difficulty in growing the tree to perfection in this country in any ordinary soil, provided always that it is free from lime in any form. Then as to hardihood, I imagine there are very many places in Britain where it could be grown in the open air. In its native wilds frost is of frequent occurrence in the hollows during the months of December, January, and February, and, as I have shown above, the tree would seem to prefer an exposed position to that of any other. The soil of our southern counties would, perhaps, require in most instances to be "made" to suit the trees' requirements, but a little trouble in this direction would not be thrown away on such a noble plant. The tree in India grows to a height of from 20 to 40 feet, with occasionally a wide spread of branches of a light brown colour and twisted in all directions. The rufus colour of the undersides of the leaves has a very curious and pleasing aspect, and altogether the tree in its native habitat is a noble object in the landscape, especially when in flower. A white variety is occasionally found on the eastern portion of the plateau, but it is very rare. The tree is found over the whole area of the plateau, but the finest specimens are, perhaps, to be found to the west, where the rainfall is heaviest. Mr. McIvor, in laying out the Government Gardens at Ootacamund, about the year 1848, on the slopes of a picturesque ravine at the base of Doda Betta, or the great hill, the highest point on the Nilgiris, with the greatest good taste left all the clumps of wild rhododendron trees, which, in after years, have formed with their artificial surroundings such beautiful objects in the gardens. Many a pilgrimage is made westward from Ootacamund by the visitors from the plains to view these glorious trees when in flower, as the chestnuts are visited at Bushey Park. Another valley to the eastward has its visitors also in the season; it is called Orange Valley, from the fact that wild orange trees are found in abundance growing on the grassy slopes in similar situations to those of the rhododendron. The trees grow to a considerable height and bear well, and have a very beautiful appearance. I can well remember how delighted I was on visiting this valley for the first time, to find large numbers of orange trees growing in a wild state, and bearing blossoms and green and ripe fruit in abundance, and the ground below covered with golden fruit, which proved, on tasting, to be intensely bitter. These trees seemed to be a natural product of this valley, but, if not, their origin is somewhat mysterious. It may be of interest to the growers of Rhododendron Nilgaricum if I give a statement of temperature, &c., in which the plant is found to grow in its native country:—

Mean annual temperature...	...	...	...	59	deg.
Maximum do.	...	...	...	77	,,
Minimum do.	...	...	...	38	,,
Average rainfall	...	...	...	54	inches.
Average range	...	...	...	17	deg.

The habitat of this tree is very circumscribed in Southern India. The Nilgiri range is but a spur of the great Western Ghauts, and yet on the latter mountains the rhododendron is never found, although they frequently rise in peaks to a much greater elevation than 5,000 feet above sea level. It has been the custom of late years to plant with tea and chinchona large portions of the Nilgiri plateau, including the grassy slopes, the home of the glorious rhododendron trees, which, of course, are destroyed by the ruthless planter. We are told that the trunks and branches make excellent firewood and charcoal for the curing of his bark and tea; but what a use to put the trees to! The Nilgiri range was evidently intended by Nature as a pastoral district, and that alone, and the successive Governments of the day were sadly at fault in allowing the advent of the speculative planter and company hastening to be rich, or attempting to be rich, by changing the face of Nature on some of the fairest portions of the plateau by the prosecution of an industry which, as is well known now, can only have a very limited existence, and by curtailing to a certain extent the crowning glory of the Nilgiri flora by the destruction of the rhododendron trees. When tea and chinchona in the near future shall have disappeared from the face of these "rolling downs," weeds of many kinds will take their places, and if, after the lapse of years, the hill slopes resume their original appearance and again be clothed with a carpet of grass, they will be minus their former greatest attraction, the grand rhododendron trees, which had gladdened with their splendid blossoms the Nilgiri plateau through the byegone centuries.

J. Lowrie.

ALPINE PHLOXES AS SPRING BEDDERS.

There is no reason why this charming race of phloxes, of which *setacea* or *subulata* is the best-known kind, should not be made to do duty as spring bedders in the most favoured spots in the flower garden, where a great range of variety is desirable. I know many of them are impatient of removal in a careless manner; but by a thorough method of preparation of a stock of plants they might be employed as proposed. To give effect each variety should be planted in bold masses; the colours are so decided, especially such as *atropurpurea*, purple-rose; *pilosa*, lilac pink; *grandiflora*, rich mauve; *model*, rosy carmine; *The Bride*, pure white, red centre; *Nelsoni*, snowy white; and *Vivid*, a bright fiery rose. These are all varieties of setacea, all free flowering, and most compact in growth, some rather more vigorous than others. Where a stock is in possession no time should be lost in dividing the roots and branches. These, if of any size, will be thickly set with roots if they have been resting on the soil. This has been a grand season for the growth of such subjects. Every piece of growth with the smallest particle of roots will quickly grow into neat little tufts. Even without roots to start with, they will soon make roots if dibbled into sandy soil in a cold frame, kept moist, and shaded from the sun until growth is again fairly on the move, when a free exposure to light and air will be the best treatment to afford them. Directly new roots are freely made, and the plants can be lifted without causing too serious a check to growth, they should be planted in an exposed situation, where the future growth will be well matured and not weakly and drawn up by overcrowding. A goodly quantity of well decomposed leaves should be added if the natural soil is heavy in character. The leaves will enable the plants to make roots more freely, and they will lift in the autumn at planting time with much better balls of earth attached, which will be the means of preventing a check, a matter of importance to their after growth. Planting should be performed at the latest the first week in October; earlier, if possible, which will admit of the plants making some progress at the roots before winter finally sets in. A slight mulching of decayed leaves about the plants would protect them somewhat should the winter be severe, and will induce roots to form from the branches early in the spring. For the spring bedding the best of all is the one known as *Amœna*. E. M.

Literature.

SECOND NOTICE OF MR. STANLEY'S "DARKEST AFRICA."

In our issue for July 5, we hastily set before our readers the general purport and special points of interest in Mr. Stanley's book; and we now return to it to present a notice of a few of the more remarkable incidents of his journey. The book is such as people have in view when they say it sticks to your fingers, for once having taken it up it is somewhat of a trial to put it down, for the narrative rushes when haste is needful, but expands into romance when there is reason for rest and the course of an episode may be traced at leisure. No current talk or book-reading can possibly diminish the attractions of the great and gloomy forest lying between Yambuya and the region of the great lakes, and it is of the highest importance, in view of the future and the part the next generation may play in Africa to note that through the heart of this forestal region there flows a great river in a course nearly due east and west, and by the aid of this river the journey was accomplished. Without the river we suspect that Stanley and his hundreds must have beaten a retreat, or have perished in the wilderness, to be heard of no more.

The map in our issue for May 10 shows the course of this river, which has many names, but will probably be known throughout as the Aruwimi, as the interior of Africa is rendered more familiar by explorations, and the trade that will spread to its inmost recesses as European influences extend. The vast area of the forest is roughly indicated on the inner sides of the covers of the two volumes of "Darkest Africa" as well as in the admirable map that fronts the first volume. The mode of travel was by water as much as possible to relieve the carriers and to ensure their more perfect safety. But rapids, precipices, cataracts, and other impediments compelled much foot-sore travel, and the rate was often only four or five miles in a day; for the road had often to be made by felling trees and cutting away underwood. When a road is met with in these wilds it is generally a foot-track, trampled by travel to exceeding smoothness and hardness as of asphalte when dry, but becomes a mere muddy gutter during rain, and is rarely more than twelve inches wide. The natives travel in single file one after another, and the winding of the path usually converts a two mile journey into three.

On June 28, 1887, the company—389 in number—marched out of the entrenched camp at Yambuya in single file, each company with its flag, its trumpeter or drummer, with fifty picked men as advance guard to handle the billhook and axe, to cut saplings, "blaze" or peel a portion of the bark of a tree a hand's breadth, to sever the leaves and slash at the rattan, to remove all obtrusive branches that might interfere with the free passage of the hundreds of loaded porters, to cut trees to lay across streams for their passage, to form zeribas or bomas of bush and branch around the hutted camp at the end of the day's travel. While the way has literally to be carved out, pioneers and carriers must be alike on the alert for alarms, ready to repel attacks, avoid poisoned arrows, and one way or another keep a look out for a chance of finding food. The horrors of the long journey were so often augmented by hunger, and so many deaths occurred from want and disease that the escape of the remnant was in the nature of a miracle. Amongst the very first dangers encountered were the skewers stuck in a path that had been hemmed in with fallen trees by hostile natives. These skewers are sharpened and sometimes poisoned, and being thrust into the ground about half their length and skillfully concealed, the naked feet of the carriers are pierced by them and they are at once disabled and their lives endangered. Stanley's journey was not accomplished without the exercise of the rule that where there is no law one must be made to suit an emergency.

Very much of the journey was accomplished by land and water simultaneously, the canoes carrying as much as possible, while a party travelled by land and often made short cuts to reach points that were near in a bee line, but far separated by the winding river. The scenery of the Aruwimi in its lower course is happily suggested by the accompanying sketch, in which the river column with the "Advance" leading sixteen canoes, makes peaceful progress as though dangers were unknown. The vegetation of the forest though beautiful as thus seen, has none of the charm for the traveller that we commonly associate with tree covered spaces, for here man is the enemy of man and the vegetation may be described as equally murderous. Indeed, if we could assign to the vegetables any moral faculties, we should have to pronounce the trees worse than the men, for the cannibals often justify their practices by alleging the sheer want of animal food, but the trees war with each other, each endeavours to over-top and stifle its neighbour, and the creepers and twiners go about strangling with apparently no other object than to bring grim death everywhere into the midst of riotous life, and the reeking moisture that feeds the soaring giants as quickly consumes them when they fall, so that there is nothing old, but quick decay seems to harry life and justify the newness and fecundity.



A VILLAGE OF THE PIGMIES. Zanzibari Scout on the watch.

The study of human nature in this journey was no new pursuit for Mr. Stanley, but it will to many a reader open a new subject for consideration, more especiallly as to the future of Africa. The stolid stupidity of his followers was but too often varied by their treachery and their often fatal folly. Desertion was common, and the deserters invariably carried away rifles and ammunition, cloth, and other valuables. The deserters were sometimes caught and punished; sometimes they certainly perished in the bush or were done to death by hungry natives; but no lessons and no punishment were effectual except for a brief space of time, and thus with losses of this kind and those from disease and accident the company declined in numbers from the first start, and the disasters became more frequent as the hardships increased and the journey neared its termination.

At Hippo Broads, on the Ihuru river, foragers for food brought in four goats, a few bananas, numbers of roasted rats, cooked beetles and slugs. Palm nuts were seen in heaps near the villages. The number was now reduced to 343, and of the six donkeys they had on leaving Yambuya only three were left, and of these one deliberately deserted, whither, no one knew. Everywhere in the forest, no matter how benighted the people, ignorant even of the meaning of the sound of a gun, Indian corn and tobacco are to be found as subjects of cultivation. As neither are natives of the African con-

tinent, their presence here proves the existence of communications, however rude and infrequent, with parts beyond where some degree of civilization prevails, as in the region of the lakes or the settlements east and west. There may be nothing in this fact, but it proves that the people of the darkest interior are not absolutely isolated, but that something reaches them from the world without, and probably the Arab traders and the tribes that assist them account for the distribution of such things as would be valued by the most ignorant and savage races. One of these Arab adventurers, Ugarrowa, was met with on the Nepoko and the meeting was altogether of an agreeable character.

Disease and starvation had well nigh made an end of the expedition when Kilonga Longa's station was reached, and fields of Indian corn, rice, sweet potatos, and beans were seen. It was a land of plenty and a place of rest, and half the distance was accomplished. That men born in Africa and in mind and body alike fitted for travel in the interior do not surpass Europeans in their achievements let the following suffice to show—Speaking of the Manyuemas, Mr. Stanley says: "This community of ivory hunters established at Ipoto had arrived, five months previous to our coming, from the banks of the Lualaba, from a point situated between the exits of the Lowwa and the Leopold into a great river. The journey has occupied them seven and a-half months, and they had seen neither grass nor open country, nor even heard of them during their wanderings. They had halted a month at Kinnena on the Lindi, and had built a station-house for their chief Kilonga Longa, who, when he had joined them with the main body, sent on about 200 guns and 200 slave carriers to strike further in a north-easterly direction, to discover some other prosperous settlement far in advance of him, whence they could sally out in bands to destroy, burn, and enslave natives in exchange for ivory. Through continual fighting, and the carelessness which the unbalanced mind is so apt to fall into after one or more happy successes, they had decreased in number within the seven months and a-half into a force of about ninety guns." Behold what follows in the tracks of such men. "What these destroyers had left of groves and plantations of plantain and bananas, manioc, and corn fields, the elephant, chimpanzee, and monkeys had trampled and crushed into decaying and putrid muck, and in their place had sprung up, with the swiftness of mushrooms, whole hosts of large-leafed plants native to the soil, briers, calamus, and bush, which the natives in times past suppressed with their knives, axes, and hoes. With each season the bush grew more robust and taller, and a few seasons only were wanted to cover all traces of former habitation and labour." The escape from the forest as described in the eleventh chapter is one of the most stirring incidents recorded.

The dwarfs obtain much attention and immensely interesting they are. Distinct in size, colour, and habits from all other African races, they appear to represent a race that has been crushed out by more powerful tribes, and perhaps may furnish the ethnologists with some fine problems. They are conscious of their inferiority and keep their place in the world with difficulty. They are undersized nomads supporting themselves in the uncleared forest by trapping game and they often form their villages in the immediate neighbourhood of agricultural tribes, the majority of whom are fine stalwart people. Their settlements often contain 2,000 or more persons, and their consumption of game must be enormous seeing that they cultivate nothing and move from time to time to districts they have not before exploited. They are perfect scouts and masters of every species of cunning. Their dwellings are low structures in the shape of an oval figure cut lengthwise, the doors from two feet to three feet high, and the huts are arranged in a circle, the inner space being reserved for the chief and his family. That there is not much known of them even in Africa is suggested by what Mr. Stanley has to say upon their thieving propensities in his twenty-third chapter. "If we assumed that native caravans ever travelled between Ipoto and Ibwiri, for instance, we should imagine from our knowledge of those forest people, that the caravan would be mulcted of much of its property by those nomads, whom they would meet in front and rear of each settlement, and as there are ten settlements between the two points, they would have to pay toll twenty times, in tobacco, salt, iron, and rattan, cane ornaments, axes, knives, spears, arrows, adzes, rings, &c. We therefore see how utterly impossible it would be for the Ipoto people to have even heard of the Ibwiri, owing to the heavy turnpike tolls and octroi duties that would be demanded of them if they ventured to undertake a long journey of eighty miles." It needs no force of argument to establish as a strong probability that the natives of Africa are doomed to an eternity of darkness and misery unless redeemed by European enterprise and the white man's influence when in search of fortune.

A Manual of Orchidaceous Plants. Part VI. Cœlogyne, Epidendrum, &c. (James Veitch and Sons).—This part 6 of Messrs. Veitch's admirable manual contains, in addition to the genera named above, spathoglottis, phaius, thunia, chysis, pleione, calanthe, diacrium, nanodes, and some other troublesome genera, some few of which are but little known, but if we take the mass as here presented we find amongst them many exceedingly interesting orchids. The accepted species and named hybrids described number in all 177, of which one-third at least may be spoken of as of importance for their beauty and other points that command attention. In a hasty review of the index we note under Calanthe enough subjects to form a distinct collection, C. veratrifolia and C. vestita being of necessity centres of attraction and influence. In respect of the last-named quality the numerous varieties of C. vestita speak sufficiently. This genus gives us a full dozen of hybrids, all useful plants, and possessing somewhat of historic importance. It was amongst the calanthes that Mr. Dominy made his first movements as a hybridizer, and the flowering of C. Dominii raised from C. masuca crossed with C. furcata, may be regarded as his first great triumph. To the same veteran operator we are indebted for C. Veitchii raised from C. rosea and C. vestita, and the seedling may be said to abolish the genus Limatodes, and render the absurdity of a bigeneric name unnecessary. We see in this hybrid one of the advantages of crossing, for there is not a more useful orchid in its season than Calanthe Veitchi, the form and colouring of which have peculiar interest in a study of the parentage. Messrs. Veitch, at page 72 of this part of their "Manual," remark upon the interesting fact that between the raising of C. Veitchi a period of twenty years elapsed ere another seedling calanthe was added to the lists, and then C. Sedeni appeared, the achievement of Mr. Seden, who obtained it from the one last-named with the aid of C. vestita rubro-oculata. This flowered at the Chelsea nurseries in 1878, since when, as



SCENERY OF THE ARUWIMI RIVER. The "Advance" and sixteen canoes proceeding up river.

remarked in the book before us, "hybrids and crosses have appeared in almost embarrassing profusion." It happens that this genus lends itself with singular willingness to the whim of the hybridizer, for the seeds, the plants, and the flowers may be obtained in the short space of only three to five years, which brings this group of calanthes into the category of plants specially adapted for the amusement of amateur cultivators.

A more strictly historical orchid is Calanthe veratrifolia, We need not praise its beauty, for its ample veratrum-like leaves and commanding panicle of white flowers are amongst the finest features of the orchid house in its season. It was noticed in "Botanical Register" 1821, under t. 573 (Lissochilus speciosus), as Limadorum veratrifolium, from a manuscript of Brown, and in the same work 1823, t. 720, it is poorly figured under its present name from a plant that flowered in Mr. Colvill's nursery at Chelsea. It is particularly interesting to observe in the history of this orchid two facts that are not often in association: it is one of the most widely distributed in the East over a region which Messrs. Veitch reckon to extend from New South Wales to Japan in one direction, and from Fiji to Southern India in the other, and yet it rarely deviates from its typical character, or to deal only with a certainty, there are but two varieties named in this book and they differ but little from the type. We cannot say that this fixity of character in a widely diffused plant is either unique or uncommon, and yet it is exceptional, and a wide range of occupation commonly is accompanied with variability of a species. The common brake fern, Pteris aquilina, is a familiar example of a plant of the world that varies so little that the varieties have absolutely no horticultural value. Examples of the opposite case are common enough; indeed every wayside botanist can tell of species that take many distinct forms in areas as limited as a few acres of ground where there appear to be no differences of soil or climate to account for the protean habit. As the first calanthe introduced to British gardens this white-flowered beauty must have done something to advertise the family, and by this time it must be entitled to a testimonial.

Under Cœlogyne we find the ever welcome C. cristata, which also is an old friend, having been discovered in 1824 by Dr. Wallich in the lower Himalaya zone, but it was introduced by Gibson in 1837 as one of the fruits of his memorable search for the Amherstia. The first flowering of this precious beauty was in the garden of Mr. Baker, Springfield, near Birmingham, in the year 1841, when a Knightian medal of the Horticultural Society was bestowed on Mr. Baker as a sign of high approval. Probably the finest specimens seen within recent years were those that the late Mr. Yates, of Sale, possessed, and that have since his death been broken up and scattered. Considering the immense extent to which this has been sought and cultivated, the varieties are surprisingly few in number, and it nearly ranks with C. veratrifolia in fixedness, which perhaps is very proper for a white flower to do, for why should it stain its reputation by assuming adventitious colours? Messrs. Veitch give a list of seven varieties, but after all there is but one, that is to say the type has an orange yellow disk, and the only distinct variety is wholly white without the yellow disk, and should be regarded as the most perfect form. This is named *Hololeuca*, by Reichenbach, but is figured as *Alba* in "Williams' Orchid Manual" Vol. I., 54. It may be more easily pardoned for not varying much, because its region of occupation is much more restricted than that of C. veratrifolium.

In further looking through the index we encounter Epidendrum, of which the species and varieties are many and various, the glowing E. vitellinum being very unlike the more lovely but quieter *E. falcatum* that we have figured as E. Parkinsonianum, from a plant superbly grown by Mr. Pollett, who hangs it the wrong way up near the roof and gives it so little attention that it is deluded into the belief that it is in its own native wilds on the heights of sunny Oaxaca, where it is at home on bare rocks, and is perfectly happy when roasted to dryness as it often is by Mr. Pollett's intentional neglect of it, which truthfully interpreted means skilful and courageous care. Messrs. Veitch speak of it as "not of any special horticultural interest," and we commend them for use of the word "special" in this case, being gratified that they have not pronounced it worthless. There are many fine things in this genus, and many more that are not worth house room.

Phaius and Pleione should detain us, but time and space are like the pet schemes of the business men, "limited." *Phaius grandifolius* is one of our fine old friends that your modern orchidist will turn up his nose at, while at the same time endeavouring to smile upon some unattractive hybrid cypripedium, a feat not possible, nor indeed worthy of the painful effort. This came into British gardens with Dr. Fothergill, who made a companion of it in the year 1778, which is like going to the beginning of the world in the garden history of orchids. It has an immense range with but few variations, and though met with in hot places, is not at all particular about temperature, provided it has stove or intermediate temperature for its growing and flowering, and when in exhibition trim it may (with a little preparation), be transferred to a cool house or apartment without harm and will last a long time in beauty, the colouring being as distinct as it is handsome. *P. Blumei* is but a variety, though often labelled as a species. Of the beauties of *P. humilis* and *P. lagenaria* we forbear to speak, for are they not known as "Indian crocuses," and amongst the most precious jewellery of the orchid house for winter flowers.

The simple and concise plan and the direct style, with everywhere sufficient references, render this book a *multum in parvo*. It contains much more information than appears, and it is full of business all through like the authors of it. The illustrations are many and good and one of them accompanies this notice. It represents *Pachystoma Thomsonianum*, a lovely little thing, native of Old Calabar. It is especially valuable, not only for its neat habit and freedom in flowering, but for the exquisite combination of white and purple, a feature very finely suggested by the black and white figure. And this little gem has the charm of form, for after all, colour is not much in favour where there is no architecture. We trust no florist will be shocked at the remark, but we prefer flowers that have a lot of drawing in them as having an attraction of a higher order than either colour or odour. But our likings are no consequence, whereas the appearance of this admirable book is of much consequence, because it enlarges the bounds of human knowledge and leads the way for the willing to a land of great, ever changing, and inexhaustible delights.

Importations of Potatos in June were very heavy. The total quantity amounted to 1,054,287 cwt., as compared with 858,670 cwt. imported in the corresponding month of last year.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Stove Plants in bloom comprise:—Achimenes in variety; Allamanda Schotti, A. Hendersoni, Bougainvillea glabra; Clerodendron fallax, C. Dipladenia Brearleyana, D. profusa, D. splendens; Gloriosa superba: Ipomea Leari; Ixora Griffithi; Passiflora alata, P. fulgens, P. kermesina, P. princeps; Stephanotis floribunda.

THE HOUSE.

Fern-cases may now be furnished with advantage, as when the plants are in position before June is out they become well established before winter. In filling the cases it is important that they should not be heaped up too high with soil. When this is done and the surface is somewhat dry, the water runs off, leaving the soil as dry as before, and spoils the carpet instead of benefiting the ferns. It should be the rule to keep the soil one or two inches below the level of the edge of the case all round, however it may be heaped up in the centre. It is impossible to lay down rules as to the fashion of dressing a case, but this point is one of practical importance, for unless the water penetrates the soil and feeds all the ferns sufficiently, failure must result sooner or later. As to heaping up the earth with rocks, and all that sort of thing, we have done much of it, and perhaps with pretty good taste, but we can make as effective a display, and a picture altogether delightful, by keeping the soil to a dead level and a little below the level of the woodwork, and arranging the planting suitably. Another important point is to select for cases ferns that will be likely to survive the winter and make a lasting growth creditable to all concerned. We have long since given up the use of heated cases as occasioning more trouble than they are worth, and therefore we are careful about planting ferns that are of tender constitution. All that thrive in a greenhouse temperature are likely to endure the winter in a fern case, and the next question is, which amongst the many that are in cultivation are best adapted for the purpose. Now, at this point a very interesting matter for observation is forced upon our attention. When a fern case is fairly placed as regards receiving a due proportion of daylight, it will be noticed that some of the ferns will hold their positions properly and present a stately appearance, but others will lean forward to the light in an inelegant manner, and due care should be taken to select those which maintain their proper position.

CONSERVATORY AND GREENHOUSE.

Conservatory and Greenhouse Plants, especially hard-wooded kinds, will be benefited by a few weeks' exposure in the open to ripen their seasonal growth and give them a stocky habit. This will afford opportunity for a general cleaning and painting of sashes, stages, walls, &c., and to clear out vermin from odd corners and old woodwork. Houses containing all ordinary kinds of stock to have air day and night, but most soft-wooded plants in flower will enjoy to be shut up for an hour after watering, and then to have a little air again.

Pelargoniums for bedding should be propagated during the next fortnight or so by cuttings put in the open ground in a shady place, or singly in thumb pots in frame or on a moist bed in a house facing south. If this work is postponed the plants will be more difficult to keep through the winter. If quantity is an object, every two joints will make a good plant; but one joint will do very well of any variety it is necessary to cut hard, for to form roots a joint in the soil is not necessary, as the internodes will root nearly as soon as the joints.

Carnations, Picotees, and Pinks to be propagated as opportunity offers from layers and pipings, both easy and certain methods.

Dahlias should have a heavy mulch after the ground has been lightly forked. This is said to harbour vermin, but practically its few disadvantages are balanced by the superior health of the plants and the beauty of the flowers, and the labour of watering is got rid of. As for earwigs, they always go upwards, and may be trapped with certainty.

Pansies to be propagated from cuttings of young wood; the old hollow stems are quite unfit for the purpose. Keep the cuttings shaded, and sprinkle frequently, but the soil of the cutting pans only moderately moist. Beds to be planted to stand over winter should now be deeply dug and manured, which will tend to reduce wireworm, as they will be turned up in the process and b destroyed. After the beds are made ready, set traps for vermin, and persevere to get the ground clean, as the losses in winter often arise through the eating away of the roots by marauders.

Roses may be multiplied by putting short cuttings, selected from the shoots of this season, in a bed of sandy soil, in a frame, keeping them shaded and sprinkled. Nine-tenths will root with ordinary care, and ninety-nine hundredths where the cultivator is skilful in propagating. Budding on brier and manetti stocks may be carried on. It is a good time to buy in new roses, and plant them, as they will be well established before winter, if taken care of as to shading and watering for three weeks after planting.

FRUIT GARDEN AND ORCHARD.

Bush Fruits require attention now that the crop is gathered. Thin this present year's growth, tie and nail all the branches, on fences and walls, and give the trees their final shape for fruiting next year. Thin out the new canes of raspberry stools, so as to leave only three or four of the strongest to each. As soon as the fruit is off, cut the old canes to the ground, and tie out the new ones that the wood may get hard and ripe. If manure is plentiful, mulch the raspberries at once, but do not disturb the surface more than may be necessary to remove weeds.

Fruit Trees that are still making young wood must not be stopped, or it will cause them to throw out useless side shoots, and the less the knife is used among them now the better. Espaliers must be trained before the young wood becomes too hard to be brought into regular order without injury.

Potted Trees must have every necessary attention to complete their growth and ripen their wood. No more pinching, and the pruning of useless growths to be deferred till the sap is down. Peaches and nectarines to be put in a position where they will be roasted with sun-heat, as near a hot wall or fence. The lights of the peach house should if practicable be removed for a month at least, and any training neglected to be done at once, that the wood may ripen perfectly.

Strawberries.—Plant out the first lot of well-rooted runners in ground well manured, and keep well watered; these will at once form good crowns, and bear well next season. Lay more runners, always removing them as soon as rooted, as they do better for being on their own feet early and distress the parent stool less.

KITCHEN GARDEN AND FRAME GROUND.

A General Clearance of Plots that have borne peas, beans, &c., should be made to burn all the dry haulm and weedy stubble, and fork over and put on manure if necessary; all winter crops will do better in the ground well dug, even if not manured, than with a mere scratching of the surface. Where there is much demand for potting composts, the kitchen garden will supply useful material for the muck-pit, which is a more economical method in the long run than the burning of rubbish, though the latter is a clean and quick way to get rid of it, and the ashes are useful. Save all the soot that can be obtained to make a puddle for dipping the roots of broccolis, cabbages, &c., when planting out from the seed bed, and store away at once all pea-sticks worth keeping, to preserve tidiness and prevent waste.

Celery newly planted will require abundance of water. Plant out as fast as possible, if any left in beds or pots. The fly has seriously damaged the crop this season, but where it has not appeared there is now no further danger, and the late celery is likely to escape altogether.

Sow Early York, Battersea, Shilling's Queen, and Rosewort cabbage, Early Horn carrot, Green Curled endive, cabbage and cos lettuce, turnips, and prickly spinach. Make ready the ground for winter spinach, the time for sowing being near at hand.

VILLA FARM.

Birds which are fed from the first require no fattening so-called, and are decidedly more deliciously flavoured than others which are shut up in coops or other confined spaces, and fed to repletion or crammed with the messes that are now and again recommended by those advisers who are imbued with the idea that it is impossible to have a bird fit for the table without its being compelled to consume large additional quantities of food for a fortnight or so before it is killed. It is decidedly more economical to give the birds a sufficiency of food to maintain them in a nice plump condition throughout than it is to allow them to fall away, and then attempt to bring them up to the mark again by the liberal supply of food selected for the rapidity with which it lays on fat, which, indeed, puts fat upon them, but does not produce the finely-flavoured meat characteristic of birds that have had plenty of good corn and wholesome vegetables as the chief constituents of their daily food. As the young birds have sometimes a difficulty in obtaining their proper share of their usual supplies, a feeding pan should be provided for them in every poultry yard, and to it the entrance should be too small for the old birds to pass through, and in this the chicks can have two or three extra feeds a day if considered desirable, and in any case a suitable quantity of food should be placed within the pen at the usual feeding times, so that the older birds cannot interfere with them or appropriate a portion of their share. The pen should, as a matter of course, be a substantial and permanent affair, but a temporary one may be constructed with a few boards and a strip of cheap wire netting at a very small outlay for either labour or material. The raising of chickens is now in a general way pretty well over, but if there are plenty of eggs of the right kind and broody hens at hand the work may be continued until quite the end of August, and the chicks so raised will come in exceedingly useful early in the season, prior to the spring chickens acquiring sufficient age and size. The great point is to have them strong before the winter sets in, for when the cold weather catches them before they have attained a certain size it will be vain to expect them to make really fine birds. It is especially important that the water supply should be abundant, and every effort made to ensure its purity by cleaning out the vessels not less than twice a week and filling them with fresh water every day. The occupants of the poultry yard of all kinds will derive immense benefit from an abundance of green food, and, if practicable, they should have some thrown into the yard every morning.

Exhibitions and Meetings.

GARDENERS' ORPHAN FUND.

Annual Meeting.

The committee and friends of the Gardeners' Orphan Fund, had a busy time of it on Friday the 18th inst., when the annual meeting and dinner were held, and the election of pensioners proceeded with. At half past twelve there was a meeting of the executive committee, at two the annual meeting was held, and at five the chair was taken at the annual dinner. The several gatherings as in previous years, taking place at the Cannon Street Hotel.

At the annual meeting the chair was taken by Mr. N. N. Sherwood, one of the vice-presidents, and there was a good attendance of members. The notice convening the meeting having been read by the honorary secretary and other preliminary matters disposed of, it was resolved that the report should be taken as read.

At the commencement of the report the executive committee express their profound sorrow at the loss the fund had sustained by the death of Mr. George Deal, and proceeded to say, "His devotion to his duties as chairman of the committee was only equalled by his business capacity, and his genial presence will linger in the memory of all who were associated with him in striving to assist the orphans of gardeners in their heritage of adversity," and deep sympathy is expressed with Mrs. Deal in her bereavement. It is hoped that in due time his memory will be perpetuated in a manner that in life would have secured his hearty approval.

The necessity for the institution and its maintenance is more fully proved by each year's experience. The first year eleven children were placed on the fund, ten by election and one in consequence of the handsome donation by Mr. Sherwood. The second year eight others were added, five by election, one by reason of the noble gift from the Duke of Bedford, and two as the result of a generous proposition made by Mr. H. J. Veitch that he would give £100 conditionally on an equal sum being raised by other contributions, which were happily forthcoming. Encouraged by the growing interest in the fund, the committee recommended that ten candidates be elected, and stated that one will be added by the Wildsmith Memorial Trustees, making a total of thirty children, who will be supported at a cost of £390. The thanks of the committee are recorded to the Duke of Bedford for the use of the flower market, Covent Garden, to the Lord Mayor and Lady Mayoress for opening the evening fête, and to the market growers for their generous co-operation on that occasion. Thanks are also tendered for the help rendered by friends in various ways, such as by collecting-cards, money-boxes, concerts, gardeners' societies, flower shows, &c. While gratified with the results achieved, and thankful that by community of effort thirty necessitous children have been provided for in three years, the committee deplore the fact that the needs of many applicants cannot be met. They consequently appeal to all who are engaged in, or derive pleasure from, horticultural pursuits to consider the best methods by which they can support the fund during the ensuing year. The members of committee retiring by rotation were Messrs. W. Bates, R. Dean, H. Herbst, W. Richards, J. Wright, W. Goldring, C. Penny, and J. Roberts, the first five being eligible for re-election. To fill the vacancies caused by the retirement of Messrs. Goldring, Penny, and Roberts, Messrs. William Marshall, G. Bunyard, and John Wills were recommended for election.

The Chairman read the cash statement for the year and directed attention to its highly satisfactory character. The receipts include £463 16s. received as subscriptions, £463 6s. 7d. as donations, £262 from the Covent Garden Fete, £200 13s. subscriptions given by and in response to appeal by Mr. Harry J. Veitch, and £138 14s. 9d. Wildsmith Memorial. The total receipts, with the balance of £615 13s. 9d. were £2,338 17s. 2d. The expenditure included £247 paid in pensions, £141 5s. 5s. management expenses. £88 19s. 5d. Covent Garden Fête. The sum of £992 18s. was invested, and the cash at bank and in hand amounted to £815 3s. 8d.

The Chairman, in moving the adoption of the report and cash statement, referred in feeling terms to the loss the fund had sustained by the death of Mr. Deal, and was glad to know that there been so general expression of opinion as to the desirability of perpetuating his memory by placing additional orphans on the fund. It gave him much gratification to preside over the meeting, and he was very happy to be able to congratulate the members on the excellent balance-sheet that had been read to them. A more excellent report could not well have been presented. It would be seen that there was an increase in the subscriptions as compared with the previous year, but there was a falling off in the donations, but this was partly accounted for by the fact that in the accounts of the previous year was included the munificent donation of £500 from the Duke of Bedford. There was also a falling off in the donations received through the local secretaries, and he hoped that a knowledge of that fact would induce the local secretaries to make still greater efforts than those that had been made in the past year. As this was essentially a gardener's institution, he would ask gardeners throughout the country to place boxes in suitable positions in the gardens under their charge, and especially would he appeal to those who had under their charge gardens that are much visited by the general public. He knew that they would all agree with him that a tribute should be paid to the memory of their late chairman of committee, and he thought they could not do better than raise a fund to be called the Deal Memorial Fund, and with its assistance place additional children on the list of pensioners. He had consulted Mr. Veitch, and they had decided that if the members would raise the sum of £250 to enable the committee to place two of the unsuccessful candidates on the fund, Mr. Veitch and himself would place the remaining five on the list.

He thought that it would be much better to commence the financial year in January instead of in July as at present, and also to hold the dinner early in the year. He believed by making the alteration the subscriptions would come in more readily, and that the donations in consequence of the dinner would be largely increased. In formally moving the adoption of the report he would urge upon the members the importance of continued exertions on behalf of the fund, for by helping the children they in most cases helped the widows, and in all cases gave the children a good start, and thus afforded them an opportunity of becoming good citizens.

Mr. H. J. Veitch in seconding the motion for the adoption of the report, congratulated the executive on what had been accomplished during the past three years. The success had indeed been so great that if any other charitable society was to be started and did half what the Gardeners' Orphan Fund had done, the promoters would have good cause to be satisfied. In referring to what had been said with reference to the late Mr. Deal, he said that he shared in the regret so generally felt at his death, and should be glad to do his share in perpetuating his memory by taking upon himself in conjunction with Mr. Sherwood the responsibility of maintaining five of the seven unsuccessful candidates. He agreed with what had been said by the Chairman with reference to beginning the financial year in January and holding the dinner early in the year.

Mr. H. Cannell supported the motion, and in doing so expressed his doubts as to the desirability of making the changes suggested. He was afraid whether so many friends from a distance would be able to attend the dinner in January, because of the risk and discomforts in making a railway journey in cold weather. The motion for the adoption of the report and balance sheet having been put from the chair it was unanimously carried.

The election of officers was next proceeded with, Mr. T. B. Haywood was re-elected treasurer, Mr. J. Fraser was re-elected auditor, and Mr. A. F. Barron was elected honorary secretary, in each case unanimously. The retiring members of committee eligible for re-election, were also unanimously re-elected, and Messrs. G. Bunyard, W. Marshall, and J. Wills were elected to fill the vacancies caused by the retirement of three members of the committee. Mr. Ward and Mr. R. Dean were appointed scrutineers of the ballot, and the meeting adjourned until four o'clock.

On resuming at the above named hour Mr. H. J. Veitch presided. Hearty votes of thanks were accorded the trustees, treasurer, auditors, committee, and honorary secretary, and the report of the scrutineers received. As the result of the ballot the following candidates were declared to be elected: Robert James Phillips, 582 votes; Thomas Henderson, 241 votes; George Philip Schrubb, 148 votes; Henry Edmund Skelton, 131 votes; George Beveridge, 100 votes; Bessie S. Deedman, 95 votes; Frank Butcher, 87 votes; Susan E. Baker, 86 votes; William Henry Milne, 79 votes; and Arthur Lacey, 78 votes.

Annual Dinner.

The large hall of the Cannon Street Hotel, in which the dinner was held, presented an extremely beautiful appearance. The mantelpieces were decorated with plants and flowers by Messrs. John Laing and Sons, of Forest Hill, the taste evinced in the several arrangements being fully appreciated by the company. At suitable intervals round the hall were placed some twenty huge Kentias by Messrs. Wills and Segar, of South Kensington, and the tables were profusely decorated with plants, flowers, and fruit. The table plants were contributed by Messrs. J. Laing and Mr. J. Hudson, and the fruit and flowers by friends in various parts of the country. The decorations of the tables were carried out by Mr. J. Hudson, Mr. G. W. Cummins, Mr. W. Bates, Mr. Ross, and Mr. J. Smith, and the general arrangements were under the charge of Mr. Barron and Mr. Wynne; Mr. Shirley Hibberd occupied the chair, and about one hundred and sixty sat down; amongst those present were Dr. Masters, F.R.S., Mr. Alderman Hardy, and Messrs. H. J. Veitch, A. H. Smee, J. Laing, H. Herbst, J. Wills, H. M. Pollett, C. H. Sharman, F. L. Lane, J. H. Laing, H. Turner, A. Baker, G. Gordon, J. Assbee, A. Baker, J. Fraser, L. Barron, B. Wynne, J. Smith, L. Castle, E. Hill, Turton, Oubridge, Lewington, F. Moore, G. Wythes, T. W. Sanders, F. Cob-

bold, H. Cannell, W. Howard, J. R. Shard, W. Manning, W. G. Head, G. Bunyard, W. Marshall, McCullum, J. Wellar, E. Butts, G. W. Cummins, W. Roupell, J. Bause, J. Collins, and W. Bates. The customary loyal toasts having been proposed and received in a manner befitting their importance,

The Chairman said, before proceeding to the business part of the programme, it was his duty to remind them that since their previous annual meeting death had been busy in thinning the ranks of horticulturists and supporters of the fund. They had lost their dear old friend, Mr. B. S. Williams, who was a supporter of the fund, as, indeed, of all institutions that had for their object the benefit of horticulturists, and they had lost their fellow-labourer in this cause, Mr. George Deal, who had given so freely of his time and talents for the benefit of the Gardeners' Orphan Fund. He therefore asked those present to drink in solemn silence to the pious memory of those friends, and in recognition of their good work and salutary example.

The toast having been drunk in silence,

The Chairman proposed "The Gardeners' Orphan Fund," which, he said, was a young institution, and had been a success from the first. All societies that began well did not go on well, but in this case there had been continued progress, and there was every prospect of its becoming increasingly useful. Having for its object the maintenance of the orphans of gardeners, it was worthy of the best support of all who are interested, however remotely, in horticulture. He would remind them of the fact that many men fail to make provisions for their families because they had not the courage to face the future. It was one of the blessings of life that people did not know how long life would last; if they did, life would be unbearable. Youth and strength do not give an assurance of length of days. But the uncertainty of life should not prevent us facing the certainty of death. The fact was they all loved life too much; that was why man endeavoured to live forty-eight hours out of every twelve. It had been so since the beginniug of the world, and what a number of dodges there were so that man could dodge death. Science supplied some of these, and if it were not for science more would die. He would remind them of the fable of the Old Man and Death. The old man was moving along in pain and misery, bearing his burden. He was weary of his burden, and sick of his life. Then he threw down his burden and called upon Death to release him. Death came up out of a hole close by with his lean lantern jaws and his chattering teeth, and he said to the old man, "Did you want me?" to which he replied "Sir, will you kindly help me to take up my burden again." Such was the case with all the world. From his wide knowledge of gardeners, he was prepared to say in the face of all the world that they were a provident, thoughtful, class of men, who acted thoroughly in accordance with the teaching of their business, which was always to look into the future, and he knew of no occupation that induced men to look forward like that of the management of the garden. It was a rare occurrence to meet a gardener who was not a member of some charitable institution, and he was glad to know that the United Horticultural Provident and Benefit Society was receiving the support it so well deserved. Owing to mistakes at the beginning it did not make the progress it should have done, but its value was now recognized, and in consequence it was making good progress. He would remind them that the demands on gardeners in their daily life were very heavy, especially in gardens that are much visited and commonly known as show places. He would also ask whether there was any class of men earning their living by skill and labour who were not cast down before they had any opportunities of making provisions for those left behind, and knowing there was not, he would urge them to support the fund in a generous manner, for it has to do with exceptional cases only, such as directly appeal to our domestic feelings.

As they would have seen from the balloting papers there were seventeen candidates, but only ten could be elected at the annual meeting held that day. But these seventeen were not the only children that were destitute. On the contrary, there were no fewer than fifty-two children in the families to which the applicants belonged that were eligible for being placed upon the fund. This showed the great necessity for a liberal response to his appeal on behalf of the fund. It had been suggested that they should keep green the memory of their friend Mr. George Deal by an act of special generosity that night. Originally, Mr. Sherwood had offered to subscribe £50, and a similar sum had been promised by Mr. Veitch. At the annual meeting these two gentlemen made an offer so liberal that he knew not how to describe it. They offered to provide for five of the seven unsuccessful candidates on condition that their proposals as to the money were accepted; and further, on condition that those present at the dinner table subscribed £250, to enable the committee to place the other two on the list of pensioners. This afforded him an immense amount of pleasure, and he hoped that the proposal would be carried out, because it would be a fitting and special recognition of the services rendered by their deceased friend. He had to announce that Sir Julian Goldsmid had promised £10 10s., Baron Schroder £10 10s., Messrs. Weeks and Co. £52 10s., and that many other contributions had been promised. The Chairman then passed under review the balance-sheet, and expressed his opinion as to the importance of a good reserve fund.

The toast was coupled with the name of

Mr. John Laing, who briefly replied, and expressed his appreciation of the honour done him in coupling his name with such an important toast, and assured those present of his deep interest in the welfare of the fund, which was already doing such an immense amount of good.

Mr. H. J. Veitch proposed the toast of "Gardeners and Gardening," and said although the toast was a comprehensive one, it did not require a long speech, as the chairman had dealt so fully with the claims of the fund. The fund was an undoubted success, and although the amateur horticulturists had rendered valuable assistance, it was chiefly due to the efforts of practical gardeners and the nursery and seed trades, that such satisfactory progress had been made. They were all anxious that something should be done in memory of Mr. Deal, and if they had put two children on the fund they would have done well, but to put seven on they would do better. He therefore hoped that the committee would be able to accept the offer of Mr. Sherwood and himself. He should couple the toast with the name of Mr. John Wills, who had risen from the ranks of the gardeners to be the foremost horticultural decorator of the present day.

Mr. J. Wills responded, and said he was glad of an opportunity of meeting those who were engaged in such good work as providing for the orphans of gardeners, and in assisting to help those who could not help themselves.

Mr. A. Dean submitted the toast of "The President, Vice presidents, Trustees, and Auditors," which was heartily received and responded to in felicitous terms by Dr. Masters.

Mr. A. H. Smee gave the toast of "The Committee and Officers," and referred to the ability with which the fund was managed. He also pointed out the importance of a large reserve fund, to enable the committee to meet the severe strain which will be necessarily imposed upon the resources of the institution six or more years hence.

Mr. J. Asbee replied, and testified to the care and time devoted to the work of management by the several members of the executive, and to the unanimous feeling that prevails at the meetings.

The toast of "The Local Secretaries" followed, this being proposed by Mr. G. Bunyard, and acknowledged by Mr. Turton. "The Visitors" was submitted by Mr. H. Turner.

Mr. Alderman Hardy proposed "The Health of the Chairman," which was received with musical honours, and in acknowledging the compliment,

The Chairman said as the result of their generous response to the appeal that had been made for the sum of £250, over £230 had been received, and he was quite sure they would have no difficulty in obtaining the remainder, and thus enable the committee to accept the generous offer made by Mr. Veitch and Mr. Sherwood.

"The Horticultural Press" was proposed by Mr. C. H. Sharman, who acknowledged the assistance afforded by the whole of the gardening papers, and the active part taken by several members of the Press in the management of the fund. Mr. B. Wynne suitably replied. The toasts were brought to a close by

The Chairman, proposing "The Health of Mr. A. F. Barron, the Honorary Secretary," who, he said, had by his tact, energy, and rare judgment, rendered invaluable services in building up the fund.

The toast was received with musical honours, and

Mr. Barron having acknowledged the compliment in a few well-chosen words, the guests began to disperse, evidently well satisfied by the entertainment that had been provided them.

A capital selection of vocal music was given, under the direction of Mr. Herbert Schartau, by Miss Lizzie Jones, Master Charles Steward, Mr. Harper Kearton, and Mr. W. G. Forington. A humorous recitation by Mr. A. Baker contributed in no small degree to the pleasure of the guests.

Before the party separated the total of moneys promised at the tables to supplement the proposals of Mr. Sherwood and Mr. Veitch as part of the George Deal memorial, was £254 17s. Persons who were not in the dinner party, but are desirous of contributing to the memorial, have but to communicate with Mr. Barron on the subject, and their contributions will be gratefully accepted.

PORTSMOUTH SUMMER EXHIBITION, July 15.

With the benevolent object of adding to the funds of the various local charities in the town, what is practically the committee of management of the Chrysanthemum Society arrange to hold a summer exhibition annually in the Victoria Park, the net gains being devoted to the charities. The show held on the date named must rank as quite the best of the series yet seen. There was a splendid display of stove and greenhouse plants and of groups for effect. Fruit and vegetables were abundant. The arrangements were, as usual, under the control of Mr. F. Power, a most energetic and painstaking honorary secretary, who deserves the highest credit for his complete success.

Plants were arranged in two large tents, the specimens occupying the centre of each, while the groups for effect were placed at the sides of one of the large marquees, thus producing a brilliant display. The principal class was that for twelve stove or greenhouse specimens, not less than six to be in bloom. Three meritorious collections were staged, the foremost position being gained by Mr. J. Cypher, nurseryman, Cheltenham, who was especially strong in flowering plants. The most noteworthy were Ixora salicifolia, I. Fraseri, Allamanda grandiflora, Erica parmenteriana rosea superba, and Clerodendron Balfouriana. Croton Queen Victoria was represented by a first-rate specimen, highly coloured. Kentia Australis and Latania Borbonica were also healthy plants. Mr. A. Offer, gardener to J. Warren, Esq., Handcross Park, Crawley, Sussex, was a good second, being especially strong in foliage plants, Crotons Prince of Wales, Andreanus, and Princeps, all in fine form. Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, was awarded third honours.

Mr. Penford, gardener to Sir F. Fitz-Wygram, Bart., M.P., Leigh Park, Havant, was the only exhibitor of four specimens, and worthily took the first card with healthy, well-grown plants of Anthurium crystallinum, Statice profusa, and Clerodendron Balfouri. Specimen palms and tree ferns made a fine show down the centre of both tents in the various classes provided for them. For three of the former, not less than six feet high, Mr. A. Offer was the most successful, staging Phœnix tenuis, P. reclinata, and Latania Borbonica; Messrs. Penford and Wills followed in the order named. For one of the latter class, not less than five feet high, Mr. Offer secured leading honours with a good plant of Cyathea dealbata; Mr. W. Peel, gardener to Miss Todd, Sidford Lodge, Shirley, Southampton, with a good one of Cyathea princeps followed. Mr. Offer was again successful in the class for three ferns, staging remarkably healthy, well-grown plants of Davallia polyantha, Cibotium Schiedei, and Davallia Mooreana of huge size; Mr. Wills followed with equally healthy but smaller plants; Mr. Peel third. Substantial prizes were provided for single specimen palm, foliage plant, and a flowering stove or greenhouse subject. Here we found Kentia Canterburyana, very healthy, and Croton Warreni, seven feet over, a mass of brilliant colouring. Mr. Offer easily secured the leading position in the two former classes, followed by Messrs. Legge, Beny Road, Gosport; and Mr. Penford, the former staging a huge Chamærops excelsa and the latter a well-grown Cycas circinalis. Mr. Cypher, with Ixora regina carrying over forty trusses of bloom, was awarded first prize in the flowering class for single specimen; Mr. Penford, with Cypripedium barbatum nigrum, second; Mr. Wills, with Kalosanthes coccinea, third in this class. Begonias were well shown, especially the first prize lot from Mr. W. Sait, gardener to General Napier, Oaklands, Cosham, being dwarf in growth, freely flowered, the blooms of good substance. Table plants were a good show, being neat, not over large nor heavy, the best coming from Mr. Wills, Mr. Cypher following. Mr. J. Burridge, North End Nursery, Portsmouth, had the best fuchsias, being dwarf, freely-flowered examples of leading kinds. Coxcombs were well represented, being dwarf, rich in colour, and of good size. Messrs. J. Burridge and Mr. C. Young, gardener to Mrs. B. Bilton, Southsea, took the honours in the order named. Coleus, pelargoniums, and gloxinias were well shown in their respective classes, especially by Mr. Hatch, gardener to the Victoria Park Committee.

Groups Arranged for Effect made a great display on both sides of one of the tents, so numerous were they. In the largest class 10 ft. by 8 ft., arranged in the shape of the letter D, Mr. Wills easily secured leading honours with a tastefully set up group, the plants being very suitable for

the purpose, not heavy, neither were they packed too closely together. A neat edging of Panicum variegatum made a pleasant finish to the whole, which was much admired. Mr. Penford followed with a slightly heavier arrangement; Mr. Peel third. For a similar shaped group, 8 ft. by 6 ft., and open only to growers residing in Portsea Island, there were four competitors, making a bright display of colour, the best coming from Mr. G. W. Rooke, gardener to Messrs. Brickwood, Esplanade Hotel, Southsea.

Cut Flowers were not largely shown, owing to the fewness of the classes provided for them. For twelve bunches of stove and greenhouse, distinct varieties, Mr. Penford was first and Mr. W. Peel second. For twelve bunches of hardy distinct varieties Messrs. Legge were first and Mr. W. Sait second. The Rev. — Shirley, Southwick Vicarage, staged the best begonias in classes. Colonel Bunbury, Oaklands, Cosham, with an extensive collection, all neatly named, secured leading honours for wild flowers, which made an interesting feature of the show; Miss A. L. Ingram, Landport, followed. Messrs. Perkins and Sons, Coventry, easily outdistanced all others with their ball and bridal bouquets; Mr. Burridge followed in both classes.

Fruit made a large display, and being so generally of good quality, gave much pleasure to the visitors, being such an advance upon other years, both in point of numbers and general excellence. For six dishes, pines excluded, Mr. A. G. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, was placed first, staging Black Hamburgh and Muscat of Alexandria grapes, Hero of Lockinge melon, Violette Hative peaches, Lord Napier nectarine, and Brown Turkey figs. Mr. Penford worthily followed, an extra fine dish of Barrington peaches was staged in this collection. For three bunches of black grapes there was brisk competition, Mr. Taverner, gardener to Sir J. A. K. Macdonald, Bart., Woolmers, Liphook, was first with Madresfield Court, perfect in every way. Mr. N. Molyneux, gardener to J. C. Garnier, Esq., Rooksbury Park, Wickham, Fareham, second with Black Hamburgh, large both in bunch and berry, and well-coloured. Mr. W. Sait third with the same variety. For the same number of white bunches, Mr. Inglefield led the way with medium-sized but well-ripened Muscat of Alexandria, followed by Messrs. N. Molyneux and Mr. T. Hall, gardener to S. Montagu, Esq., South Stoneham House, Southampton, the former staging excellent Foster's Seedling, and the latter good Buckland Sweetwater. For two bunches of black grapes, competition confined to Portsea Island only, Mr. G. Dee, gardener to Mrs. Mills, Crescent Villa, Kingston, Portsmouth, was the most successful, followed by Messrs. Cowley and Son, Albert Road, Southsea. The best scarlet-flesh melon was staged by Mr. Dimmick, gardener to Mrs. Young, The Limes, Northend, Portsmouth; Mr. Penford followed. The last-named had the best green-flesh melon, Messrs. Inglefield and Taverner following. Mr. Inglefield staged the best dish of peaches, highly-coloured fruit of Violette Hative. Mr. T. Wilkins, gardener to Lady Theodore Guest, Inwood House, Henstridge, second; Mr. Penford third. Messrs. Wilkins, Inglefield, and Penford secured the prizes for nectarines in the order named. Mr. Hall was first for cherries and for strawberries; Mr. Inglefield was the most successful.

Vegetables made a great show, so numerously were they staged, and of such good quality. For nine distinct sorts, Mr. Wilkins was first, staging Sutton's Seedling potato, Duke of Albany pea, Green Globe artichokes, Perfection tomatos, Model carrots, and Magnum Bonum potatos as his best dishes. Messrs. Inglefield and N. Molyneux followed. Single dishes of tomatos and cucumbers were well shown in their respective classes.

BEDFORD FLOWER SHOW, July 17.

The town and county association held its seventh annual display in a spacious paddock abutting the Goldington Road, Bedford, on the above date. In point of quality it was equal to its predecessors. Four or five large marquees were provided for the productions, but whether from entries not being filled or other causes a very large amount of blank table-space was noticeable. A large and fashionable company filled the grounds during the afternoon, but at five o'clock the heavy rain (so general through the country) set in and greatly interfered with the comfort of all. About £120 was offered in prizes in two hundred classes, and being the only summer show held, the subjects represented included fruits, flowers, and vegetables in classes for professionals, amateurs, cottagers, and market gardeners, while honey, wild flowers, and bouquets had classes in separate divisions. The centre of attraction proved the classes open to all England.

Roses.—The class for forty-eight single trusses made a grand show of blooms, of fairly good size, excellent in colour, and clean; at the head of eight competitors stood Messrs. G. and W. H. Burch, Peterborough, who took the £5, the arrangement of the varieties being: Back row—Her Majesty (extra fine), Ulrich Brunner, Mrs. J. Laing, Senateur Vaisse, Lady Mary Fitzwilliam, Exposition de Brie, La France, Marie Baumann, Eugenie Verdier, Antoine Ducher, Marie Verdier, Duke of Connaught, Alfred Colomb, Violette Bouyer, Francois Michelon; middle row—Elie Morel, Earl Dufferin, Heinrich Schultheis, Duchess of Bedford, Star of Waltham, Princess Beatrice, Comte Raimbaud, Queen of Queens, Marie Rady, Baroness Rothschild, E. Y. Teas, Horace Vernet, Niphetos, Duc de Rohan; front row—Captain Christy, Fisher Holmes, Comtesse de Nadaillac, Avocat Duvivier, Innocente Pirola, Camille Bernardin, Madame Willermoz, Madame V. Verdier, Merveille de Lyon, A. K. Williams, Catherine Mermet, Charles Darwin, Silver Queen, Barthelmy Joubert, Madame Joseph Desbois, and Etienne Levet. The second card fell to J. Burrell and Co., Cambridge, for boxes of blooms of fine form: Back row—Mrs. Jowitt, La France, John Stuart Mill, Violette Bouyer, Duke of Edinburgh, Madame E. Verdier, Marie Rady, Niphetos, Alfred Colomb, Madame G. Luizet, Ulrich Brunner, Countess of Oxford, Baroness Rothschild, François Michelon, Duke of Teck, Eugenie Verdier; centre row—Maurice Bernardin, Her Majesty, Marie Baumann, Star of Waltham, Camille Bernardin, Mrs. J. Laing, Dupuy Jamain, Lady Mary Fitzwilliam, Horace Vernet, Princess of Wales, Auguste Rigotard, Souvenir d'Elise Vardon, Innocente Pirola, Lord Macaulay, Olivier Delhomme; front row—Madame V. Verdier, Comtesse de Nadaillac, Fisher Holmes, Marie Verdier, Charles Lefebvre, Etoile de Lyon, Duke of Wellington, Sir Rowland Hill, Duke of Connaught, Heinrich Schultheis, Maréchal Niel, Earl Dufferin, Merveille de Lyon, Louis Van Houtte, Mdlle. Susan Rodoconachi, and Amazone. The third place was assigned to Messrs. W. H. Frettingham, Beeston, Notts, whose selection included bright forms of E. Y. Teas, Marguerite de St. Amand, Charles Lefebvre, Alfred Colomb, Merveille de Lyon, Her Majesty, Sir Garnet Wolseley, Captain Christy, Beauty of Waltham, Louis Van Houtte, Heinrich Schultheis, Marie Louise Pernet, François Michelon, May Quennell, Prince Arthur, Duchesse de Morny, Duchess of Bedford, Madame G. Luizet, A. K. Williams, Ulrich Brunner, Duke of Edinburgh, Baroness Rothschild, Duke of Connaught, Madame V. Verdier, J. S. Mill, Marie Rady, Emilie Hausberg, General Jacqueminot, La France, Le Havre, Duke of Wellington, Jules Finger, Marie Baumann, Madame Annie Wood, Madame Bravy, Dupuy Jamain, Camille Bernardin, Earl of Pembroke, Madame Isaac Perriere, Victor Verdier, Dingee Conard, Duke of Teck, Jean Lelievre, Countess of Rosebery, Charles Darwin, Mrs. Laxton, and Xavier Olibo.

Eighteen Tea or Noisette.—A good class and fairly much alike, the flowers of full size, J. Burrell and Co. leading with bright forms (well furnished with foliage) of Souvenir d'Elise Vardon, Adam, Comtesse de Nadaillac, Souvenir d'un Ami, Madame Lambard, Princess of Wales, Madame Cusin, Amazone, David Pradel, Madame Hoste, Madame Margottin, Reve d'Or, Catherine Mermet, Souvenir de Paul Neyron, Maréchal Niel, The Bride, Luciole, and Innocente Pirola; G. and W. H. Burch second, with a shade smaller buds of Niphetos, Madame Cusin, Souvenir d'Elise Vardon, Francisca Kruger, Caroline Kuster, Miss Ethel Brownlow, Maréchal Niel, Catherine Mermet, Souvenir d'un Ami, Souvenir de Paul Neyron, Madame Lambard, Innocente Pirola, Anna Olivier, Jean Ducher, Madame Bravy, The Bride, Madame de Watteville, and Comtesse de Nadaillac; Mr. J. Mattock, Headington, Oxford, third, his selection being Anna Olivier, Madame Hippolyte Jamain, Madame Cusin, Souvenir d'Elise Vardon, Francisca Kruger, Souvenir d'un Ami, Comtesse Riza du Parc, Hon. Edith Gifford, Amazone, Souvenir de Paul Neyron, Comtesse de Nadaillac, The Bride, Catherine Mermet, Madame Welch, Niphetos, Devoniensis, Perle des Jardins, and Innocente Pirola.

Amateurs.

Twenty-four Single Trusses.—The flowers staged were in no sense inferior to the traders' exhibits, the Rev. W. H. Jackson, Stagsden Vicarage, Bedford, securing the £4 for a charming box, containing large blooms of Ulrich Brunner, Francois Michelon, Marie Rady, Marie Finger, Marie Verdier, Marie Baumann, Horace Vernet, La France, Etienne Levet, Merveille de Lyon, Charles Lefebvre, Her Majesty, Countess of Oxford, Mrs. J. Laing, Dupuy Jamain, E. Y. Teas, Camille Bernardin, Baroness Rothschild, A. K. Williams, Cheshunt Hybrid, Dr. Andry, Captain Christy, Madame V. Verdier, and Marquise de Castellane; E. B. Lindsell, Esq., Bearton, Hitchin, second, his best forms were Her Majesty (very full), Marie Rady, Lady Mary Fitzwilliam, Ulrich Brunner, Merveille de Lyon, Beauty of Waltham, Madame S. Rodoconachi, Madame G. Luizet, Catherine Mermet, Dr. Andry, Caroline Kuster, Emilie Hausberg, Marie Finger, and Souvenir d'Elise Vardon; Mr. J. Green, Bedford, third, his premier blooms were La France and Gloire de Dijon. In the corresponding class for local amateurs the Rev. W. H. Jackson once again held his own; while for twelve, the first card fell to Mrs. L. E. Times; very choice were blooms of Baroness Rothschild, Her Majesty, Francois Michelon, La France, Marie Rady, Catherine Mermet, Captain Christy, Lord Beaconsfield, and Niphetos; Miss Bailey Denton, second, the finest forms included Pride of Waltham, Hon. E. Gifford, La France, Mrs. J. Laing, Ulrich Brunner, Baroness Rothschild, and Marie Baumann; G. Moules, Esq., third, whose box had creditable specimens of La France, The Bride, Her Majesty, Jean Soupert, and Marie Baumann.

Twelve Teas.—In the open amateurs' class, E. B. Lindsell, Esq., took the card for a nice box of stout, clean buds full of colour, the best forms being Caroline Kuster, Catherine Mermet, Souvenir d'Elise Vardon, Marie Van Houtte, Innocente Pirola, Rubens, Francisca Kruger, and Perle des Jardins; George Moules, Esq., second, his best forms were Hon. Edith Gifford, Marie Van Houtte, and Souvenir d' un Ami; Rev. W. H. Jackson, third, with good sized buds of Comtesse de Nadaillac, Madame H. Jamain, Belle Lyonnaise, Souvenir de Madame Pernet, Souvenir de Therese Levet, Caroline Kuster, The Bride, and Etendard Jean d'Arc.

Hardy Herbaceous Perennials or Bulbous Flowers.—These, in thirty-six bunches each, filled a very large amount of table space, and rivetted the attention of visitors, the premier award (£2) going to J. Burrell and Co., Howe House Nurseries, Cambridge, who had neat gatherings of Alstrœmeria aurea, orange yellow; Bupthalmum salicifolium, single yellow daisy-like form; Campanula pelviformis, pale grey lavender-blue; Catananche bicolor, white, blue centre; C. cærulea, blue; Centaurea macrocephala, deep yellow; Chrysanthemum maximum, large white marguerite-like flowers; Coreopsis lanceolata, yellow; Delphinium Madame Richarlet, cobalt blue, tipped rose; and three other forms of lavender, ultramarine, and metallic blue; Eryngium amethystinum, delightful in colour; Eupatorium purpureum, purple; Gaillardia grandiflora maxima, orange and red; Helenium pumilum, yellow; Helianthus rigidus, golden yellow, black disc; Lilium auratum, white, orange and red bands, crimson spots; L. candidum, white; L. croceum, orange; L. testaceum, pale apricot or nankin; Lychnis chalcedonicum fl. pl., double scarlet; Monarda didyma, bright scarlet; Malva moschata alba, white, fragrant; Œnothera macrocarpa, golden yellow; Œ. Youngi, deep gold; Œ. speciosa, white, and fragrant; Papaver nudicaule, white; P. miniata; bright orange; Phlox John Forbes, salmon pink, deep eye; Potentilla Le Vesuve, bright red, edged yellow; Pyrethrum parthenium, double white; Scabiosa caucasica, pale blue; and Scolymus Hispanicus, golden yellow thistle-like flower. Messrs. Paul and Sons, the Old Nurseries, Cheshunt, were second, the species represented being Eryngium alpinum, silvery-white bracts; Gaillardia maxima; Arnebia echioides, golden yellow, brown spots; Galega officinalis compacta, lilac pea-shaped flowers; G. alba, white; Malva moschata alba; Hemerocallis Thunbergii, bright yellow; Lythrum salicaria roseum, rosy-pink; Epilobium angustifolium album, white; Erigeron speciosa superbum, purple, with yellow centre; Potentilla Wm. Rollison, yellow and orange, double; Polemonium Richardsoni, bright blue; Cephalaria alpina, sulphur; Alstrœmeria aurantiaca, brilliant orange; Œnothera Youngi, Polygonum Brunonis, pink; Campanula carpatica, blue; Delphinium ranunculiflorum, double blue, rosette form; Galega officinalis, Helenium pumilum, Bupthalmum cordifolium, golden orange; Lychnis chalcedonica, fl. pl.; Iceland poppies, white, yellow, and orange forms; Delphinium Dr. Gilkenet, double, lavender blue; Gladiolus The Bride, creamy white; Viola Countess of Kintore, Alstrœmeria pulchella, crimson scarlet; Centaurea macrocephala, Lilium testaceum, Funkia ovata, Chrysanthemum maximum, Phlox Surpasse Brilliante; Rudbeckia californica, yellow, with brown cone; Potentilla Le Vesuve, Catananche bicolor, and Alstrœmeria aurea. The third, Mr. J. C. Shepherd, High Street, Bedford, whose neat bunches were attractive, and included the double Campanula persicifolia, Delphiniums, Hyacinthus candicans, white bells; Erigeron speciosa, Pentstemon corsair, Lilium candidum, Aconitum bicolor, Agrostemma purpurea, Lilium testaceum, Aquilegia chrysantha, yellow; Lychnis chalcedonica fl. pl., Lilium colchicum, Galega officinalis alba, Achillea millefolium roseum, red; Chrysanthemum maximum, Gaillardia grandiflora, Bupthalmum salicifolium, Pyrethrum serratum, white; Campanula carpatica alba, Galega compacta, Lychnis chalcedonica, Achillea

ptarmica, double white; Papaver nudicaule, Catananche bicolor, Geum coccineum, double scarlet; Gladiolus The Bride, Centaurea montana alba, Helenium pumilum, Campanula carpatica alba, Lathyrus latifolium rosea, Pyrethrum aphrodite, Polemonium Richardsonii, and Lathyrus latifolius alba. Messrs. Horton and Smart fourth. Messrs. Laxton Brothers made a very fine show with a collection of varieties, which secured a commendation, the varieties staged included tastily disposed cuttings of Epilobium augustifolium, Galega officinalis alba, Geranium pratense fl. pl., Gaillardia hybrida grandiflora, Liliums candidum, auratum, lancifolium, and longiflorum, Delphinium ranunculiflorum, D. nudicaule, D. grandiflorum, Achillea ptarmica, A. millefolium roseum, Lathyrus roseum superbum, Campanula pyramidalis, C. persicifolia alba, Centaurea montana, C. m. alba, Digitalis aurea, Stenactis speciosa, Lychnis chalcedonica, Gladiolus The Bride, Asperula hextaphylla, Spirea palmata elegans, S. aruncus, Papaver nudicaule aurantiacum, Pyrethrum Mont Blanc, Coreopsis lanceolata, Phlox decussata alba, Scabiosa caucasica, Chrysanthemum maximum, and Dianthus Napoleon III.

PLANTS were fairly well represented, and included some showy semi-circular groups, the first prize being awarded to Mrs. Orr, who had a grand palm as a centre, around which were disposed specimen fuchsias, begonias, geraniums, petunias, dracænas, Crassula coccinea, mixed with adiantums and Asparagus plumosus, the whole edged with Isolepsis gracilis; J. Hawkins, Esq., second, the flowering plants being strong-growing fuchsias, lilies, geraniums, coleus, petunias, gloxinias, cockscombs, well balanced with ferns, and a specimen dracæna as a centre; F. Howard, Esq., third. For one specimen, Mrs. Orr led with a giant Agave americana; F. Howard, Esq., second, for a large piece of Adiantum Williamsi; the third card falling to a Cocos palm, staged by J. Hawkins, Esq. The classes devoted to species were generally good, but as no names were appended to the varieties, interest is lacking to the inspection. F. Howard, Esq., was the premier exhibitor of hardy and exotic ferns, in sixes; and also for six pyramidal-grown fuchsias, he being also the only exhibitor of four lilies (lancifolium roseum). Double petunias made a good class, Griffith Jones, Esq., and F. Howard, Esq., dividing the honours. Zonal geraniums were a good average, but mounted too high to be effective, G. Jones, Esq., Mrs. Orr, and F. Howard, Esq., taking the cards. Balsams and gloxinias were poor. Cut flowers were of the ordinary type; the bouquets and epergnes not equal to the standard of provincial shows. The children's baskets of wild flowers, as also the dried specimens mounted on paper, proved a very interesting feature.

FRUIT was a large show, so far as the hardy varieties went, the strawberries unusually strong. For three dishes, Mr. T. Bradshaw was first, with Sir Joseph Paxton, Excelsior, and Lucas; G. Repton, Esq., second; positions being reversed in the single dishes. Mr. C. Read, and J. Hawkins, Esq., presented the best dishes of Morello cherries; G. Jones, Esq., staged a prime sample of Early Bigarreau. Gooseberries were truly fine, and approaching ripeness, T. A. Wythes, Esq., E. T. Leeds-Smith, Esq., and G. Repton, Esq., being the winners, with large fruits. For currants, Miss E. King, first for red; G. Jones, Esq., white; and G. Hurst, Esq., with black. One of the grandest exhibits of raspberries seen this season came from A. D. Chapman, Esq. For a collection of indoors-grown fruit, J. Hawkins, Esq., was the only competitor, he staging peaches, nectarines, melons, cherries, and black grapes. The best black grapes were from Major Shuttleworth, G. Jones, Esq., and J. Hawkins, Esq., who shared the awards for Hamburghs; Major Shuttleworth first for Buckland Sweetwater; and C. Howard, Esq., second for Foster's Seedling.

VEGETABLES were displayed in plenty, and of excellent quality, the collections of twelve varieties representing choice developments, very noticeable being the French beans, tomatos, cauliflowers, mushrooms, celery, onions, carrots, and peas.

POTATOS made a fine show. For six dishes, G. Robinson, gardener to F. Howard, Esq., was first in a keen competition with grand forms of Sharpe's Victor, Sutton's Matchless, Sutton's Prizetaker, Reading Russet, Reading Giant, and Royal Windsor; B. Catlin, gardener to Colonel Hasted, second, with Snowdrop, International, Reading Russet, Reading Ruby, Sutton's Seedling, and Sutton's Prizetaker; equal third prizes going to H. Cook, gardener to Colonel Unwin, for Cole's Favourite, Reading Russet, Snowdrop, Sutton's Seedling, Beauty of Hebron, and Puritan, and to G. Hermon, gardener to Griffith Jones, Esq., for Sutton's Seedling, Vicar of Laleham, Vicar of Coggeshall, Snowdrop, Reading Ruby, and Sutton's Prizetaker. Single dishes: white kidney—first, Major Shuttleworth, with Rivers' Royal Ashleaf; Colonel Unwin, second; and G. Hurst, third, with Cole's Favourite. White round—First, Mrs. Orr and F. Howard, Esq., with Sutton's Masterpiece. For red kidney the awards went to Sutton's Prizetaker; and for red rounds the cards fell to Reading Russet throughout.

PEAS.—A great show, and splendid for size and colour. For six dishes, F. Howard, Esq., first, with Early Market, Reading Giant, Leviathan, Stourbridge Marrow, Telephone, and The Duchess; G. Jones, Esq., second, with Duke of Albany, Telegraph, Telephone, Sutton's Mammoth Marrowfat, Maincrop, and a seedling; the prizes in the single dishes all falling to gigantic pods of The Duchess.

Amateurs and cottagers and market gardeners alike showed well, but the absence of names of varieties prevented any further notes being made, the rain causing the tents to be crowded as the afternoon wore on.

MANCHESTER ROSE SHOW.

The Manchester Botanical and Horticultural Society's Rose Show took place at the Botanical Gardens, Old Trafford, on the 19th inst., the flowers being arranged on tables down the centre and at the sides of the annexe. A considerable number of blooms were staged, but the recent storms and heavy rains had left their mark on some of them. A few who had entered found themselves unable to compete, but the competition was good throughout, and Mr. Findlay has much reason to be satisfied with the extent and quality of the exhibition. The day was beautifully fine, and 7,400 persons were present, the sum of £160 being taken at the gates.

In the classes for nurserymen there were nine collections of 72 varieties, and Messrs. Harkness and Sons, nurserymen, Bedale, were placed first with a very fine lot of flowers, remarkably fresh and bright, including Her Majesty, Etienne Levet, Heinrich Schultheis, Maréchal Niel, Horace Vernet, The Bride, Fisher Holmes, Lord Macaulay, Grace Darling, Elie Morel, Lady Helen Stewart, Etoile de Lyon, Marie Rady, Niphetos, Souvenir de Paul Neyron, Princess of Wales, Camille Bernardin, Marie Finger, Madame Alphonse Lavallée, J. S. Mill, Souvenir d'un Ami, Jean Ducher, Duc de Rohan, Madame Gabriel Luizet, Auguste Rigotard, Madame H. Jamain, Madame Cusin, Mrs. J. Laing, Catherine Mermet, Star of Waltham, Madame Eugene Verdier, and Innocente Pirola; second, Messrs. Cranston and Co., Hereford, with some very fine blooms of such leading varieties as A. K. Williams, Madame A. Lavallée, J. S. Mill, Alfred Colomb, Victor Hugo, Countess of Rosebery, Devoniensis, Madame I. Periere, Fisher Holmes, Duchess of Bedford, Marie Van Houtte, Souvenir d'un Ami, Madame H. Jamain, Dupuy Jamain, Prince Arthur, General Jacqueminot, Earl of Dufferin, Rosieriste Jacobs, Madame Berard, Mrs. Jowett, Marie Baumann, Marechal Vaillant, Beauty of Waltham, and M. P. Wilder; third, Mr. B. R. Cant, Colchester; fourth, Messrs. Paul and Son, Old Nurseries, Cheshunt. There were five stands of 36 varieties, three trusses each; and here the Cranston Company were first with some very fine blooms, the leading varieties being A. K. Williams, Lady Sheffield, General Jacqueminot, Senateur Vaisse, Alfred Colomb, J. S. Mill, Auguste Rigotard, Ulrich Brunner, Queen of Queens, M. P. Wilder, Maurice Bernardin, Prince Arthur, Her Majesty, Beauty of Waltham, Dupuy Jamain, Madame Berard, and Duke of Edinburgh; second, Messrs. Prior and Son, Colchester, with good blooms of the following: Caroline Kuster, Francois Michelon, Alfred Colomb, Madame Bravy, Marie Baumann, Niphetos, Duchesse de Morny, Marie Verdier, A. K. Williams, Lady Mary Fitzwilliam, General Jacqueminot, Dupuy Jamain, Madame Lambard, Madame I. Pereire, Madame Willermoz, Souvenir d'Elise, and Mrs. J. Laing; third, Messrs. Paul and Son; fourth, Mr. H. Merryweather, Southwell.

Tea and noisette roses were shown in fine character. The best eighteen varieties, three trusses of each, came from Messrs. Harkness and Son, who had excellent blooms of Catherine Mermet, Innocente Pirola, Souvenir d'un Ami, Souvenir de Paul Neyron, Anna Olivier, Madame Willermoz, Caroline Kuster, Madame Bravy, David Pradel, Marie Van Houtte, Souvenir d'Elise Vardon, Jean Ducher, Niphetos, Madame Cusin, Madame Welch, Princess of Wales, The Bride, and Rubens; second, Mr. B. R. Cant, with Madame de Watteville, Marie Van Houtte, Ethel Brownlow, Souvenir d'un Ami, Comtesse de Nadaillac, Madame Hoste, Souvenir d'Elise, Princess of Wales, Francisca Kruger; third, Messrs. Cranston and Co. With twelve varieties, single blooms, Mr. B. R. Cant was first with Comtesse de Nadaillac, Madame Cusin, Madame Lambard, Madame de Watteville, Catherine Mermet, Jean Ducher, Niphetos, Souvenir d'Elise, The Bride, Souvenir d'un Ami, Innocente Pirola, and Princess of Wales; second, Mr. H. Merryweather with Catherine Mermet, Comtesse de Nadaillac, Marie Van Houtte, Niphetos, Innocente Pirola, Souvenir d'Elise, Souvenir de Victor Hugo, Madame Hoste, &c.; third, Messrs. Harkness and Son.

The best twelve blooms of any yellow rose were those of Francisca Kruger, from Messrs. Cranston and Co.; second Mr. B. R. Cant, with Marie Van Houtte; and third Messrs. D. and W. Croll, Dundee, with the same. The best twelve blooms of any white rose came from Messrs. Prior and Son, who had fine blooms of Niphetos; Messrs. Harkness and Sons were second with Merveille de Lyon; and Mr. H. Merryweather third with the same. The best twelve blooms of any crimson rose were superb ones of Alfred Colomb; Messrs. Paul and Son second with A. K. Williams; and Mr. B. R. Cant third with the same.

Messrs. Perkins and Sons were the only exhibitors of three bouquets of roses; as usual staging excellent examples.

In the amateur classes the Rev. J. H. Pemberton, Romford, was to the fore. He had the best thirty-six varieties, single blooms, having in excellent character, Marie Baumann, Auguste Rigotard, Souvenir d'Elise, Prince Arthur, Earl of Dufferin, Alfred Colomb, Marie Finger, Madame Victor Verdier, Louis Van Houtte, Ulrich Brunner, Comte Raimbaud, Lady Mary Fitzwilliam, La France, M.P. Wilder, Marie Rady, Merveille de Lyon, Beauty of Waltham, Innocente Pirola, Sir Rowland Hill, and Horace Vernet; second, E. B. Lindsell. Esq., Hitchin, with Dupuy Jamain, Victor Hugo, Mons. E. Y. Teas, Marie Van Houtte, Louis Van Houtte, Alfred Colomb, La France, Ulrich Brunner, Dr. Andry, Mr. J. Laing, A. K. Williams, Francisca Kruger, Marie Baumann, Captain Christy, &c.; third, the Rev. A. Foster Mellair, Ipswich. The Rev. J. H. Pemberton also had the best stand of twelve varieties, three trusses of each, staging fine blooms of Ulrich Brunner, Duke of Wellington, Merveille de Lyon, Her Majesty, Baroness Rothschild, Auguste Rigotard, and Caroline Kuster; second, E. B. Lindsell, Esq., with Catherine Mermet, Mons. E. Y. Teas, Ulrich Brunner, Comtesse de Nadaillac, Marie Baumann, Lady Mary Fitzwilliam, &c.; third, the Rev. A. Foster Mellair.

The best twelve tea and noisette roses, three trusses of each, came from the Rev. F. B. Burnside, Hereford, who had capital blooms of Madame Cusin, Hon. Edith Gifford, Innocente Pirola, Comtesse de Nadaillac, Francisca Kruger, The Bride, Souvenir d'un Ami, Princess of Wales, Souvenir d'Elise, Madame Bravy, Mons. Furtado, and Catherine Mermet; second, the Rev. J. H. Pemberton, with Innocente Pirola, Souvenir de Therese Levet, Princess of Wales, Souvenir d'un Ami, Marie Rady, Niphetos, and Anna Olivier; third, Mr. Samuel Barlow. In the class for twelve blooms, the Rev. F. R. Burnside was also first, having Souvenir d'Elise, Catherine Mermet, Innocente Pirola, Princess of Wales, Hon. Edith Gifford, Souvenir de Therese Levet, quite startling in colour; Caroline Kuster, Niphetos, Comtesse de Nadaillac, The Bride, Rubens, and Francisca Kruger; second, Mr. E. B. Lindsell, with Caroline Kuster, Francisca Kruger, Marie Van Houtte, Anna Olivier, Souvenir d'Elise, Catherine Mermet, and Comtesse de Nadaillac; third, the Rev. J. H. Pemberton.

There was no entry for twelve trusses of any yellow rose. The best twelve of any white rose were those of Innocente Pirola, very fine indeed, from the Rev. F. R. Burnside; Mr. C. Burgess, Plumbley Hill, Cheadle, was second with Merveille de Lyon, and Mr. Samuel Barlow third with the same. The best twelve crimson roses were Ulrich Brunner from the Rev. J. H. Pemberton, very fine. Mr. Samuel Barlow was second with Marie Baumann.

The best three bouquets of roses were staged by Mr. Geo. Wilkes, gardener to Miss Lord, Ashton-on-Mersey.

Prizes were also offered for district grown roses, cultivated within twenty miles of Manchester. Mr. Tatham, of Wilmslow, had the best twenty-four single trusses, staging very good blooms of A. K. Williams, Captain Christy, Marie Baumann, Duc de Rohan, Prince Arthur, Ulrich Brunner, Beauty of Waltham, Alfred Colomb, La France, Madame I. Periere, Lord Bacon, and M. P. Wilder; second, James Brown, Esq., Heaton Norris. Mr. Brown had the best twelve varieties, his leading flowers being Marie Baumann, Violette Bouyer, Her Majesty, Duke of Wellington, and Comte Raimbaud; second, Mr. Tatham, with good blooms of Ulrich Brunner, Lord Bacon, Duc de Rohan, Jean Ducher, and Comtesse de Nadaillac. Mr. Burgess had the best six, staging Her Majesty (very fine); Mr. R. G. Burgess was second. The latter had the best bouquet of roses; Miss Lord was third.

A first-class certificate of merit was awarded to Messrs. Paul and Son for Bourbon rose, Mrs. Paul. A new crimson-shaded hardy rose, named Bruce Findlay, was much admired, but the judges expressed a desire to see it in better condition,

The exhibition was materially helped by collections of other flowers. Mr. Samuel Barlow had a large and interesting collection of garden roses from Llandudno, among them a white moss rose named Madame Guinnoseau, a very interesting group of cut flowers, and a huge flowering spike of Phormium tenax variegata, which has bloomed in the open air at Llandudno, Messrs. Dickson and Robinson, seedsmen, Manchester, had hardy cut flowers. carnations, and roses; Messrs. Dickson, Brown, and Tait had hardy cut flowers, roses, &c.; Messrs. Dicksons (Limited), Chester, a collection of cut flowers of hardy plants; Messrs. Clibran and Son, Altrincham, fine blooms of single and double begonias, clematis, &c.; and Mr. M. Campbell, Blantyre, a very fine lot of cut pansies, the fancy varieties being particularly striking.

HAMMERSMITH HORTICULTURAL SOCIETY, JULY 17.

A pretty little show, somewhat above the average, must be the verdict upon this event. It is a pity that the excellent labours of the committee, principally working gardeners and amateurs, fired by a zealous desire to extend a love of horticulture in Hammersmith, do not meet with a more generous support and recognition from the inhabitants. The borough is a largely populated one, contains some wealthy residents, and it is regrettable, although laudable in one sense, to see the struggle for existence that its society is making. Let us hope that better times are in store for the society.

GARDENERS' CLASSES.—For an effectively-arranged group of plants, first honours were accorded to a very tasteful arrangement contributed by Mr. John Addison, gardener to Mrs. Lloyd, Merton Lodge, Chiswick. For the president's prize (F. G. Tautz, Esq.) for three decorative plants, flower or foliage, Mr. E. Booker, gardener to — Glover, Esq., Dorset Lodge, Goldhawk Road, W., was first, with good specimens of Adiantum cuneatum, Yucca aloifolia variegata, and Davallia Tyermanni. Mr. Booker was also first in the class for exotic ferns, showing capital examples of Adiantum cuneatum, A. Williamsi, and Thamnopteris Australasica. He was closely followed by Mr. J. Addison, who staged some well-grown specimens. The prizes for specimen foliage and flowering plants were taken by Mr. Booker—in the class for the former with a stately Yucca aloifolia variegata, and in the latter with a fine Hydrangea hortensis. For six cockscombs and for twelve cut roses, the first prizes went to Mr. G. Lampard, Sutherland Road, Chiswick. For twelve bunches of cut flowers, Mr. E. Booker, with a very attractive stand, was first; for three gloxinias the same exhibitor occupied the post of honour, with well-flowered examples. Mr. E. Booker had the premier award made in his favour in the class for a specimen fern for a grand example of Adiantum cuneatum.

In competition for the prizes for four dishes of hardy fruit Mr. G. Lampard was first; Mr. W. Martin, gardener to Colonel Cowan, Barnes, second; and Mr. J. Addison third. For a brace of cucumbers, Mr. G. Lampard was first, and Mr. W. Martin second. The special prize for a collection of vegetables, six distinct varieties, was won by Mr. J. J. Stickler, High Road, Chiswick, with some very creditable produce—all the more creditable in that the exhibitor is a railway porter employed at Gunnersbury Station, his few spare moments being given to gardening pursuits.

AMATEURS' CLASSES.—The prizes for groups of plants arranged for effect were well contested. With the first prize was added the bronze medal of the Royal Horticultural Society. This much-coveted award was gained with a very pretty group by Mr. J. Bromley, 17, Miles Street, Hammersmith, a working painter, but a most enthusiastic amateur gardener; Mr. Woodhouse, 43, St. Peter's Grove, Hammersmith, was second with a very creditable arrangement; Mr. W. Davey, St. Peter's Schools, Hammersmith, third. Mr. T. Nelson, 21, St. Peter's Road, Hammersmith, a working blacksmith, competed successfully in several classes, as did Mr. Wilford, Goldhawk Road, Hammersmith, and the courteous secretary of the society, Mr. T. Pitt, 6, Kilmarsh Road, Hammersmith. The ferns which gained the first prize for Mr. J. J. Hillier, Black Lion Lane, Hammersmith, were good examples of cultivation. The cottagers' display—if not extensive—was a creditable one, and lively interest was aroused in the brisk competition for bunches of wild flowers arranged by children under fourteen. Mr. M. T. May, gardener to the Marquis of Bute, Chiswick House, sent a most beautifully-arranged group of foliage and flowering plants, not for competition, which added very considerably to the attractiveness of the show. Messrs. C. Lee and Sons sent six boxes of roses, not for competition, which were universally admired; the following sorts we noted as being specially good: Marie Baumann, Boule de Neige, Her Majesty, extra fine, A. K. Williams, and Fisher Holmes.

The judges were Mr. G. Cannon, Mr. M. T. May, and Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing. We cannot close this report without referring to the excellent services rendered in the arrangement of the show by Mr. T. Pitt, the secretary; Mr. D. Dowel, the treasurer; and Mr. W. Davey and Mr. J. C. Cowley, chairman and vice-chairman of the society.

NATIONAL PINK SOCIETY, NORTHERN SECTION.

As in London so in Manchester, the new movement in favour of re-establishing the pink in the position of an exhibition florists flower was commenced under the most favourable auspices, and though the movement in favour of a northern show was commenced only recently, it is gratifying to know more than enough was received in the form of subscriptions, not only to defray the cost of the show, but a substantial balance will be carried forward to next year, when it is intended to add materially to the number of classes and prizes. The support given to Mr. Samuel Barlow is of a nature to indicate that the cultivation of the pink as a florists' flower will receive considerable extension during the next few years. It is also gratifying to know that a movement has been set on foot to establish a pink exhibition for the midland growers on a date intermediate between the London and the Manchester shows; and it does seem as if the annual exhibition in the public park at Wolverhampton affords an excellent opportunity for carrying out an exhibition of Midland grown pinks.

The exhibitors of pinks at Manchester were limited in number of the south, but a decidedly good start was made. The largest class here was for twelve laced pinks in not less than six varieties, and two stands competed. Mr. M. Campbell, Auchinraith Nurseries, Blantyre, was placed first with good flowers, the pretty pale red laced Modesty being highly attractive. He also had Ada Louisa, Dr. Maclean, Nothing Better, a good dark purple laced flower; Boiard, which comes fine in the north as in the south; Reliance, Device, Godfrey, and John Drake, a flower with finely formed petals. Mr. Samuel Barlow, Stakehill House, Castleton, who could have shown some wonderful flowers ten days later, his pinks being very late, and the flowers, therefore, small and undeveloped, was second with Boiard, George Hodgkinson, Brown's Heavy Red, a very free flowering variety; Mrs. Thurstan, Henry Hooper, and Mrs. Dark, also very free and pretty. In the class for six blooms, distinct varieties, Mr. Samuel Barlow was first with Boiard, Mrs. Dark, James Thurstan, a very fine dark purple variety, that lays its petals in such a symmetrical manner as not to need much dressing; a variety the stock of which is limited at present, but which has a great feature as an exhibition flower; Brown's Heavy Red, George Hodgkinson, and one unknown second; Mr. Tom Lord, Hole Bottom, Todmorden, who had good blooms of Boiard, Rosy Morn, Modesty, Bertram, Mrs. Dark, and Eurydice. Mr. Campbell was third with Modesty, Jeannie Godfrey, Emeline, Nothing Better, and Rosy Morn. Mr. C. W. Thurstan, Wolverhampton, was fourth, and Mr. W. Prescott, Manchester, fifth. In the class for six blooms not less than three varieties, Mr. S. Barlow was again first with two blooms each of Mrs. Dark and Brown's Heavy Red; and one each of Boiard and unknown. Mr. F. Morton, Wolverhampton, was second with Boiard, Henry Hooper, George Hodgkinson (two blooms), Mrs. Dark, and Clipper.

In the classes for the best purple and red-laced flowers, a goodly number of blooms were staged. With purple-laced, Mr. Barlow carried off the whole of the five prizes, being placed first, second, and fourth with Boiard, third with Henry Hooper, and fifth with George Hodgkinson. In the class for red-laced pinks, Mr. Tom Lord was first and second with Bertram, and fourth with Modesty; Mr. Barlow third and fifth with Mrs. Dark.

The premier purple-laced pink was Boiard, shown by Mr. S. Barlow, and the premier laced variety Modesty, shown by Mr. M. Campbell.

The class for a collection of pinks, laced, black and white, selfs, border, &c., was a very interesting one, and, though only two exhibitors competed, it was the means of bringing some most desirable varieties to the fore. Mr. Thomas Walkenden, Moss Side Nurseries, Sale, was first with good bunches of William Brownhill, a charming pure white variety, with smooth well-formed shell-like petals; Mr. Sinkins, Fimbriata alba, and seedlings, white varieties; laced, Progress, Emily, and seedlings; Linley Walkenden, white, tinted with blush; Souvenir de Sale, bright pinkish-lilac, &c. Mr. Walkenden also added a bouquet and a vase of pinks, and one or two other things showing the methods by which the pink may be turned to account as a decorative agent. Mr. Samuel Barlow was second with a smaller but excellent collection, having nice bunches of the following laced varieties: George Hodgkinson, Boiard, Mrs. Dark, Mrs. Thurstan, Frank Simonite, Brown's Heavy Red, Lakin's Seedlings, the old white garden pink, and some bunches of the richly coloured mule pink, Napoleon III. There is no doubt this class will prove a very effective and instructive one another year.

Certificates of merit were awarded to Mr. Thomas Walkenden for the following pinks: Souvenir de Sale, Progress, pure white shell-like petals, laced with delicate pink; William Brownhill, white; and Linley Walkenden, white, tinted with blush in the centre.

NATIONAL CARNATION AND PICOTEE SOCIETY, JULY 22 AND 23.

The annual exhibition of the southern section of the National Carnation and Picotee Society at Chiswick, on the above dates, was one of the most successful gatherings that has yet taken place under the auspices of the society, and all concerned had good cause to be gratified with the result. The competition in the majority of the classes was remarkable for its severity. The greater proportion of the blooms were distinguished by their large size and high finish, and the selfs and fancies were staged in larger numbers than on any previous occasion. The flowers were arranged in a spacious tent, pitched on the lawn contiguous to the Council Room; and as the weather was delightfully fine the visitors were able to fully enjoy the gardens, which are now rich in interest, not the least important of the trials in progress being that of carnations and picotees. The various details of the exhibition were admirably carried out, and Mr. Henwood, Mr. J. Douglas, and the other members of the executive who took part in carrying out the arrangements may be congratulated on the results of their labours.

CARNATIONS were very largely shown, and the long lines of attractively-coloured flowers produced a bright and highly-attractive display. In the great class for twenty-four carnations, to comprise not less than twelve varieties, the post of honour was occupied by Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, with blooms large, bright in colour, and highly finished. The varieties were Matador, Robert Houlgrave, Harrison Weir, Arthur Medhurst, Squire Whitbourn, Thalia, Alisemond, Edward Adams, John Keet, Joseph Crossland, Harmony, Rosamond, Squire Whitbourn, and seedlings. Mr. Charles Turner, Slough, was a remarkably close second, the flowers hardly so large as those in the first prize collection, but superbly finished. The varieties consisted of Thalia, J. McIntosh, James Douglas, Mrs. Matthews, Hutchinson's Rose, Mrs. Payne, Robert Houlgrave, W. K. Mayor, Alisemond, Squire Llewelyn, William Skirving, Squire Potts, Mayor of Nottingham, James Taylor, Jupiter, Miss E. Wemys, Albion Pride, and several seedlings. Mr. M. Rowan, 36, Manor Street, Clapham, was third, with blooms bearing the impress of skilful cultivation.

There were six competitors in the class for twelve varieties, and the premier award was made in favour of Mr. M. Rowan, who had large and finely-finished blooms of James Douglas, Thalia, Alfred, Edward Rowan, Sarah Payne, Gordon Lewis, J. D. Hextall, George Melville, Sportsman, Master Fred, Admiral Curzon, and John Burton; Mr. J. Douglas followed very closely for second place with remarkably good blooms of Alisemond, Rob Roy, John Harland, Joseph Crossland, Tim Bobbin, Sport, Matador, and seedlings; Mr. C. Phillips, 18, Hamilton Road, Reading, was third with medium-sized blooms of good quality; Mr. Headland, The Firs, Leyton, was fourth; Mr. G. Chaundy, Witham Street, Oxford, was fifth; and Mr. W. J. Nicholls, 274, Kingsland Road, N.E., sixth. There was a very keen contest in the class for six blooms, from which exhibitors in the foregoing classes were excluded. Mr. J. Lakin, Temple Cowley, occupied the first place with admirably-developed blooms of James Douglas, Squire Llewelyn, J. D. Hextall, Matador, Lovely Mary, and Duchess of Fife, a beautiful rose-flake, remarkable for high finish and delicate colouring; Mr. T. Anstiss, Brill, was second with good blooms of Dodwell's Seedling (a promising purple-flake), Miss Mary, Robert Cannell, W. Bacon, James Douglas, and Robert Houlgrave. Mr. J. Keen, 15, Castle Street, Southampton; Mr. F. Nutt, 1, Gloucester Road, Southampton; Mr. A. J. Sanders, gardener to Viscountess Churton, Brookham Lodge, Cobham; and Mr. W. L. Walker, Dunolly, Reading, were awarded the remaining prizes in the class in the order of their names.

SINGLE SPECIMEN CARNATIONS were good throughout, and on this occasion the members of the executive were careful to avoid the confusion which usually prevails in the specimen classes. The awards were made as under: Scarlet bizarre, Mr. J. Douglas first and second with Robert Houlgrave; Mr. Headland third and fourth with Joseph Headland, and Mr. Phillips fifth with George. Crimson bizarres, Mr. J. Douglas first and third with seedlings; Mr. Phillips second with John Harland; Mr. R. Sydenham

fourth with Harrison Weir; and Mr. Headland fifth with Duc d'Aumale. Pink and purple bizarre, Mr. A. J. Sanders first with William Skirving; Mr. J. Douglas second and third with seedlings; and Mr. J. Lakin and Mr. Rowan fifth with Sarah Payne. Purple flake, Mr. Rowan first, Mr. A. J. Sanders third, and Mr. Phillips fifth, with James Douglas; Mr. J. Douglas third with a seedling; and Mr. J. Lakin fourth with Mayor of Nottingham. Scarlet flakes, Mr. J. Douglas first with Alisemond; Mr. J. Lakin second and Mr. Phillips third and fifth with Sportsman; and Mr. Headland fourth with Henry Cannell. Rose flakes, Mr. Lakin first with Lovely Mary; Mr. J. Douglas second with a seedling; Mr. C. Turner third and fifth and Mr. Rowan fourth with Thalia.

PICOTEES, although less effectively coloured, obtained a full share of attention from the general body of visitors, as well as from those who take a special interest in this exquisitely beautiful flower. The premier award in the class for twenty-four blooms, in not less than twelve varieties, was made in favour of Mr. C. Turner, who had exceptionally fine blooms of Lucy, Norfolk Beauty, Mrs. Gorton, Madeline, Miss Flowdy, Lord Valentia, Louisa, Nymph, John Smith, Rival Purple, Princess Dagmar, and Lady Holmesdale. Mr. J. Douglas was a capital second, his varieties being Liddington's Favourite, Brunette, Mrs. Sharpe, Miss Flowdy, Nymph, Muriel, Ethel, Princess of Wales, Her Majesty, Constance Heron, Clara Penson, Mrs. Chancellor, Silvia, Mrs. Bower. Mr. F. Hooper, Widcome Hill, Bath, was third.

The entries were numerous in the class for twelve, and at the head of the several competitors was Mr. J. Douglas, with flowers representing Her Majesty, Princess of Wales, Silvia, Constance Heron, Jessie, Mrs. Chancellor, Liddington's Favourite, Mrs. Sharpe, Zerlina, Muriel, Mrs. Geggie, and Brunette. Mr. C. Phillip was second with flowers of comparatively small size but of high quality, the varieties being Orlando, Mrs. Ricardo, Muriel, Mrs. Sharpe, Brunette, Ethel, Juliette, John Smith, Royal Visit, Amy Robins, and Thomas William. The remaining prizes in the class were awarded to Mr. A. J. Sanders, Mr. Headland, and Mr. W. J. Nicholls. The premier award in the class for six blooms was made in favour of Mr. M. Rowan, 36, Manor Road, Clapham, who had splendidly-developed blooms of Master Norman, Edith Dombrain, Muriel, Liddington's Favourite, Clara Penson, and Brunette. Mr. G. Chaundy was second with Liddington's Favourite, Lady Holmesdale, Clara Penson, Mrs. Lord, and a seedling. Mr. J. Lakin, Mr. Rebbeck, Southampton, Mr. J. Keen, and Mr. F. Nutt were third, fourth, fifth, and sixth respectively.

SINGLE SPECIMEN PICOTEES were not less satisfactory than were the specimen carnations. The prizes were awarded as under: Red heavy edge, Mr. J. Lakin first with Isabel Lakin, a beautiful flower in the way of Brunette, but as shown with a richer-coloured and more regularly-defined. Mr. A. J. Saunders was second and Mr. J. Douglas fifth with Brunette, Mr. Headland third with J. B. Bryant, and Mr. J. Douglas fourth with Princess of Wales. Purple heavy-edged: Mr. J. Douglas first and third with Mrs. Chancellor, Mr. C. Phillips second and fourth with Muriel, and Mr. Sander fifth with Zerlina. Rose heavy-edged: Mr. C. Turner first with Madeline, a new flower of fine form and exquisite in colouring, Mr. J. Douglas second with Mrs. Payne and third with Constance Heron, Mr. Phillips fourth with Mrs. Ricardo, and Mr. J. Nicholls fifth with Mrs. Sharpe. Rose light-edged: Mr. J. Douglas first and second, Mr. Headland third, and Mr. Phillips fifth with Liddington's Favourite, and Mr. R. Sydenham fourth with Mrs. Geggie.

YELLOW GROUND FLOWERS showed a marked advance upon those staged in previous years. Mr. C. Turner obtained premier honour in the class for twelve with superb blooms of Annie Douglas, Almira, Janira, Agnes Chambers, Dorothy, and seedlings. Mr. J. Douglas occupied the second place with blooms of Mrs. Whitbourn, Agnes Chambers, and seedlings. Mr. G. Hooper, of Cambridge Place, Bath, was first for six with excellent blooms of Mrs. Little, Agnes Chambers, Alice Brooks, Star of Bath, and Duchess of Albany. Mr. G. Chaundy was second, and Mr. F. Nutt third.

YELLOW GROUND SPECIMENS had one class set apart for them, and the prizes were awarded as follows: Mr. J. Douglas first and third with seedlings of high quality; Mr. C. Turner third with Agnes Chambers, and Mr. Headland fourth with Mrs. Headland, and fifth with a seedling.

SELFS AND FANCIES were largely shown, and produced a bright display of colour. There were five competitors in the class for twenty-four blooms, and the premier position was occupied by Mr. C. Turner with good blooms of Mary Morris, Anna Benary, Germania, Rose Celestial, Colonial Beauty, Victor, Ruby, Terra Cotta, Purple Emperor, Duchess of Connaught, and Lady Rose Molyneux; Mr. J. Douglas followed for second place with a collection, consisting chiefly of seedlings; Mr. W. Toby, 3, St. Mark's Grove, West Brompton, third, with finely-developed blooms; and Mr. F. Hooper and Mr. G. Hooper were fourth and fifth respectively. There were no less than nine stands in the class for twelve blooms, and the awards were made in favour of Mr. G. Chaundy, Mr. C. Phillips, Mr. Rowan, Mr. Antess, and Mr. A. J. Saunders.

PREMIER FLOWERS were Robert Houlgrave carnation, shown by Mr. C. Turner, and Liddingtons Favourite picotee from Mr. J. Douglas.

PLANTS IN POTS were represented by three or four excellent collections, and the prizes were awarded to Mr. C. Turner, whose principal specimens were those of Mrs. Reynolds Hole, Agnes Chambers, Viceroy, Almira, and Purple Emperor; Mr. J. Douglas, and Mr. Headland.

SEEDLINGS were few in number, and met with but little favour from the judges. Mr. J. Douglas was first and second in the yellow-ground seedling class for Nellie Hibberd. First-class certificates were granted to

Mr. C. Turner for

Sunset.—A yellow ground flower, the blooms large, and of good form; the ground yellow buff shaded with scarlet.

Victory.—An effective flower of good form, the ground light buff heavily flaked and edged with brilliant carmine red.

To Mr. Douglas for

Nellie Hibberd.—A beautiful yellow ground flower, the bloom comparatively large and of exquisite form, the ground clear lemon yellow, the petals edged bright red.

CARNATION CONFERENCE.

On Tuesday afternoon a conference on carnations was held by the Royal Horticultural Society, Martin R. Smith, Esq., presided, and in his opening address said that, as carnations were now raised from a pampered stock it was a hopeless task to attempt the culture of the modern varieties in the open ground. The flowers were seen and admired at the exhibitions, the plants were purchased and planted in the choicest sites, but instead of growing vigorously and blooming satisfactorily, they dwindled away and died. The growers were to blame in the matter, because of their not selecting hardy varieties for the parents. What was really required was a race of hardy varieties, and he should like to see in the National Society's schedule a class for flowers cut from plants that had been wholly grown out of doors. To encourage the cultivation of these hardy varieties he would give twenty guineas annually for five years to the society to be offered in prizes for them. Papers were read as follows: "The Carnation from a Botanical Point of View," by Mr. F. N. Williams; "The Florist's Carnation and Picotee," by Mr. H. Turner; "Carnations and Picotees in Towns," by Mr. M. Rowan; and "Border Carnations," by Mr. R. Dean.

Replies to Queries.

Fairmile.—You do not say what treatment your roses have received; have they been pruned? If so, in what sort of way? To answer offhand why they do not flower is impossible, for at the best it must be a mere guess in absence of facts.

J. B.—It is an easy matter to strip the berries from the plants before they ripen. A nimble lad would clear a large bed in less than an hour. But if you see no other way than to cut, remove them that way only cutting so much as is necessary to get rid of the seeds. The matter is so simple that we cannot conceive of a difficulty.

Stephanotis.—J. M.: If the growth is over-crowded a few of the shoots may be taken out at once, but the general pruning should be deferred until the winter when the plant is at rest. A moderate top dressing of some suitable portions such as Clay's or Standen's would be of material assistance to the specimen in completing its growth.

Flowers of the Fig.—Flos: The flowers are concealed within the fig on its internal surface. They are male and female, the former being situated near the orifice in the top of the fleshy receptacle, and the latter in that part of the cavity next the stalk. If the stamens are perfect the fertilisation takes place when the figs have attained rather more than their full size. Fertilisation is not necessary to ensure the fruit swelling and ripening.

Annuals in Flower.—Vigo: It is impossible to remove the seeds from annual plants now in flower where the quantity is considerable, but where it can be done, the flowering will be much prolonged. We have in view just now a magnificent display of poppies, the owner of which manages to remove the seed pods two or three times a-week, and he will be repaid for his trouble, for in the end the number of flowers will be about doubled.

Injured Vines.—G. F. C.: The vines have evidently been kept too close and moist, and we would suggest that you increase the ventilation and employ a little fire heat when necessary to prevent the thermometer falling too low. The foliage has been caught by the sun when the house has been insufficiently ventilated. It will not be necessary to reduce the quantity of water poured over the floor, as with more liberal ventilation the evaporation will proceed more rapidly, and the atmosphere will not be so heavily charged with humidity.

Injured Grapes.—Troubled: It is a case of what is technically known as "scalding," and the injury to the berries is the result of insufficient ventilation. To prevent further mischief admit air more freely to the vinery, and be careful to open the ventilators early in the day. It is an excellent practice to open the top ventilators to the extent of two or three inches an hour or so before the sun shines with full force upon the roof of the house, as when that is done any moisture that may have condensed upon the berries evaporates before they are exposed to the direct rays of the sun, and "scalding" seldom occurs.

Names of Plants.—J. M., West Ham: Your interesting fungus is Clathrus cancellatus, a beautiful member of the Phallic series, and one of the most offensive.—A. D. Sterndale: The grass is Festuca ovina, the sheep's fescue.—S. M. C., Uppingham: The shrub is the New Zealand Veronica Traversi.—Harlesden: 1, Draba confusa; 2, Lespedeza polystachya; 3, Fragaria Indica; 4, Lobelia cœlestis.—Frank H. F. T.: 1, Oncidium incurvum; 2, Dendrobium fimbriatum; 3, Dendrobium secundum; 4, Phaius albus.—W. Thomson: The lily is a good sample of Lilium Krameri, but to label it Japonicum is not so sad a case as you imagine, for it is related thereto, and is by many suspected to be a hybrid between Japonicum and auratum. We have it in beautiful condition at the present time.

London Pride.— F.: With reference to the popular name of saxifraga umbrosa, Deakin in his "Florigraphia Britannica" says (page 605) "its extreme power of accommodating its growth to all conditions, even to a small box of soil hung from the window in the most confined parts of the City of London, together with the great beauty of its flowers have obtained for it the name of London Pride." On the other hand, Prior, in "Popular Names of British Plants," (page 137) remarks "It is understood upon apparently good authority, that of Mr. R. Heward," that the popular name of London Pride was "given to this latter plant in reference to the person who introduced it to cultivation, Mr. London, of the firm of London and Wise, the celebrated royal gardeners of the early part of the last century." But this origin for the name can hardy be the correct one.

Fuchsias.—J. M.: Fuchsias require good cultivation when intended for exhibition. Plants raised from cuttings struck now, and grown on vigorously until the autumn, and rested during the winter will, under good cultivation, make medium-sized specimens in the course of the summer of 1891. They should be grown in a compost consisting of turfy loam five parts, and well-rotted manure, leaf-mould, and silver sand one part each. Until they are coming into bloom they should be placed in a house in which a temperature intermediate between that of the greenhouse and stove is maintained, be lightly shaded during bright weather, and enjoy a moderate degree of atmospheric moisture combined with liberal supplies of water at the roots. A certain amount of stopping will be necessary, but the pinching must not be overdone, as they present a much more attractive appearance when allowed to grow somewhat naturally. The following are all suitable for exhibition: Harry Brooks, Mr. King, Beauty of Lavington, Aurora superba, Berliner Kind, Wave of Life.

Obituary.

WE have to announce the death of Sir ALFRED FREDERICK SLADE, third baronet, of Maunsel House, Bridgwater. He served with distinction throughout the Crimean campaign in the 57th Foot, and was severely wounded at the storming of the Redan. It will be remembered that he played a leading part in the opposition to the Council of the Royal Horticultural Society which led to the resignation of the Council in a body in the year 1873. His age was 56 years.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
3	S	**9th Sunday after Trinity.**	4 28	5 56	7 42	9 36	7 30	3 28	3 51	0 29	0 53	63·2
4	M	Ruprecht died, 1870.	4 30	5 51	7 41	9 55	8 55	4 16	4 40	1 16	1 41	63·2
5	Tu	Bishop Bloomfield died, 1857.	4 31	5 45	7 40	10 13	10 17	5 3	5 24	2 5	2 28	63·1
6	W		4 33	5 39	7 38	10 30	11 35	5 47	6 9	2 49	3 12	63·1
7	Th	*Name of Jesus.* ☾ Last Quarter.	4 35	5 32	7 36	10 49	After.	6 33	6 55	3 34	3 58	63·0
8	F	Thumberg died, 1828.	4 34	5 24	7 34	11 15	2 6	7 20	7 45	4 20	4 45	62·9
9	S	Greenwich Observatory commenced, 1675.	4 38	5 16	7 32	11 44	3 17	8 12	8 43	5 10	5 37	62·9

Orchids in Flower.		Day of Yr.
Acrides roseum	Sylhet.	180
Brassia verrucosa	Guatemala.	215
Cattleya labiata	Brazil.	216
Cypripedium Sedeni	Gar. hyb.	217
Dendrobium chrysanthum	Nepal.	218
Miltonia Moreliana	Brazil.	219
Stanhopea Shuttleworthi	Colombia.	220
		221

MAIDENHEAD HORTICULTURAL SOCIETY. — The ANNUAL SHOW of this Society will be held in the grounds of Curtisfield, Maidenhead, on THURSDAY, August 14, 1890. Entries close on August 7.

Schedules and particulars from the Secretary, O. King, Ray Park Cottage, Maidenhead.

Exhibitions and Meetings for the Ensuing Week.

Monday, Aug. 4.—Hepworth Horticultural Society.—Annual Exhibition.
Monday, Aug. 4.—Headington Horticultural Society.—Annual Exhibition.
Monday, Aug. 4, and Tuesday, Aug. 5.—Northampton Horticultural Society.—Annual Exhibition.
Tuesday, Aug. 5.—British Fruit Growers' Association.—Conference at Leicester.
Tuesday.—Aug. 5.—Leicester.—Flower Show.

Auction Sales for the Ensuing Week.

Friday, August 8.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.
Thursday, Aug. 7.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

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The Gardeners' Magazine.

SATURDAY, AUGUST 2, 1890.

The Fern Conference of the Royal Horticultural Society must be pronounced a brilliant success, despite the fact that, apart from the enthusiasts who make and have a kind of monopoly of the full appreciation of such things, the general public gave it but scanty support. It brought to a kind of intellectual focus many rays of acquired light on the subject of fern varieties, especially as to their origin, æsthetic merits, and the means at our command for their multiplication. Nor was the exhibition provided for illustration of the capabilities of the British ferns as protean performers, wanting in richness, variety, and scientific interest. It may be dangerous to make the declaration, but we are inclined to incur the risk by saying that Mr. E. J. Lowe, of Chepstow, placed upon the table a finer display of varieties of British ferns than has ever been before exhibited. That the silver challenge cup, offered by N. Sherwood, Esq., for the best collection of hardy ferns, was awarded him, surprised no one; indeed, the ferns themselves were such a surprise, that there was not room for the cup in the heads of the critics. The silver-gilt Flora medal awarded to C. T. Druery, Esq., was ably earned by the plumose lady ferns, the curious hard ferns, the grand crested male fern, and the superb Victoriæ form of the lady fern, the plant shown being from the original find, and perfectly typical in character. The group from J. A. Whithard, Esq., Streatham, obtained for the gardener, Mr. H. Wright, golden opinions, and usefully filled one side of the tent appropriated to the Carnation Show and the Conference. The trade lots from Messrs. Veitch and Son, Messrs. W. and J. Birkenhead, and Mr. H. B. May were of importance as illustrating the commercial side of the subject, and Messrs. Veitch's filmy ferns were especially valuable as illustrating the possibilities of multiplication and variation of this interesting class of ferns.

A leading lesson for the observer of the several lots can be set forth in three words, to the effect that *Ferns Love Light.* We meet with them in shady woods; they love to hide themselves on the cool and moist side of masses of rock, and even creep into caverns and grottoes as for shade and moisture; and yet they love light, for in ten thousand places where ferns of supposedly delicate constitution abound and prosper, there is absolutely no shade, unless, indeed, it be in the moisture-laden atmosphere which subdues the glare of the sunshine and prevents the desiccation that might follow were the ferns removed from the breezy mountain to the burning sand on the level of the sea, as in the Sahara, for example, or on the Mexican plains, where the cactuses rejoice in strong light and heat and drought. The brilliant parsley fern riots in the fullest glare of mountain sunshine on the heights of Kirkstone Pass; the lady fern forms majestic avenues on the road from Low Wood to Kirkstone, on the sunniest parts of Helvellyn, Snowdon, Ben Nevis, and other heights well known to collectors of British ferns, their favourites abound; and however the hard fern and the buckler ferns may love full exposure, and the lady ferns and smaller male ferns, with the maidenhair and filmy ferns, may secure shade and shelter as the primary conditions of existence, they all love light, and become pale and attenuated when deprived of it beyond a certain point not far removed from what may be understood as full exposure. Mr. E. J. Lowe's ferns bore evidence of very complete illumination; they were, generally speaking, short for their proper stature, stout, of the fullest green colour, and capable of enduring the trials of an exhibition with the least imaginable harm for such delicate subjects. Our illustrations from Kew tell the same tale; and those will take the trouble to experience the pleasure of a close comparison of the several British ferns in the Royal Gardens will quickly perceive that with some species the fullest exposure in open beds answers perfectly, while others show a slight degree of distress as the result of a free and full bath of sunshine.

Another lesson of this exhibition is to be found in the diversity of forms the British species are capable of assuming. The destroyers of ferns do not usually discriminate between species and varieties. Now, it happens that the varieties of which such ardent hunters and cultivators as Mr. Lowe and Mr. Druery are enamoured, do not, as a rule, contribute in any material degree to the interest or beauty of British scenery. The bracken, the male fern, the female fern, the royal osmund, and the hard and buckler ferns *in their normal forms* are of the highest importance as adornments of natural scenery. But the varieties of these that are of primary importance to the amateurs, may for all ordinary scenic considerations be ignored, because they are of rare occurrence, and really contribute no special beauty to the scenes in which they occur. They are, in fact, commonly passed by even by collectors who live by peeling the mountains, but when transferred to the garden of an amateur, who is master of this business, they reveal beauties unsuspected, and soon give birth to other varieties, surpassing even themselves in beauty, curiosity, eccentricity, and other points that push right into the heart of the genuine amateur. It follows that the collecting and cultivating of varieties is in no necessary way connected with the spoliation of the country. The mere grabber may want a thousand or a hundred (as the case may be) of male ferns, or lady ferns, or royal osmunds. The genuine amateur does not want one of them except for purposes of reference. He is content to plod on, searching and hoping until he meets with an abnormal form, and *then* he becomes an undoubted spoiler, for he will have the curiosity or die for it; but when he has secured it the beauty of the glen or cliff is in no wise diminished, for that was the very fern that no one else wanted, and that utterly escaped admiration and even notice amid the wealth of normal forms all fresh and beautiful, and telling their own tale of the purposes of nature and the harmonies of things.

The list of varieties certificated that we gave on page 440 of our

report will show that the committee had something to do in the recognition of distinct and beautiful forms, known to but few at present, and in some cases known only to their possessors. Amongst them were many wonders of form, and a few scarcely less than wonders in respect of colour. A few variegated British ferns have been met with by explorers of the moors and glens where varieties are chiefly sought, but it was Mr. Lowe's good fortune to present quite a series of variegated hart's tongue ferns, a few of which were boldly coloured with a deep creamy or amber variegation. We will not claim for these curiosities that they are in themselves of any great value, but they are of special interest as giving promise of better things to come. Raising varieties from spores is the familiar pastime, and in some sort the passion of the collectors and cultivators who lead the way in this pursuit; and they all look upon such variations as prophetic of ferns that will be as richly coloured as crotons, or say, to be well within moderation, as Pteris tricolor, Pteris argyrea, and the singularly useful Pteris cretica albo-lineata. What Nature has done for these three exotic ferns, is in a way repeated in certain forms of British scolopendriums, and the case acquires peculiar interest when it is found that the production of variegation is probably at the command of the cultivator. We say "probably" because we dare not say certainly; but not a few of our friends of the fern persuasion feel confident that they have the power to influence the growth from the initial stage of the fertilization of the prothallus. That they operate with definite ends in view, and often are rewarded with the results desired, must be registered amongst the facts of fern culture. Those who do not believe it possible that any manipulation can influence the obscure sexuality of these mysterious plants, will attribute the occurrence of new varieties from cultivated spores to the spontaneous generosity of Nature. But the operator will continue his operations, and will see new forms arise from spores he has intentionally blended, and will be justified in the belief that crosses are effected because of the characters that are severally reproduced or modified agreeably to the characters of the parent plants. It is a question for the initiated only; onlookers, however interested and familiar with plants in general, will do well to keep themselves in an attitude of conviction, for the analogies are all in favour of the possibility of artificial crossing, and the phenomena of germination in these plants are far removed from the resources of the merely casual observer. It is difficult to deny the possibility of crossing, or even of crossing to obtain certain specified results, when the question is seriously entertained in view of such a riotous assemblage of beauties, oddities, and strange departures from typical form as the exhibition for the most part consisted of.

If the things were wonderful for beauty, their names were not less wonderful for ugliness. Let there be no complaint against the general public that on such an occasion the visitors are few. The labels on the plants gave no sign of the advance of common sense in the naming of plants, for they might be regarded, with but few exceptions, as extravagant examples of uncommon nonsense. But the repulsive names might not prove fatal were measures taken to interest the public in the subject. Something other than dry technical essays are wanted; and, in fact, the whole literary business of the Fern Conference was of a forbidding nature, and suitable only for a score of pundits shut up in a small room; and it was sheer folly to arrange chairs for a mixed audience expected to listen patiently to discourses in an unknown tongue. The few who came in hopes of obtaining useful knowledge went away saddened with the thought that possibly botanical and horticultural studies tend to derangement, and even destruction of the mind.

Gardeners' Royal Benevolent Institution.—A flower service was recently held in the Church of Osbaldwick, near York, when a collection was made on behalf of this institution, with the result that its funds will benefit to the extent of about £3.

Society of American Florists.—The sixth annual meeting will take place in the Horticultural Hall, Boston, Mass., on August 19, 20, 21, and 22. The president is J. M. Jordan, of St. Louis, Mo.; vice-president, M. H. Norton, Boston, Mass.; secretary, W. J. Stewart, Boston, Mass.; treasurer, M. A. Hunt, Terre Haute, Ind. On the first day the business will include discussions on "Easter Trade, and System in Business." On the second day "Hybridization" will be discussed on an essay by E. S. Carman. Third day, "Review of Plants of Recent Introduction." Fourth day will be devoted to social enjoyment.

The Small Farm and Labourers' Land Company.—The fifth annual meeting of this company was held yesterday at the Westminster Palace Hotel, Lord Wantage, V.C., K.C.B., presiding, among the other gentlemen present being Mr. Channing, M.P., Mr. Stafford Howard, the Rev. G. S. Reaney, and Mr. Samuel Insull. The report was adopted sanctioning the payment of a dividend of 4 per cent. for last year, and a resolution was passed authorizing a dividend at the rate of 2 per cent. for the current year. It was stated that the liabilities of the company were just under £14,000, against which they had properties valued at £14,200 and about £700 cash in hand.

EXCURSION OF THE NATIONAL CHRYSANTHEMUM SOCIETY.

On Monday last a party of members of the National Chrysanthemum Society made an excursion by rail and river, as previously arranged by Mr. W. Holmes, the indefatigable and apparently inexhaustible honorary secretary. The party, including a few ladies, numbered eighty-two persons, and the day was one of the best as regards weather, being fine without excessive heat. Leaving Paddington at ten a.m., Reading was soon reached, and a walk was made from thence to Caversham, where the steam launch, *Fashion*, was waiting as appointed. This compact and commodious vessel steamed with its happy freight to Henley, where the land was regained and dinner was found ready at the White Hart Hotel. That agreeable ceremony having been honourably performed, under the presidency of R. Ballantine, Esq., chairman of committee, the party divided, one portion pushing over the bridge and up the hill to Park Place, the other being "in the *Fashion*" for a visit to Marlow. At six there was again a general assembly at Henley, and the *Fashion* took its precious freight to Reading for the train home, the end of it being that all were safe in Paddington soon after ten, about equally tired and equally satisfied with a delightful day, including several distinct and pleasing episodes.

The main attraction, undoubtedly, was Park Place, the seat of John Noble, Esq., described in our issue for May 31, of the present year. The scenes on this fine property are of the most varied character owing to its situation overlooking the beautiful river Thames, and being laid out with every regard to its capabilities. Much of the beauty of the place is the result of its variety of soils and levels, many of the more prominent characteristics of the chalk formation being here pleasingly developed, especially in the hanging woods and cliffs next the water, where a romantic slope of grass opens the way to a Roman amphitheatre and a tunnel cut through the chalk, connecting scenes of the most opposite character. The glass houses here are models of their kind, and are comfortably arranged in a walled garden in the best of keeping, under the management of Mr. George Stanton. The worthy owner of this place allows free access to it from the river, and was much gratified by the visit of the National Chrysanthemum Society.

SURREY FLORICULTURAL SOCIETY.

July 23 and 24.

This admirably managed society held its forty-sixth annual exhibition on the above dates, in the beautiful grounds of Casino House, Herne Hill, and a more thoroughly representative display of horticultural produce could not well have been desired. Plants, flowers, and fruits were all shown in large numbers, and in a condition thad did much credit to the cultural skill of those who took part in the competition for the prizes.

The groups of plants arranged for effect formed an exceptionally beautiful feature, and received a full share of attention from the general body of visitors. In two of the three classes for groups Mr. T. Griggs, Mr. W. Chalk, gardener to A. Norman, Esq., Streatham; and Mr. Elson, gardener to A. Peat, Esq , were first, second, and third respectively. In the third class for groups Mr. H. A. Farmer and Mr. C. J. Bennett were first and second respectively . There were upwards of eighty classes in the schedule in addition to those for groups, and ample provisions were made for stove and greenhouse plants in bloom and remarkable for the beauty of their foliage, ferns, selaginellas, begonias, orchids, gloxinias, fuchsias, zonal pelargoniums, fruits, vegetables, table decorations, roses, and hand bouquets. The most successful of the large body of exhibitors were Mr. J. Lambert, gardener to H. W. Segelcke, Esq., Herne Hill, who obtained twelve first, seven second, and two third prizes; Mr. W. Clark, gardener to W. Sopper, Esq., Herne Hill, with a record of seven firsts, three seconds, and three thirds; Mr. W. Monk, gardener to G. R. Higgins, Esq., Dulwich, who took seven first, six second, and one third prizes; Mr. J. Day, who took three first, eight second, and four third prizes; Mr. F. Fulbrook, gardener to B. Baker, Esq., Streatham Hill, who had five first and two third prizes awarded him; Mr. J. Swain, gardener to E. Jones, Atherstone House, Clapham Park, whose successes included six firsts, five seconds, and two thirds. Other of the more successful competitors were Mr. W. Farley, gardener to C. Gowan, Esq., Bell House, Dulwich; Mr. E. Longley, gardener to W. J. Twigg, Esq., Croxted House, West Dulwich; Mr. W. Keefe, gardener to T. H. Wells, Esq., Denmark Hill; Mr. Woolridge, South Norwood Park; Mr. C. J. Bennett, Mr. F. Beale, Mr. H. A. Bultitude, and Mr. H. Betts.

The weather was delightfully fine, the arrangements admirably carried out under the direction of Mr. Bungay, the courteous secretary; and the awards were made by Mr. J. Laing, Mr. C. Helmer, and Mr. J. Hudson.

CHILDREN'S FLOWER SHOW, MILE END.

The children's flower show, held under the auspices of the Industrial and Floricultural Society, in Beaumont Hall, Mile End, on Thursday and Friday last, was especially interesting as showing what can be accomplished by well-directed efforts in developing a taste for flowers amongst the children of artisans in towns. Formed some four years since, the society has from the first given special attention to diffusing a knowledge of plant culture amongst the children in the Mile End district, and this branch of its work has evidently been attended with a large measure of success. Of the success that has been achieved the exhibitions afford the best possible proof. From a small gathering in one of the school-rooms in the district the exhibitions have increased so rapidly in extent as to necessitate the engagement of the spacious hall in Beaumont Hall for the accommodation of the plants in competition for the prizes. The society not only offers prizes, but it supplies the plants at cost price to intending competitors, and assists the young cultivators with such advice on their culture as may appear needful, and is thus doing a work of which the importance cannot well be over-estimated.

The schedule of prizes included classes for zonal pelargoniums, fuchsias, musks, moneyworts, and plants remarkable for the beauty of their foliage. Of these the most popular were the pelargoniums and fuchsias, nearly three hundred plants being staged in the two classes set apart for these flowers. Musks are evidently popular in the district, for between twenty and thirty examples were staged. Ferns predominated amongst the plants grown for the beauty of their foliage, and one of the finest of these was a specimen of the common hart's tongue. Conspicuous amongst the miscellaneous plants were some excellent specimen ivies, and several admirably-flowered examples of Lilium auratum.

Much praise is due to Mr. F. W. Angus, the hon. secretary, for the admirable manner in which the arrangements were carried out. The prizes were awarded by Mr. Jordan, of Regent's Park.

Calls at Nurseries.

MR. THOMAS FRANCIS RIVERS' NURSERIES, SAWBRIDGEWORTH, HERTS.

These famous nurseries cover a great extent of ground, and appear to be always extending. Every detail of the business is provided for by systematic arrangement and careful forecasting, new tracts of land being taken in from time to time in order to put out stock on fresh ground. Of what is called general nursery stock, there is simply none; and therefore orders for miscellaneous subjects need not be sent to Sawbridgeworth. The great feature is fruit, but roses, coniferous trees, grape vines, strawberries, and ornamental trees adapted for parks and spacious grounds have the fullest attention, and the most skilful management. The soils and aspects vary considerably; in a general way the soil may be described as a calcareous loam; much of it is of good quality, but it is nowhere so rich as to promote a gross growth, and where it proves poor, as in some quarters is the case, farm crops are put on, and thus we see in the midst of the great nursery brakes fine fields of wheat, swedes, and mangles. Of wheat and swedes we may say Mr. Rivers has model crops, and if at harvesting they do not overtop all ordinary averages, there will be a sad case established against severely good practice, for such management as the crops have here may be equalled in a few places but can be nowhere surpassed.

As a matter of course, apples, pears, and plums cover much ground. The making of all kinds of trees for all kinds of purposes is carried on as in all other such places; but the favourite course of procedure is to work low down and form free bush and pyramid trees, which are mostly kept open for perfect maturation of the wood. Extensive fruiting orchards are in course of formation, and these free dwarf trees are preferred to standards, as suffering less from rough weather, often less from frost, and as they rarely rise beyond ten to twelve feet, the gathering of the fruit is easily and expeditiously accomplished.

A favourite mode of procedure is to cover a square of some thirty or forty acres with fruiting trees at their permanent distances, and to fill in the whole space with quince stocks, pear stocks, mahaleb cherry stocks, plum stocks, or paradise and nonsuch apple stocks, and the trees worked upon them are selected according to their several promises for forming bushes, pyramids, espaliers, and so forth. The extent of the nurseries, the variety of soils and aspects, and the facilities for the appropriation of fresh ground afford a large choice of sites for special purposes, each class of trees being put on the lands that are found to suit them best. The pear stock is largely used for soils, purposes, and varieties for which the quince is unsuitable.

Small fruits are made the most of for undercrop in orchard tracts, and gooseberries appear to be in special favour as a paying fruit to market, both green and ripe. Black currants run to large numbers and pay well. All the good strawberries are grown in quantity, and an interesting plantation of some two or three rows of each sort enables comparisons of season and quality to be made conveniently without travelling over the larger quarters. Of strawberries, mention should be made of James Veitch, Carolina Superba, Dr. Hogg, Eclipse, La Constante, Marguerite, Prolific Hautbois, and Myatt's Eliza, as of the highest merit and deserving to keep a place even where newer kinds find favour. Amongst the gooseberries the most profitable are Green Prolific, Gipsy Queen, Early Sulphur, Rumbullion, Crown Bob, Whinham's Industry, Companion, and Whitesmith.

Of plums we saw none in this place when walking over three weeks since. But we saw the old plantations of Early Rivers and Rivers' Czar that we have many times seen solid with fruit; and there are now some rows of thriving dwarf plums that can be easily protected when in fruit, for birds take toll here as elsewhere and they are not so unwise as to kill them, because when there is no fruit there is plenty of useful work they can do and that seriously needs their attention, for butterflies, moths, and sawflies like the fresh air and the abundance of wholesome vegetation. The favourite plums make a large list, but three of the whole number have a special fame for making profit, and they are Rivers' Prolific, The Czar, and Monarch. They follow each other in the order of their names; they were raised here and they are among the best behaved one year with another. Pears are many; in fact here is one of the largest collections, but of fruit there is certainly not much. One variety that is known as Fertility may be said to show a good profitable crop, and it is a fine pear for the market, being of fair size, showy colour, and rich half-melting flesh. If you wait for it to melt you lose it; if you eat it crisp it gratifies. It happens to have been freely planted and the total of the crop will be considerable.

The crop of apples in common with that of pears is infinitesimal as compared with the extent of surface allotted to this fruit. The best crop is on Duchess of Oldenburg, a Russian apple of large size and more than average beauty, ripening from the middle of August to the end of September. It is a dessert and culinary fruit, of excellent quality, the tree is hardy and bears well. Stirling Castle, an early and excellent culinary apple that comes near to Hawthornden, is bearing a fair crop; and Cellini, another of the earlies, but keeping until near Christmas is among this season's fruiters. This is a beautiful fruit resembling the Nonesuch, but keeping longer by a few weeks. It should be said that the early kinds are preferred by Mr. Rivers for orcharding as the crop can be turned into money when the market is just in the humour for them, and the Americans have not arrived to pull down prices. Many of the most useful varieties of apples begin to bear in the second year's growth from the graft, and although each little tree will at that early age bear but few, a very considerable crop may be gathered from a young plantation closely planted, making a very speedy return upon outlay.

The orchard houses are the chief glory of Sawbridgeworth. As glass structures they are models of convenience and efficiency, being roomy, admitting of almost any amount of ventilation, with means of heating in every case, and unobstructed light from the ridge almost to the ground line. Such a range of fruit houses one may not expect often to see and still less often furnished as these are; for the pot culture of cherries, peaches, pears, and plums is carried to the highest perfection, and the results are seen in magnificent crops of fruit. Orchard houses are by no means rarities, but such as these are, stand apart from all averages both in make and management. The trees are highly fed, they are not allowed to root through, they are bathed in light, and in a considerable degree agitated by wind, for the leaves respond to the breeze that plays upon them from the ventilators above and the ventilators below. Perhaps the most pleasing at this time are the cherry houses, with their handsome trees loaded with luscious fruit. Most beautiful is the sight of the great bunches of amber, scarlet, crimson and jet black shining berries, of flavour not be dismissed as simply good or even as delicious, for not easy would it be to obtain such cherries by any other mode of cultivation, for here they hang amidst the ample healthy foliage, fed to their fullest size, ripened to their intensest colour, and safe from the birds until secured for the delight of superior though featherless bipeds. But the peach and nectarine houses are wonders in their way, when we see trees not much bigger than a tall man carrying a dozen to a score of huge, highly-coloured fruits of such peaches as Sea Eagle, Crimson Galande, or Hale's Early. Nor are plums, pears, and apples wanting among the fruit crops under glass, and the plums especially look extra handsome and tempting now that plums are scarce, and we seem almost bound to fee the man who permits us the sight of a ripe crop of such as the Czar or Golden Esperen. A very pretty practice prevails in the management of pot pear trees. A collection of the best varieties for such culture are flowered under glass, and having set a crop are turned out to make the rest of their season's growth in the open. There are long rows of pretty pot pyramid pears covered with fruit now enjoying "all weathers," and while extra-well fed to ensure size, having the full light and air that ensure colour and flavour.

Amongst cherries in special favour for pot culture are the following:—

First Early Cherries.—*Baumann's May*, a black gean; deep red, flesh purple, juicy, sweet, a fine fruit for its season, being the first to ripen. *Early Jaboulay*, a red gean; large, heart-shaped, deep amber with dots of red, very juicy, sweet, excellent. *Belle d'Orleans*, a red gean; medium sized, pale yellow and bright red, tender, juicy, and rich. One of the best for early supplies. *Early Black Bigarreau*, a black gean; very large, heart-shaped, shining black, sweet, and rich; a grand early cherry. *Bowyer's Early Heart*, a red heart; medium sized, waxen yellow, sweet, and rich.

Mid-season Cherries.—*Early Rivers*, a black gean; fruit in clusters, large, heart-shaped, shining black; tender, sweet, and most agreeable. It might be classed as second early. *Black Tartarian*, a black heart; very large, heart-shaped, blackish brown becoming deep black, flesh purple, juicy, very rich; a grand cherry. *Bigarreau Gros Cœuret*, a red heart; fruit very large in clusters, heart-shaped, light red mottled with carmine, flesh yellowish, with brisk refreshing flavour. *Bigarreau*, a red heart; the true Bigarreau produces very large fruit, scarcely heart shaped, pale amber dotted with red, passing to full rich red on the side next the sun; flesh pale yellow, crackling, sweet, delicious; a fine variety for orchard planting. *Empress Eugenie*, a red duke, fruit medium sized, round, deep red; tender, juicy, rich. *Belle de Choisy*, a red duke; fruit large, round, amber, mottled with red, flesh tender, juicy, without acid; a superb variety. *Bigarreau Ludwig*, a red gean: fruit large, heart-shaped, pale amber; flesh pale yellow, juicy, sweet, and rich.

Late Cherries.—*Emperor Francis*, a late bigarreau; very large, oblong, compressed, brilliant red; flesh yellow, tender, juicy, sweet; *Bigarreau Napoleon*, a red heart; fruit very large, heart-shaped, yellow much overspread with red; flesh firm, white, rich, sweet, and refreshing. *Archduke*, a black duke; fruit large, heart-shaped, full deep red; flesh red, tender, juicy, sweet, and piquant.

A few peaches adapted for pot culture will have equal claims to notice with cherries.

Early Peaches.—*Alexander*, a large freestone peach, melting, juicy, and delicious; the earliest sort at present known. *Early Beatrice*, medium size, yellowish with much red, in flavour not first rate but valued for its earliness. There is much difference of opinion as to its merits; Mr. Fairgrieve reports it as excellent and the earliest of all. *Early Louise* is of better quality and a few days later. *Early Rivers*, of large size in style of Noblesse, is a remarkably fine fruit only a few days later than Early Louise. *Early Albert*, a free stone of good size, yellow with deep crimson cheek, flesh white, melting, very rich. *Hale's Early*, the flowers large, the fruit of medium size, suffused and streaked with crimson; flesh pale yellow, melting, delicious, a good, beautiful, and early fruit.

Mid-Season Peaches.—*Alexandra Noblesse*, a very large fruit of a pale colour with a few red dots, flesh tender, melting and rich. *Crimson Galande*, large, uneven, dark crimson, flesh tender and melting, juicy and delicious; a fine second early. *Dr. Hogg*, large, round, lemon yellow dotted with crimson, flesh firm, rich, too sweet for some palates but generally a favourite.

Late Peaches.—*Nectarine Peach*, fruit very large, pale yellow dotted with red; flesh red next the stone, rich, piquant, refreshing. One of the best to grow under glass, and carries well. *Osprey*, extra large, creamy white with a slight stain of crimson on the side next the sun; flesh tender and melting, rich and refreshing, a grand variety for pot culture. *Sea Eagle*, extra large, pale yellow with deep red cheek, flesh white with stain of red, richly flavoured. One of the grandest peaches for pot culture and equally good for the open ground. *Golden Eagle*, very large, deep orange with red cheek; flesh melting, particularly rich and satisfying, the best of the yellow peaches. *Lady Palmerston*, large freestone; melting, a delicious orange-coloured peach, always good.

So many of the finest peaches, nectarines, and plums have been raised at Sawbridgeworth that Mr. Rivers can select from his own seedlings collections sufficient for all purposes. At the present time seedling fruits of many kinds constitute large plantations, and the comparisons needful for determining their merits as they come into bearing necessitate the cultivation of a general collection of the established varieties, a fact that adds immensely to the interest of a walk over this busy place.

EALING GARDENERS' ASSOCIATION.

Visit to Messrs. Sutton and Sons, July 28.

The members of the above-named association were a happy band on Monday last, feeling ready to exclaim as they gaily journeyed from Ealing by the special saloon provided by the Great Western Railway,—

> "Smiles the earth, and smile the waters,
> Smile the cloudless skies above us."

For by the courteous invitation of the Reading firm a party numbering about ninety spent a thoroughly enjoyable day in the town made famous by biscuits and flowers. The party began well with a startling mass of flowering annuals in Messrs. Sutton's admirably-kept trial grounds, which were caught in perfect trim at the time of our visit. It may be of interest to mention that these grounds are fifty-two acres in extent, being devoted exclusively to the trial of all kinds of vegetable, flower, and farm seeds and potatos, to experiments with the same under various conditions, and to the raising of stock seeds.

In the floral department, in which there are 1,035 trials this season—annuals, biennials, and perennials—we were universally struck with those splendid free-flowering bedding annuals, the godetias, for as seen here in great "blocks"; they were very telling. Especially noteworthy were Lady

Albemarle, large, bright red flowers; Duchess of Albany, one of the finest sorts, having large, pure white flowers, very freely produced; and The Bride, white flowers, blotched with crimson. The nasturtiums (Tropæolums) produce astonishing colour. Noticeable was Empress of India, crimson scarlet, with rich dark foliage; King Theodore (Sutton's Improved), the darkest nasturtium—this appeared to come very true; Aurora is one of the most beautiful, varying in colour from a soft yellow to pale pink, lower petals suffused with purplish carmine. Poppies of course produced a magnificent effect; what is called the "giant" strain, having immense flowers of brilliant colours. We must not omit to mention in this connection the marvellously beautiful "Shirley" poppies. Clarkias are established favourites of easy culture, very free-flowering and showy during the summer months. These were seen in admirable condition. C. integripetala is a greatly improved class, having deep rose-coloured flowers, with fine broad petals. Sweet Williams—how attractive these are by reasons of their large heads of rich and beautifully-coloured flowers; Sutton's Black is the darkest one known; colours crimson to black. Harlequin, well named, curiously marked and striped of various shades of colour. Amongst those attractive annuals, with their handsome Antirrhinum-shaped flowers, Linaria reticulata aurea purpurea, large heads of yellow and marone flowers; the contrasts of colour in each flower are singularly effective. Marigolds, both African and French, made, as may well be imagined, a very bright and effective display. Amongst those delightful free-flowering subjects, the sweet peas, Butterfly was noted, with its pure white flowers edged with lavender blue. Vesuvius is a beautiful kind, upper part of flower carmine rose, spotted crimson, lower part violet and lilac, a charming combination of colours. A very true selection of Eckford's Boreatton peas were observed. Very effective in masses were the Viscarias, with their large brilliant magenta flowers. We were struck with a large patch of Convolvulus minor, dark blue—fine dark blue, very free flowering. Amongst good annual chrysanthemums may be mentioned C. segetum grandiflorum (Corn Marigold), bright yellow heads of flowers, most useful for cutting, as they retain their freshness for a long time in water. We feel we have only referred to a hundredth part of the good things in the flower way; we could go on to speak of beautiful things amongst leptosiphons, acrocliniums, candytufts, mignonette, alyssums (of a charming new dwarf white amongst the latter, which is to be introduced next year), schizanthus, and a host of other charming things amongst these classes of plants, but we wish briefly to turn to other matters of interest.

A great trial of garden peas has taken place this year; in all there were about 150 unnamed seedlings. All the varieties were sown at the same time, April 10, thus the matter of their relative earliness has been brought to the front. A cross between President Garfield and American Wonder is a wrinkled pea as early as Ringleader, and one of its merits consists in having the pods twice the size of Ringleader; will probably be put in commerce next year. A cross between American Wonder and Jubilee is as early as American Wonder, but with pods three times the size. Some improvements on that grand exhibition pea Duke of Albany were noted, producing pods much more productive and of a beautiful glaucous green colour, height from two to three feet. The Duke grows from five to six feet in height, so that a great improvement has been made in this respect. In beet Sutton's Blood Red is a beautiful stock, suitable either for bedding or kitchen garden. Amongst cauliflowers Sutton's First Crop is considered the best forcing variety. Mammoth Cos lettuce is a fine type. From the trial grounds we adjourned to the Portland Road Nurseries of the firm. Two long houses are filled with a grand lot of begonias in flower, six months from sowing of seed. Here is the course of procedure: Sown in February, up in March, pricked off in April, first potting in May, second potting in June, in flower in July. We observed a charming collection of Achimenes, particularly noticeable being the new variety, Sutton's Rosy Queen. The triple span-house was filled with Sutton's Prize Gloxinias, an admirably grown lot of plants, including the new "netted" strain, sown February 12, 1890, the plants included erect, drooping, and horizontal classes. One house and pit of Cyclamens, seeds sown November and December, 1889, give promise of good results later on, judging by the present grand condition of the plants. Outside we observed a fine healthy batch of hollyhocks, sown February, 1889. Quarters of the ground are occupied with trials of all the finest German and French asters and stocks, sown in the open, April 29th, and May 1st, 1890. A large plot of good strains of carnations and picotees grown from seed sown February, 1889, were flowering most freely. Of very particular interest is a collection of potatos from the Andes, grown for experiment, and to be crossed with the current commercial varieties.

I cannot conclude this most inadequate description of our trip without referring to the splendid hospitality extended by the firm to all the members taking part in it, and to the extreme courtesy and kindness shown by the heads of the firm and the various departmental representatives. It will be a day long to be remembered—indeed, never to be forgotten—by those who had the great privilege of participating in it.

Some idea of the enormous trade done in seeds was given by an inspection of the spacious seed warehouses. The chief entrance is by a noble façade and corridor in the market place. The buildings cover nearly six acres of ground. At this period of the year the stores are almost empty, the last harvest of seeds having been sown and the crops for sale in 1891 being yet in the fields. The vegetable seed department is an enormous room, 159 feet in length, by 30 feet in width. The millions of bags and seed pockets necessary for the requirements of this department are now in course of preparation. The flower seed department is now undergoing enlargement to meet the increasing demand for flower seeds. Seed potato stores are on several floors, where thousands of bushels are sorted by hand for orders ranging from a peck to several tons. The farm seed order room is a compartment 180 feet in length by 60 feet in width, without a single column to obstruct the work.

A capital photo of the party was taken by Mr. Wright, the gardener at Devonhurst, Chiswick, who, with his undoubted skill as a gardener, combines an almost professional grasp of the photographic art. J. B.

THE NONPAREIL APPLE was brought immediately from Normandy to North Aston, in Oxfordshire, about 150 years ago (that is before 1743, in which this was written), and from thence they were propagated through England by Colonel Vernon, who lived there, at first under the name of the North Aston apple. About seventy years ago, when coming one day into the kitchen, he took one of them up as they were paring them to make pies, and tasting it, he asked what they called them. They told him they were the Folks' Apple, upon which he desired that they might come into the parlour, and that the folks should take what were used for the parlour before. The King sent some grafts to the King's gardener at that time, and from thence they were spread over England. ("Collectana," series 2, Oxford, for Oxford Historical Society, 1890, p. 400.)—*Table-Talk of Bishop Hough.*

The Household.

FRUIT JAMS AND JELLIES.

THE Royal Horticultural Society offers prizes for jams and jellies and other forms of fruit preserves, a note on the subject may be useful. It happens that I have seen a few failures in the preparation of these things, and I am familiar also with successes, and with not a few of these last that are worthy of remembrance. I shall keep both failures and successes in mind in the few words I have to say.

A first word on causes of failure. One certainly consists in making use of damaged, over ripe, and wet fruit. Those who gather from their own gardens do not suffer from these causes, but when the purchase of fruit is left to servants there will happen sometimes a failure from the employment of material unfit for the purpose.

Another and the chief cause is *insufficient cooking.* The object of the cook is to get rid of water. That probably is all that we can accomplish. There may take place some chemical changes in the combination of the acids with the sugar, &c., but those I propose to take no notice of, for the evaporation of moisture being sufficient, all else follows without any aid from us. But when insufficiently condensed by the cooking process, mildew will appear in due time, and then it will be said "this store-room is damp," when the truth is the jams are damp, or, in other words, too watery in texture to maintain their integrity.

Excess of sugar will not spoil jams and jellies for keeping, for it may be observed that moulds and mildews do not attack sugar; it is in itself a preservative substance, and as potent that way as salt. But excess of sugar spoils the preparations by destroying their distinctive flavourings. A preserve of any kind overloaded with sugar is at best but a mawkish mixture that is likely to prove injurious to health while obnoxious to the palate. Excess of sugar in any kind of food tends to the production of gastric acidity, and then the young are rendered sick and the aged rheumatic; but sweets in a good condition are amongst the wholesomest of foods, and a kind of religious care should be taken that they are not rendered too sweet. The usual allowance of sugar is the equal of the weight of fruit. It must be admitted that as fruits differ in degrees of natural acidity, so may the proportions of sugar differ. But for all that, I have found that a rough rule is of great value, and I say to my manager of the business, "three quarters of a pound of sugar is enough for a pound of any kind of fruit," and the rule answers so admirably that I shall adhere to it until exceptional circumstances occur to justify a deviation.

To make jams and jellies in ordinary cooking pots is a grave mistake. They can be so made and made well, but a longer time is required, and there is great risk of insufficient cooking. Whoever intends to make preserves will be money in pocket by purchasing proper preserving pans, for in these a great surface is exposed to the fire below and the air above, the result being a more rapid and equable evaporation; a great saving of time, less distress to those who have to do the stirring, and a more complete and perfect preserve. The cooking should proceed until the thick fluid adheres to the spoon like a glaze; and it should be poured into the jam pots at once, and be tied down as soon as possible, even if still hot.

As a rule special flavourings and colourings are undesirable. The genuine thing is generally the best thing of its kind. At the same time there is room for the exercise of art and taste in adding and correcting flavours, and no general rule on that part of the business can be hazarded. It is worthy of remark also that fruits may be mixed almost at random without creating discords; but all mixtures are not equally acceptable, and the mixing requires judgment. We put red currants with raspberries to correct the flatness of the latter, and for the same reason we put damsons with blackberries. Many mixtures are preferable to pure preserves of any one of the several subjects, and the examples now mentioned illustrate the principle, and serve as guidance for its application. X. Y. Z.

ASPARAGUS CULTURE.

ASPARAGUS CULTURE has received a good deal of attention lately in the G.M. It will be remembered, perhaps, that I sent a note detailing my experience, giving the results of growing it with plenty of manure in a heavy but badly-drained soil; and without manure in a newly-made garden with a gravelly subsoil. To save the reader the trouble of referring back to past numbers, I will repeat here that when I had to grow asparagus with plenty of manure in a cold and heavy soil, I was utterly disheartened with the result, as during a wet winter the plants frequently died, while in the summer the grass rarely exceeded a height of four feet eleven inches. When making a new garden taken in from an arable field two years ago last April, I planted a bed of asparagus without any manure, simply digging the ground one spit deep. The result is that I was able to cut a pretty good supply of grass during the season just past. Young grass is still coming up as I write (July 24), and the older growth is in the most luxuriant condition. In proof of this, I send to the editor with this note a single straw that measures six feet three inches in height, having a stem large enough to please any person of reasonable wants, while there are more even of a greater height. I do not want the reader to suppose that I think I have accomplished a feat, because I have simply done nothing of the kind. All that I want to show is that if my experience is of any value, better asparagus can be grown on land that is naturally well-drained without manure than where the ground is well dressed but of a retentive character and badly drained. I should mention that the plants were one year old when planted.

J. C. CLARKE.

[The stem sent is six feet in length, and nearly three inches in circumference at the base—a quite satisfactory growth.—ED.]

Reports on Fruit Crops, 1890.

CHERRIES.

Aberdeenshire.—Variable, and on the whole below the average.

Mr. J. Forrest, Haddo House, writes: The trees flowered freely, but the fruit did not set freely, and the crop is poor. May Duke and Morello do best with us.

Antrim.—Crop generally good.

Mr. Charles Warrick, Shanes Castle, reports: May Duke ripened early this year, and we gathered the first dish on June 6; the best crop we have had for some years. The crop of late varieties is not good.

Armagh.—Variable, on the whole satisfactory.

Ayrshire.—A full average, and the fruit good.

Banffshire.—An excellent crop in most districts.

Mr. C. Webster, Gordon Castle, remarks: An average crop on wall trees, and over an average on standards.

Bedfordshire.—Plentiful on all sides.

Berkshire.—Variable, but generally an average crop.

Buckinghamshire.—An average crop in most districts.

Cardiganshire.—Crop generally good.

Mr. R. C. Williams, Crosswood Park, reports: Above the average; May Duke the best, and the fruit of good flavour. Morello is bearing a good crop.

Carmarthenshire.—An average crop on all sides.

Cheshire.—Plentiful supplies of good fruit.

Clackmannan.—Abundant, and of good quality.

Cork.—Rather light in districts in which grown.

Derbyshire.—Variable, and on the whole the crop very light, especially of dessert kinds.

Devonshire.—Crops above the average.

Mr. R. Nicholls, Castle Hill, says: All varieties appear to be carrying abundant crops, and the fruit very fine indeed.

Dorsetshire.—Dessert kinds scarce, but Morellos plentiful.

Down.—An average crop of excellent fruit.

Dublin.—Fruit plentiful and good.

Dumfriesshire.—An excellent crop is reported from all sides.

Mr. Charles Blair, Burnfoot, writes: Cherries are first-rate. Crop considerably above the average. May Duke and White Heart are the varieties the most generally cultivated.

Durham.—Crop generally light.

East Lothian.—Below the average.

Essex.—Very variable, but generally light.

Mr. G. W. Dance, Gosfield Hall, remarks: Good average crops on standards, and of Morello on north walls.

Mr. J. Douglas, Great Gearies, reports: Cherries are abundant and very good, both on standard and wall trees, with the exception of the Morello. The trees of the Morello were laden with fruit, which was most promising up to a certain point, but it is now shrinking up and dropping off, and we shall lose at least three fourths of it.

Fermanagh.—Generally below the average.

Mr. R. Elworthy, Crom Castle, says: May Duke good, but all other kinds poor.

Fifeshire.—Somewhat below the average.

Mr. C. Smith, Dysart Gardens, remarks: May Duke a good average crop, Morello much below the average.

Forfarshire.—An average crop in most districts.

Galway.—An average crop, dessert kinds being the most satisfactory.

Glamorganshire.—Fruit plentiful and good.

Gloucestershire.—Variable, and on the whole considerably below the average.

Hampshire.—Fairly good in some districts, but generally much below the average.

Mr. E. Molyneux, Swanmore Park, reports: Cherries never miss a heavy crop, and the fruit attains to a good size, and is of excellent quality. Such sorts as Governor Wood, White Heart, May Duke, Elton, Bigarreau Napoleon, and Black Circassian are really splendid; Morello varies a little in places, but the crop is magnificent.

Hereford.—An average crop, Morello being the most satisfactory.

Hertfordshire.—Considerably below the average on all sides.

Mr. J. Kipling, Knebworth, remarks: Very light, but Morellos are a fair average crop.

Mr. R. Sawford, Danesbury, says: About half a crop. Kentish, Morello, Bigarreau, Napoleon, and White Heart are the best.

Mr. E. Hill, Tring Park, observes: Morellos a very fair average; sweet kinds under average; May Duke is the only variety with a full crop.

Mr. F. Q. Lane, Great Berkhampstead, reports an average crop; and Mr. T. F. Rivers, Sawbridgeworth, a failure.

Huntingdon.—Not more than half an average crop.

Kent.—Variable, but on the whole the crop moderately good.

Mr. G. Woodward, Barham Court, writes: Average crop. Singular to say cherry trees seldom require washing when grown upon turf. The gales of wind and rain we experienced on July 4 and 5 caused some anxiety, but so much damage was not done as might have been expected.

Mr. G. Bunyard, Maidstone, reports: The East Kent orchards were short, but the prices ruled high at the sales of the fruit on the trees. In this part of Kent we have a fair crop—some remarkably good. Those who "feed" cattle in orchards have made the best crops and the finest fruit.

Kilkenny.—A light crop on all sides.

King's County.—An average crop is reported by the majority of correspondents.

Mr. J. Roberts, Charleville Forest, writes: Cherries are bearing well. We have them as pyramids on borders and on walls cropped, especially May Duke, Arch Duke, and Bigarreau; Morellos are also good. They all require an immense amount of attention to keep off blackbirds and jackdaws.

Lancashire.—Light in some places, heavy in others; on the whole an average crop.

Mr. J. Stoney, Allerton Towers, Woolton, remarks: A very good crop of dessert kinds, and Morello bearing well in all the gardens. In an adjoining farm one of the finest crops of May Duke that has come under my notice. The tree was of large size and was carrying large clusters of fine fruit at every spur. There must have been thousands of fruits. The tree was on a wall with a west aspect, and was evidently well cared for.

Leicestershire.—Moderate crops, Morello the most satisfactory.

Lincolnshire.—Fairly good crops in most districts.

Londonderry.—Variable, and on the whole rather below the average.

Mr. H. Carter, Downhill Castle, remarks: There was a good promise, but much of the fruit dropped at the stoning period, owing, no doubt, to the excessive drought that prevailed at the time, and we had about half a crop.

Longford.—A good crop, more particularly of Morellos.

Middlesex.—Fairly good in some places, poor in others.

Mr. G. Wythes, Syon House, says: Cherries set a very good crop, and were full of promise; but the black aphis at one time increased so fast that the ordinary means of destroying the pest failed to keep the trees clean. I found a solution of quassia chips the best remedy for this troublesome pest, but it should be applied before the fruit is ripe. In consequence of the heavy rains much of the fruit cracked.

Midlothian.— A full average crop.

Mr. M. Dunn, Dalkeith Gardens, writes: The cherry crop is a full average, and the fruit clean, and of excellent size and quality, Black Eagle, Black Tartarian, Governor Wood, May Duke, Frogmore Early, Bigarreau Napoleon, Bigarreau. Elton and Morello are the finest varieties and the best bearers.

Monmouthshire.—Crop light, but fruit good.

Nairn.—Dessert varieties light, but of Morello a fair crop.

Norfolk.—Crop generally good.

Mr. W. Orr, Stow Hall, observes: Dessert varieties a fair crop, but of the Morello the crop is very heavy. Trees much infested with black fly.

Northamptonshire.—An excellent crop of both dessert and culinary varieties.

Northumberland.—Rather variable, but on the whole good.

Mr. George Harris, Alnwick Castle, says: Of May Duke on east wall there is as usual a fair crop. Black Circassian and Bigarreau crop very lightly every year on the same wall. The crop of Morello is light.

Nottinghamshire.—Crop generally a full average, and the fruit good.

Oxfordshire.—Crops good of both dessert varieties and the Morello.

Pembrokeshire.—An average crop in most districts.

Perthshire.—A heavy crop in all districts.

Mr. P. W. Fairgrieve, Dunkeld House, reports: Very fine crop of every kind; the fruit of large size and excellent quality. The best of the dessert kinds are this year Governor Wood, Bigarreau Napoleon, Black Eagle, Carnation, Elton, May Duke, and Late Duke.

Renfrewshire.—Crop a full average, and the fruit good.

Rutlandshire.—Variable, and on the whole not more than half a crop.

Staffordshire.—A full crop of excellent fruit is reported from all districts.

Stirlingshire.—Generally above the average.

Suffolk.—A fairly good crop in most districts.

Surrey.—Partial, the best crops being those produced by wall trees.

Sussex.—Fruit above the average, both in quantity and quality.

Westmeath.—Fruit plentiful, but rather small.

Westmoreland.—Variable, and on the whole below the average.

Wicklow.—A full crop, but fruit deteriorated by cracking.

Wigtonshire.—Fairly good in most districts.

Mr. J. Day, Galloway House, remarks: The crops of dessert kinds are very good, and the fruit is large and well-coloured. The fruit of the Morello is late, and much has turned yellow and fallen off.

Wiltshire.—Light in a few places, but generally a good crop.

Mr. J. Warden, Clarendon Park, Salisbury, says: A good crop, but the trees much blighted until the recent heavy rains. May Duke has borne well, and we have satisfactory crops of Frogmore Bigarreau. The Morello is bearing well, and the trees are now clean and healthy.

Worcestershire.—Fruit plentiful, but in many instances rather poor.

Mr. William Crump, Madresfield Court, reports: We have average crops, but the fruit is not quite so large as usual, and the fruit of the Bigarreaus has cracked badly. The Morello is bearing a full crop. We are in favour of growing the Morello and other varieties as bush trees in open quarters where the plot can be netted round with galvanized wire netting having half-inch netting, and overhead with hemp netting. Black fly has been troublesome.

Yorkshire.—Excellent crops in all districts.

Mr. J. B. Riddell, Castle Howard, writes: Cherries are plentiful this year, and May Duke, White Heart, and Black Tartarian are exceptionally fine.

STRAWBERRIES FOR MARKET.

By Mr. G. Bunyard.

Read at Conference of British Fruit Growers' Association, June 27, 1890.

This crop is most extensively grown for market in the county of Kent, and I propose in the first place to give a *résumé* of the usual way they are cultivated there and then to detail the varieties. Soil and situation will come first.

The best soil is a deep stiff loam rather inclined to clay than a lighter sandy mixture, and by preference such as does not feel the summer drought to a great degree, but avoiding the chalky uplands and the sandy drifts. Strawberries seem to flourish on all other soils provided deep and clean culture is carried out and a heavy manuring is applied before the plants are put in. I have seen them grand in cool clay bottoms and in higher flinty and pebbly soils which are common in the Crays district near Swanley.

Situation is unimportant, all that is requisite is an open space free from trees, and the larger the field the better, the aim being to reduce manual by substituting horse labour in hoeing, and such open fields are more readily kept clean than where they are bounded by woods and intersected with hedges.

It is important to have the land thoroughly clean at first, and in order to do this a crop such as potatos, cauliflowers, peas, or beans may be taken the previous years, when the ground can be kept quite free from weeds, and be frequently stirred and laid up for the action of sun, wind, and frost to purify and mellow it.

Preparation of the Soil.—This must be deeply cultivated; large fields may be ploughed by steam, and if both ways so much the better. In smaller ones the land may be deeply dug or trenched, being previously manured with thirty-five to fifty tons of manure per acre, and harrowed down two or three ways about a fortnight before planting. The cost of manure, carting, spreading, ploughing, coal, &c., will be about £15 to £20 per acre, or if dug £25 to £30.

Planting.—This is generally done in March, when all danger from the runners being lifted by frost is passed, and the plants are about making their rootlets, when they strike at once and soon develop fine healthy foliage; an ingenious marker with spokes on a wheel which strike the land at regular

distances is used, and the planters then follow with the dibble and plant by the acre. The distance preferred in Kent is thirty-two inches between the rows, the plants being sixteen inches apart. Care must be taken that the crowns are not buried beneath the soil, and they should be set as firmly as possible.

Summer Cultivation.—The first year consists in removing the runners about four times with a sharp knife, horse-hoeing to keep down the weeds, and hand-hoeing between the plants.

Autumn Cultivation is completed by earthing up the plants with a mould board plough to protect the foliage, and to allow the water to drain away from the crowns the plough is set as shallow as possible.

Cultivation in Spring.—The field will require horse-hoeing to level down the plough ridges in March or April when the land is dry, and after a hand-hoeing when the plants are in bloom; the fields are littered with barley straw requiring about two and a-half to three loads per acre (about one and a-half tons) preparatory to picking.

Cultivation First Year of Cropping.—As soon as the crop is cleaned the straw is raked off, the runners and old dead foliage having been removed by a bagging hook; the horse hoe is used again, and every encouragement given to the plants to develop foliage and make plump crowns for the second season's crop, which is generally the best. The straw is used in the cattle yards, and thus pays for cost of removal.

Expenses per Acre.—Estimated roughly the cost per acre up to the time of picking may be set at nearly £50 per acre—*i.e.*, £25 per year first and second years per acre; the expenses for the rest of the series of years the crop is on the land being very much less. If five years an average of £15 to £20 per acre.

Duration of Crop.—About five years is considered the utmost that a profitable crop can be expected, as when the fruit becomes small the market value will not be remunerative.

Average of Yield.—Two tons an acre is considered a fair yield, much more is occasionally taken, and rarely less.

Price.—This varies year by year according to the weather, a dry warm time stimulating the consumption from £16 to £28 per ton will be a fair average. The cost of picking and packing is about fourpence to sixpence for twelve pounds, this done by women, boys, and girls, and they are paid by the dozen or gross in punnets, and by the peck later in the season, this included in the expenses quoted per acre.

The usual plan is to place a shed at a convenient spot for the vans to load and for the pickers to assemble, and as each set of punnets or peck baskets is brought in a tin tally is given to the picker, which is turned into cash as required. Some large growers dress the strawberry land three times a year, using soot or artificial manure, and an autumn and spring dose of farmyard dung. After the third year a mulching of manure, about fifteen to twenty tons per acre must be placed round the plants to assist them, and this might be annually repeated, as the strawberry lands are so well cared for that one or two crops can be taken after they are ploughed up without extra manure.

The uses of strawberries are well known. As a dessert fruit they take the first place, and as a preserve are very rich. The custom is to send all earlier pickings for table use in punnets, and to "plum" the rest for the jam makers when they are stripped off the stalks. As regards the consumption it increases year by year in a remarkable degree, and when the price gets low they are eagerly purchased by the working classes. In 1888 the crop was very large, and one retailer in Maidstone sold twelve hundred pounds over the counter on a Saturday, when formerly you could scarcely buy a basket in the town at all; truly the luxuries of one generation are the necessities of the next.

It may be asked as to the profits of strawberry growing. The growers are naturally reticent at giving these particulars, but I gather from various sources that from £20 to £40 per acre may be expected where the plantations are well done and cared for, and put on the market in good condition. None but the best make top prices, and care to the little details of culture will reap an adequate reward, and at times an exceptional profit. My notes give 6,000 pecks of 12 lbs. each as the largest picking at the Crays on one farm alone, while another grower is said to have 2,000 acres, and picked 360 tons in one week.

As strawberries are very perishable, the plantations should be near a railway, to avoid as far as possible the bruising in transit. In the great strawberry districts picking commences as soon as daylight allows, and the earliest pickings go in special vans for Manchester, Birmingham, and the large centres of consumption, later pickings being in time for the London markets. Growers in other parts deliver to the towns daily in spring vans. This enables to put them in the market in a fresh condition. The bottom of the van should have one foot of straw in it to prevent jolting, and a neat light cover should be placed over them to exclude the sun and dust.

As regards sorts, in market work only those that carry well can be largely grown, and in this respect none approach Sir Joseph Paxton, its fine rich colour, firm flesh, and glossy skin make it taking in appearance. It is as hardy as any kind, and most productive. For an earlier crop, Alice Maud or Vicomtesse de Thury are used in some grounds, and Sir Charles Napier for a main crop, while Elton Pine and Eleanor are favoured for a late crop. Laxton's Noble will be very much grown in a few years, its large size and freedom of crop and vigorous growth are what the growers desire. We picked fruit nearly an ounce in weight on June 13, and no other kind can compare with it for earliness and bountiful crop. This is the early market strawberry of the future.

The practice in other counties is slightly different; for example, in Scotland, where they are extensively grown about Aberdeen, the small early kinds, Black Prince and King of Earlies, furnish the first gatherings, and Eliza, President, and British Queen are grown, and as the rainfall there is considerable the beds will last in good order as long as eight years.

British Queen is well grown near Sandwich where the cool, deep, and rather heavy loam suits them; but, as a rule, this variety is not a paying crop as it bears sparsely, and the beds must be renewed every other year.

For preserving, Mr. Beach, the contractor for Lord Sudeley's extensive fruit farms in Gloucestershire, prefers the old Carolina Pine to any other for jam purposes; the colour is bright, and it makes a delicious whole fruit preserve. In the same district Sir Charles Napier and Stirling Castle Pine are preferred with Paxton for punnet sale.

In the Cornish system the plant is only 20 by 14 inches for small growing kinds and 20 by 16 for others. Here again by deep cultivation and heavy manuring beds are sometimes retained as long as fifteen years. Possibly the rainfall keeps the plants in health and vigour, while the proximity to the sea may be advantageous. One farmer there picks an average of two tons per day, and as all are marketed with baskets this represents an enormous picking.

In conclusion I would venture to suggest a trial of more varieties, such as James Veitch for earlies, and Waterloo, Laxton's Jubilee, and Aberdeen Late for late sorts. Waterloo is of very deep colour (quite a mulberry) but its fine appearance would in time command a sale. A grower says it sells for double the price of others at the same season. Jubilee is an enormous cropper. A plot of land should be set aside, and two or three new or fresh varieties tried every year, as both early and late strawberries are much appreciated.

Other promising varieties are Laxton's Latest of All, a grand berry of the richest flavour; Prince Teck, an improved Paxton; and Aromatic, a finely coloured midseason fruit. The American varieties have not yet been of much service, or equal to existing sorts.

For preserving enormous crops are produced by Newton Seedling, a very strong grower. John Powell (Kitley's Goliath) and the old Elton Pine are also useful for this purpose. Crescent Seedling, from America, is the earliest, and the fruit could probably be gathered at two pickings, as it produces a very large crop of small berries, and will prove valuable for jam to start the factory. King of the Earlies would also make a fine whole fruit jam, and is very productive. I am of opinion that as far as culture is concerned we have reached the best possible, and the only thing I object to in our Kent field system is the late hoeing which is often given.

If the land is thoroughly cleaned and pulverized, by the time the flower trusses show and before they open it would be preferable to finish hoeing at this stage, and not delay the work until the flower is out; but the weather is a factor in all operations, and is often wet when such work would otherwise be done. The object of the final hoeing is to destroy seed weeds and to prevent evaporation. Great care is exercised in laying on the straw or the annual mulching. In May the dung is sometimes carried on by rough hand barrows to prevent the closing of the soil, as happens when wheelbarrows are used. If short stuff is at hand baskets and bodges are used. To sum up the culture in a few words—deep cultivation, heavy manuring, clean culture, and care in sorting the fruit appear to be essentials.

We appear to have reached the best market strawberry in Sir J. Paxton, but those who have time and patience should try hybridization, taking this as one parent. In Prince Teck we have a reputed advance on this old favourite, and earlier and later strawberries that have the same characters as Paxton would be valuable additions to market varieties. At this date (June 27) several promising varieties are under trial, but must be proved before we can admit them in a list of market kinds.

ROSE GARDEN OF R. N. G. BAKER, ESQ.,

Heavitree, near Exeter.

We do not often have the pleasure of looking over half an acre of ground entirely devoted to the growth of roses for exhibition purposes, and cultivated by an amateur. The pleasure, therefore, was the greater when, on a recent occasion I had the satisfaction, in company with another large grower of the queen of flowers, in going through the extensive collection of roses belonging to Mr. Baker. This gentleman's name will be well known to most of your readers as a successful exhibitor of roses in London as well as at provincial shows. For this reason I think a short account of the number and treatment of the plants which are grown so well will interest the general reader. It is the more necessary, I think, to go into the question of numbers and space devoted to the plants than into minute details of the system of culture pursued, because those who are not experienced in growing roses have an idea that they only want to grow a few more plants than the number of flowers they want to enable them to successfully compete at exhibitions. To show how completely mistaken they are, the example under notice, even in one particular only, plainly shows, because more than half an acre of ground is devoted to the two sections of hybrid perpetuals and teas only. As I have already said, the owner of these is a most successful exhibitor, but no one knows better than Mr. Baker that it would not be so if he had a less number of plants and varieties to choose from.

All the perpetuals and most of the teas are grown as dwarf plants. The number of plants of each variety of the former ranges from ten to twenty, and sometimes as many as thirty. The more suitable the variety for exhibiting, the greater number of plants grown. The teas are for the most part grown in sixes. These few details will be sufficient to show the lines that intending exhibitors must follow if they want to achieve honours in fields that are severely fought.

It should be understood that Mr. Baker exhibits in the largest classes provided for amateurs, and in these he is singularly successful. But even if one does not aspire to the highest honours, the fact remains the same, that a proportionate number of plants must be grown to furnish blooms on a particular date for a smaller stand.

In the case under notice, I may mention that the plants are grown in lines about three feet apart. Every spring they are heavily mulched over the roots with half-rotten manure, over which a thin layer of soil is placed. How many hundred plants there are to deal with in this way I do not know, but there must be many, as the area of land they cover testifies. Any way, the stock is in perfect health, with a rich promise of bloom.

Many of the plants must be more than ten years old, as the strongest have five and six stout stems each. It will therefore be seen that the plants are cut-backs of considerable age. As a matter of fact, most of the varieties are cut back every year rather hard, as the old stems are not many inches above the surface. Yet the growth on the majority of the varieties is vigorous, with large and stout foliage. It may be useful to notice that each strong shoot was only carrying one bloom bud, but the number on a plant varied from three to six flowers on each.

Amongst the large number of Hybrid Perpetuals grown here I made note of the following as being in the most promising condition at the time I saw them in the third week in June: Alphonse Soupert, Charles Felix Briton, Mrs. Baker, Mrs J. Laing, Marquise de Castellane, Prince Camille de Rohan, E. Y. Teas (more vigorous than ever I saw it), Violette Bouyer, Merveille de Lyon, Ulrich Brunner.

The best of the newer sorts then in flower were John D. Pawle, Mr. J. Brownlow, Lady Arthur, Sir R. Hill, and Caroline d'Arden.

All these were remarkable for their vigorous growth and large and handsome foliage. Indeed, large, healthy, and stout foliage characterized the plants generally. There are some varieties of the h.p.'s that are bad doers in many places, but in this case there does not appear to be many of them. This plainly

shows what may be done with even some of the weakest growers as cut-backs by generous treatment in a good soil. This example also clearly illustrates that, whatever may be one's leaning towards the weak or the strong growers, the would-be exhibitor cannot afford to be biassed when making his selections, or he will exclude some of the most perfect flowers from the exhibition stand. The weak ones he must make strong by liberal culture, and the strong ones he must prune according to their general behaviour. To the beginner this last piece of advice may appear to be rather mystical, but practice will prove that it is sound. As no one can build up a reputation in a day, a beginner in rose culture cannot expect to learn in a year or two all the details that lead first to success in growing, and finally in exhibiting roses.

With regard to the Tea Scented varieties, these are not grown in such large numbers at Heavitree as the Perpetuals. At the same time, they are to be seen there in considerable numbers. As there are some varieties of this section that do not grow so well in the open air as others, I took the names of those I found doing the best. They are as follows: Madame Margottin, Innocente Pirola, Madame Maurin, Madame Lambard, Madame Falcot, Madame Hoste, Souvenir de Paul Neyron, Viscountess Folkestone, Anna Olivier, Marie Van Houtte, Princess of Wales, Honourable Edith Gifford, and The Bride.

The Teas are treated in the same liberal manner as the h.p.'s. They are fairly hard pruned and well mulched with manure every year.

J. C. Clarke.

Notes of Observation.

BIRDS AND SEED BEDS.

A few days ago I was sowing a few seeds in the open ground. Amongst them were some East Lothian stocks. The drills were prepared and the seed of the stocks sown. At that point I was called away, and was absent from the work about half an hour. On my return I looked along the drills to see how thick the seeds were, but not one could I find. I then remembered that several birds flew away as soon as I returned. It was evident, therefore, that these feathered visitors had committed the robbery in my absence, which put me to the trouble and expense of getting a fresh supply of seed. One feels rather sore when such a barefaced robbery occurs, but I suppose I must place it as a set-off against the injurious insects they devour. I should not have mentioned the matter only the case plainly shows how innocently the seedsman might have been blamed for sending out inferior growing seeds. If I had not looked for the seed on my return I should have concluded that it was bad, as I should have watched and expected to see the plants coming through, but now I know it is of no use to look for any.

J. C. C.

STRAWBERRIES AT DALKEITH.

Permit me to supplement your report on the strawberry crop with a note on strawberries here. The wet weather in June resulted in the production of a heavy crop, and the rains of July also caused a good deal of rot amongst the fruit in low-lying and closely sheltered places. Strawberries are largely grown for market in Midlothian, and the favourite varieties are Keen's Seedling, Vicomtesse Hericart de Thury (commonly known here as Garibaldi), James Veitch, and Moffat's Duke of Edinburgh. Laxton's Noble has been tried on a limited scale, and from its success this season its culture is likely to be increased, as the fruit is of fine size, ripens very early, and is tolerably good in flavour when grown in the open beds.

Dalkeith Gardens. Malcolm Dunn.

APPLE ECKLINVILLE.

At the present time this is one of the handsomest and best of culinary apples, the fruit on some of my small trees being very large considering that it is early yet, for I am writing on St. Swithin's Day (July 15). On the side next the sun they are taking on a good depth of colour, which makes them quite distinct and attractive. There is no occasion to say more in its favour, for it is a sort that is well known to be a constant bearer, and useful both as an early and mid-season fruit. I, however, doubt if there is another sort to equal it for early market work.

J. C. C.

GLADIOLUS THE BRIDE.

For growing in pots whether for the embellishment of the conservatory or the supply of cut flowers, the white form of Gladiolus Colvilli, variously known as Alba and The Bride, is unsurpassed by any of the bulbous plants. It is very easily grown, is elegant in habit, and the pure white flowers are exquisitely beautiful. We grow it somewhat largely, and find it invaluable for decorative purposes generally. Seven-inch pots are employed in its cultivation, and five corms are put in each pot. A compost similar to that used in growing hyacinths in pots is found the most suitable, and when the potting is completed the pots are stood on a hard surface out of doors, and have some loose material heaped over them. Here they remain until new growth has commenced, when they are removed to a cold pit, and thence transferred to the forcing pit as required. It is advisable to place the plants when growing freely in a light position near the glass. The variety known as Rosy Gem, although not so generally useful as The Bride, is extremely beautiful, and may be employed to advantage in the decoration of the conservatory.

J. Aplin.

Hasfield Court, Gloucester.

ALLAN'S CHAMPION PEA.

As showing the peculiarities of the season I would mention that early peas were damaged by frost on June 2. Late peas are satisfactory, being robust in growth and free from insect pests. Allan's Champion has proved an excellent second early variety, being a very abundant bearer and of excellent quality. It is certainly worthy of extended culture.

G. T. Miles.

Wycombe Abbey.

THE HOLLY FERN.

When the holly fern is in a thrifty condition it is not surpassed in beauty by any of the species indigenous to the United Kingdom, but it is a comparatively rare occurrence to meet with examples under cultivation that are in a robust state of health. Some of the authorities attribute much of the want of success to commencing with collected plants having but few roots, whilst others regard unsuitability of soil as one of the chief causes of failure, and there can be no doubt that both classes are in some degree right. Of the many hundreds of plants of Polystichum lonchites that I have met with under cultivation I have not seen any that have equalled in vigour the specimens I saw in June last in the York Nurseries. Both in the borders and in the beautiful rock garden they were in the most robust state of health, examples with fronds from twelve to fifteen inches in length being quite common. There can be no doubt that the climate of York is highly favourable to this and other of the hardy ferns, but that does not wholly account for their vigorous condition. Mr. R. Potter, who has charge of the hardy plants and ferns, and is no mean authority, attributes the success chiefly to the use of strong loam instead of peat and the composts so generally employed. "Plant the holly fern in mellow fibrous loam," said Mr. Potter, "and it will grow as freely as could possibly be desired." And the results certainly fully justify the assertion. I would, therefore, suggest to those who may be anxious to enjoy the full beauty of this interesting fern to commence with plants that are well established in pots and to use substantial loam containing a liberal proportion of fibrous matter.

G.

VEITCH'S PEARL CAULIFLOWER.

We have a great improvement in cauliflowers in Veitch's Pearl. The heads are as large as those of Early London, and are pure white and extremely delicate in flavour. For summer use this variety is of exceptional excellence, and should have the attention of those who have not yet grown it.

George Baker.

Membland, Plymouth.

SHADING GRAPE VINES.

I thank Mr. John Jenkins for his communication on this subject, as well as all other correspondents who have supported me in my views Referring to Mr. John Jenkins's note, I can quite believe what he says, that several vineries in his district were roasted for the want of shading, owing to the vines being trained so near the glass. If the writer of that sentence were to travel much he would find the same thing occurs in other districts besides that to which he alludes. But I am bound to say it does not always occur through the foliage being so near the glass, although that aggravates the evil. Neglect to give air early in the morning is a fruitful source of scorching, and the nearer the leaves are to the glass the more liable they are to injury from the neglect I have alluded to. The correspondent I have already quoted appears to be anxious to learn the distance that vines are generally trained from the glass. If we were to take the average distance from all the vineries in any district, it would be found not to exceed one foot, and rather under that than over. I am glad that Mr. Jenkins has raised this question, as without doubt it is a very important one. Distance from the glass has a greater influence upon the vines than many suppose, as unless the foliage is kept healthy and uninjured thorough success cannot be obtained. The nearer the leaves are to the glass the more liable they are to be attacked with red spider. They are also smaller than when they have more room to extend. I have proved in practice that eighteen inches is a very safe distance for the rods to be trained from the glass; that distance allows room for a current of air to pass between the foliage and the glass. I know that there is an opinion in some quarters that the footstalk of the leaves becomes drawn if they are more than twelve inches away from the glass, but that is a mistake, they are no longer than those that are nearer the light. This fact can be proved anywhere if there are vines growing against a back wall of a house, as even these will be found to have but very little longer leafstalks than those trained near the glass. If more convenient, I would not hesitate to have the rods two feet from the roof, certainly I would rather have them two than one foot. That the leaves do not get drawn when so far away from the glass I can demonstrate to any one at the present time, as I have a Black Hamburgh cane that is trained quite that much away from the glass in a span-roof house. The object of training the vine in this way is to utilize the narrow space under the span, and at the same time leave the two sides below unoccupied for other things. There is a surprising difference in the size of the leaves when they are close to the glass and those six inches or eight inches farther from it, as I proved in practice many years ago. This ought to be sufficient to convince anyone that the best grapes are grown where there is a body of air passing between the glass and the foliage. As a rule the best bunches and berries are obtained where there are the largest leaves; that being so, it is evidently to the advantage of the cultivator so to place the wires as to allow them to develope to normal proportions, and still leave an unoccupied space between them and the glass.

J. C. C.

Medlars.—Discussing in the *Moniteur d'Horticulture* the early days of horticulture M. Gilbert tells us that in the Middle Ages medlars held the first place among cultivated fruits. It was the medlar, it seems, which was used as the foundation of the preserves of Orleans known as Cotignac, which were so famous that when a French sovereign entered the town a box of Cotignac was always offered to him, and it was a box of these preserved medlars which was the first present made by the people of Orleans to Joan of Arc when she led her troops to the assistance of the beleaguered city. The medlar was used as a preserve as well as to season meats.

THE KEW COLLECTION OF BRITISH FERNS.

By Charles T. Druery, F.L.S.

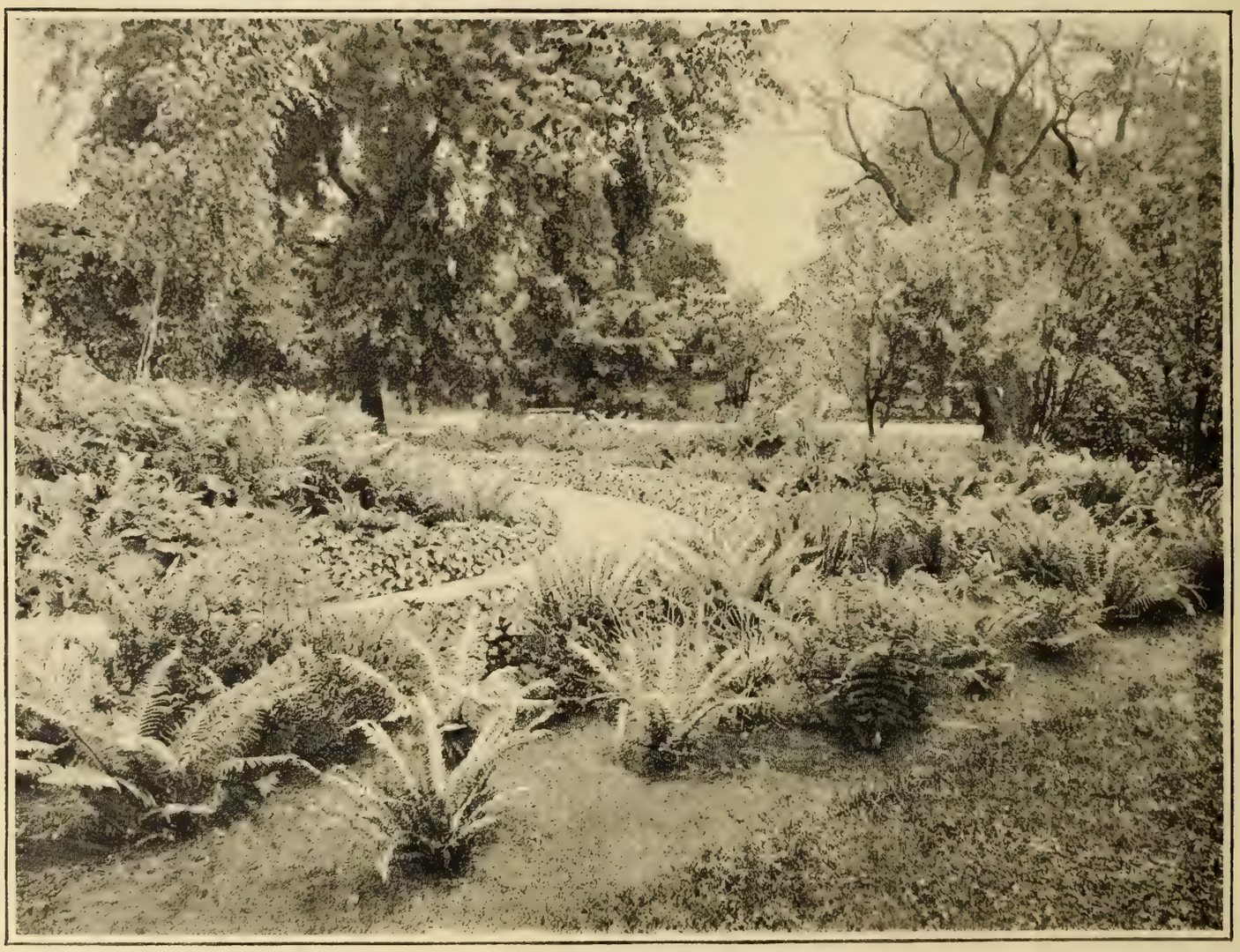
(Continued from page 442.)

Entering the Gardens by Cumberland Gate, the nearest entrance to Kew Gardens Station, the path leads directly to the main body of the collection. On the left hand, bordering for some distance the first path leading towards the Palm House, will be seen a large number of varieties, amongst which are many interesting and a few unique forms, but as these are as yet unnamed or classified, we must perforce ignore them and pass on to the collection proper.

Proceeding on our way we see the "Economic Plant House" on the right, just clearing which, we find a short path leading up to it, and here, immediately on the left, the ferns begin to appear. On the left of the path passing through them there is a series of flat beds, mounds, and well arranged rockeries, backed by a noble mass of trees and shrubs which shelter the plants from the noonday sun and largely from the wind.

The range of rock-work and ferns extends right round a large oblong piece of ground until we nearly reach the point from which we started, in the direct path to Cumberland Gate. On the right of that point a long wide flat bed affords accommodation for many varieties and skirts the path for some distance. As both sides of this bed are accessible all the plants are easily examined, an advantage not possessed by the left hand arrangement. This, however, is more than counterbalanced by its prettier and more congenial effect, as ferns in flat beds are not quite in their element, which is generally undulating and broken ground. The imitation of stratified rocks cropping out tier after tier at a low angle is very natural and picturesque in appearance, and affords besides a multitude of nooks and crannies for the benefit of the smaller species of ferns, which, planted on a level would not only be unnaturally placed, but would inevitably protest against such treatment by dying out of hand.

So much for the general situation, now for the ferns themselves. Starting from the Economic Plant House and commencing with the plants on the left hand, we find several very distinct and pretty varieties of the Lastrea or Buckler Fern families of which the common Male Fern (L. filix mas) is the most familiar type. In close proximity are three dwarf forms, viz., L. f. m. fluctuosa, with all the side divisions or pinnæ very closely set and somewhat curled and twisted, L. pseudo mas crispa gracile, Lyell, a still dwarfer variety, very densely congested, and with peculiar pointed pinnæ, while L. p. m. crispa, a somewhat similar dwarf minus this peculiarity, stands a few yards further on. These last two are representatives of the hard evergreen form of the Male Fern, and the first-named of the soft deciduous and far more common type. A slender, gracefully tasselled variety of the Broad Buckler Fern (L. dilatata cristata gracile) next claims our attention, and only lacks symmetry in its parts to be a gem of first water. Though long in cultivation, its irregularity is invariably transmitted through the spores. Polystichum aculeatum multifidum, a tasselled form of the by no means sportive Hard Prickly Shield Fern now appears, a fine dark green shuttlecock growth strongly contrasting with the Male Ferns. L. Propinqua (the rare intermediate Male Fern) cristata of Barnes, and another tasselled but distinct form found by Coward, stand in close proximity, and should be compared as specimens of kindred wild finds of special interest. L. ps. ramosissima, one of the rarest of varieties, next appears, a very fine bushy specimen, in which every frond branches again and again. The spores of this so rarely yield the true type that for propagating purposes it is practically barren, whence its rarity. A finely divided tasselled example of the Soft Prickly Shield Fern P. angulare divisilobum polydactylum comes next, as first introduction to that species. Among the adjoining group of Buckler Ferns should be noted L. f. m. capitatum, heavily tasselled; L. prop. grandiceps, compare with the two crested forms already mentioned; L. f. m. lineare, a fine distinct attenuate form; L. ps. m. concinna, neat narrowed pinnæ; and L. dilatata Howardiæ, which is probably the most curious variety of the species. The curling of the pinnæ in out-of-door culture hides their peculiar narrowness and cutting. We now come to another member of the Lastrea family,

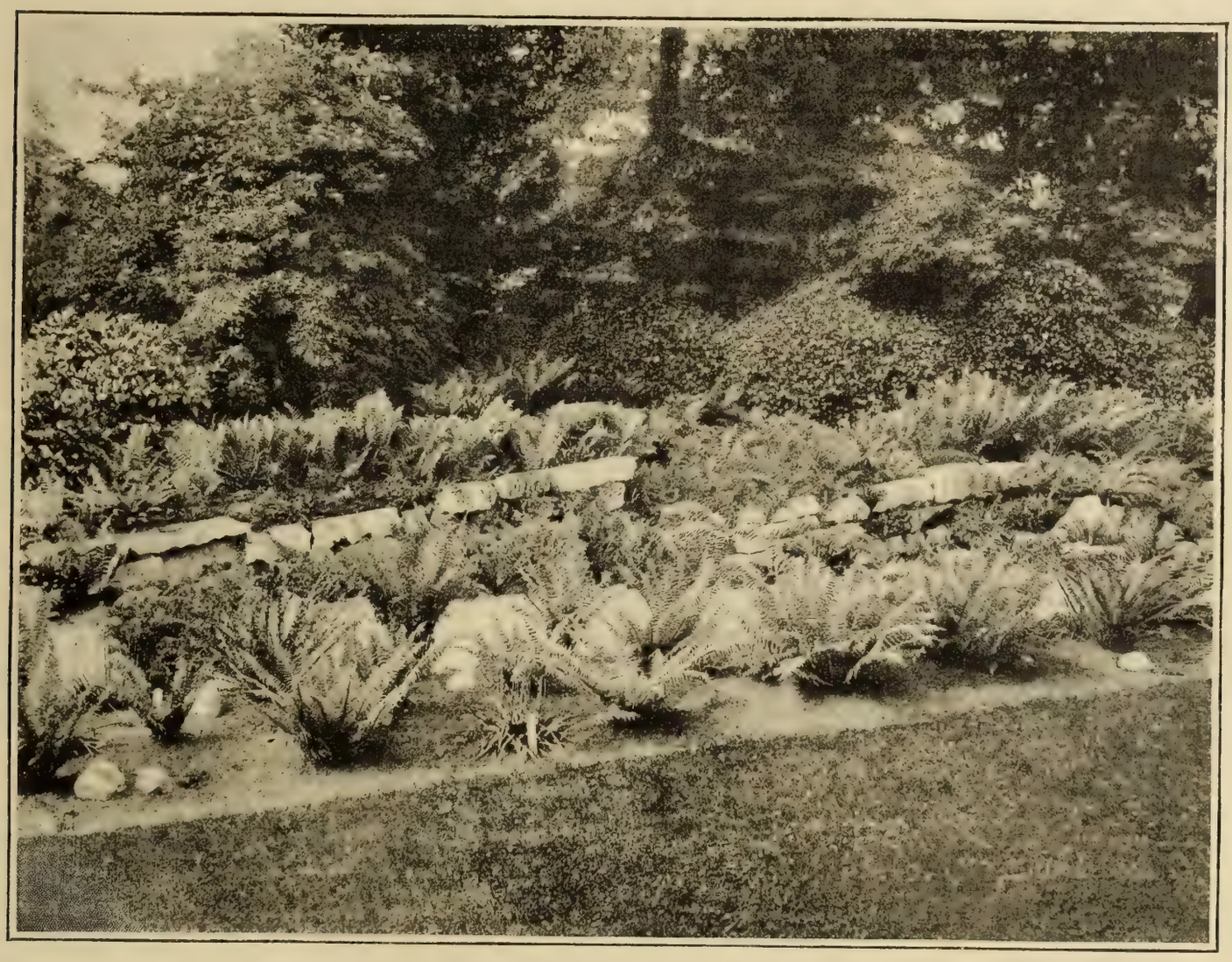


KEW COLLECTION OF BRITISH FERNS—Open beds with full exposure for ferns of hard texture.

which hardly seems at home here, viz., L. montana (oreopteris), or the Lemon-scented Buckler Fern, of which two crested forms, L. m. cristata and L. m. grandiceps, and a neat narrowed one, L. m. curvata, are associated. These evidently require a damper position, needing more root moisture than their companions. A singular narrowed and tasselled Male Fern (L. ps. mas. angustata cristata), a secondary sport from the old crested King of the Male Ferns, figures here, and P. angulare multilobum, a grand Shield Fern of finely divided foliage, typical of a large section of choice varieties in this species. As a contrast should be noted the dwarf form of L. ps. mas crispa cristata.

We next observe a specimen of variegation in our native ferns, and perhaps the best variety we have, L. f. m. lux lunæ, or the Moonlight Male Fern, in which the major part of each sub-division is white. Incidentally we may mention that numerous finds have been made of plants variously and irregularly splashed with white or yellow, but this is the only symmetrically-tinted one we know, and requires plenty of light to develop its variegation. In a close, dark place it is quite green. Next comes one of the late Mr. Barnes' more beautiful forms of L. dilatata grandiceps, the heaviest crested variety of the species, the terminal tassels being large moss-like balls of cresting. P. ang. plumosum elegantissimum is very fine, but hardly justifies its christening to the connoisseur. At this point the sloping bank is agreeably diversified by a jutting promontory of loose stones, in which the Brittle Bladder Fern (Cystopteris fragilis), the Oak Fern (Polypodium dryopteris), its near relative the Limestone Polypody (P. calcareum), and its more distant one the Common Polypody (P. vulgare) find a more or less congenial home. It is, we think, a trifle too much exposed to permit vigorous growth of these species. This stony bank leads up very naturally to the rocky strata which here apparently emerge from the bowels of the earth without a trace of that artificiality which too often mars and makes ridiculous many so-called rockeries.

Here, fortunately for the spectator and no less for the plants, Nature has been studied and imitated in one of her simplest geological phases, the plain outcrop of a few strata of freestone, broken up, apparently by weathering, into cracks and crevices and in every case laying in lines of natural cleavage, satisfying at once both the eye and the imagination (*vide* photo). No greater improvement can be conceived than this arrangement forms over the ancient chaos of tree stumps and erratic boulders which was formerly dignified, but not described by the name of rockery on or near the self-same spot. However, "revenons à nos moutons." In the horizontal cracks of these rocks we find several species of the rock and wall-loving Spleenworts (Asplenia), the Black Maidenhair Spleenwort (Asp. adiantum nigrum) thriving in abundance. That rarest member of the family in these islands, the forked Spleenworts (A. septentrionale), makes as luxuriant a clump in one of the crevices as it possibly could do in its native wilds. In another nestles the Beech Fern (P. phegopteris) in company with the Oak Fern, whose acquaintance we have already made, a little gem of verdure which deserves far more cultural justice than it gets. Asplenum lanceolatum. A. fontanum, and others are lacking, and even the common but beautiful Maidenhair Spleenwort (A. trichomanes), which, together with its beautifully crested and plumose form (incisum), it is to be hoped, will ere long be domiciled here, as they would be perfectly at home in the congenial nooks abounding at this spot.



KEW COLLECTION OF BRITISH FERNS—An escarpment of rock affording shade and shelter.

In the immediate foreground are Lady Ferns (Athyrium filix fœmina), most noteworthy of which is A. f. f. Clarissima, not so much, perhaps, on account of its form, though that is very distinct in its attenuate divisions, as in its being the nearest link among ferns to the higher family of flowering plants, by virtue of its curious faculty of producing prothalli, and eventually through them young ferns, from small excrescences on the backs of the fronds where the sporeheaps would normally be found. This fern remained unique and unpropagated for twenty years until this peculiar property termed Apospory was discovered, and a number of plants raised thereby, of which this is one. A. f. f. pulcherrimum cristatum well deserves its name of the beautiful crested Lady Fern, and has a fit companion in A. f. f. congesto cristatum of much denser habit. The grand A. f. f. plumosum Axminster is represented only by a small plant, which, however, will doubtless assert

itself in time in the shoulder high mass of delicate tracery which it produces when robust. This fern has become the progenitor of a host of far lovelier forms, and should be compared with its first improved offspring A. f. f. plumosum elegans Parsons some few yards farther on. A. f. f. Howardiæ merits attention, next to which stands a small plant of the unique and wonderful A. f. f. Victoriæ, in which all the pinnæ are crested and double, so that each frond consists of a series of slenderly tasselled crosses. This was a wild roadside plant in Scotland. Its immediate neighbour here, A. f. f. cruciatum, is, we believe, derived from it, and has the same crossed or cruciate character minus the tassels. No other species of fern has yielded a like variety. Victoriæ stands absolutely alone. Close by is a number of seedling forms of the same species of narrow outline and multiplied pinnæ and crests, all interesting as showing results of crossing and selective cultivation, but hardly worthy of ranking with the *élite*. A specimen of the frilled Hart's Tongue (Scolopendrium vulgare var. crispum) here acts as a foil to the feathery Lady Ferns, with which we have by no means done. A. f. f. regale, with even the pinnules tasselled claims close examination, and has its foil in the dense little A. f. f. Edwardsii, the smallest form of the family. A. f. f. cristatum Jonesii is a grand plant with slender divisions bearing heavy pendent tassels, and next comes the lovely simplicity of the Horsfall plumosum (A. f. f. plum. Horsfall), which should be compared with the Axminster and the great difference noted in habit and texture, though both are of normal outline and wild finds. A grander group than the foregoing could hardly be brought together. A fit companion, A. f. f. magnificum cristatum, will be observed springing from a rocky cleft, in which it is obviously quite at home. A. f. f. Pritchardii, a narrow variety in which the pinnæ are bunched up into short tufts; A. f. f. apuæforme, all crest and bare stalks; A. f. f. caput Medusæ, heavy crests on fronds, with pinnæ reduced to small round knobs; and A. f. f. curtum cristatum, with confluent pinnæ and bushy round terminal tassels, constitute a smaller growing group than the last, but no whit less interesting.

(To be continued.)

PACKING FRUIT.

By J. C. Clarke.

The quantity of fruit more or less spoilt that is sent to country markets through being badly packed is much greater than many people imagine. The most surprising part of the business is that those who send fruit in this way do not learn better from actual experience. That they do not may be seen almost daily at this time of year, yet the very men who send their produce to market in such a careless manner take no end of trouble in all the stages of growth to produce it, and then in a great measure spoil all their past efforts for the want of a little extra care in preparing it for market. Peaches and grapes probably suffer more than any other fruits from careless packing, the former especially; yet with an ordinary amount of care peaches can be packed to go by rail and arrive at their destination in a satisfactory condition.

The chief point in regard to this fruit is to gather it before it is quite ripe. This is of primary importance, as it is almost impossible to handle a ripe peach without disfiguring it. There is nothing better for packing peaches than boxes; these should not exceed four inches in depth, and should be large enough to hold twelve large fruit or eighteen small ones. It is not desirable to have the boxes large enough to hold a greater number. It is better to use more of them, and when securely packed tie two or three of them together. The packing material for the bottom and sides of the box may be moss or dried grass from the lawn, in any case the material *must be quite dry and free from dust.* Moss is what I have used in large quantities in my time. I had it collected several weeks before it was required for use. After being spread out to dry on the floor of a loft it was well beaten with a stick to get out the dust, at the same time all hard lumps were carefully picked out. The bottom of the box as well as the sides and ends should have a bed of moss one inch thick. Each fruit must then be wrapt separately in tissue paper. In placing the fruit make a position in the moss to receive each one, and between them place pieces of cotton wool to prevent bruising. If the moss is soft and clean there is no necessity for using the wool at all. I have many times wrapt some moss in pieces of tissue paper to place between the fruit and found it to answer admirably. I, however, like to tack a sheet of cotton wool on to the lid to prevent its moving, the box may then be made secure.

When packed in this way, and the boxes handled with ordinary care, the fruit will take no harm in transit if it has to travel two or three hundred miles.

With regard to grapes, when they have to be sent a long distance by rail for the use of private families, they cannot be dealt with in a better way than I have described for peaches, except that nothing should be placed between the bunches to prevent the berries rubbing each other in transit. The bunches must be packed as close together as it is possible to get them consistent with careful handling. When several bunches have to be packed in the same box, the box should be placed in a slanting position on one end. Packing will then commence at the bottom, the weight of each bunch will help to fix it so that it cannot be moved by ordinary shaking.

A good many grapes in small quantities are sent by parcel post, but this is a mode of conveyance I do not recommend anyone to adopt unless under special circumstances, as unless they are securely packed in substantial boxes they are often spoilt by the time they reach their destination. I would rather trust fruit of any kind to the tender mercies of railway servants than those of the Post Office, not because either are negligent, but because in sending fruit packages by railway they do not pass through so many hands. However, grapes can be sent by parcel post and arrive at their destination in a fairly satisfactory condition if they are well packed. Tin boxes are the best, but they should not be too large. Begin packing by placing a layer of moss or cotton wool in the bottom of the box, then wrap the bunch of grapes in a piece of tissue paper, and repeat the same process with cotton wool. The parcel is then ready for placing in the box. When it is placed in its position fill up the sides with wool or paper shavings, so that the package cannot move. Of course so much handling will rub off a good deal of bloom from the berries, but much worse than that happens if they are packed loosely; the berries get bruised, which is a great disfigurement. It is better to rub off some of the bloom in packing than to run the risk of the fruit getting battered against the sides of the package in transit. I have many times sent small bunches of grapes by post in round tin canisters, by first wrapping the bunch in paper, followed by a covering of cotton wool, making the parcel large enough to fill the canister without having to use much pressure to get it in. The shoulder end of the bunch must be at the bottom. This allows of any unoccupied space at the top being filled up with soft paper or wool.

INTERMEDIATE STOCKS.

Having to grow plants remarkable for the fragrance of their flowers somewhat largely both for conservatory decoration and the supply of cut blooms for dressing indoor apartments, the cultivation of stocks both in the open and under glass has of necessity received a full share of attention. We obtain good results in growing these plants in the open for summer flowering, but as they differ but little from those obtained by my neighbours, I do not propose to say anything about the practice adopted in dealing with those flowered in the open borders. But in the cultivation of the intermediate stocks under glass I am so far successful that those who have an opportunity of seeing our annual displays tell me that they are not surpassed. They are certainly remarkably good, and the numerous finely-developed spikes present an extremely beautiful appearance, and fill the conservatory with their delightful fragrance. I am frequently asked to give particulars of my practice, but I have been reluctant to comply with the requests because to me it appears such a simple matter that I am afraid some may think me guilty of presumption in offering advice on the cultivation of flowers so well known to all. But a request for information has been made that I cannot well resist, and I have thought it desirable to send on my notes to you with the hope that they may be useful to readers of the Gardeners' Magazine other than my friend, who, I would add, has been a subscriber for some years.

My practice has for many years past been to sow the seed at the end of July, or the first week in August, as there is then plenty of time for the plants to acquire the proper degree of strength to enable them to pass through the winter safely. As we require a large stock, the seed is sown in shallow boxes; and as it is well to avoid waste, or the necessity for pricking off at a very early stage, the seed is distributed rather thinly. The boxes are filled with a light, rich mixture, consisting of fibrous loam, leaf-mould, and sand, and the soil is pressed rather firm, and made quite level on the surface. The seed is covered lightly with a little of the finer portion of the mixture, and the boxes are placed in a frame or pit. The surface soil is sprinkled with water, a can to which a fine rose has been affixed being, as a matter of course, used. No ventilation is necessary until until the seedlings make their appearance; but if the frame occupies a sunny position, mats or canvas are laid over the glass during periods of bright weather. On the appearance of the first seedling ventilation is commenced, and air admitted freely, as a sturdy growth during the time they are in the seed boxes has an important influence upon the ultimate results.

By the middle of September they will, with careful attention, be of a suitable size for pricking off, and as promptness in carrying out this detail is essential there should not be any unnecessary delay. From the boxes they are transferred to pots six inches in diameter, and five plants are put in each pot. This is a larger number than is required for the production of effective specimens, but an allowance must be made for those having single flowers. The proportion of plants bearing single flowers will depend upon the care with which the seed was saved, but it will seldom exceed two-fifths. Three plants are sufficient for each pot, and as soon as the flower-buds are visible those showing signs of producing double flowers are cut off close to the surface of the soil. If, as sometimes happens, they are all double, the number is reduced to two. On the other hand, should there be a preponderance of single flowers, the pots remain in the frame, and the flowers are cut and sent indoors. The compost found the most useful is one formed with turfy loam five parts, well-rotted manure two parts, and leaf-mould and silver sand one part each. Care is taken to have the pots properly drained, and to pot moderately firm. As they are potted we place them in a light and airy pit, where they remain until they are coming into bloom. During the winter the pit is ventilated freely when the weather is favourable to the admission of air, and in severe weather the glass is covered with mats and litter to keep out the frost. Clear water only is used until the buds are visible, and on their reaching this stage they are supplied with liquid manure and clear water alternately.

The varieties grown are the White, Scarlet, and Purple forms of the intermediate stock, and Mauve Queen, a very beautiful variety, producing massive spikes of a delicate mauve colour. G. S.

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House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Hardy Plants in bloom comprise Aster coccineus, A. formosus, Campanula pyramidalis; Delphinium amœnum; Dianthus superbus; Gladioli; Liliums, Linum narbonense; Lychnis fulgens; Neirembergia rivularis; Pentstemon Jeffrayanum; Phloxes in a great variety; Potentilla insignis; Scutellaria peregrina; Solidago altissima; Tritoma uvaria.

THE HOUSE.

The watering of palms and other plants with ornamental leafage employed in the decoration of the drawing-room and other of the indoor apartments must be done with care. They should have sufficient water to maintain the soil in a nice moist state and no more. The India-rubber plant is one of the first to suffer from an excess of moisture at the roots, and in all cases in which the pots are placed in water-tight receptacles occasionally examine them, and empty the receptacles of any water that has accumulated in them, for if the pots stand in water for any length of time the roots will assuredly perish. It is advisable to carefully sponge the leaves of all plants employed for indoor decorations once or twice a week to keep them free from dust, and to make amends in some degree for the atmospheric humidity so essential to their health of which they are deprived. We have now arrived at the turning point of the summer. Therefore care must be taken not to overwater fern cases, because, although an excess of water may now do but little harm, there will be such a reduction of evaporation that the excess may not be got rid of before the cool autumnal weather comes, and then perhaps some of the ferns will be killed by mildew above ground, and others may be killed by the rotting of the roots.

CONSERVATORY AND GREENHOUSE.

Camellias must have constant care. Many old plants will be found wanting water, and the best way to deal with them will be to plunge the pots to their rims in a tub of water for half an hour, to thoroughly soak the ball. If allowed to continue very dry, now that their buds are set, the buds will fall off. Young plants that have not quite filled their pots with roots must be only moderately watered.

Cinerarias will in many cases need to be shifted on, and it is well to take advantage of the forward state of some of the plants to obtain a few extra fine specimens by encouraging vigorous growth.

Hard-wooded Plants that have been exposed to all weathers in pits and plunge-beds, and in the flower garden, must shortly be returned to their proper places in the greenhouse for the winter. It is not that there is any fear of frost just yet, but we may have long-continued and chilly rains, and these plants ought not to be exposed to such vicissitudes. At all events, where plants of any value, as Epacris, Boronia, Correa, &c., are now out of doors, let the first cold rains that occur be the signal for housing them.

STOVE AND ORCHID HOUSE.

Stove Plants must be prepared betimes for the winter by gradually reducing the supply of water to such as have completed their growth, and exposing as much as possible to air and sunshine all hard-wooded plants that the growth of the season may be completely ripened. Shut up early, and use fire heat if needful. Climbers will in many instances need to be cut back in order to obtain an immediate and quick growth to produce a late bloom.

Orchids in full growth must have moisture and heat sufficient to maintain them in health, but the judicious cultivator will not often have to light a fire this month. Those going to rest to be encouraged by removal to a cooler part of the house, where they must have less water, but be kept plump by frequently sprinkling the paths and stages. This is a good time to separate pseudo-bulbs for increase of stock and to pot on small plants. Orchids that have been a long time in the same pots need top dressing with fresh material. Shut up at four till the third week of the month, and then shut up at three. After shutting up syringe gently with water of the same temperature as the house. Temperature of Indian house 70 deg. to 75 deg. by night, 75 deg. to 85 deg. by day; Mexican house, 65 deg. to 70 deg. by night, 70 deg. to 85 deg. by day.

FLOWER GARDEN AND PLEASURE GROUNDS.

Auriculas may be repotted now if it has not been already done. The soil should be full of fibre, and in a sweet and fresh condition. Put the offsets in thumbs singly, in a sandy mixture, and shut them up close for a week; this is better than inserting them round the sides of pots, as they can be allowed to fill the thumbs with roots, and then have a good shift at once.

Herbaceous Plants may in some cases be divided now, and many may be raised from seed for next year. All the low-growing tufted plants, such as Aubrietia purpurea and Arabis albida, may be parted so that each little tuft has a few fibres; if shaded and kept watered for a week they will soon make new roots, and form nice tufts to remove from the reserve ground to the borders and beds in early spring.

Intermediate Stock to be sown in pans and boxes in frames, or in some shady place under a wall. When large enough to handle, pot them for the winter, and house them in a light, dry, airy pit. A little frost will not hurt them, but severe weather will do much injury to them.

FORCING AND FRUIT HOUSES.

Peaches and Nectarines under glass that have ripened their crop, should if practicable be fully exposed night and day by removal of the lights. Thin out the young wood of the season, to promote the ripening of all the good shoots that have been laid in. The borders in which the trees are planted may be allowed to become comparatively dry with advantage.

Pines in a growing state to have a moist air and a steady bottom heat. Shut up early, and at the same time sprinkle the bed; this will greatly help any fruit now swelling. The bottom heat for pines must not be less than 90 deg.

Vines from which the crop has been gathered will require free exposure. If the lights cannot be removed, open all the ventilators night and day, and slightly reduce the number of the laterals. Vines in pots to be laid on their sides as soon as the leaves decay, in order to induce a state of complete rest; but they must be maintained in a growing state until the wood is well ripened.

FRUIT GARDEN AND ORCHARD.

Strawberries to fruit next year should be planted at once, and the surplus runners finally removed from the old plants. The newly-planted beds should have liberal supplies of water until they are well established. Those rooted in small pots will want a shift; repot them firmly in a sound loamy compost, and keep well watered.

Wall Trees may now be trained in and moderately pruned; remove the foreright shoots, and all superfluous shoots, however well placed, and train in none but good wood, and that sufficiently far apart that it may ripen perfectly.

KITCHEN GARDEN AND FRAME GROUND.

Celery to be earthed up with care after heavy rain or a good watering. Take care the soil does not get into the hearts.

Leeks may still be planted out, and those already grown to a good size may be earthed up to blanch them.

Spinach must be sown now for winter, The common prickly spinach is an excellent variety, but the true Flanders is far better.

Turnips may still be sown to stand the winter, but it will soon be too late to sow any kind of seeds for winter crops.

Winter Greens.—This is the last favourable opportunity for securing a sufficiency of winter and spring produce in the kitchen garden, and whatever is to be done must be done to make sure of supplies at a time when it is impossible to get them up quickly. Plant out every morsel of winter greens that may be left in seed beds or where first pricked out to strengthen, including broccoli, cabbage, and kale.

VILLA FARM.

Wherever the stocks of bees were in the first instance of an average degree of strength and have had proper attention the supers and hives will now be well stored, and as the harvesting of honey usually ceases by the end of July or the early part of August the supers should be removed with as little delay as possible and the honey from the hives taken. It is quite certain that no good can possibly result from leaving full hives or supers a day after they are filled, but it is probable the honey may be diminished, and also become more or less discoloured. The great point is to take the honey at once, and in the case of hives rifled of their stores unite two or three stocks and commence to feed liberally, so that by the middle of the autumn the hive may weigh about twenty pounds nett. The supers will, of course, be taken away bodily and the honey retained in the comb until sold or otherwise disposed of, unless they are of an excessively large size. As a matter of course, the supers should first receive attention, for it is from these that the best honey is obtained. The small sectional supers, to which we have previously alluded, require simply to be removed from underneath the hive cover and placed in a cool storeroom after the few bees clustering about the comb have been brushed off, but supers of glass and straw require more careand trouble to remove them. These latter should be placed on what are known as adapting boards, so that they can be removed from the top of the hives without any trouble or disturbance of the bees. The adapting boards are simply thin slips of wood of the width of the super, and provided with a slit along the middle for about two-thirds of the length, or a hole in the centre to allow the bees to pass up from the hive. In removing glass or straw supers that have no boards underneath them other than those forming the crown of the hives, it will be necessary to first of all detach the lower edge of the combs with a thin knife or a piece of string, and prop up the super with a wedge of wood and leave it for a few hours for the bees to repair the damaged cells. Bees are much more difficult to drive in cold wet weather, therefore, as far as practicable, advantage should be taken of periods of warmth for the removal of supers.

SEEDLING STRAWBERRIES.

By Mr. Thomas Laxton.

Read at Conference of British Fruit Growers' Association, June 27, 1890.

When I was invited to read a paper on "Seedling Strawberries" at this Conference, I felt that there might be listeners who would inquire of themselves why seedling strawberries should require to be separately treated, when the history and cultivation of the fruit is expounded by the able fruitists and writers who have kindly taken those subjects in hand. But looking at our special and most popular summer fruit as almost of an annual character, as it gives its produce from seed more rapidly than any other fruit with which I am acquainted, and to the enormous demand to suit the various tastes and requirements of consumers, I do not hesitate to lay before you a few of the simple facts and slight experiences gathered by me in a period of thirty-two years, during which I have, mostly at intervals of three or four years, continued to raise and work out a batch of seedlings, chiefly by cross-fertilization. The annual character of the Alpine strawberries, so much appreciated by our French neighbours, is well known, as they are ordinarily and best treated as such, coming fairly true from seed, and the produce generally finer than from runner plants. Our so called English strawberries, which probably contain an admixture of the blood of all the edible species, may be treated in a similar manner, and may be more quickly fruited from seed than, I believe, is generally understood. As these are now cultivated in most temperate and semi-tropical climates, and as almost every soil and situation has a peculiarity for some particular variety or varieties, it becomes necessary to provide sorts suitable for these varied climes and localities. In North America, I believe, this has been largely and systematically carried out, with the result that a more vigorous race than we have in most of our English and Continental sorts has been secured, for if there be a failing in our many good quality strawberries it is chiefly that of weak constitution. The health and vigour of most of the American varieties leads me to look to these as suitable parents to be introduced into our home stud book; for although the American sorts are not all or generally suitable for our moister climate, especially in a wet season, still their great fertility, hardiness, and vigour, combined with good size of fruit, has seemed to me just what we want on this side of the water to keep up the health standard and constitution of the western European varieties, for our cousins looking at the matter in a practical and profitable way have excelled us in the production of hardy, prolific, and large fruited varieties adapted for market and field culture. By the introduction of the American strawberry blood we have an alliance of two distinctly acclimatized races, and I cannot but think that such an alliance is equally advantageous for our artificially produced and cultivated fruits, as it has proved for the over-civilised human race. Now following the lines adopted in America in raising seedling strawberries, the objects which it has appeared to me that we ought to seek are:—

1. Constitution and moderate vigour.
2. Fertility.
3. Solidity and external firmness to adapt the fruit for transit.
4. Flavour and quality.
5. Size and appearance.

The latter points many market growers will hold as constituting the blue blood of the strawberry, while, on the other hand, private gardeners will put quality in the foreground, as strawberries are grown to be eaten as well as to form captivating works of art. This adds to the necessity for providing a sufficient number and variety of sorts as may be required for the particular purpose. It has been my folly to seek the philosopher's stone, and to blend all the desired qualities in one. I need hardly say that this happy goal has not yet been attained, and the pleasure may yet be looked forward to by workers in the interesting field of seedling-strawberry raising. But to be practical, what is most wanted now are early, main crop, and late sorts having good-sized high-flavoured fruits with a firm exterior, the colour of a bright glossy scarlet and lasting. The conical or heart-shaped form may perhaps find most favour, but the shape should be regular. The plant hardy, moderately vigorous and sturdy, and fairly productive of runners. A stout footstalk carrying about ten or twelve even and regular-sized fruits, free of but not too far from the ground. The fruits of good and distinct flavours, it not being necessary that all sorts should assimilate in this respect, variety and novelty being desirable to suit various tastes. And, lastly, if these qualities can be adapted to fruits suitable also for forcing, a material gain will be secured.

How these Ends may be Attained.—1. By sowing seed from naturally fertilized, large, and well shaped fruits approximating to the above standard or objects desired. Perhaps the varieties Sir Jos. Paxton, Noble, or Auguste Nicaise may supply what is wanted in the earlier sorts, and British Queen, Commander, President, Dr. Hogg, Loxford Hall, Waterloo, Latest of All, or Eleanor similar advantages for the improvement of the main and late sorts. 2. By artificially intercrossing the best English and foreign varieties.

Modes of Operation.—The seed may either be sown as soon as the fruit is thoroughly ripened, when it may be broken up and the pulp or flesh well washed out and separated from the seed through a fine sieve or piece of muslin, dried, and at once sown in a box of rather light soil, kept moist and in a shady situation until vegetation takes place, which will probably occur in two or three weeks. As soon as the plants are large enough to handle they may be pricked out into boxes or potted off at once into 72's and afterwards repotted from time to time or planted out as may be required, or the fruits may be dried in a sunny place and retained until the early spring following, when the seed may be rubbed or picked out and sown and treated as above.

The former method has the advantage of gaining time, and from it I have been able to obtain fruit from some of the seedlings in about fourteen months from sowing the seed. The latter mode avoids the preservation of and carrying through the winter a number of small plants and the attendant risk of loss from slugs and insects.

I prefer and adopt the former when possible, and time is important, and this I find was the mode preferred by the late Dr. Roden, well known as a successful raiser and improver of the strawberry. When the seedling plants are strong enough I usually plant them out in rows about 1 foot to 1 foot 3 inches apart according to size and vigour, giving 2 feet 6 inches between the rows. This affords a fair opportunity for testing and securing a few runners during the first two years; for although some of the plants may flower and fruit the year following that of sowing the seed many will not, however, fruit, nor can any be satisfactorily put on further probation until the second year. Where convenient, it is a good plan to put out the seedlings by the side of an open walk or path, facing south if possible, as there the plants get ample light and air and can be readily tended.

How and What to Intercross.—Where it is desired to intercross two distinct varieties or species the parents should be both healthy and vigorous plants, but not too vigorous, and it will be well for security and convenience that the intended seed-bearing plant should be grown in a pot. The anthers must be removed from the flower to be operated upon with a pair of small sharp-pointed scissors the day preceding the opening and full development, and early the following morning pollen of the sort required as the male parent should be applied to the pistils of the intended seed-bearing flower directly from the pollen-bearing flower, and as there is a possibility of the organs not being sufficiently ripe or developed it may be advisable to repeat the operation a few hours later; but the first access of pollen will usually suffice. When it is clear that fertilization has taken place I pinch off all flowers and fruit not required, so as to strengthen those intended for seed. There is also an advantage in potting the plants to be worked upon, as they may be advanced or retarded for use with varieties flowering earlier or later in the open, and the operations can be more safely conducted under cover, the protection of gauze, however, being unnecessary for a many pistilled flower like that of the strawberry. It will be wise not to over-fertilize or apply too much pollen, as when many seeds are obtained from a fruit the whole are generally weaker than when a few well-developed seeds are secured. I have an impression also that an excess of alien pollen tends in the strawberry to a predominance of the characters of the pollen-bearing male parent.

As to Forthcoming Results, it may be anticipated that as the cultivated strawberry is a cross-bred fruit, there will be considerable variety as well as some wide breaks in the progeny from inter-crossing, but generally the offspring will show characters intermediate between the parents, and with perseverance it will be possible to gain the end sought. Having practised strawberry crossing so long, however, it is somewhat discouraging to know that Noble, probably the most remarkable break in strawberries of recent years in this country, was obtained without artistic intervention. I surmise there are some who will like to know its actual origin—such is easily told. In 1884 I grew and sowed the seed from a large and handsome fruit of Forman's Excelsior (a fine and good shaped firm-fleshed strawberry on light soils). From this sowing I obtained only five plants, one of which proved bolder than the rest, and subsequently became "Ennobled"—the remainder were not acquisitions. Now, considering that I have during the past thirty-two years from my own work of cross-breeding raised at least 10,000 seedling strawberries, and out of these only nine have as yet been sent forth to the world, although all have had to be tried, and many after being largely cultivated for years have had ultimately to be abandoned, and that out of a small batch of five from natural fertilization there should be one distinct gain, I feel that the work of a cross-breeder who can only point to such results is not altogether satisfactory, nor, I may feelingly add, profitable. Although Noble was only from natural, or insect or wind fertilization, I am able with some confidence to indicate its breed, and that it contains American blood, as the fruit from which it was grown was taken from a row of Forman's Excelsior grown contiguous to one of Sharpless Seedling, a large, early, and vigorous sort, and if the foliage, habit, fruit, and periods of maturity of these two varieties be examined and considered, it will appear tolerably plain that Noble has a good deal of each of these varieties in it, and that the advantages of American blood have been secured without the agency of man. The influence and weight of Noble will, however, doubtless soon be apparent in forthcoming varieties, for by intercrossing it with all the best varieties, and reversing the crosses in most cases a large number of seedlings have been obtained and are on trial. In carrying out my own work I have found that the seed of Noble is lighter, and does not vegetate so freely as that of the varieties crossed with its pollen, and it may be that to this imperfection of seed the fertility of Noble in quantity and size of fruit may be owing. I have also introduced with success the blood of other American seedlings into my crosses, and I am a believer that in this introduction of new blood there is greater probability of further advancing our own home race of strawberries, a field in which there is yet ample scope for progress.

DUNSTER CASTLE, NEAR MINEHEAD, ON BRIDGWATER BAY.

The Residence of G. F. Luttrell, Esq.

Dunster Castle is situated near the western end of the county of Somersetshire, and as it is but a short distance from the shore of the Bristol channel, its position is well known to those who traverse that part of the coast. It appears from Savage's "History of Carhampton," the present castle was built about the middle of the reign of Queen Elizabeth (1580). The first member of the Luttrell family that came into possession of the place rebuilt a considerable portion of the castle. The present owner has also expended large sums of money on restoring it to its present satisfactory state.

Dunster is said to have been a place of great note, and a fortress of the West Saxon Kings. Its original name, Torre, signified a fortified tower, but in successive ages it was called Dunestorre, "the Tower of the hill," and in later years by contraction, Dunster, the additional dun, or din, implying a hill, a mount, or a port. It is Celtic, and occurs frequently, as in E-din-burgh, Dun-barton, &c. It will be seen that not only the castle but the town is associated with many remarkable events of bygone ages. The beautiful church, the quaintly formed market house, and the inn known as the Luttrell Arms, are in themselves sufficient attractions for visitors.

With regard to the castle, the first thing that strikes the visitor is its prominent position, as it stands on an eminence very difficult of access. History does not record that the present castle has passed through any serious vicissitudes of war, but the structure that preceded it was probably partly demolished by an invading enemy. At any rate there is but little of the old structure now remaining. After passing through the present gateway the ancient door of the first castle comes in view, and on the right of the door are the ruins of one of the towers.

I am not, however, so much interested in the castle or its history as in the grounds and its surroundings. I may mention here that the deer park consists of about 800 acres. A portion of this space comes into view in ascending the hill. As we obtain glimpses through trees of umbrageous growth, this vast area of land is presented in various aspects. Far down in a delightful vale is a wide stretch of pasture, while at the next halting place towering hills rise prominently before the spectator. We turn from these pretty peeps into the country below, to take a turn in some of the many bosky walks that skirt the hillsides in all directions. As we were favoured by fine weather we felt tempted to linger amidst such pleasing scenes. We began to realize that if the storm-beaten trees that overshadowed us could speak, they could probably tell us something of wars and strifes that had taken place in their immediate surroundings. However, time did not admit of dwelling on such subjects. The temptation to see more was strong, so we proceeded to ascend the hill still farther. If the journey up gave us pleasure, the reader may pretty well conjecture what was the feeling when we stood on the level ground surrounding the castle. Walking and admiring from different points the visitor finds each one rich in some distant landscape or sea view. Looking eastward the eye travels over an extensive tract of country until it rests on the distant Quantock hills, many miles away. From here we also had a fine view of the channel and the coast of South Wales. It will thus be seen that although the castle and its immediate surroundings possess attractions enough in themselves to satisfy the eye and the mind, its position, apart from other considerations, is rendered still more unique owing to the extensive and rich views with which it is surrounded.

Not the least of many pleasing surprises that await the visitors after they have inspected the castle and the objects that more immediately surround it, is the Bowling Green. Quite unexpectedly we are introduced through a grove of trees upon a plateau of land that one would not expect to find on what appears to a stranger such a narrow and steep eminence. From this point the views that open are of the most varied character. The distant rocks and well wooded stretches of the country make up a scene of impressive grandeur, and as we gaze upon them from a height far above them, a sense of awe is felt as the eye rests upon the far off horizon beyond.

I must turn my attention now to a few subjects that will interest many gardening readers, as owing to the proximity of the castle and grounds to the sea, and the mildness of the climate, many plants will live there in the open air that require glass protection over a greater part of England. Trained to the south wall of the castle is a fine old Lemon tree (Citrus limonia) that bears freely every year, with only the protection of a glass case during the winter. History says that early in the present century this tree had only the protection of a boarded frame. Near by this is a plant of Cassia corymbosa that has occupied the same position for many years. Clianthus puniceus is also quite happy rambling over the walls, and the small-leaved variegated myrtle flourishes in the most satisfactory manner. The tree that the Prince of Wales planted when he visited the owner some years ago occupies a prominent position by the side of the carriage drive leading up to the castle, and is growing luxuriantly. In places like Dunster choice coniferous trees are none too plentiful. This specimen of Abies Nordmanniana is therefore conspicuous, and will remain a lasting monument of the royal visit.

The kitchen gardens are full of interest. There are three of them in different places, and all are near the town. This being so, the area of each is not great. A prominent feature in this department of the place is the advance made in hardy fruit culture since I saw the gardens some few years ago. The walls are being gradually filled with the better class of peaches and nectarines, as well as pears and plums. In this matter the directing mind is evidently bent on cultivating only what is the best, while inferior sorts of fruit in all classes are being discarded.

Amongst peaches on the open walls I noticed that earliest of all the peaches, Alexander, is doing remarkably well, and promising a fine crop of fruit. Other sorts were also in good condition, the trees bearing ample evidence that

they were managed with painstaking care. The same remarks apply to other forms of trees, as there are well-formed pyramids as well as fruitful examples of espaliers. It is gratifying, as one goes about, to see that hardy fruit culture is not only extending, but it is receiving increasing attention from the younger branches of our profession.

The glass structures are numerous, but so much distributed that a stranger hardly knows when he has got to the end. An unheated peach house proved a very interesting feature, being well filled with perfectly healthy and fruitful trees. This house is thirty yards long and ten feet wide. The back wall is occupied with trees, while the front space is furnished with wires on which the trees are trained. Sea Eagle peach and Lord Napier nectarine I found to be in high favour here, the best mid-season peaches being Grosse Mignonne and Royal Hative.

A range of vineries in two divisions were in a satisfactory condition, the early house being well furnished with a good crop of bunches of a useful size. The later division also promises well. I may mention here that in the early vinery, which is a light and fairly lofty structure, a line of tomato plants in pots was fruiting in a very respectable manner, trained to the back wall. But it must be understood that in this case the tomato plants obtain more light than is usual in the majority of vineries. As a rule, vines and tomatos do not do well together, nor were they fruiting so well in this case as when they are grown alone. But it was something gained to have a few ripe fruit in the middle of April obtained without any additional outlay for fuel.

Mushrooms are produced in quantities in a well-heated and arranged structure, which is also utilized in the production of early crops of seakale and rhubarb. The usual quantities of foliage and flowering plants are grown in the various houses. In the stove I noticed a batch of Eucharis amazonica in fine health. A particularly useful and taking plant, as it is grown at this place, is Crassula jasminiflora. Neat examples in five-inch pots were very striking, each plant presenting a compact head of bloom nine inches high and nearly as much through. Each little shoot produces a panicle of pure white flowers, which possess a pleasing fragrance. This is one of the most useful plants for wreath-making and button-hole work that I am acquainted with. It is increased from cuttings as soon as the plants go out of flower. Each little piece, if grown in a structure which is only heated to keep out frost, makes a useful sized plant in one year with the least possible amount of labour.

Mr. Webber, the gardener, has, I find, joined the ranks of those who are advocating a more extended use of hardy plants. He has demonstrated his views in this direction by devoting a long border that runs parallel with a prominent walk solely to the use of hardy herbaceous plants. This is as it should be, and at no distant date the border in question will prove an attractive feature. Already it is occupied with such striking and useful plants as delphiniums, hollyhocks, Michaelmas daisies, pyrethrums, and similar subjects. I can only hope that visitors to Dunster will catch some of the spirit and leaning towards hardy flowers that has evidently made a serious impression on the minds of those who are interested in these gardens. It would be wrong, however, to leave the impression on the reader's mind that hardy flowers had been altogether neglected here, because there is a herbaceous garden at Dunster that differs in all its main features from anything I have seen before. The visitor passes through this garden in going to and from the church to the castle, this space is also enclosed by walls. On one side stands a glass structure that, from its appearance, I should say was the first ever built upon the estate. The substantial rafters and sash bars and small squares of glass speak, as it were, of the earliest attempts of gardening under glass. The character of this structure would not strike the uninterested visitor with much force; only the furnishing of the ground which is associated with it is much of the same archæological character. The outlines of this space are perhaps rather formal, but for the most part the beds and borders are of a very informal character. Besides this, there is a certain degree of quaintness in the characters of the plants and the way they are associated, which develops into a characteristic feature. As we walk from the beds to a distant border we appear to be carried back to old time gardening, which, amongst such scenes as Dunster, is quite in keeping. I was not surprised to hear from my guide that this old-fashioned garden of hardy flowers is religiously kept by the owner as a link with times long past, and that it is still watched over and cared for in that spirit. I can only say that I sincerely hope it may long remain so. To deprive Dunster of this quaint spot would be to take away the most interesting feature of the lower grounds. The plants employed here are chiefly low in stature. In some places there are aubrietias, pinks, and saxifragas covering several feet of ground, some gracefully carpeting the raised sides of the beds. Bulbs of various kinds are in strong force, and as these die down annual flowers are put in by their side, so that from early spring until late in the autumn there are flowers of some kind in bloom. In one corner of this garden is a large plant of the Pittosporum Tobira, that has stood many years in the same position. Near London this plant requires the protection of a greenhouse during the winter.

J. C. C.

Preserved Fruits of various kinds, including jams, jellies, fruits preserved in bottles, and syrups, as well as dried fruits, will be exhibited in the Drill Hall, James Street, Westminster, on the 14th, 15th, and 16th of October next. The Royal Horticultural Society in giving the invitation to exhibitors promise that "meritorious awards will be made to exhibitors whose preserves shall have been considered worthy of the same by competent judges." A schedule will be issued for the guidance of exhibitors.

British Fruit Growers' Association held a meeting on Thursday, July 24, at the Horticultural Club, T. Francis Rivers, Esq., in the chair. The principal business was concluding arrangements for the Conferences at Leicester, the Crystal Palace, and Brighton, on August 5, September 5, and September 11 respectively. It was stated that the Exhibition at Leicester is expected to be a large one, and with fine weather the attendance is always good, Abbey Park being a popular place of resort. At Brighton the Conference will be held in the King's room at the Royal Pavilion. A most encouraging letter was read from Sir Edwin Saunders, and that gentleman was unanimously elected a vice-president, together with W. B. Waterlow, Esq., Dr. S. Makovski, and W. H. (Bullock) Hall, Esq. Mr. L. Castle stated with regard to the proposed holiday trip by himself and Mr. Gordon in Ireland, that a large number of letters had been received offering suggestions as to the route to be taken, much of the information indicating that fruit is successfully grown in many districts, and that the crop this year is satisfactory.

Exhibitions and Meetings.

ROYAL AQUARIUM FLOWER SHOW, July 29 and 30.

The exhibition held at the Royal Aquarium, Westminster, on Tuesday and Wednesday, was so thoroughly good in the whole of its features, as to fully justify the generally expressed opinion as to its being the most complete of the several successes achieved by Mr. W. Holmes during the current season. Carnations, picotees, and tuberous begonias, for which special provisions were made in the schedule, were staged in large numbers and high-class condition, and these were supplemented by remarkably fine displays of roses and hardy flowers. The arrangements were admirably carried out under the direction of Mr. Holmes, and the general effect produced was eminently satisfactory.

Carnations were staged in immense numbers, and in some respects were of a higher quality than were those shown at the exhibition of the southern section of the National Carnation Society at Chiswick in the week previous. In competition for the prizes for twenty-four blooms, Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, was first, with splendidly-developed blooms of Rob Roy, Arthur Medhurst, Tim Bobbin sport, Alisemond, Edward Adams, Thalia, Matador, Robert Houlgrave, and seedlings. Mr. Martin Rowan, 36, Manor Street, Clapham, was a close second; and Mr. C. Turner, Slough, was third, with blooms of high quality. There was a very strong competition in the class for twelve blooms, and here Mr. M. Rowan was first, with large, smooth, and brightly-coloured blooms of Jessica, Rifleman, Gordon Lewis, Alfred, Rob Roy, Robert Houlgrave, Sarah Payne, Fred, W. Skirving, Matador, George Melville, and Sportsman. Mr. J. Douglas and Mr. C. Turner were second and third respectively, with blooms in every way worthy of their reputation. The competition was especially keen in the class for six blooms, and here Mr. J. F. Kew, London Road, Southend, was first, with good blooms of George, Thalia, Mayor of Nottingham, Richard Dean, and two seedlings. Mr. R. Sydenham, Birmingham, and Mr. J. Lakin, Temple Cowley, Oxon, were awarded the second and third prizes, for blooms showing high-class cultural skill.

Specimen Carnations included a considerable number of blooms of high quality. The awards in the several classes were as under: Scarlet bizarre—Mr. C. Phillips, Reading, first with Robert Lord, and fourth with Robert Houlgrave; Mr. Headland second with Fred, and fifth with Joseph Crossland. Crimson bizarre—The first prize was awarded to an unnamed flower, and Mr. J. Douglas was second with his sport from Tim Bobbin; Mr. Headland third and fourth with Mrs. Whitbourn; and Mr. R. Sydenham fifth with J. D. Hextall. Pink and purple bizarre—Mr. M. Rowan was first with William Skirving, and fifth with Sarah Payne; Mr. J. Douglas was second with Matador, and fourth with a seedling; and Mr. C. Turner third with J. Taylor. Purple flakes—Mr. Rowan first with Gordon M. Lewis; Mr. J. Douglas second and third with seedlings; Mr. C. Turner fourth with Prince George of Wales; and Mr. Headland fifth with James Douglas. Scarlet flakes—Mr. J. Douglas first and fifth with Alisemond, and fourth with Matador; Mr. Rowan second and third with Sportsman. Rose flakes—Mr. M. Rowan first with Thalia; Mr. J. Douglas second with Tim Bobbin; Mr. R. Sydenham third and fourth with Thalia; and Mr. F. Hooper, Bath, fifth with Mrs. Cooling.

Premier Carnation was Robert Houlgrave, shown by Mr. M. Rowan.

Picotees were not less numerously shown than were the carnations, and in the great class for twenty-four Mr. C. Turner was first with exceptionally fine blooms. The varieties were Dr. Epps, J. B. Bryant, Madeline, John Archer, Mrs. Sharpe, Edith Dombrain, and seedlings. Mr. J. Douglas, who was second, had flowers distinguished by their large size and high finish, and Mr. M. Rowan and Mr. F. Hooper were third and fourth with excellent blooms. The class for twelve blooms was exceptionally well filled, and the post of honour was occupied by Mr. C. Turner, who had in a high style of development blooms of Mrs. Payne, Madeline, John Smith, Mrs. Sharpe, Mrs. Gorton, Mrs. Chancellor, Liddington's Favourite, Princess of Wales, and four seedlings. Mr. J. Douglas followed closely for second place, Mr. Rowan was third, and Mr. H. W. Headland, The Firs, Leyton, were third and fourth. The premier award for six varieties was made in favour of Mr. F. Hooper, who had J. B. Bryant, Liddington's Favourite, Dr. Epps, and three seedlings; Mr. J. Lakin was second, and Mr. H. Startup, Stanley Road, Bromley, was third.

Specimen Picotees were plentiful and generally of high quality. Heavy edge red, Mr. A. J. Saunders, Rookham Lodge, Cobham, first with J. B. Bryant; Mr. J. Douglas second and fourth with John Smith, and third and fifth with Brunette. Light edge red, Mr. Headland first and Mr. J. Nicholls second with Souvenir de Headland; Mr. J. Douglas third, Mr. H. Startup fourth, and Mr. Phillips fifth with Thomas Williams. Heavy edge purple, Mr. Sanders first and second and Mr. Phillips fifth with Zerlina; Mr. Phillips third and Mr. Headland fourth with Muriel. Light edge purple, Mr. Headland first and Mr. Nicholls second with Pride of Leyton; Mr. Mr. Austin third with Clara Penson; Mr. Rowan fourth with Mary; and Mr. Phillips fifth with Ann Lord. Heavy edge rose, Mr. C. Turner first with Madeline, second with Sarah Payne, and fourth with a seedling; Mr. Rowan third with Lady Louisa, and fifth with Edith Dombrain. Light edged rose, Mr. J. Douglas first, second, and fourth with Liddington's Favourite; Mr. F. Anstiss third with the same variety; and Mr. J. Lakin fifth with a seedling.

Premier Picotee was Liddington's Favourite, shown by Mr. J. Douglas.

Fancy and Self Carnations were largely shown, and produced a bright display. The post of honour was occupied in the great class for twenty-four by Mr. C. Turner with a collection in which Romulus, Ruby, Almira, Mrs. R. Hole, Victory, Robert Houlgrave, Thomas Page, Dorothy, King of the Yellows, and Lord Rendlesham were seen at their best. Mr. J. Douglas, Mr. Toby, St. Mark's Grove, Chelsea; and Mr. F. Hooper were awarded the remaining prizes in the class. Mr. Turner was first also in the class for twelve with good blooms of Germania, Romulus, Lord Rendlesham, Ruby, Janiro, Rose Celestial, Victory, Terra Cotta, Almira, and Mrs. R. Hole. Mr. M. Rowan followed closely for second place, and Mr. G. Chaundy, Oxford, and Mr. Anstiss were third and fourth. In competition for the prizes for six fancies the successful exhibitors were Mr. Anstiss, Mr. W. L. Walker, Reading; Mr. F. Nutt, The Avenue, Southampton; and Mr. A. J. Saunders.

Yellow Ground Carnations were well represented, and in the class for yellow selfs Mr. C. Turner was first, and Mr. F. Hooper second; and in the corresponding class for yellow grounds the prizes were awarded to Mr. Turner, Mr. C. Phillips, and Mr. Chaundy.

Bouquets of Carnations and Picotees constituted an exceedingly attractive feature. For eighteen bouquets Mr. C. Turner was first with a beautiful collection, and Mr. F. Hooper and Messrs. Paul and Son were second and third

respectively. Hand bouquets were plentiful, and Mr. E. Chadwick, Hanger Hill House; Mr. J. R. Chard, Stoke Newington; Mr. Lakin, and Mr. F. Hooper were the successful competitors. Mr. Chadwick and Mr. Chard were first and second also for epergnes dressed with carnations and picotees; and Mr. D. B. Crane, Archway Road, Highgate, was third and fourth.

BEGONIAS, for which several classes were provided, were so well shown as to constitute the finest exhibition of these flowers that has yet been held in the metropolis. Messrs. J. Laing and Sons, Forest Hill, occupied the post of honour in the great class for collections with a magnificent group, in which the plants were remarkable alike for their high development and the superb quality and effective colouring of their flowers. Messrs. H. Cannell and Sons, Swanley, were second with a collection of admirably-grown plants, having flowers of high quality and affording a great diversity of colouring. Messrs. J. Laing and Sons were first for twelve single and twelve double zonals without reference to colour, and also for six scarlet or crimson, six rose-coloured, six yellow, and six white varieties. In each case the firm staged specimens so large in size, admirably flowered, and highly finished as to bring them much praise.

GAILLARDIAS were represented by one collection only, but that was so good as to fully justify the award of the first prize. The exhibitor was Mr. T. S. Ware, Hale Farm Nursery, Tottenham, who presented the flowers in a very tasteful manner.

ROSES had no class specially provided for them, but they were so strongly represented as to form an important and highly attractive feature. Messrs. Paul and Son, Cheshunt, staged several hundred blooms which were exceptionally good, especially noteworthy being the blooms of L'Ideale and Marshall P. Wilder. Excellent collections of roses were also contributed by Mr. W. Rumsey, Waltham Cross; Messrs. D. Prior and Son, Colchester; Rev. J. H. Pemberton, Havering-atte-Bower; Mr. C. Turner; and W. Taylor, Hampton.

MISCELLANEOUS CONTRIBUTIONS, other than roses, included a large and beautiful group of lilies from Mr. W. Gordon, Twickenham; a collection of pansies and violas from Messrs. Dobbie and Co., Rothesay; hardy cut flowers from Messrs. Paul and Son, Messrs. Barr and Son, Mr. T. S. Ware, Mr. E. F. Sich, and Messrs. Ryder and Son, Sale. Messrs. J. Veitch and Sons, Chelsea, exhibited a large collection of flowers of carnations, picotees, and begonias, the latter from plants growing in the open. Messrs. J. Peed and Son, Roupell Park Nurseries, Tulse Hill, contributed several hundred gloxinias, which, arranged on a ground-work of maidenhair fern, presented a very attractive appearance. Mr. H. Eckford sent large gatherings of his new sweet peas. Messrs. Fellows and Ryder, Orpington, contributed an excellent collection of tomatos, including well-finished fruit of Conference, Golden Gem, Golden Queen, Hackwood Park Prolific, Dedham Favourite, and other good kinds. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, sent a group of tomatos in five-inch pots, carrying a good crop, and fruit of the peach tomato. From Mr. W. G. Gilbert, Lennaen Hall, Guist, Norfolk, exhibited six well-ripened melons, and good dishes of peaches and nectarines. Mr. S. Mortimer, Farnham, submitted cucumber Eclipse, an excellent variety, obtained from a cross between Blue Gown and Purley Park Hero. The fruits were about eighteen inches in length, with but little handle, and uniform in thickness throughout.

PEAS had three classes provided for them and the entries were numerous and the quality remarkably good. In two of the classes the prizes were offered by Messrs. Sutton and Sons, and in the other the prizes were provided by Messrs. C. Sharpe and Co. In one of Messrs. Sutton's classes the first prize was awarded to Mr. R. Simms, Tyler's Green, Pierce, Bucks, for good dishes of Jubilee and Perfect Gem, and Mr. C. J. Waite, Esher, and Mr. J. Bunting, Enfield, were second and third. In the second class Mr. C. J. Waite was first with Windsor Castle and Perfection Marrow, and Mr. S. F. Cook, Holmwood, Hendon, was second, and Captain Danbery, Cheltenham, was third. In competition for Messrs. Sharpe's prizes Mr. Cornish, Enfield, was first with Triumph, Victory, and Sharpe's Queen, and Mr. T. Anderson and Mr. J. Bunting were second and third.

NOVELTIES were numerous, and the following first-class certificates were granted: To Messrs. J. Laing and Sons for *Duchess of Edinburgh, Mrs. French, Duchess of Teck, Duke of Fife*, and *Standard Gem* begonias; to Mr. Lakin for *Emma Lakin* carnation; to Mr. J. Lakin for *King of Scarlets, C. Headland, Lilian.* and *Mr. Henwood* carnations; to Mr. C. Turner for *Dazzle, Ruby Romulus*, and *Victory* carnations; to Messrs. Dobbie and Co. for *Mr. J. Bolton*, fancy pansy; to Messrs. J. Veitch and Sons for *Begonia Worthiana*; to Rev. H. H. Dombrain for *Gipsey* gladiolus; to Mr. H. Eckford for *Primrose, Orange Prince*, and *Ignea* sweet peas, and Mr. S. Mortimer for *Express* cucumber.

ACTON HORTICULTURAL SOCIETY, JULY 23.

The annual exhibition held by this old and ably managed society, in the grounds of Derwentwater House, on the above date, proved in every way a brilliant success. There was a keen competition in the whole of the hundred odd classes, and the quality of the contributions was considerably higher than for several years past. The weather was delightfully fine, and there was a large attendance of visitors.

One of the most important classes in the schedule was that for a group of stove and greenhouse plants arranged for effect. The entries were numerous and the whole of the arrangements did credit both to the cultural skill and taste of the exhibitors. The successful competitors were Mr. T. Butcher, Mr. J. Fraser, Mr. W. Polley, and Mr. S. Beach, to whom the prizes were awarded in the order of their names. There were two classes for stove and greenhouse plants in bloom, and in each the specimens were of medium size, fresh and well bloomed. Mr. T. Butcher, Mr. W. Spowage, Mr. S. Beech, Mr. G. Benham, and Mr. W. Wilks were leading prizetakers. These exhibitors, with Mr. J. Fraser and Mr. W. Polley were also the most successful of the exhibitors in the corresponding classes for ornamental-leaved plants. Mr. Butcher had the premier award made in his favour in the class for a specimen in flower, and in the class for a specimen plant with ornamental leafage Mr. W. Polley occupied the first place, other successful competitors were Mr. G. Benham, Mr. G. Eaton, and Mr. W. Spowage. Mr. G. Eaton was first for a collection of caladiums, with rather large, richly coloured specimens. The same exhibitor was first also for four coleus, and Mr. C. Burrows and Mr. J. Fidler were second and third, the specimens being neat and admirably coloured in the whole of the collections. Begonias in bloom, represented by large, finely flowered specimens from Mr. T. Butcher, Mr. W. Polley, and Mr. C. Burrows, and in the corresponding class for begonias with ornamental leafage, Mr. T. Butcher, Mr. W. Spowage, and Mr. W. Polley were first, second, and third respectively. Mr. W. Polley obtained premier honours in the class for four zonal pelargoniums, with well-bloomed examples. The most successful exhibitors in the class for fuchsias were Mr. T. Butcher, Mr. G. Benham, Mr. S. Beech, Mr. J. Stone, Mr. W. Wilks and Mr. Burrows. Balsams were admirably shown by Mr. J. Stone, Mr. G. Benham, and Mr. Foster; cockscombs, by Mr. T. Butcher, Mr. C. Burrows, and Mr. W. Polley; and petunias by Mr. G. Benham and Mr. J. Fidler. Gloxinias of exceptional excellence were contributed by Mr. Butcher and Mr. Polley. In the class for four ferns Mr. W. Spowage was first, and in that for two Mr. W. Polley occupied the first place.

There was a large display of cut flowers, and amongst the exhibitors who occupied a foremost position were Mr. G. Eaton, Mr. G. Sizmur, Mr. W. Spowage, Mr. J. Fidler, Mr. W. Wilks, Mr. G. Benham, Mr. T. Butcher, and Mr. Brackley. Of a high degree of excellence was the fruit. Mr. S. Beech was first in each of the two classes for black grapes with well coloured clusters of Black Hamburgh. Mr. H. Bilton obtained premier honours in each of the two classes for white grapes, and in competition for the prizes for collections of fruit Mr. S. Beech was first for six dishes, and Mr. W. Wilks was first for four. Four classes were set apart for collections of vegetables, and the winners of the first prizes were Mr. T. Butcher, Mr. W. Wilks, and Mr. G. Eaton.

The contributions from amateurs and cottagers formed a large and important part of the exhibition. The most successful of the amateur exhibitors were Mr. C. B. Green, Mr. E. B. Athawes, Mr. E. F. Hunt, Mr. H. T. Swinnock, Mr. W. Abbot, and Mr. C. M. Roberts, all of whose productions were highly meritorious. Cottagers seldom exhibit so well as on this occasion, for the entries ranged from eight to ten in each of the thirty-two classes, and the vegetables were of exceptional excellence. The competition for the prizes for cooked potatos created much interest, and the majority of the entries showed that the exhibitors know how to cook as well as to grow these esculents. Under the rules the exhibitors had to bring the potatos piping hot on to the ground at one o'clock, and as the judges properly proceeded to make the awards within five or six minutes of the stated time, some of the exhibitors found the awards made when they put in an appearance.

The whole of the arrangements were admirably carried out under the direction of Mr. C. B. Green and Mr. Fox, the joint honorary secretaries.

WALTHAM ABBEY AND DISTRICT HORTICULTURAL SOCIETY.

This society, of which Sir Thomas Fowell Buxton, Bart., is president, and which originated a few years ago after a flower show had been held in connection with the meeting of the County Agricultural Society, held its fifth annual exhibition on July 24, in the grounds of Farm Hill, Waltham Abbey, a place well adapted for the purpose, but a little too wide from the centre of population. Unfortunately, although the day proved fine, the numbers attending it were disappointing, and that in all probability from the cause above named. After all, whatever may be the loftiness of the motives actuating promoters of flower shows, they are yet but commercial speculations, and unless they are supported by the general public they cannot go on. The society appears to be admirably officered and well managed, and though there is a fair subscription list, some twenty-five pounds or so are necessary, as takings at the gates, to pay the way. We fear that only a little more than a third of that sum was taken on this occasion. It is, we think, desirable that an attempt be made to hold it nearer to Waltham Cross next year, so as to bring it within easier reach of the population.

The best things were found in the open class tent, some excellent subjects being staged here, among them the groups arranged for effect, two classes for these being provided for there. In one class orchids were admitted, and here Mr. Ayling, gardener to A. J. Hollington, Esq., Forty Hill, Enfield, was first, with an excellent arrangement, the background being formed of palms and richly-coloured crotons; in the foreground there was seen, rising out of a bed of ferns, some excellent orchids, such as forms of Cattleyas, Lady's Slipper, including Cypripedium caudatum, Oncidium macranthum, Odontoglossums, Disa grandiflora, an excellent piece of decorative work. Mr. J. Nicholson, gardener to W. Melles, Esq., Sewardstone Lodge, Chingford, was second with a tasteful arrangement; and Mr. W. Langlands, gardener to Captain J. W. Melles, also of Sewardstone, was third. In the class for a group from which orchids were excluded, Mr. Nicholson came in first; Mr. J. F. Watt, gardener to J. Reed, Esq., Old Clock House, Winchmore Hill, was second; and Mr. J. Turk, gardener to P. Bosanquet, Esq., Little Berkhampstead, Herts, third.

Some remarkably good plants were staged. In that for six miscellaneous plants, Mr. J. Nicholson was first with Clerodendron Balfourianum, a richly-coloured Acalypha; Bougainvillea glabra, Anthurium crystallinum, Yucca aloifolia variegata, and one other. Mr. J. Green, gardener to Sir T. F. Buxton, Bart., Warlies, Waltham, was second, having all foliaged plants. In that for six stove and greenhouse plants, Mr. E. Ayling was first with Allamanda Hendersoni, a fine Clerodendron Balfourianum, Plumbago capensis, Cycas revoluta, Kentia Belmoreana, and Macrozamia species, Mr. J. Nicholson was second with Areca Verschaffelti, Beaucarnea, Cycas revoluta, Stephanotis floribunda, Bougainvillea glabra, and Rhyncospermum jasminoides. Mr. W. Langlands was third.

Mr. Ayling had the best specimen orchid, having a finely bloomed piece of Cattleya Gaskelliana, with over twenty flowers; Mr. Nicholson coming second with a well grown and bloomed Brassia Verrucosa. The best specimen plant was Bougainvillea glabra; a fine fuchsia was second.

Some excellent Achimenes—much better than usually seen at exhibitions of larger pretensions—were shown by Messrs. Ayling and Nicholson. Mr. J. F. Watt had the best six tuberous-rooted begonias here as elsewhere, an improving feature; and Mr. J. W. Jones, Waltham, was second. Messrs. Ayling and Nicholson were first and second with four fuchsias, well grown and bloomed; and Messrs. Nicholson and Clark had some good zonal pelargoniums.

Exotic ferns were a fine feature. Mr. Green had the best six, having well grown specimens of Davallia Mooreana, very fine; Adiantum Williamsi, A. tenerum, A. Gracillimum, Platycerium alicorne, and Lomaria Gibba; Mr. W. Clark was second, the leading plants being Adiantum Farleyense, A. cuneatum, Pteris cretica albo-lineata, and Gymnogramma chrysophylla. The best specimen fern was a marvellously fine piece of Gymnogramma chrysophylla from Mr. Green; Mr. Nicholson coming second with Davallia Mooreana.

Messrs. Nicholson and A. West, gardeners to A. H. Lancaster, Esq., Honeylands, Waltham Abbey, had the best four coleus, and Mr. May, gardener to H. J. Adams, Esq., Enfield, the best six table plants; Mr. Nicholson being second. Mr. J. W. Jones was the only exhibitor of foliaged begonias.

In the amateurs' division prizes were offered for ferns, for collections of four miscellaneous plants, fuchsias, zonal pelargoniums, and others, the principal prizetakers being Mr. S. Fear, Mr. G. Gregory, and Mr. J. Bunting.

In the open class, the best twenty-four roses came from Mr. J. Nicholson; Mr. J. Turk was second. Mr. Langlands had the best twelve, Mr. Nicholson having to be content with second place; but he had the best six teas and noisettes, Mr. J. W. Jones was second. Mr. S. Fear had the best twelve in the amateurs' class; and Mr. J. W. Jones and Mr. W. Weeks took the first prizes in the two classes for six varieties.

Mr. E. Ayling put up a superb stand of twelve bunches of cut flowers, they being mainly composed of orchids; Mr. J. Nicholson was second. The best twelve bunches of outdoor flowers came from Mr. Green, a very good lot indeed; Mr. J. Turk being second. Other cut flowers consisted of carnations, picotees, &c., but nothing calling for special mention.

The better class of fruits was disappointing, but some good strawberries, Morello cherries, raspberries, gooseberries, and currants were staged.

Vegetables were numerous, and, on the whole, good, but time did not admit of gathering up details.

The first prize for three vases of flowers, as also for one piece, went to Miss Ellen Vincent, but all were somewhat showy in character. Some vases of pretty sweet peas deserved a higher award than was made to them.

Miscellaneous collections included a magnificent lot of cut roses from Messrs. Paul and Sons, Old Nurseries, Cheshunt, muny of them set up in sixes of one variety. Foremost were Her Majesty, A. K. Williams, Marie Baumann, Beauty of Waltham, Senateur Vaisse, Charles Lefebvre, and other popular varieties, as well as a very fine collection of hardy cut flowers. Mr. W. Rumsey, nurseryman, Waltham Cross, had a fine collection of cut roses, and a bold and striking group of useful decorative plants; and a similar group of plants came from A. J. Edwards, Esq., J.P., Beech Hill Park, all of which were highly commended.

The awards were made by Mr. Richard Dean, F.R.H.S, Ealing; Mr. W. Alexander, The Pole Gardens, Ware; and Mr. J. Ramball, Woodford.

BUCKINGHAM FLOWER SHOW, July 29.

This old-established society held its sixty-fourth annual exhibition, in the grounds of G. R. Ellis, Esq., abutting on the sluggish branch of the Ouse, which skirts the town. The display filled six large tents, a goodly portion grown in the district, but the chief attractions lay in the classes "open to all England."

Plants.—For a dozen ornamental foliage, Mr. A. Hislop, gardener to H. S. Leon, Esq., Bletchley Park, secured the £5 prize, putting up large and fresh examples of Pandanus Veitchi, Phœnix dactylifera, Areca Bauerii, A. lutescens, Croton variegatum, C. nobilis, Seaforthia elegans, Phormium tenax, Caladium Chantini, Acalypha musaica, Latania borbonica, and Livistonia rotundifolia; Mr. J. Price, gardener to H. Gosling, Esq., Westbury Manor, second. In the class for six, the awards went to the above named in the same order, and also for one specimen, each staging fine growths of Cycas revoluta; the prizes for one specimen in flower going first to Mr. Hislop, for a grand Allamanda Hendersoni; Mr. A. W. Hainsworth, Broughton Astley, second, for a fine example of Plumbago capensis. For six exotic ferns, Mr. Hislop was again first, his group including extra large specimens of Davallia Mooreana, Adiantum decorum, A. cuneatum, A. excisum multifidum, Blechnum lanceolatum, and Elaphoglossum conforme, Mr. J. Price second. For a group of mixed varieties staged for effect, Mr. Price led, his semi-circular arrangement being well balanced with crotons, coleus, dracænas, begonias, pandanads, celosias, gloxinias, caladiums, Hyacinthus candicans, mixed with neat ferns, and edged with Cobea scandens and a pteris; Mr. A. W. Hainsworth well merited second place, having a feathery cocos palm as a centre, backed by specimen begonias, Acalypha musaica, white and primrose forms of large summer-flowering chrysanthemums, cockscombs, celosias, gloxinias, lilies, caladiums, ixoras, pandanads, vincas, dracænas, edged with Tradescantia rubra and adiantums; while as a dividing line between the above, Mr. Hicks, gardener to R. S. Budgett, Esq., staged a monster Hydrangea hortensis, carrying one hundred and sixty heads of flower. Other single specimens worth notice were the Croton pictum (a truly grand plant), staged by Mr. Hislop; the second prize card being affixed to a large example of Croton angustifolium exhibited by Mr. J. Price. For a plant in flower Mr. Price led with a massive development of Agapanthus umbellatus; Mr. Hainsworth second with a small Stephanotis floribunda; Dr. P. L. Benson, Steeple Claydon, had the best Lilium auratum (thirty-nine flowers). Fuchsias were limited to one group from Mr. Hainsworth; well-grown examples enough, but thinly flowered, each leader tied to an ungainly stake carried above the shoot four or five inches, quite marring the effect; a first prize, however, was awarded. In the members' classes the coleus, begonias, double petunias, and zonal geraniums were a good average for cultural merit.

Cut Flowers.—This constituted the attractive feature of the exhibition. For a dressed dinner-table the competition was small as compared with days that are past. Miss Lizzie Bennett, Stowe Castle, was first, and Mr. W. J. Ridge second, the flowers used being choice for the centre pieces, the smaller vases filled with the simplest kinds mixed with grasses, &c. For six buttonholes there was a severe contest, Mr. W. J. Ridge taking the card for arrangements, in which some of the individual flowers might be regarded as large; but very choice appeared the miniature bouquets formed of tuberoses, Stephanotis pips, ixora, forget-me-not, oncidiums, and odontoglots, Mr. C. Tailby second; the cards in the amateur class for six going to Miss Jeannette Tailby, Miss M. Thorpe, and Miss L. Bennett. For an epergne Miss J. Tailby and Mr. Thorpe divided the honours, the prizes for a basket of flowers being shared by Miss L. Thorpe, Mrs. E. Elliott, and Miss M. Thorpe. The best dress spray came from Mr. W. J. Ridge, who had very chastely-posed gardenias, tuberoses, and Dendrobium thyrsiflorum on fern fronds; Miss M. Thorpe second, with delicate spikes of jessamine, tuberoses, and young ruddy rose foliage; Mrs. E. Elliott third. For a dozen bunches Mr. John Mattock, New Headington, Oxford, was first for a choice grouping of pancratiums, begonias, Bougainvillea glabra, Anthurium Scherzerianum, Statice profusa, eucharis, Lapageria alba, Stephanotis floribunda, Lilium auratum, Allamanda Hendersoni, Oncidium flexuosum, and Cattleya Mendeli; Mr. A. Hislop second.

Roses.—For twenty-four varieties (triplets), Mr. G. Prince, Oxford, presented for the £2 prize matchless examples, large, clean, and full of colour, the selection being Alfred Colomb, Souvenir de S. A. Prince, Earl Dufferin, Her Majesty, Charles Lefebvre, Captain Christy, Duke of Edinburgh, Marie Verdier (fine form), Victor Hugo, Marie Finger, Senateur Vaisse, Princess Mary of Cambridge, Duchess of Bedford, Violette Bouyer, Dr. Andry, Prince Camille de Rohan, Madame S. Rodoconachi, A. K. Williams, Mrs. J. Laing, Marie Baumann, Benoit Comte, Louis Van Houtte, and Francois Michelon. Mr. J. Mattock second with flowers a shade smaller though good in form and colour; one third teas; his selection comprised Ferdinand de Lesseps, Marshall P. Wilder, Innocente Pirola, Reynolds Hole, Marie Verdier, Alfred Colomb, La France, Horace Vernet, Souvenir d'un Ami, Auguste Rigotard, Her Majesty, A. K. Williams, Madame Lambard, Earl Dufferin, Marie Van Houtte, Duchess of Bedford, Catherine Mermet, Charles Lefebvre, Rubens, Louis Van Houtte, Amazone, Marie Baumann, and Hon. Edith Gifford. Mr. J. Walker, Thame, third, his best forms being Marie Baumann, Paul Neyron, Duke of Edinburgh, Dupuy Jamain, Ulrich Brunner, Merveille de Lyon, Marquise de Castellane, Niphetos, Ferdinand de Lesseps, and Duke of Wellington. For twelve Mr. Prince was a grand first, the whole of the blooms of superior size to the triplets above mentioned; the varieties were Captain Christy, Charles Lefebvre, Her Majesty, Dr. Andry, Mrs. J. Laing, Beauty of Waltham, Marie Finger, Senateur Vaisse, Francois Michelon, Duke of Edinburgh, Benoit Comte, and A. K. Williams. Mr. Mattock second, his premiers being La France, Horace Vernet, Marie Verdier, Marie Baumann, Louis Van Houtte, Hon. E. Gifford, and Grace Darling.

Tea-Scented Roses.—For twelve Mr. Prince was to the fore, the blooms large and free from weather stains, the flowers being worthy of a prize four times the value offered. His selection included Madame Cusin, Madame Hoste, Devoniensis, The Bride, Catherine Mermet, Caroline Kuster, Comtesse de Nadaillac, Innocente Pirola, Amazone, Souvenir d'Elise Vardon, Princess of Wales, and Souvenir de S. A. Prince; Mr. Mattock a good second with Francisca Kruger, Jean Pernet, Madame Lambard, Innocente Pirola, Catherine Mermet (fine), Amazone, Madame de Watteville, Souvenir de Paul Neyron, Hon. E. Gifford, Marie Van Houtte, Devoniensis and Rubens. For six teas the cards went to Mr. E. J. Ridge, Buckingham, and Dr. P. L. Benson.

Pelargoniums.—In the classes for twenty-four single trusses and twenty-four triplets, Mr. John Walker, Thame, took the premier cards, his single trusses being very bold and represented forms known as Charles Mason, Mons. Muriel, Gloire de France, Dante, C. N. Fraser, Madame Hoste, Surpasse, Edward Barker, Beatrice, Lumen, Alex. Dupre, Mrs. Patchett, International, Petitecan, Mrs. H. S. Barker, Swanley Single White, Eva, Magenta, F. P. Raspail, Miss Dobbie, Clytie, Sophie Birkin, John Gibson, and Gustave Widemann; Mr. Mattock second.

Carnations.—Mr. J. Walker had no opponent in this class, his box of twelve were attractive and represented James Taylor, John Keet, Clementina, Dan Godfrey, Capt. Horrick, Sportsman, John Laing, James Douglas, Rev. J. Bennett, Edward Adams, Sporting Lass, and Sarah Payne.

Dahlias.—As a sort of first fruits of the season, Mr. J. Walker staged a dozen very choice medium sized flowers of Peacock, Rev. J. B. M. Camm, Mrs. W. Slack, William Rawlings, Flag of Truce, John Wyatt, Hon. Percy Wyndham, Flora Wyatt, Mrs. A. Campbell, Mrs. Shirley Hibberd, and Hope; Mr. Mattock, second with four show and eight cactus forms; while the cards for pompons were divided between Dr. Benson and Mr. Mattock. Extra exhibits of cut flowers included a dozen specimens of the new rose Souvenir de S. A. Prince, from Mr. G. Prince, Oxford, and a very choice wreath from Mr. J. Clows, florist, High-street, Banbury, composed of Lilium auratum, Stephanotis floribunda, Gladiolus The Bride, white stocks, Achillea ptarmica, rose-buds and fern fronds, to which a commendation was granted.

Fruit.—This was a choice section, but no names being attached to the varieties, only a cursory reference can be given. For white grapes some grand clusters of Buckland Sweetwater secured the card to Miss H. A. Turner Andrews, Maidsmoreton; Mr. C. Cordery, Shalstone, second, with Foster's Seedling. Mr. J. Price and A. C. Rogers, Esq., Prebend House, Buckingham, shared the awards for well-finished Black Hamburghs. In the collections and single dishes were very handsome peaches, nectarines, cherries, melons, apples (1889), and the run of bush fruits, gooseberries and currants being fully ripe and large.

Potatos.—The prizes in the single dishes were awarded as under: Amateurs: *Red Kidney*, first and second to Mr. Bresee, third to Trophy. *White Kidney*, first and second, Woodstock Kidney; third, Sutton's Seedling. *Coloured Round*, Reading Russet, all through. *White Round*, Early Handsworth and Sutton's Satisfaction. Cottagers: *Red Kidney*, first, second, third, fourth, Mr. Bresee. *White Kidney*, International, all through. *Coloured Round*, first, Vicar of Laleham; the others Reading Russet. *White Round*, Early Handsworth. For six dishes, Mr. C. Gunthorpe, Buckingham, first, in a stiff competition, for handsome dishes of Edgecote Seedling, Woodstock Kidney, Sutton's Satisfaction, Radstock Beauty, Mr. Bresee, and Reading Russet,; Mr. H. G. King, second for Reading Russet, Early Handsworth, Mr. Bresee, Snowdrop, International, and Radstock Beauty; while in the cottagers' section, the cards went to Mr. Geo. Barrett, for large examples of Mr. Bresee, Reading Russet, Vicar of Laleham, Sutton's Seedling, International, and Sutton's Satisfaction; Mr. John H. Harris, Gawcott, second with International, Mr. Bresee, Vicar of Laleham, Reading Giant, Reading Russet, and Early Handsworth; Mr. George North third with Reading Russet, Trophy, Vicar of Laleham, Early Handsworth, Mr. Bresee, and International.

Special Classes.—For the prizes offered by Messrs. Sutton and Sons, Reading, for six dishes of vegetables, distinct, the competition was very keen, the post of honour being accorded to Mr. A. Hislop for remarkable developments of Magnum Bonum cauliflower, Moore's Cream marrows, Perfection tomato, Windsor Castle potatos (new), Dwarf Mammoth marrowfat peas, and Canadian Wonder dwarf beans; Mr. Hicks, gardener to R. S. Budgett, Esq., second with Magnum Bonum cauliflower, Perfection tomatos, Rousham Park Hero onions, Duke of Albany peas, Giant White runner beans, and Early Eclipse potatos; the third card falling to Mr. C. Cordery for Main Crop tomatos, Magnum Bonum cauliflower, Duke of Albany peas, Snowball turnips, Ne Plus Ultra dwarf beans, and Ashleaf potatos. For Messrs. Webb and Sons' prizes, the first card went to Dr. P. L. Benson, Mr. Bresee potatos, Perpetual Bearer cucumbers, and Globe Tripoli Onion being the best of the six dishes; Mr. W. Purcell second, Royal Standard peas, runner beans, and Tripoli onions being three good dishes.

The Rushden Silver Band and a variety entertainment combined to draw a full attendance of townspeople, the dwellers in rural districts being in full swing with the hay harvest.

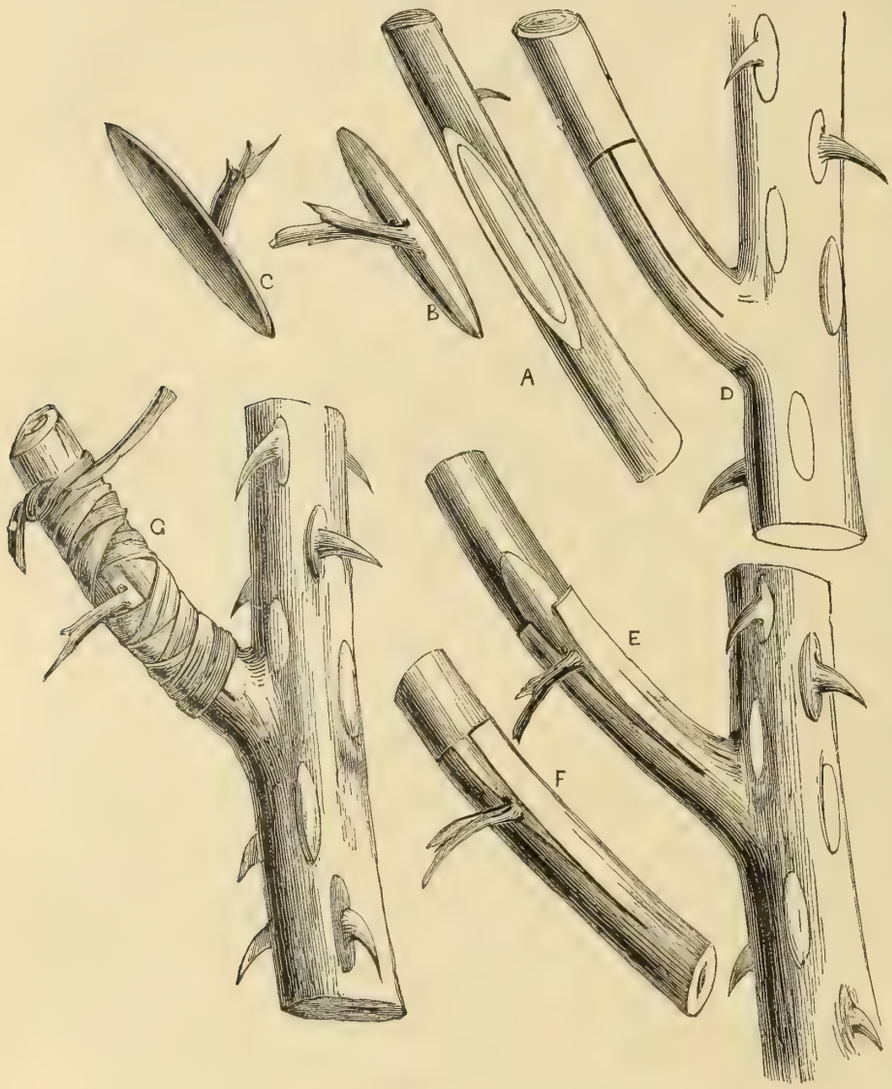
The Weather of the past Week has favoured outdoor work in most parts of the country, but has been changeable and chilly, and certainly not favourable to the ripening of grain or to the hastening of the harvest. Potatos are doing well, and the signs of disease are rather less than more as compared with last week. The outlook is not particularly cheerful, for it seems that we must still expect changeable though, on the whole, agreeable weather.

Replies to Queries.

Chrysanthemum Buds.—J. D. G. : The buds of the varieties mentioned should be taken moderately early, the finest blooms being produced by the crown buds.

Roses.—Anxious One : The mischief has been caused by the cold, sunless weather, and nothing can be done at the present time. They should have a liberal application of farmyard manure, or some suitable artificial fertilizer in the course of the winter.

Budding Roses.—G. Robson : Budding the rose is, comparatively speaking, a simple operation, and with the aid of the accompanying diagrams, you should have but little difficulty in mastering the various details. Before commencing the work of budding, select the shoots on the stocks in which to enter the buds, those in a vigorous condition being preferable, and then trim away a few of the more weakly shoots. This having been done, select from the varieties you are desirous of increasing moderately stout shoots for the supply of buds. Cut them from the trees about six inches from the base, and at once place them in a watering pot containing two or three inches of water. The shoots of one variety only should be taken at a time to avoid mistakes, and if you intend budding a considerable number of stocks with any one



BUDDING THE ROSE.

variety, a portion only of the shoots required for the supply of buds should be cut at one time. This precaution is, however, of less importance this season than in hot dry summers, as the shoots are now well supplied with sap, and you are not likely to meet with any difficulty in readily detaching the buds. In preparing the buds cut off the leaves immediately below the lower leaflets and then take off the bud with a portion of the bark and wood as shown at A and B. The wood with the thin end of the budding knife must be removed, when you will have the shield C, consisting of the bark only with the bud and the lower portion of the leaf stalk. A shoot near the top of the brier, whatever may be its height, must be selected to receive the bud, and what is designated a T incision be made in it as at D. It is a good practice to insert two buds on each brier, and when this is done, the two highest shoots should be selected, one on either side. It is becoming a custom amongst the experts to omit the top cross cut, and in the advanced practice the incision represents an I. The advantage of the longitudinal incision only is seen in windy weather, when worked shoots sometimes snap off at the cross cut. But as you have not had any practice in the work, we would advise you to adopt the T cut, because of the greater ease with which you will be able to insert the bud. Having made the incision, raise the bark on either side with the handle of the knife, and then push the bud into the slit as at E. You will observe that the top of the shield projects beyond the cross cut, and this must be cut to fit the top of the T, as at F. In taking off the top of the shield, as indeed in making the cross cut you must carefully avoid cutting into the wood, for if the knife is allowed to penetrate the wood to any considerable depth, a moderate gust of wind will suffice to snap off the top of the shoot. To complete the operation bind up with wool cotton, raffia, or bast, it matters not which. If you use bast, select the strips for softness, and keep them in a can of water ready for use, as it is more pliable when moist. Bind the shoots with care, and allow the stalk to project, and the bud free, so that when growth commences the young shoot will not meet with any hindrance. The briers should be budded with as little delay as possible.

Melons.—Six Years : From your description of the management, it seems you give your melons more water than is good for them. These do not require either so much moisture at the root or overhead as cucumbers do, and hence they are not usually grown together. We think if you give more air and less water you will get over your trouble. But the season is hurrying away, and you must give attention to the matter at once.

Names of Plants.—Streatham Elms : The orchid is Dendrobium Dalhousianum, native of India.—J. C. Knightrider : The fern is Cyrtomium caryotideum, native of Natal. It is not quite hardy, therefore it is not safe to plant it out, but cool house culture suffices for it. To distinguish it from C. falcatum, which is better known, is not difficult. The last named has harder and more glossy pinnæ, which are not serrated. Your plant is serrated and is not glossy.—J. Varley : Your blue-flowered aquatic is Pontederia cœrulea, native of North America. It is hardy. A better plant is P. cordata, considered the finest hardy aquatic in cultivation.—W. C. : The yellow flower is Melilotus officinalis, a herb employed to flavour the Gruyere cheese. The rustic plant is Scrophularia aquatica, usually regarded as poisonous, but the roots were eaten by the French soldiers during the siege of Rochelle, 1628. Hence the French now call the plant *herbe du siege.*—Plants in blue paper box : 1, Meadow Sweet, Spiræa ulmaria ; 2, The Gladwyn, Iris fœtadissima.—R. H. B. : 1, Thermopsis Corgonensis ; 2, Phlox acutifolia ; 3, Eryngium alpinum ; 4, Stokesia cyanea.—H. Everard : 1, Oncidium Forbesi ; 2, Oncidium lanceanum ; 3, Masdevallia Dayana ; 4, Dendrobium macrophyllum.—F. E. B. : Ficus repens. But why cover with that a wall so well adopted for Vanilla?—E. D. : 1, Rudbeckia laciniata ; 2, Epilobium angustifolium album ; 3, Lathyrus palustris ; 4, Spiræa salicifolia ; 5, S. Menziesi ; 6, Veronica spicata ; W. B. H. : 1, Asplenium flaccidum ; 2, Asplenium bulbiferum ; 3, Pteris cretica albolineata ; 4, Pteris lata ; 5, Adiantum assimile ; 6, Adiantum capillus-veneris.

Diseased Tomatos.—Herewith I enclose for your inspection a few leaves of my tomatos which are evidently attacked by some disease. I shall be glad to be informed through the pages of the Gardeners' Magazine whether the disease is likely to increase or shorten my crop. In the first place I must tell you that they are growing in a house thirty-seven feet in length and are planted in the border. They are trained to a single stem and are carrying seven or eight trusses of fruit and flowers on each stem, and have an abundance of foliage. The whole of the plants made a most satisfactory growth without a trace of disease until within a week since, when I discovered spots on the foliage similar to those on the leaves I am sending you. From the beginning of July up to that time I kept them close, without fire heat and syringed them twice daily. This practice was adopted because I had in the same structure some melons in pots and tubs, from which I thought I should be able to obtain two or three fruits each. I kept the house close to encourage the melon plants to grow rapidly, and it was my intention to again admit air freely when the melons were about the size of a hen's egg. Of course as soon as I found the leaves affected by the disease I withheld the syringing and ventilated freely during the day and admitted a little air at night. Water was sparingly applied to the roots with a little liquid manure to assist the plants in swelling up the fruit. I should like to know what is the best remedy and whether I should remove the diseased leaves. W. Castle.

[The plants are suffering from a rather severe attack of the disease caused by the fungus known as Cladisporum fulvum, and unless you succeed in checking it the crop will fail to ripen satisfactorily. The conditions under which the plants have been grown are the best possible that could have been adopted for the development of the disease and there can be no doubt that the greater proportion of the attacks of the fungus are the result of keeping the plants in a close moist atmosphere combined with a low temperature. We would suggest that you increase the ventilation, maintain a dry atmosphere, and employ a little artificial heat during periods of comparatively cold and dull weather. The diseased leaves should be taken off and burnt, and the remaining foliage be dusted with sulphur, the application to be repeated in a week or ten days if found necessary. Sulphur is the best remedy for the disease that is at present known, but it is not so efficient as could be desired. We would add that tomatos differ so widely in their requirements from both melons and cucumbers that they ought not to be grown in the same structure as either of these two crops.—Ed.]

Show and Fancy Pelargoniums.—A. B. : The length of time that should elapse between the pruning and repotting of pelargoniums will depend upon the progress made after they have been pruned. They should remain undisturbed at the roots until the shoots range from half an inch to two inches in length, and be then removed from the pots in which they were bloomed. In repotting, reduce the balls of soil by about one-third and shorten a few of the longest. Those flowered in nine-inch pots should be put into others two sizes smaller, but for all the others pots one size smaller should be used. The pots must be perfectly clean and efficiently drained, and in arranging the drainage materials use rather small crocks, and put sufficient in each to form a layer about one and a-half inches in thickness. The compost should consist of fibrous loam six parts, and leaf-mould, well-rotted manure, and sharp silver sand one part each, and be used in a rather dry state. Press the new material rather firmly, and when repotted place in a frame and keep rather close for a short period. Until they are commencing to grow freely use the watering-can sparingly, for an excess of moisture at the roots immediately after the repotting will render the soil sour, and prevent a free development of the new roots. Pot off the cuttings as soon as they are nicely rooted, and put them in three-inch pots, using a compost similar to that advised for the plants that have been cut back.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
10	S	**10th Sunday after Trinity.**	4 40	5 8	7 31	—	4 23	9 20	9 59	6 8	6 45	62·8	Galeandra Baueri ..... Guyana.	222
11	M	Dog Days end.	4 41	4 59	7 29	0 19	5 22	10 37	11 15	7 24	8 2	62·8	Galeandra cristata ..... Guyana.	223
12	Tu	Trinity Law Sittings end.	4 42	4 49	7 27	1 3	6 11	11 52	—	8 40	9 27	62·7	Huntleya meleagris ..... South America.	224
13	W	*Old Lammas Day.*	4 44	4 39	7 25	1 58	6 50	0 24	0 51	9 49	10 16	62·6	Miltonia bicolor ..... Brazil.	225
14	Th	Sir Colin Campbell died, 1863.	4 45	4 28	7 23	2 57	7 21	1 13	1 35	10 38	11 0	62·5	Miltonia candida..... Brazil.	226
15	F	● New Moon.	4 46	4 16	7 21	4 6	7 48	1 56	2 14	11 21	11 39	62·4	Miltonia spectabilis ..... Brazil.	227
16	S	Battle of Thionville, 1870.	4 47	4 5	7 19	5 11	8 8	2 30	2 47	11 55	—	62·3	Peristeria elata ..... Panama.	228

MAIDENHEAD HORTICULTURAL SOCIETY. — The ANNUAL SHOW of this Society will be held in the grounds of Curtisfield, Maidenhead, on THURSDAY, August 14, 1890. Entries close on August 7.

Schedules and particulars from the Secretary, O. King, Ray Park Cottage, Maidenhead.

Exhibitions and Meetings for the Ensuing Week.

Monday, Aug. 11.—Royal Botanic Society.—Annual Meeting.
Tuesday, Aug. 12.—Royal Horticultural Society.—Meetings of Floral, Fruit, and Scientific Committees.
Tuesday, Aug. 12.—Clay Cross.—Flower Show.
Wednesday, Aug. 13.—Stow-on-the-Wold Horticultural Society.—Annual Exhibition.
Thursday, Aug. 14.—Faringdon Horticultural Society.—Annual Exhibition.
Thursday, Aug. 14.—Maidenhead Horticultural Society.—Annual Exhibition.
Saturday, Aug. 16.—Hawick Horticultural Society.—Annual Exhibition.
Saturday, Aug. 16.—Crystal Palace.—Co-operative Flower Show.

Auction Sales for the Ensuing Week.

Monday, Wednesday, and Saturday, Aug. 11, 13, and 16.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.
Thursday, Aug. 14.—Messrs. Protheroe and Morris, at Wright's Nursery, Lee; Plants, also the Leasehold Nursery.
Friday, Aug. 15.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

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The Gardeners' Magazine.

SATURDAY, AUGUST 9, 1890.

Is the Carnation a Hardy Plant? The question is of more than momentary interest, and it is one that cannot be settled absolutely with yea or nay. An average winter spares carnations in open beds that have been fairly well made and planted, and have no special difficulties to contend with as regards exposure, drainage, and other local circumstances. In the climate, say of London, the carnation is a hardy plant, as the term is commonly understood; and throughout the British Islands it is almost equally so, but extreme conditions northward are often more than it can endure, and in the south an exceptionally severe winter will thin plantations considerably. The smoke and dust of towns do not readily affect the carnation, but, in common with all other plants that obtain the attention of cultivators, it can endure extreme conditions with less injury in a pure air than in one that is loaded with damp and dirt in the winter season. So far the carnation is hardy, and the question is answered in the affirmative. But, as remarked above, a winter of exceptional severity will everywhere thin the plantations, and the losses will usually prove more numerous in the north than in the south, and in the east than in the west, of these islands. The destruction by frost and damp will be found to correspond in some degree with the classes to which the plants belong. The yellow ground picotees will suffer sooner and more generally than the clove carnations, and in proportion to the delicacy of the markings of carnations and picotees proper will be the relative tenderness and liability to injury.

The question of the hardiness of the carnation was raised in an interesting manner by Mr. Martin Smith in his address on opening the Carnation Conference at Chiswick, July 22. He said carnations are now raised from a pampered stock, and it was useless to attempt the cultivation of the modern varieties in the open ground. The flowers were seen and admired at the exhibitions, the plants were purchased and planted in the choicest sites, but instead of growing vigorously and blooming satisfactorily, they dwindled away and died. The growers were to blame in this matter, because of their not selecting hardy varieties for the parents. There is a certain amount of truth in Mr. Smith's declaration, but far less than he and many others imagine; for, to speak in a general and comprehensive manner, it may be said that the carnation in all its several forms is as hardy as it ever was, but the more recent developments of taste in floriculture favour varieties that are not only less hardy than cloves and other border kinds, but are not likely to be improved in respect of hardiness by any kind of culture whatever. The general employment of glass as an aid in flowering show carnations is rather one of convenience than necessity. Free exposure to the elements detracts from the beauty of the more highly bred varieties, and for these, therefore, the protection of glass is desirable. A sudden storm may destroy the bloom of a collection at the very moment of its highest perfection, while, as regards the normal conditions, the flowers attain to their best possible character with the aid of shelter from dust, powerful sunshine, and long-continued heavy rains. If Mr. Martin Smith and others who are of his opinion will be content with selfs and a certain number of the more robust flakes and picotees, they may be wholly grown and flowered in the open ground with the inevitable risks of damage to which we have referred; but if they must have the varieties that are the most anxiously sought and that serve as standards of highest quality at exhibitions, they must do as the experienced cultivators advise: they must, in fact, resort to the employment of glass. It must be granted that those who grow for exhibition are more deeply interested in floral quality than in relative hardiness, but as regards this last point they cannot be utterly indifferent, for they must keep the plants they have secured with so much care, and the tenderest will be the first to disappear when trials come, as they will come to this as to every other flower. In Mr. Hibberd's lecture given last year on the "Origin of the Florists' Carnation" it was stated upon the best of evidence that named carnations and picotees rarely last more than twenty years, and amongst the varieties in cultivation at the present time the famous Admiral Curzon is probably the oldest. Mr. Hibberd submitted to several of the most eminent cultivators a list of 320 varieties that were in winning stands in the year 1822, and they all agreed that not one of the number was now in cultivation. The use of glass had nothing to do with their disappearance, but lest a question should arise as to that point a parallel fact may be found of an older date to strengthen the contention that glass does not kill carnations or in any material degree diminish the hardiness of the plant. All the splendid lot grown by Parkinson in 1629 had passed out of existence in the time of Rea, 1676, a period of less than fifty years.

A valuable lesson in selection for open ground cultivation is in process of publication in the garden of the R.H.S. at Chiswick. A great collection was formed and planted in the autumn of last year, and the plants have flowered in a satisfactory manner in the present season, as our readers have been advised in time for their inspection. These have been carefully overhauled by the Floral Committee, and the results will be made public in due time. For the present we can say that while the collection includes a certain proportion of finely finished exhibition flowers, and many blooms worthy of a place in a competition might have been cut, and are still appearing, the strength of the collection is in selfs of no special floral quality; beautiful indeed, and most worthy of care in any garden, but not such as would give special delight as exhibition subjects. A certain few high-class flowers have flowered freely and in admirable style, but to speak in a general way, the more refined varieties of exhibition character show less vigour and

give less bloom than the selfs that have chiefly colour and fragrance and profusion of bloom to recommend them.

It may be that the persons who so persistently declaim against the employment of glass in the cultivation of auriculas, carnations, and other "hardy" flowers are prepared to reject the more perfect floral types, and rest content with varieties, the first merit of which is hardiness. To this there can be no objection. In fact, as this is a free country, and the florists are a broad-minded and generous class, the lovers of carnations who look for hardiness first and quality last will find the florists ready and willing to help them. But then the advocates of border culture, pure and simple, must cease to denounce the use of glass by such as seek the highest quality as their first aim, and are prepared to incur some risks and pains to secure it. To say that a highly bred yellow ground picotee is as hardy as a border self would be to speak an untruth; and to say that it can be rendered as hardy by border culture pure and simple would be equally an untruth, and it follows that the border grower must rest content without it. The facts are known to the experts, and they will not alter their course to meet the views of persons who, perhaps, are alike wanting in the knowledge and taste that are needful in the appreciation of the highest beauties of florists' flowers.

It will be seen by our report of the address of Mr. Martin Smith that he has the courage of his convictions. He will give twenty guineas annually for five years to the southern section of the National Carnation and Picotee Society, to be awarded in prizes for carnations wholly grown out of doors. It is a generous offer, and should prove eminently useful. As remarked above there are varieties of high quality that prosper in the open ground, and that, therefore, may with advantage be rendered prominent in exhibitions. We shall, indeed, be well pleased to find in winning stands in the classes founded on Mr. Smith's proposal a fair proportion of varieties of the highest quality. It will be time to prophecy results when the facts declare them, but in the present view of the case it appears that the prizes offered are calculated to be of signal service in popularising the carnation as a florists' flower adapted for the universal garden.

B. S. Williams' Memorial.—Baron Schroder will subscribe ten guineas to the fund. At the meeting to be held on Tuesday, a list of subscriptions will be announced.

Mr. F. Hanson has been engaged as head gardener to Sir S. Crossley, Bart., Somerbyton Hall, Suffolk.

Mr. J. Earle has been engaged as head gardener at Frampton Court, Dorchester, the residence of A. B. Sheriden, Esq.

Mr. A. J. Brown has been engaged as head gardener and bailiff at the School of Handicraft, Chertsey.

Mr. George Groves has been engaged as head gardener at Temple House, Great Marlow, the residence of General O. Williams.

Mr. F. Q. Clatworthy has been engaged as head gardener at Lifton Park, Devonshire.

Mr. R. Aitken has been engaged as head gardener to Miss Solari, Pouchin End, Boxmoor, Herts.

Mr. J. Bywater has been engaged as head gardener to T. E. Page, Esq., Long Stratton, Norfolk.

Apple Crop in Canada and Nova Scotia is reported to be considerably below the average.

"Diseases of Crops and their Remedies" is the title of a book by Dr. A. B. Griffiths, F.R.S.E., &c., announced in Messrs. G. Bell and Son's list of new books.

Weather Forecasting is treated scientifically and systematically by Captain Henry Toynbee, late of the Meteorological Office, in a volume published by Mr. E. Stanford.

Mr. Robert Aitken, late gardener to J. J. Ford, Esq., Park Side, Hammersmith, has been appointed head gardener to Miss Solari, Ponchin End, Boxmoor, Herts.

Royal Botanic Society.—The fifty-first anniversary meeting of this Society will be held in the Society's House, Inner Circle, Regent's Park on Monday next, August 11, at 1 p.m.

Mr. H. A. Burberry has been engaged as orchid grower at Highbury, Birmingham, the residence of the Right Hon. Joseph Chamberlain, M.P.

London County Council has postponed for the present the intended appointment of a general superintendent of the London parks.

A Twin Cucumber, similar to the one described in our issue of June 28, has been forwarded by Mr. A. H. Burberry, gardener to Dr. Cockle, The Lodge, West Moulsey. The fruits are strictly defined by a deep suture between them, but in substance are as one; the length eighteen inches, the weight 4 lbs. The variety is Rollison's Telegraph.

Poisoning of Peafowl by Fruits of the Common Laurel has been recorded by Mr. Morris, who, at a recent meeting of the scientific committee of R.H.S., stated that some peafowls at Kew had lately died, their crops being found to be full of the fruit of the common laurel. As the pulp is harmless it was suggested that perhaps their death was due to prussic acid being developed from the kernels, though the presence of the stone appeared to negative that being the cause, otherwise it was difficult to account for it.

Oxford Union Carnation and Picotee show on Tuesday was in every sense a success. The flowers were grand, the weather perfect, the company sufficient for the place, and fully satisfied with the entertainment.

Tomatos Attacked by Disease were submitted to the scientific committee of the R.H.S. The specimens were from the society's gardens at Chiswick, and were attacked by phytopthora. As this appears to infect the tomatos when growing in the open, it was suggested that whenever possible they should be at once transferred indoors to a warmer and drier atmosphere, tomatos requiring a warmer climate than the average English summer to ripen properly. This treatment appears to invigorate them, and renders them not only less susceptible to the disease, but has been known to check the further growth of the fungus at once.

The Death of Mr. Charles Roach Smith makes a serious gap in the roll of amateur horticulturists of the higher class. Though conspicuous for his antiquarian researches and discoveries, he was far ahead of horticulturists in many matters pertaining to fruit culture, and wrote some singularly useful papers on home-grown fruits. Probably a better quality of wine of British growth was never tasted than the white and red wines he placed before his friends when they visited him.

One Bite at a Man by a Horse or Dog is permitted by the English Law! Such was the declaration of Mr. Commissioner Kerr in the City of London Court, in the case of Burley v. Collinson, on the 5th inst. The plaintiff claimed from the defendant the sum of £5 for personal injuries sustained in consequence of being bitten by a horse, the property of the defendant. It appears that the plaintiff had struck the horse by accident, and the animal resented the affront by biting him. The Commissioner said that the law of this country permitted dogs and horses to have one bite and no more. Judgment was entered for the defendant.

The Fresh-Water Jelly-Fish that first appeared in the Victoria tank in the Regent's Park Botanic Gardens in the year 1880, and has since then appeared yearly, is reported by Mr. William Sowerby to be once more in active existence, and, as a matter of course, a greater mystery than ever. On July 30 "numbers of full-grown individuals were seen in the new tank, swimming about as if quite at home." We make no pretence to explain the singular phenomenon, but having found many kinds of river fishes capable of living in sea-water, and equally sea fishes living in fresh water, we should be prepared to find that the medusa in the Victoria tank is of marine origin, and possibly imported by the water supply. The jelly fishes multiply by gemmation as well as by ova, which accounts for their rapid increase when conditions are favourable. It is by ova in the first instance, no doubt, that the Victoria tank in Botanic Gardens is tenanted by these curious creatures.

The Arrival of the German Emperor at Osborne on Monday last gives a kind of triumphant flourish to the close of a season of prolonged and generally enjoyable excitement. Parliament lingers on in a kind of self-imposed penance that is equally undignified and unprofitable; the picture galleries are closed, and London, in common with every other busy city in the empire, is "empty." In the deserted cities the crowds are nearly as dense as ever, and need feeding and entertaining in the usual way. Even London, which is severely "out of town," amusements abound, and life is still possible even for those who cannot make holiday. We, who neither know nor desire rest, have in view much business for the vacation season. On the 12th committees of R.H.S. meet as usual. On the 16th the Co-operative exhibition will take place in the Crystal Palace; on the 21st Dublin and Aberdeen will have horticultural exhibitions; on the 26th R.H.S. again; 27th, Reading; 28th, Oxford; 30th, Falkirk; and September opens with exhibitions numbering two or three daily for a fortnight.

The Fasting Man at the Westminster Aquarium after practising in his own peculiar fashion for 42 days, professes to have "beaten the record" and to have gone home. During his so-called "fast" he partook of water freely, and had a daily allowance of 2½ ounces of a prepared food, which he alleges contains only vegetable constituents. It may be a matter of some interest what this preparation really contained, but taking the business from first to last, the only feeling it appears likely to arouse in the minds of rational people is one of contempt and disgust, that a man should be permitted to do this sort of thing as a matter of business. There is no gain to science or humanity; no edifying spectacle for an inquiring public; no decent entertainment for the vulgar crowd; no honour to the man who has endured a trial beginning in folly and ending in injury to health. If this man had died in the experiment who would have been responsible? Morally, those who made profit of his useless and pitiable performance; but legally, no one appears to know, the assumption being that all parties were at ease on that point from the first. But is this subsistence for 42 days on a daily allowance of prepared food a fast? We submit that it is not, and that some other name must be given to the hateful performance.

Proposed Fruit Show in the Guildhall of the City of London, promoted by the Fruiterers' Company, is so far organized that the schedule will be published in the course of a few days. It will include classes and money prizes for amateurs, gardeners, cottagers, and tenant farmers, for all classes of hardy fruits including tomatos. Nurserymen and market growers will be invited to contribute, but instead of money there will be provided certificates of merit, and they will be free to exhibit any kinds of fruit and any number of dishes within a certain given space. There will be a corresponding invitation to manufacturers of fruit jams, jellies, &c. There will be a class for ladies for the exhibition of home-made jams and jellies. In some of the classes medals will be offered in addition to money. The show will be held on the 6th, 7th, and 8th of October next.

OXFORD CARNATION AND PICOTEE UNION,

August 5.

Brilliant weather conduced to increasing the number of visitors and exhibitors to assist at the "feast" held in Mr. Dodwell's garden on the above date. The display of carnations was regarded as fully up to show quality, although the past nine weeks had been very trying to cultivators—sunless days, cold nights, and a train of evils, including an abundance of insect pests. To accommodate the increased and increasing number of exhibitors, Mr. Dodwell this year sacrificed a considerable strip of his kitchen garden, and thereon erected a marquee of proportions sufficient to give easy access for the inspection of the flowers staged in competition and a comfortable promenade for the crowd of visitors who annually gather at The Cottage, Stanley Road, to enjoy perhaps the grandest display of carnations and picotees in England or beyond. Mr. Dodwell's own collection of plants can be reckoned as giving a wealth of bloom representing about five hundred varieties, of which seventy popular forms are his own tested seedlings under number only, the quantity of individual blossoms expanded on the show day being considerably over twenty thousand.

There were eighty-five stands staged in competition in twelves and sixes, and while a few weak examples were here and there apparent, as a whole the display might be regarded as demonstrating high cultural skill. Some new features were introduced this year, namely, classes for dinner-table decorations, hand bouquets, and button-hole bouquets, in which carnations and their "grass" and other greenery might be arranged for effect. Mr. Charles Turner, of Slough, presented a collection of choice developments "for certificates," including yellow grounds, Countess of Jersey, Mrs. Henwood, Victory, Romulus, Mrs. Walford, and The Rector, a heavy rose edge, all securing the desired honour, other forms being Old Coin, Golden Fleece, and Duchess of Sutherland. Mr. Anstiss, Brill, also aided the display by a grand collection of dahlias, and the general arrangements gave quite a new interest to the meeting. In noting the awards and the varieties presented in the order of the schedule, the first to command attention are :—

Carnations : Flakes or Bizarres.—For twelve, there were eight competitors, Mr. Martin Rowan, Clapham, taking the premier card for John Buxton, S.B. ; Robert Houlgrave, S.B. ; Sarah Payne, P.F. ; George Melville, P.F. ; John Whitham, S.F. ; Gordon Lewis, P.F. ; Rob Roy, R.F. ; Matador, S.F. ; Rifleman, C.B. ; Fred, S.B. ; J. D. Hextall, C.B. ; and Jessica, R.F. Mr. W. Read (gardener to Mr. Dodwell) second, with large forms of great substance and high colour, with Robert Hargrave, Dodwell's S. 2,066, Thomas Moore, Thalier, R.F. ; Mrs. Mathews, R.F. ; George Melville, Jessica, Squire Potts, S.B. ; Jos. Lakin, C.B. ; Dodwell's S. 727, Sarah Payne, and William Skirving, P.P.B. Messrs. Thomson and Co., Birmingham, third, with C. H. Herbert, S.B. (premier carnation of the whole show) ; James Merryweather, R.F. ; Thalia, Seedling, Sarah Payne, P.P.B. ; Alismond, S.F. ; Admiral Curzon, S.B. ; Duc d'Aumale, Sarah Payne, Tim Bobbin, R.F. ; George Melville, and Master Fred, C.B. Mr. R. Sydenham, Birmingham, fourth, with George Melville, Master Fred, Matador, Edward Rowan, Thalia, Robert Houlgrave, Mrs. Gorton, C.B. ; Cristagalli, R.F. ; Sportsman, S.B. ; Mrs. Payne, P.P.B. ; Gordon Lewis, and Seedling. Mr. G. Chaundy, Marston Road, Oxford, fifth, with Gordon Lewis, Sportsman, Robert Lord, S.B. ; Eccentric Jack, P.P.B. ; Admiral Curzon, and seedlings. Mr. A. R. Brown, Handsworth, Birmingham, sixth, with Mrs. Gorton, Thalia, J. Merryweather, Master Stanley, S.B. ; Squire Whitbourn, P.F. ; Edward Rowan, Biddy Malone, R.F. ; William Johnson, Henry Cannell, S.F. ; George, S.B. ; Alismonde, S.F. ; and Tim Bobbin. Mr. J. Walker, Thame, seventh, with John Keet, R.F. ; Master Fred, Clementina, Robert Houlgrave, Rev. J. Bennett, Mrs. Barlow, P.P.B. ; Jupiter, President of Corpus, P.F. ; Sporting Lass, Robin Hood, R.F. ; and Sarah Payne. Mr. H. Geggie, eighth, with numbered seedlings.

In the class for six thirteen stands entered. Mr. Tom Lord, Hole Bottom, Todmorden, was placed first, with Biddy Malone, Richard Dean, S.F. ; Harrison Weir, C.B. ; John Keet, and Squire Meynell, P.F. Mr. J. S. Hedderley, Bulcote, Notts, second, with Rifleman, Geo. Melville, Robt. Houlgrave, Sportsman, Wm. Skirving, P.P.B. ; and a seedling. S. Barlow, Esq., Stakehill, Manchester, third, with Sir Garnet Wolseley, P.P.B. ; Robt. Houlgrave ; E. S. Dodwell, C.B. ; Dr. Foster, P.F. ; Sportsman, and J. D. Hextall. Mr. Joe Edwards, Blackley, Manchester, fourth, with E. S. Dodwell, Seedling, Sportsman, Sir Garnet Wolseley, Sarah Payne, and Thalia. Mr. W. L. Walker, Earley, Reading, fifth, with Robert Lord, S.B. ; Gordon Lewis, Wm. Skirving, Robt. Houlgrave, Sarah Payne, and Mrs. Barlow. Mr. W. Bacon, Derby, sixth, with Sarah Payne, W. Bacon, Joseph Lakin, George, S.B. ; and seedlings. Mr. C. Phillips, Reading, seventh, with John Simonite, C.B. ; Mrs. Barlow, Thalia, George, Robt. Houlgrave, and Alismonde ; Mr. H. Startup, Bromley, Kent, eighth.

Picotees.—For twelve dissimilar (nine competitors), Mr. M. Rowan filled the post of honour, his election being Brunette, red heavy edge ; Mrs. Payne, heavy rose edged ; Duchess, heavy scarlet edge ; Nellie, light rose edge ; Edith D'Ombrain, heavy rose edge ; Favourite, light red edge ; Mrs. A. Chancellor, heavy purple edge ; Mrs. Dodwell, heavy red edge ; Mrs. Sharp, heavy edged rosy-scarlet ; Clara Penson, light purple edge ; Thos. William, light red edge ; and Amy Robsart. Mr. R. Sydenham, second, with Lady Holmesdale, H.R.E. ; Dr. Epps, H.R.E. ; Mrs. Bower, L.R.E. ; Ann Lord, L.P.E. ; Favourite, Novelty, P.P.E. ; Morna, H.P.E. ; Lady Louisa, H.E.R. ; Ethel, L.E.R. ; Mrs. A. Chancellor, Daisy, M.E.R. ; and Muriel, H.E.P. Mr. W. Read, third, with Dodwell's Seedlings 680, 784, Mrs. Payne, Novelty, Mrs. Coldridge, Favourite, Lady Holmesdale, Isabel Lakin, H R.E., Mrs. Sharp, Fraulein, H.P.E., Nellie, and Amy Robsart, H.P.E. Thomson and Co., fourth, with Becky Sharp, Mr. F. Ricardo, Favourite, Henry, Clara Penson, Thos. William, Mrs. Sharp, Mrs. A. Chancellor, Mrs. Payne, Campanini, Muriel and Brunette. Mr. A. R. Brown, fifth, with Campanini, Her Majesty, L.P.E. ; Orlando, Constance Heron, H.S.E. ; Imogen, H.P.E. ; Emily, M.R.E. ; Jessie, M.P.E. ; Favourite, Lady Holmesdale, Brunette, Juliette, M.P.E. ; and Lady Louisa. Mr. G. Chaundy, sixth, with Arnot Lyle, M.P.E. ; Wm. Summers, H.R.E. ; Favourite, Mrs. Coleridge, Mrs. Gorton, L.R.E. ; Royal Visit, H.R.E. ; Imogen, Lady Holmesdale, Zerlina, H.P.E. and seedlings. Mr. T. Anstiss seventh, with Emma Rachel, Irene, H.R.E. ; Gertrude, H.R E. ; Favourite, Clara Penson, Daisy, M.R.E. ; Brunette, Mrs. Sharp, Polly Brazil, Edith D'Ombrain, Baroness Burdett-Coutts, M.P.E. Mr. H. Geggie, Bury, Lancashire, eighth, with numbered seedlings ; Mr. John Walker, ninth, his best flowers being Mrs. Keynes, M.R.E. ; Mrs. Sharp, J. B. Bryant, H.R.E., and J. R. Baynes.

For six (sixteen staged) Mr. A. W. Jones led with Mrs. Keynes, M.R.E. ; Muriel, Clara Penson, Miss Horner, H.R.E. ; and Edith D'Ombrain. Mr. J. Whitham, Hebden Bridge, Yorks, second, with Zerlina, Miss Flowdy, L.R.E. ; Clara Penson, Gertrude, John Smith, H.R.E. ; and Imogen. Mr. J. S. Hedderley, third, with Favourite, John Smith, Muriel, Thos. William, Zerlina, and Mrs. Sharp. Mr. F. Nutt, The Avenue, Southampton, fourth, with Mrs. Coleridge, Dr. Epps, Mrs. Payne, Nellie, Mrs. Sharp, and Mr. Anstiss. Mr. J. Lakin, sixth, with seedlings of medium and heavy red and rose edge forms. Mr. J. Rebbeck, Southampton, seventh, with Mrs. Sharp, Mrs. Coleridge, Ethel, Mrs. A. Chancellor, Thos. William, and Mrs. Payne. Mr. W. L. Walker, eighth, with Mrs. Payne, Tinnie, M.P.E. ; Morna, Edith D'Ombrain, Mrs. Sharp, and J. B. Bryant ; and Mr. Joe Edwards, ninth, with Mrs. Rudd, H.S.E. ; Clara Penson, Mrs. Geggie, Miss Horner, Wm. Summers, and a seedling.

Selfs, Fancies, or Yellow Grounds.—Twelve blooms (nine competitors) : First, Mr. W. Read, with Dodwell's Seedling 167, soft deep yellow, feathered and flushed rose and mauve ; D.S., 770, 580, 626, 1890, 761, Gladys, The Maestro, scarlet ground, flaked marone ; Schlieben (Benary), Stadrath Bail (Benary), Terra Cotta, ruddy buff ground, edge pink ; and Nora (Benary). Mr. G. Chaundy, second, with Queen of Hearts, rich apricot, flamed and flaked red ; Dodwell's 191, primrose yellow, picoteed rosy purple ; and seedlings, Mr. R. Sydenham, third, with Thalia, Annie Lakin, white self ; Mrs. Reynolds Hole, Henry Cannell, S.F. ; Germania, yellow ; Dorothy's Sister, Arthur Medhurst, Mrs. Muir, Mrs. Payne, Robert Houlgrave, and seedlings. Mr. A. R. Brown, fourth, with Purple Emperor, Lady Edwards, Scarlet Gem, Pride of Penshurst, Tim Bobbin sport ; Patricia, bright yellow, slightly marked with light lines of red in the middle of petal, large ; Countess of Bective, Duchess of Connaught, Dodwell's 485, W. Ward, and Dodwell's 179, rose on yellow. Thomson and Co., fifth, with W. Spinks, Germania, Mrs. R. Hole, The Mayoress, Gladys, Terra Cotta, Blushing Bride, Olivette, Colonial Beauty, buff, heavily edged pink, grand form ; Mr. Thomson, and Agnes Chambers, yellow, reddish pink margin ; Mr. M. Rowan, sixth, with Dodwell's 157, bright primrose, rosy-red and marone markings ; Governor, Janira, Gladys, Dodwell's 186, primrose yellow, rosy-red marks ; Black Knight, deep purple marone ; Dorothy, buff-edged and flaked red ; Joe Willett, very distinct form ; Edith, Mrs. George, Mars, S.B., and Imperator ; Mr. W. L. Walker, seventh, with Germania, Robert Houlgrave, Rose Celestial, Black Knight, Admiral Curzon, Ada Brilliant, Dorothy, Terra Cotta, and J. Barnett ; Mr. T. Anstiss, eighth, with Alfred Grey, golden yellow, flaked scarlet, full ; Exile, soft yellow, feathered and flamed rose ; Mrs. Muir, Germania, and seedlings ; Mr. John Walker, ninth, with Mrs. R. Hole, Beauty of Brill, Sporting Lass, Joe Willett, and seedlings.

For six (thirteen stands), Mr. T. Lord, first, with Thalia, Sportsman, Gladys, Mrs. Prince, Tom Pinch, and Dodwell's 186 ; Mr. F. Nutt, second, with Germania, Budge, Mrs. Muir, The Moor, Almira, yellow, flaked rose pink, and Joe Willett ; S. Barlow, Esq., third, with Mrs. E. Weymess, Mrs. Prince, Van Dyke, Captain Cuttle, and seedlings ; J. Wynne Ffoukes, Esq., Chester, fourth, with Dodwell's 154, pale yellow, flamed rose ; Germania, Mrs. R. Hole, Mrs. Alford Hebe, Squire Pott's sport ; Mr. J. S. Hedderley, fifth, with Dodwell's 154, Janira, Mrs. Muir, Gladys, The Maestro, Royalty ; Mr. C. Phillips, sixth, with Gladys, Mrs. R. Hole, Brilliant, Germania, Robert Houlgrave, and a seedling ; Mr. H. Startup, seventh ; Mr. A. W. Jones, eighth ; and Mr. John Walker, ninth.

Yellow Grounds. Kilmurry Seedlings.—Six blooms (five exhibits), first : Mr. W. Read, with Alfred Grey, Tournament, primrose yellow, picoteed rosy red ; Patricia (premier bloom in the show), Queen of Hearts, Rachel, soft yellow, marked rose ; and Nancy, delicate primrose, picoteed with red down centre of petals ; Mr. G. Chaundy, second, with Alfred Grey, Queen of Hearts, Ursula, primrose, bright red markings, shell-shaped petals ; Patricia, Nora, primrose ; and Rachel ; Mr. T. Anstiss, third, with Alfred Grey, Exile, Nora, and seedlings ; Thomson and Co., fourth, with Rachel, Sovereign Lady, fawn apricot, full ; Queen of Hearts, Gretchen, pale straw, flamed rose ; and Patricia ; Mr. R. Sydenham, fifth, with Patricia, Rachel, Alfred Grey, Dulce, pale buff apricot, deeper centre ; and Rachel.

Any other Raiser's.—Six blooms (twelve stands) : Mr. W. Read, first, with Shadrath Bail, Germania, Dodwell's 167, 604, 186, and 1,890 ; Thomson and Co., second, with Colonial Beauty, Germania, Terra Cotta, Dodwell's 167, Rachel and Agnes Chambers ; Mr. G. Chaundy, third, with Ada, Queen of Hearts, Mrs. R. Hole, Dodwell's 192, and seedlings ; Mr. A. R. Brown, fourth, with Mrs. R. Hole, Lady Edwards, Pride of Penshurst, Dodwell's 192, rich primrose faintly picoteed rosy-red on white, and Dodwell's 485 ; Mr. R. Sydenham, fifth, with Dodwell's seedlings 167, 191, 192, 154, soft yellow flamed rose, extra good form, Ada, and a seedling ; Mr. J. S. Hedderley, sixth, with Exile, Germania, Tournament, Patricia, and Dodwell's 154, 192 ; Mr. T. Anstiss, seventh, with Mrs. R. Hole, Alfred Grey, Nora, Germania, Mrs. Hooper, and Dodwell's 191 ; Mr. F. Nutt, eighth, with Duchess of Teck, Germania, Almira, Annie Douglas, Nancy, and Tournament ; Mr. C. Phillips, ninth, with Almira, Dorothy, Terra Cotta, Annie Douglas, Germania, and Ada.

Specimen Carnations.—First, Thomson and Co., with Germania ; second, Mr. W. Read, with Gladys ; third, Mr. G. Chaundy, with deep rose self ; fourth, Mr. W. Read, with white self 626 ; fifth, Mr. H. Geggie, with Mrs. Lee, white self.

Scarlet Bizarres.—First, Thomson and Co., with C. H. Herbert ; second, Mr. W. Read, with Robert Lord ; third, Mr. G. Chaundy, with Seedling ; fourth, Mr. W. Read, with R. Houlgrave ; fifth, Mr. M. Rowan, with R. Houlgrave.

Crimson Bizarres.—First and second, Mr. M. Rowan, with J. D. Hextall ; third, Mr. W. Read, with William Read ; fourth, Mr. R. Sydenham, with J. D. Hextall ; fifth, Mr. J. S. Hedderley, with Master Fred.

Pink Bizarres.—First, Mr. T. Lord, with Eccentric Jack ; second, Mr. R. Sydenham, with John Harrison ; third, Mr. J. S. Hedderley, with Wm. Skirving ; fourth, Mr. M. Rowan, with Sarah Payne ; fifth, Mr. J. Edwards, with Sir Garnet Wolseley.

Purple Flakes.—First and second, Mr. M. Rowan, with Gordon Lewis ; third, Mr. R. Sydenham, with Seedling ; fourth, Mr. H. Geggie, with Seedling ; fifth, Mr. J. Edwards, with Sarah Payne.

Scarlet Flakes.—First, Mr. M. Rowan, with John Whitham ; second, Mr. M. Rowan, with Matador ; third, Mr. J. S. Hedderley, with Sportsman ; fourth, Mr. W. Read, with Dodwell's 727 ; fifth, Mr. G. Chaundy, with Sportsman.

Rose Flakes.—First, Mr. J. Lakin, with Mrs. Gibson ; second, Messrs. Thomson and Co., with Robert Thomson ; third, Messrs. Thomson and Co., with Thalia ; fourth, Mr. H. Geggie, with Dodwell's 125 ; fifth, Mr. M. Rowan, with Thalia.

Picotees.—White Grounds.

Broad Edge Red and Shades.—First, Mr. W. Read, with Dodwell's 784 ; second, Mr. M. Rowan, with Mrs. Sharp ; third, Mr. W. Read, with

Dodwell's 680; fourth, Mr. M. Rowan, with Edith D'Ombrain; fifth, Mr. R. Sydenham, with Dr. Epps.

MEDIUM EDGE RED AND SHADES.—First, Mr. M. Rowan, with Mrs. Payne; second, Mr. M. Rowan, with Nellie; third, Mr. A. W. Jones, with Miss Horner; fourth, Mr. W. Read, with Nellie; fifth, Mr. R. Sydenham, with Lady Holmesdale.

LIGHT EDGE RED AND SHADES.—First, Mr. G. Chaundy, with Favourite; second, Mr. W. Read, with Favourite; third, Messrs. Thomson and Co., with Mrs. Herbert; fourth, Mr. A. W. Jones, with Thomas William; fifth, Mr. M. Rowan, with Mrs. Gorton.

BROAD EDGE PURPLE.—First, Mr. W. Read, with Amy Robsart; second, Mr. R. Sydenham, with Mrs. A. Chancellor; third and fourth, Mr. A. W. Jones, with Muriel; fifth, Mr. J. S. Hedderley, with Muriel.

MEDIUM EDGE PURPLE.—First, Mr. M. Rowan, with Muriel; second, Mr. W. L. Walker, with Muriel; third, Mr. M. Rowan, with Mary; fourth, Mr. A. R. Brown, with Juliette; fifth, Mr. T. Anstiss, with Baroness Burdett-Coutts.

LIGHT EDGE PURPLE.—First, Mr. R. Sydenham, with Clara Penson; second, Mr. A. W. Jones, with Clara Penson; third, Messrs. Thomson and Co., with Clara Penson; fourth, Mr. A. W. Jones, with Clara Penson; fifth, Mr. R. Sydenham, with Clara Penson.

SPECIMEN CARNATIONS, SELFS, &c.—First, Mr. J. Nutt, with Germania; second, Mr. G. Chaundy, with Germania; third, Mr. W. Read, with Queen of Hearts; fourth, Mr. W. Read, with Germania; fifth, Mr. G. Chaundy, with Queen of Hearts.

PREMIER BLOOMS.—Carnation, Messrs. Thomson and Co., for C. H. Herbert; picotee, Mr. W. Read, for (heavy rose edge) Little Phil; self, Mr. F. Nutt, for Germania; fancy, Mr. W. Read, for (yellow ground) Dodwell's 166; yellow ground, Mr. W. Read, for Patricia.

DINNER-TABLE DECORATIONS.—First, Mrs. G. B. Dodwell; second, Mr. W. Hovell, Headington Hill Gardens; equal thirds, Messrs. Thomson and Co., and Mr. W. Wardill, Luton. Hand Bouquet of Carnations: First, Mrs. G. B. Dodwell; second, Mrs. W. Gawn; third, Mr. T. Anstiss; extra prizes to Mr. John Walker and Mr. W. Hovell. Six Button-hole Bouquets: First, Mrs. G. B. Dodwell; second, Mr. John Walker; third, Messrs. Thompson and Co.; extra prize, Mr. T. Anstiss.

THE LUNCHEON.

This was held in a marquee erected in the playground of St. John's School, Iffley Road, by permission of the Warden (Rev. R. M. Benson) and the headmaster (Mr. Robert Thomas). Ald. Buchell presided, and those present included Mrs. Buchell, Mr. and Mrs. S. Barlow (Castleton, Manchester), Mr. and Mrs. E. S. Dodwell, Dr. Guinness, Miss Guinness, Mr. and Mrs. Arthur Guinness, Miss Chivers (Bath), Mrs. Chatterton, Mr. and Mrs. Anstiss (Brill), Mr. H. Carter, Mr. W. Greenaway, Mr. C. Ridley, Mr. and Mrs. A. Medhurst (Oxford), Mr. W. Hovell (Headington Hill Hall), Mr. R. Taylor (Sulgrave), Mr. W. Bacon (Darley), Mr. W. Wardell (Luton), Mr. J. Edwards (Manchester), Mr. and Mrs. W. McKenzie Bradley (Exmouth), Mr. and Mrs. Henry James (Oxford), Mr. J. S. Hedderley (Bulcote, Notts), Mr. W. M. Hewitt (Chesterfield), Mr. J. T. Ridley (Newbury), Mr. T. Lord (Todmorden), Mr. J. Gibson (Reading), Mr. J. Payne (Oxford), Mr. F. Bower (Bradford), Mr. C. Henwood (Reading), Mr. H. Gould (Elsfield), Mr. C. Green (Stanton House), Mrs. Wentworth Austin, Mr. L. Walker (Reading), Mr. R. Dean (Ealing), Mr. A. H. Dodwell, Mr. G. Bryceson (London), Mr. T. Hewitt (Solihull), Mr. T. Bower (Bradford), Mr. A. W. Jones, Mr. J. Pope, Mr. R. Sydenham, Mr. W. Spinks, Mr. C. H. Herbert and Mr. J. E. Osborne (Birmingham), Mr. W. P. Wright (London), Mr. J. Whetham (Hebden Bridge), Rev. C. E. Moberley (Oxford), Rev. John Rippon (Brill), Mr. W. Adams (Shrewsbury), Mr. G. Rudd (Birmingham), &c. At the conclusion of the luncheon,

The Chairman proposed "The Health of the Queen," other loyal toasts being included.

Mr. Barlow submitted "The Mayor and Corporation," remarking that it would be a great breach of manners to leave that venerable city without proposing and drinking the toast. In old times Oxford achieved considerable renown as a city, and he had not the slightest doubt that under its new and enlarged government, even greater achievements were in store for it. (Applause.) County Councils had some defects, and he did not think for some time to come the work would be better for the ratepayers as regarded cheapness. In all the renown Oxford had won, it had never seen so many carnations in one garden as on that day—(applause)—and if anyone doubted his word, he would ask them to go to Mr. Dodwell's garden and see for themselves. (Cheers.)

The Chairman, in response, was sorry the Mayor was unable to be present at that most interesting gathering. During his own year of office he did not remember any one day which he enjoyed more than that he spent with the friends of Mr. Dodwell in visiting the charming show of that year. On behalf of the Mayor and Corporation, he was sure they were glad to welcome at all times visitors, and among them none more so than the florists. (Applause.) In proposing the toast of "The Judges," the Chairman said there was no more delicate and responsible office that a man could possibly undertake than that of being judge. (Hear, hear.) He coupled with the toast the names of Mr. Shaw, Mr. Hewitt, and Mr. Ball. (Applause.)

These gentlemen having briefly returned thanks,

Mr. Dodwell proposed "The Exhibitors," and said it had pleased God to send them a season that had been trying beyond all former precedent in his life-long knowledge. He could remember no season during which they had so many of the plagues of Egypt during June and July. They had no sun, or if they got it it was a blistering sun, then blighting nights, baneful wind, green fly, thrip, and every form of trial that affected the florist came upon them and oppressed them. Nevertheless, there they were, on the 5th August, with a very good show, a great many glorious flowers to look upon and rejoice in, and, he trusted, to thank God for. But God worked by His instruments, and that day it was the exhibitors. He therefore proposed their health. (Applause.)

Mr. Rowan, in response, said the exhibitors had a reputation to sustain, and that exhibition was becoming *the* great show of the Midlands. (Hear, hear.)

The Chairman proposed "The Press and Art," and said he was glad to see such a juxtaposition, and that it was very apt and suggestive. Naturally florists must be lovers of the beautiful, and the beautiful and art were always associated together.

Mr. James responded for the Press, and Mr. Arthur Guinness, who was called upon to respond for "Art," recited a piece entitled "Love in a Balloon," from *Once-a-Week*, and being encored gave Sir Walter Scott's "Young Lochinvar," which was also much appreciated.

Mr. Walker proposed "The Carnation and Picotee Union," and with regard to its growth, said their treasurer had to increase the accommodation each year, both for the show, and also for the luncheon. He hoped the union might flourish, and carry out the object for which it was founded, namely, the promotion of the cultivation of the carnation and picotee. (Hear, hear.)

Mr. Barlow, in absence of the president (Mr. James McIntosh), acknowledged the toast, and said he might tell the gentlemen of the south that they knew nothing about weather. (Laughter.) Since the end of May they in the north had scarcely seen the sun, and the flowers, instead of opening generally, had rotted. He thought the Council of the Oxford Carnation and Picotee Union might well congratulate themselves upon the success it had achieved. He had not the figures, but he thought he was right in saying that both in membership and subscriptions there was an advance upon all preceding years. (Applause.) During the year several questions had been raised in the papers, and it had been the desire of some of their friends to extend the basis upon which they received flowers for adjudication. Although he desired the strict line of the old florist rules, yet he would have no objection to another line of rails being laid down, and another train run alongside. All of them had, no doubt, seen the beautiful yellow grounds which old florists seemed to think little of. What they wanted was a white ground as pure as possible, yellow grounds being looked upon as innovations, but so much advance had been made in the quality of the flowers that they could now invite them to the exhibition, where they would be an additional beauty and interest. (Hear, hear.)

Mr. E. S. Dodwell proposed "The Visitors," and said it was an especial pleasure to him in his old age, when infirmity laid heavily upon him, and he was totally unable to go into the world and meet friends, that so many friends came to see him. (Applause.)

The Rev. J. Rippon acknowledged the toast, and said he had been a visitor for five years in succession, and had always been received by Mr. Dodwell with the greatest kindness.

Mr. Barlow introduced the toast of "The Ladies," which was acknowledged by the Chairman.

Mr. E. S. Dodwell proposed "The Health of the Chairman," saying he was the best of chairmen, a jolly good fellow, and a man whom they hoped to meet through all time. (Applause.)

The Chairman briefly acknowledged the toast, and trusted they would all meet again.

This concluded the toast list, and many of the company returned to Mr. Dodwell's garden, and again enjoyed the display.

Law.

RIGHT OF ACCESS TO A GARDEN.

IN the Court of Appeal, July 29, before the Master of the Rolls, Lord Justice Lindley, and Lord Justice Bowen, WILKES v. GREENWAY was an appeal from the decision of Mr. Justice Vaughan Williams, and raised a point of considerable novelty and interest. The defendant had acquired, by occupation for 12 years, a title, under the Statute of Limitations, to two gardens at Wolverhampton, of which the plaintiff had been the owner. The plaintiff still owned the land bounding these gardens on the north and east, and also owned a private road which was the only means of approach to the gardens, and which had always been used by the defendant. The plaintiff claimed an injunction to prevent this user of the road, contending that, although the defendant had acquired a title to the land, he had not acquired any right of way over the road, since the Prescription Act required an uninterrupted user for 20 years for the acquisition of such an easement. The learned Judge, having taken time to consider the question, gave judgment for the defendant, holding that since a defined way was necessary to the enjoyment of the gardens, the law would presume that somehow or other, by legal means, by grant, or otherwise, that right of approach must have been created without which possession could not have been taken. The plaintiff appealed.

Mr. Bosanquet, Q.C., and Mr. R. E. C. Kettle appeared for the plaintiff; and Mr. Jelf, Q.C., and Mr. Hickey for the defendant.

The Court took time to consider the question, and this morning delivered judgment allowing the appeal.

The Master of the Rolls read the judgment of the Court as follows:—In the present case the parties have admitted, though upon what facts or what view of the law we do not know, that the defendant has acquired a title in fee simple in possession, under the Statute of Limitations, to the two plots of land. If we were to go behind this admission it would be important to inquire into the character of the possession which the defendant has had during the statutory period, with a view of seeing whether (having regard to the only possible approach to these premises) his possession even of them can have been such as to satisfy the statute. But we do not propose to reopen the matter which the admission covers, and the admission, whether based upon an accurate conception of the rights of the parties, will be now treated by us as binding for the purpose of this appeal. Nor do we know (for we are not told) under what circumstances the approach to these premises has been used, whether under such circumstances as to have been enjoyed under some contractual right, or by permission, or by way of trespass only. The one point argued before us has been whether, assuming the premises to have passed to the defendant by virtue of the Statute of Limitations, a right of way over this approach inevitably came into existence over the plaintiff's remaining land as a way of necessity, and as distinct from any other way. This point may be one which only becomes possible either on a statement of facts that is incomplete or assumptions of law that are not certain. On the hypotheses, however so presented to us, and without further knowledge of the facts, we can only say that there is nothing in the Statute of Limitations to create ways of necessity. The statute does not expressly convey any title to the possessor. Its provisions are negative only. We cannot import into such negative provisions doctrines of implication that would naturally arise where title is created either by express grant or by statutory enactment. The title to the premises is not a title by grant. The doctrine of a way of necessity is only applied to a title by grant, personal or Parliamentary. Upon the hypotheses we are obliged to assume the title to the right of way can only be maintained if the statute gives it, which statute, however, does not apply to a right of way. It is not contended that the statutory enactment as to easements applies. We are therefore unable to agree with the learned Judge below, but we regret the way in which this question has been raised upon the admissions before us, a way which tends by its incomplete statement of facts and somewhat doubtful hypotheses rather to confuse than to elucidate the law.

THE KEW COLLECTION OF BRITISH FERNS.

By Charles T. Druery, F.L.S.

(Continued from page 462.)

The Hart's Tongues now come to the fore by way of a change, but the wondrous variety of form into which nature has transmuted the mere strap of the common type is but sparsely represented. We have already seen one of the finest in the frilled Hart's Tongue (S. v. crispum), which, strange to say, though absolutely barren of spores, so that every independent wild plant constitutes an independent sport, has been found over and over again. Col. A. M. Jones, whose connection with this collection must never be forgotten, records his finding twelve plants in one lane on one occasion, and on another, no less than seventeen, all barren. Yet, as he truly says, "the discovery of half a dozen plants by the same hunter is generally considered the work of a life." At this point we find the following marked varieties, S. v. laceratum, sometimes called endivæfolium from a supposed resemblance to endive leaves. Here the Hart's Tongue seems trying to become divided like its feathery brethren, and in the effort sends out long and sometimes crested projections from the base and either side of its fronds, finishing up with a fine heavy tassel at tip. S. v. variegatum comes next, a yellow and green variety, and S. v. peraferens, a very odd form in which every frond terminates abruptly in a sort of pocket, the midrib projecting like a thorn. S. v. marginatum tenue, a very narrow form, and S. v. ramosissimum, a fine branched variety complete the series. On the top of the second slope of rockwork here Athyrium f. f. rhoeticum reflexum must not and indeed cannot be overlooked, so curious a sport is it, the pinnæ being all rolled into tubes and twisted to boot, giving the plant the oddest conceivable appearance. A dense and compact Shield Fern (Polystichum ang. proliferum densum), makes a fine contrast, and is one of the numerous representatives of this species in which little plants are developed along the midribs. This facilitates so much their propagation that various forms ought to be much more generally used as decorative plants. As it is, one only and that an inferior one, is popularly known (P. ang. prolif. Allchinii.)

Here in the foreground we see a few specimens of the Hard Fern (Blechnum spicant), of which the common form figures fairly healthily next the path, though the few varieties in the recess are obviously out of their element. B. s. contractum, with fronds narrowed half way up, and B. s. trinervium coronans, a charming form with neat star-like crests hence hardly attract the attention they merit. A more sheltered and damper position would bring out their character better. At the back of this rocky recess, snugly located under the protection of the trees and shrubs of the background, is a grand group of Shield Ferns, mainly of Col. Jones's contribution and embracing the very cream of the best types. As it is impossible to convey by description any definite idea of their delicate, yet distinct divergences, nor yet allude to many which are located beyond the reach of general investigation, we will merely name the most conspicuous and indicate their salient features.

P. ang. grandiceps ? (Jones) Enormous spreading crests many inches wide. P. ang. revolvens, fronds like tubes, pinnæ being rolled back. P. ang. tortuosum, twisted and erect, resembling the Irish Yew. P. ang. pendens, broad drooping fronds with large pinnules. P. ang. cristatum gracile, even pinnules crested. P. ang. divisilobum deltoideum, finely cut broad triangular fronds. P. acul. cruciatum, one of Mr. E. J. Lowe's singular hybrids between P. angulare cruciatum and a dense form of P. aculeatum, into which species the cruciate character was conveyed. P. ang. multilobum ovale, charmingly divided. P. ang. parvissimum, a small-growing, dense form, but christened when too young, being by no means the smallest of the tribe. P. ang. frondosum Jones, splendid leafy fronds. P. ang. rotundatum, unique, pinnules round, or nearly so; and finally, as a fitting climax, P. aculeatum pulcherrimum, incomparably the loveliest form of that species, though the specimen here is a little too much exposed to display its full delicacy of character. Strange to relate, this unique fern was found by a labourer in the garden hedge of one of our keenest and most successful fern hunters, the late Dr. Wills. It is quite barren, and very rare and precious. In the recess in the foreground two new acquaintances meet our eye, viz., the Marsh Buckler Fern (L. thelypteris) and the tasselled Royal Fern (Osmunda regalis cristata). This latter was another surprise, the original being bought as a common plant with others in a dormant state for a few pence; in the following spring £25 was bid and refused for it immediately its character appeared. Both these last-named species, like the Hard Ferns and the Mountain Lastreas show that the position here is a trifle too dry for luxuriant growth. A fine example of the Moonlight Male Fern is a conspicuous object in the right centre of this recess.

The path now trends to the left towards Cumberland Gate. Still pursuing it we see a very handsome Broad Buckler Fern (L. dilatato crispata cristata), with crispy crested fronds; A. f. f. laciniato cristatum, a prettily-cut and tasselled Lady Fern; and a fine plumose-looking Shield Fern, P. ang. frondosum, the last contrasting strongly with its neighbour, P. ang. lineare polydactylum, an irregularly tasselled cross, interesting botanically as showing its double parentage most convincingly by retaining the irregular tasselling of one parent, which always throws a few plain pinnæ amoug the tasselled ones, and the defective central pinnules of the other. This is a type in our opinion of the crossing to be avoided, as with so many perfect and symmetrical forms to choose from the selection of imperfect ones is strongly to be deprecated, leading only to a multiplication of defective hybrids instead of improved and higher types of symmetrical beauty. Close by will be perceived without any searching the most striking Athyrium of the whole collection, A. f. f. plumosum divaricatum, whose heavy, dense, yet delicately-cut fronds merit close inspection. It holds, however, first place only by virtue of its robust growth; fine as it undoubtedly is, it is beaten at all points by A. f. f. plumosum elegans Parsons, of which the specimen here is, as we have observed, small and not so well established. Close by are P. ang. foliosо decompositum, another of the finely-cut plumose Shield Ferns, of which so many figure here, and P. ang. Bayliæ, with long, slender, finely-pointed divisions. Two Lady Ferns follow, A. f. f. orbiculare, with crests like mossy cricket balls, and A. f. f. gemmatum, denser still, and finer in its ultimate divisions. P. ang. decompositum is worth looking at, and so is P. ang. rotundatum polydactylum, a cross between the round pinnuled form we have recently examined and the irregular crested one at which we have had our grumble. A. f. f. cristatum densum, another noteworthy Lady Fern, leads us on to the absolute King of the Shield Ferns, P. ang. divisilobum plumosum densum (Jones), a terribly long name, but that is a royal peculiarity, though unfortunately among plants by no means a prerogative. This fern is the joint product of nature, Colonel A. M. Jones, and his colleague, Dr. E. J. Fox, and is incomparably the finest cut and most beautiful yet raised, or at any rate that we have seen. This originated with others closely akin from spores of a far inferior wild find of Colonel Jones, so inferior, indeed, that when Dr. Fox, who raised the batch, referred them to their parent, and quoted his register as proof, Colonel Jones could not credit it, and it was only when a second sowing produced like results that he was convinced. It is therefore the direct offspring of a wild find. Two others of the batch, "laxum" and "robustum," are also gems of first water. We are indeed informed that the latter has recently threatened to usurp the throne.

We now return to our original starting point, to which we are in close proximity, in order to take stock of the more noteworthy varieties occupying the long bed on the right hand of the central path. A fine group of Shield Ferns of the decomposite or divisilobe series first attract notice, P. angulare divisilobum acutum, lineare, foliosum, and densum, all similar in general appearance, but distinct in detail. Close by are P. ang. brachiato cristatum, a singular form with very wide basal pinnæ, forming in some cases trident-shaped fronds, and P. ang. tortocristatum Padley, with twisted crests. The chief species, however, represented in this bed we speedily find to be the Lady Fern, of which there are so many fine varieties that we must perforce put them into list form in the order of their appearance, attaching to each a brief description.

A. f. f. glomeratum, heavy terminal bunchy crests.
A. f. f. grandiceps, akin to last, but with red stems and different cutting.
A. f. f. Tyermannii, another heavily crested form, but with pinnæ reduced to knobs.
A. f. f. plumosum elegans, two specimens of this charmingly cut form, best plant close to path.
A. f. f. orbiculare, already noted in rockery.
A. f. f. Vernoniæ cristatum, a gem; note the peculiar crispy make of pinnæ.
A. f. f. regale, well named, splendidly crested.
P. ang. alato revolvens, a curious form with recurved pinnæ, forming the fronds nearly into a tube.
A. f. f. reflexum, pinnæ tube-like; compare with A. f. f. rhoeticum reflexum later on, which is a much better form.
A. f. f. acrocladon densum, a specially marked sub-variety of acrocladon, and one of the most striking of all the Athyria; a dense mass, more like a bed of fine moss than a fern; compare with the old acrocladon (its parent) a few yards further on.
A. f. f. canaliculatum, heavy twisted crests, with peculiarly hollowed midribs.
A. f. f. curtum, an old dense growing variety.
A. f. f. Girdlestoneii, all central pinnules reduced to small knobs, very distinct and pretty.
A. f. f. Vernoniæ corymbiferum, a little gem; the peculiar Vernoniæ crispiness should be observed.
A. f. f. torto cristatum, peculiar heavy twisted tassels.

Here are two contrasting Polystichums worthy of note:—

P. ang. div. densum and P. a. lineare, one the very antithesis of the other.
A. f. f. laxo cristatum, large plants with wide set pinnules and small crests, graceful and distinct from all around it.
A. f. f. cruciato cristatum, heavily crested form of Victoriæ.
A. f. f. sub-plumosum ramulosum, finely crested with dilated pinnules.
P. acul. grandiceps, an exceptionally fine form of this species, pinnæ crested.
A. f. f. Fieldiæ, cruciate pinnæ, truncate fronds, very distinct.
A. f. f. Elworthii, finely crested memento of one of our fern pioneers, Mr. Elworthy; even the pinnules crested.
A. f. f. flexuosum, fronds and pinnæ twisted, latter like tubes.
A. f. f. purpureo corymbiferum, splendidly crested, red stalked variety.
A. f. f. stipitatum, beautiful congested form, narrow pinnæ; peculiar name for such a form.

At and about this spot will be observed a large number of polydactylous Polystichums of various types, all of which are obviously the result of crossing numerous non-crested varieties with the one polydactylous form to which we have already alluded, and as this form is characterized by bearing irregular tasselled pinnæ, together with a few plain ones on every frond, though it is interesting to observe throughout the group how persistently this imperfection is transmitted, not a single frond being without a few normal pinnæ, yet this constitutes so grave a defect that we must decline to name them in the list of our *élite*.

A better claim upon our admiration have

A. f. f. Vernoniæ crispum, the crispy Vernoniæ character increased.
A. f. f. congestum polydactylum, dense dwarf and crispy form.

A. f. f. Vernoniæ cristatum (Jones), a different form from the one already referred to of same name; red stems.

Here intervene a very narrow and cruciate form of Polystichum angulare, P. ang. Wakelyanum, and a prettily crested Common Bracken (P. aquilina cristata).

A. f. f. crispum cristatum, dense pretty form.
A. f. f. cruciatum minus, a curious reduction of the Victoriæ type.
A. f. f. rhoeticum reflexum, a most striking form, duplicate already seen in rockery, but worth the nearer inspection permitted here.
A. f. f. conioides cristatum, a crispy gem, à la Vernoniæ; pinnules crested.

One of the late Mr. Carbonell's finest legacies, P. ang. stipulatum, here figures as a grand plant; certainly one of the handsomest of all. L. filix mas polydactyla and L. pseudo mas subcristata here permit a close inspection of the difference of these two subspecies of male fern.

(To be continued.)

LILIES AFTER FLOWERING.

Nearly all lilies cultivated in pots—or, for that matter, those grown in the open ground—should be repotted or taken up and transplanted as the case may be, very soon after they go out of flower. This is especially necessary with those of the Lancifolium type and L. candidum. Indeed the same remarks apply to L. auratum. They all begin to make new roots very soon after the flowers fade. For that reason it is necessary to do what is required to be done to them before fresh root formation commences. Unless the cultivator has watched the behaviour of the bulbs repotted both before and after new growth commences he cannot have any idea what a difference it makes in the strength of the stem, and consequently in the number and size of the flowers. Those repotted at the proper time are always much more vigorous than those which are neglected. Referring chiefly to those grown in pots, I may remark here that the plants should receive the same amount of attention after they go out of flower with regard to water as they did before. The flower stems should not be cut down as is too often the case, all the time they are green. The proper treatment is to allow the stem to die away in its own manner, it may then be removed without injuring the bulb. With regard to soil, I have found that the character of loam varies so much in different places that I always advocate using a third part peat with the loam to keep it open and sweet. At the same time I am aware that loam of a friable character with only some sand mixed with it will grow lilies in the most satisfactory manner.

Lilies suffer a good deal in the early summer months if they are overpotted. When they are in that condition the soil gets sodden with moisture which causes some of the young roots to rot. Good drainage and medium-size pots are prime necessities for successful lily culture. Even the beautiful golden-rayed lily (Lilium auratum) will make a good spike of flowers in a six-inch pot, and so will that charming variety, L. Harrisi, better known as the Easter Lily. Of course, a good deal will depend on the size of the bulb what number of flowers will be produced, but given a sound bulb of fair average size, according to the variety, it is better to use rather small pots than large ones.

In dealing with lilies amateurs and inexperienced people make a grievous mistake by keeping the soil about the roots quite dry during the winter, which is decidedly wrong. It should be remembered that the roots of lilies are always more or less active. Therefore, to keep them without moisture is to endanger their lives; or if not so bad as that, it will make them so weak that they will be a long time in getting over it. The best position for lilies in pots during the winter is in a cold pit, or standing on the floor of a cool house. A dry shelf or a stage is the worst, and, as a last word, I will say there are too many dry shelves and stages in the world for the welfare of many of the plants that are now grown upon them. Liliomaniac.

Proposed Memorial of the late Mr. B. S. Williams.—Interest in the proposed memorial of the late Mr. Benjamin Samuel Williams, of the Victoria and Paradise Nurseries, has acquired force since our reference to the subject a fortnight since, and the desire to participate in it appears to have greatly extended. A meeting of horticulturists is announced to be held in the Hotel Windsor, Westminster, on Tuesday next, August 12, at 2 p.m., when, probably decisive steps will be taken to give form and purpose to the proposal. A circular has been published, from which we learn that "it is proposed to establish a 'Williams' Memorial Fund,' to provide, at horticultural exhibitions, money prizes and certificates for the encouragement of the cultivation of stove and greenhouse plants and orchids; these prizes and certificates to be competed for in the usual way." It is added that "To carry out the proposal, a committee is in course of formation, to include representatives of all horticultural interests associated with, or related to, the special sphere of activities of our late friend, who was especially distinguished as an importer, cultivator, and raiser of tender exotic plants, to which the proposed memorial prizes would especially apply. The committee will collect subscriptions, advise on procedure, and in all convenient ways promote the completion, with all reasonable speed, of a fund sufficient for the purposes indicated." It is desired that communications on the subject be addressed to H. J. Veitch, Esq., 544, King's Road, Chelsea, S.W.; or Shirley Hibberd, Esq., Kew, near London.

GRAPE GROWING.

The most successful example of grape growing on a large scale that is to be met with in the west of England, or for that matter, perhaps, anywhere else, may be seen at the present time in Mr. Brown's nursery, St. Thomas's, Exeter. It consists of two large houses of vines that have been planted three years. For convenience sake, I will refer to each house separately. The first is a substantial span-roof structure, 90 feet long and 18 feet wide. This is planted with black Hamburghs. All the roots are inside, and the rods four feet apart. There are close upon 700 bunches of grapes in this house. The average weight of each bunch is estimated to be 2lbs., so that a little calculation will show the reader the aggregate weight of the whole. It is not, however, the weight of the produce that is so satisfactory, but altogether the vines are in such magnificent health that one feels that they could never tire in admiring them. The size of the berries is as satisfactory as the dimensions of the bunches, while the colour is a deep jet black that makes one anxious to know something of the treatment the vines have received. On that head I cannot enlighten the reader further than to say that they have been treated in a common-sense manner. Having seen the same vines in the year previous, I observed that Mr. Brown aimed at securing large and healthy leaves, in which he was successful. I do not remember an instance in all my travels of having seen vines carrying such magnificent foliage. The grand leaves that I saw last year were the forerunners of the splendid bunches of fruit produced this season.

Those who have any doubt about the functions of large and healthy vine leaves, or their capacity to increase the weight of the produce in succeeding years, cannot do better than go and see the vines under notice. If they do not come away convinced and edified I shall be very much mistaken. I ought to mention here that Mr. Brown is acknowledged to excel in plant-growing for market, therefore it is not surprising that he should succeed in grape-growing also. The lines on which he has worked to attain success comprised, in the first instance, the erection of suitable houses: the proportions, it will be noticed, are such as to afford ample room both for the roots and branches; and while the structures are substantial they are so constructed as to afford the maximum amount of light. The roofs being fixed, the squares of glass used are much above the ordinary size used for vineries, so that there is a perfect flood of light reaching every part of the house. As the houses used in the same nursery for plant growing are built on similar principles, no doubt the proprietor was influenced by his past experience as regards providing an abundance of light for his vines. If so, the result justifies his highest expectations. It is a commonly accepted opinion that vines do not object to big rafters and heavy sash bars with small squares of glass. The condition of the vines in the instance under notice demonstrates that they will do even better under the opposite conditions. However, the short, sturdy leaf-stalks and the thick, leathery foliage left no manner of doubt on my mind that the treatment the vines were receiving was right.

I have enlarged somewhat on this matter while saying nothing of the other house of grapes. I have done so because it occurred to me that what I had to say might be of service to those who intend to go in for grape growing for market. They could not have a better teacher than the one I have referred to, as here is a case where 700 bunches of grapes have been produced in the space of three years in one house, and looking at the high quality of the produce, the question as to whether grape growing will pay when well done is answered very decisively in the affirmative.

To return to the other house. I must here state it is 100 feet long, and the same width as the one first noticed. The whole of the space is filled with muscats. Here, also, the roots are all inside, and the canes the same distance apart as in the other house. In all there are about 300 bunches of splendid grapes, grand in size of both bunch and berry. In this house also the foliage of the vines strikes one as being very remarkable for its large size and stout texture. I could say much more about the size of the wood and the clean, healthy growth, but it must be seen to be properly appreciated. The large, well-shouldered bunches I saw the same vines carrying last year quite prepared me for anything of a sensational character that might follow, for it did not want a very experienced eye to understand that the preparations for the roots had been of a substantial character.

I do not remember ever having seen a more successful example of grape growing, whether from a commercial point of view or any other. As there are many men who are starting in this business, I hope what I have written may be of some use to them. J. C. Clarke.

The Nurseries of Messrs. James Backhouse and Son, York, recently reported on in G.M., presents some excellent examples of the glass structures introduced to public notice of late years by Messrs. W. Richardson and Co., of Darlington. We have had the pleasure to award medals and certificates to Messrs. Richardson for these structures when they have been exhibited at meetings of R.H.S. and other societies, having observed how admirably mechanical leverage and structural proportion have been studied to ensure the utmost cubical capacity with unobstructed light and abundant ventilation, with economy of material and rigidity. In our report on the nurseries we omitted by an accident reference to the range of new houses, 450 feet in length, lately erected there by Messrs. Richardson; but we find in our notes special reference to them as admirable constructions of their class, to which our attention was directed at the time of our visit.

MESSRS. LANE AND SONS' NURSERIES, BERKHAMPSTEAD, HERTS.

The first impression of a visitor to Messrs. Lane and Sons' famous nurseries at Berkhampstead, is that they are scattered all over the world. But after driving about and compassing them all, we arrive at the comfortable conviction that they are within the grasp of one day's peregrination with the aid of a fiery steed, and large wheels to make the dust fly. In the town itself are the home nurseries, snugly embowered in sheltered vale with a river to supply water and water-cresses; and to maintain that under filtration that has often been regarded as one of the causes of the special productiveness of the great vineries there. In these home nurseries may be found all the beautiful trees and shrubs that are valued in parks and gardens; collections of conifers, deciduous trees, flowering shrubs, hollies, ivies, and though last not least, roses; for these nurseries have a fine ancient renown as a commercial home of the queen of flowers.

Many readers who have not visited Berkhampstead for some years, will be interested to hear once more of the great vineries. Well, the upper house, hitherto occupied with muscats is so occupied still, and there is the crop, a fact to be proud of. But the lower and longer house that used to be annually loaded to the full length of the rafters with Black Hamburghs, is relieved from the risk of the rafters giving way, for the grapes are no longer there; it is now a house of tomatos! Strange things happen, and the tomato is like the youth fresh from school, ruddy with health, pushing in disposition, self-assertive, and with a future that to all but himself is a grave problem. But sufficient for the day answers in an industry that can change its course to suit circumstances. First-class tomato culture pays fairly well, and here they should pay more than fairly well, for the place is packed as close as the mechanical possibilities will allow, and the plants are in the best of health and producing immensely. Perfection is the favourite variety, and perfection is the stamp of production, but considering the density of the plantation to keep them in such health as they are must demand more than ordinary care and vigilance. An underground river has its course at about a yard below the surface of this house, and one part of its course is visible, indeed, forms a dipping place, but whether this subterranean water helped the vines and now helps the tomatos, it might be rash to aver, although the rising of the moisture to the roots of the plants must be constant by the action of capillary attraction.

Near by on the other side of the public road is the late Mr. John E. Lane's orchard, and on the way up there is an interesting section of the top crust of the natural soil that the geologist will find interesting. There is a kind of upthrust of chalk topped by red gravel, and all about gravels, sandy loams and chalk alternate and mix, and constitute soils that to the eye appear unfit for vegetation of any except the coarsest and commonest kinds, but really prove to be sufficiently fertile for vegetables and fruits of all kinds and in places so well adapted for coniferous trees, rhododendrons, and roses, as apparently to have been specially prepared for them by nature. Mr. Lane's orchard all have heard of, and it is our duty now to report that the trees are in the best of health and there is fruit of some sort visible. Of small fruits the crops have been abundant, and none more so than gooseberries; of pears and plums there are but few; of apples there is a fair crop, more especially of Stirling Castle, Cellini, and Lane's Prince Albert. The last named is carrying a good crop; not a tree is barren, and as this sort has been largely planted, for the late Mr. J. E. Lane knew how well he might trust it, this year of general scarcity is a year of plenty as regards this variety at Berkhampstead. There is an abundance of nuts, and a sharp-eyed rustic found and led us to a bunch in which thirty-five nuts were counted.

The soil of this nursery is a gravelly loam containing an infinitude of stones. The trees are mostly standards of the old-fashioned type, and since they were formed they have had no pruning, or only so much interference with knife as unruly growth, or the death of a branch here and there might occasion. The situation is somewhat elevated and is decidedly breezy. Being lifted up and overlooking the happy valley where the river sparkles amid the greenery, it is admirably circumstanced for natural drainage and the constant movement of the air is protective in its way against both mildew and insect vermin. The experts have yet to learn the value of a "breezy" situation as one not liked by the moths and sawflies, and other insects that make war upon fruit trees, but while this admirable orchard is in mind, we mention the matter and leave the experts to think about it.

Another little drive takes us to another orchard, the newer venture of Mr. F. Q. Lane, who has every reason to be proud of his achievement. Here there are fewer kinds of trees than on the late Mr. J. E. Lane's piece, and the ground appears to consist of stones only. It really argues a fine courage in a man to plant such stony ground with thousands of trees and bushes intended for fruit production, but then our friend was bred and born here, and has learned the value of pebbles as a heritage of the family. Such profitable plums as Pond's Seedling, Victoria, Prince Englebert, the Czar, and Early Orleans are in favour here, and the trees are mostly standards with free open heads, and their leaders scarcely shortened. The undercrop consists of currants and gooseberries, and it is noticeable that in this stony ground black currants prosper and produce enormously, while of gooseberries, the crops of Gipsy Queen and Monarch were enormous; certainly the best we have seen this season. A considerable bulk of the gooseberries are marketed green, and probably they would all be so disposed of, but the quantity is so great that it is almost a necessity to leave some to ripen. This, like the other and older orchard, is in an open, breezy spot, and the trees are in perfect health, without a trace of insect enemies.

The grand feature of the business is the great nursery on Berkhampstead Common. Here in the midst of an enormous tract of furze that is wonderful for its glow of gold in the season, the plantations of coniferous trees and rhododendrons have extended and extended, so that to drive over them leisurely is a good day's work. On entering the place one is struck with the immense display of golden yews of all shapes, sizes, and patterns. All the established kinds are here in specimen form ready for the sudden decoration of a grand garden. But in addition there are plantations of seedlings of the most various character of growth and colour, the golden tone predominating, and including many of the most admirable habit that will greatly enrich our collections of ornamental trees whenever Messrs. Lane may elect to name them and send them out. A committee of experts might do some useful service here by selecting the seedlings best adapted to be named and propagated, although usually the nurseries that produce such things depend on their own resources generally for the judgment required in placing new varieties in the market.

All the useful and most of the rare and curious conifers are here in fine condition, and in all possible sizes from the seedlings of a few years' growth to the great specimens that are adapted for "immediate effect" in the hands of a skilful planter. The rarer piceas and pinuses make a grand show, and of the cheaper things that are planted in quantities there are great stocks that include all the best varieties. The periodical lifting of all trees and shrubs is a fixed rule of the business, and not a tree has a chance of making a gross growth fatal to removal. It is by adherence to this golden rule that nurseries acquire their fame as sending out trees that live and that are preferred by experienced purchasers to trees of larger growth obtainable, perhaps, at less first cost, but which, having been left too long on one spot, have become, properly speaking, immoveable, and more likely to die than live when transplanted.

In the remarks on rhododendrons in natural soil in our issue for June 14 last we spoke of the rhododendrons here as growing in a soil of clay and stones. Such, indeed, appears to be the case with the trees here, but we might add that the stones so preponderate that the clay that binds them together is like an accident rather than an incident of the business. Messrs. Lane have usually described the soil of Berkhampstead Common as "loam." The natural growth of the place is gorse, and gorse only. There are many gravelly tracts on the vast area, but the gorse covers all, and the soil is called "loam" for convenience. By "stones" we do not mean such as might be suitable for garden walks, for they are mostly of the size that would suit as missiles in rough warfare, and they might "rake them off" for ever and ever, and the general total would still appear to be undiminished. Yet in this soil the rhododendrons not only live, but grow, and not only that, but grow in a more satisfactory manner than in many kinds of peat. The growth is short, the crowns ripen perfectly, and the flowering is more profuse than the average of rhododendrons, whether on peat or any other soil throughout the country. There is absolutely no shade, and the pure air of the common favours a strong sunlight; while the rainfall does not exceed 28 inches, and in the last few years has not reached that figure. Nor is the mean temperature in any special degree favourable, for although the place is not characterized by excessive cold, the climate is a trifle cooler than that of London. It follows that the soil cannot be unsuitable, because the plants obtain no special help from other agencies.

The varieties grown include all that are of high renown in gardens, the later kinds being in full force and attaining here to the highest perfection of form and colour.

Other flowering shrubs commonly classed as "peat plants" thrive equally well on the "loam" here, and when lifted have ample masses of roots corresponding to their healthy heads. Amongst the miscellanies we noticed a remarkably fine example of Kalmia latifolia, with flowers of a deeper colour than ordinary, so deep, indeed, and of so rich a glow of purplish rose as to be worthy of a name and a place in the select list. But of extra good things of this kind there are too many in the place for particularization here, and we can only say to the curious in such matters that they may find some entertainment, and with it a fine breath of appetising air by making an exploration. To be sure, the flowers are passing away and even roses are fading, but the trees remain with their growth to testify that a mixture of clay and stones may have some virtues for those who know how to make use of them. Persons who are contemplating the purchase of peat for rhododendrons might do well to consider if the natural soil at their command is not sufficient for all the more desirable of the ericaceous shrubs that are commonly required in gardens. After all, probably nine-tenths of all the rhododendrons in the country, or say ninety-nine hundredths, are in the soil natural to the places where we find them; while many planters who have incurred great expense in importing soil for them have, in the course of a few years, found the artificial conditions adopted less favourable to the plants than the more simple procedure of trusting them entirely to the natural circumstances of the situation. Any moderately fertile pulverulent soil free from calcareous salts appears to be suitable for these plants, the chief peculiarity of which is not in their chemical but their mechanical requirements. They are peculiar in the hair-like character of their roots, which can as easily ramify amongst stones and grit in search of nourishment as in the readily yielding peat, leaf mould, and turf often provided for them; but cannot force their way into any stubborn material such as pure clay of a tenacious consistence. Often the artificial soils provided fail entirely because too homogeneous in character, the result being that decay converts them into a sour pasty mass, which might probably be obviated by a very free admixture of stones, sand, or other siliceous grit.

New Plants, Flowers, and Fruits.

Carludovica Caput Medusæ (*B.M.* 7,118).—The native county of this fine plant is unknown, but is probably tropical America. The specimen figured flowered in the palm house at Kew in December, 1887. It is a dark green stemless plant, with leaves three or four feet long, the inflorescence a feathery mass in a spathe of the same colour, which is creamy grey.

Rosa multiflora (*B.M.* 7,119).—A pretty, small-flowered rose, native of Japan and Northern China. The leafage is distinct in the narrowness of the folioles, and the flowers are in a loose corymb, pink in the bud, pinky blush when expanded.

Hemiorchis Burmanica (*B.M.* 7,120) —An interesting gingerwort, with handsome green leaves and unattractive yellow flowers.

Tillandsia (Vriesia) amethystina *B M.* 7,121).—A Brazilian species, with handsome leaves and sulphur-coloured inflorescence.

Allamanda violacea (*B.M.* 7,122).—An interesting and beautiful plant, probably the same as *A. Blanchetti*. It is the first purple-flowered species known to gardeners, and was in cultivation thirty years ago, but was soon afterwards lost. A plant flowered at Kew in September, 1889, the flowers being of a soft rosy purple colour.

Lueddemannia Pescatorei (*B.M.* 7,123).—A robust habited orchid allied to Cycnoches, native of New Grenada. Flowers in large racemes; dull red and yellow, unpleasantly scented.

Bignonia Rugosa (*B.M.* 7,124).—A free growing climber, native of the United States of Colombia; flowers, pale yellow.

Masdevallia Carderi (*B.M.* 7,125).—A small species with pendulous campanulate flowers, white with red base and red horns.

Asarum caudigerum (*B.M.* 7,126).—An unattractive and uninteresting plant of dwarf growth with curious inflorescence.

Hakea laurina (*B.M.* 7,127).—A striking protaceous shrub known in the Riviera as the "sea urchin" in allusion to its globose blood red flowers adorned with golden exserted styles.

CYPRIPEDIUM YOUNGIANUM.

Hybridists are as diligent as ever in their operations among the Lady Slipper orchids, and one of their most recent additions is a handsome plant bearing the above name. It was raised in the nurseries of Messrs. Sander and Co., St. Albans, from C. superbiens and C. Roebeleni, the latter being the pollen parent. At the meeting of the Royal Horticultural Society in the Drill Hall, July 8, it was exhibited and generally admired, receiving an award of merit as a recognition of its value.



CYPRIPEDIUM YOUNGIANUM.
(Engraved from a drawing by Mr. John Weathers.)

C. Youngianum may be said to be intermediate between its two parents, as certain characteristics of each of them is at once noticeable to a practised eye. The leaves are light green, having the upper surface traversed by longitudinal darker green lines, which are connected by means of dark bars. The strong, dull purple pubescent scape of the plant in question bore two large flowers and, curiously enough, besides the usual bract at the base of the ovary, it also had another in the shape of a young leaf about a third of the way up. But this was probably an abnormal state of affairs which is unlikely to occur when the plant blooms again. The upper sepal is creamy-white, tinged with green at the base, and handsomely marked with dark madder-brown stripes, while each of the intervening spaces is decorated with a row of spots of the same colour. The lower sepal is not so large; it is white with pale green stripes. The petals remind one very much of those of C. Morganiæ, but they are not so long nor so broad as in that fine hybrid. They are also white, flushed with rose at the margins, which are fringed with dark grizzly hairs and heavily spotted with madder-brown on the front surface. The blunt, oblong pouch is of a soft olive-brown colour in front, passing into pale green behind, while the inflexed basal lobes are sparsely studded with small, reddish brown warts, and the surface of the pale green roundish staminode is marked with dark green reticulations. On the whole, notwithstanding its lateness in the field, C. Youngianum may be considered a success, and will no doubt take its place among first class hybrid Lady's Slippers.

J. W.

BORDER PINKS.

One result of the recent exhibition of pinks by the National Pink Society will be to encourage the production of border varieties. Good border pinks in the form of named varieties are so limited in number that Mr. Turner found himself unable to put up six or eight distinct sorts. Some of our best border pinks—those having large, full flowers and finely-rounded petals of the florists' type, such as Derby Day, Lord Lyon, and Newmarket—are unfortunately of weakly constitution; Lord Lyon, which I regard as the best of the trio, particularly so. More is the pity, because this characteristic of weakness militates against their employment as seed parents. All the three above named have shades of rose or rose-pink, the dark centre being peculiar to almost all pinks of this type. Ascot, soft pink; the old Anne Boleyn, finely shown at the Royal Aquarium by Mr. C. Turner; Rubens, a good dark variety; and Paddington, are excellent coloured varieties, well worthy a place in the garden.

The florists still include among their exhibition varieties a type they designate the "white and black." This has, of course, a dark centre; but the pure white petals are devoid of any lacing whatever. It not infrequently happens that a laced variety, if unshaded, will come destitute of lacing, and then it is to all intents and purposes a white and black flower; but it is obvious it cannot be depended upon to maintain this character. I had this season a large and very full flower on a plant of a fine laced variety named John Dorington that came without a trace of lacing, and it made a very fine black and white, but all the other flowers were well laced.

Of pure white pinks we have several. There is the old white garden pink, always a favourite for its great freedom, and Mrs. Sinkins, which was raised by a Mr. Sinkins, who gave Mr. Turner a few cuttings of his seedling, and finding it likely to be valuable, sent it out; and Her Majesty, Mrs. Welsh, and Clifton White, all seedlings raised from Mrs. Sinkins, and all like that variety "bursters"—the calyx bursting and destroying the symmetry of the bloom. It is a great defect in a pink or carnation for the calyx to split, and it is unfortunate that so many of the finest varieties are addicted to this habit. Undoubtedly the best pure white pink is Mrs. Lakin, raised by Mr. Joseph Lakin, of Temple Cowley, and awarded a certificate of merit by the National Pink Society. It came among a batch of seedlings obtained from a fine laced variety named Modesty, and when propagated was found to maintain the purity of the flower. It has pure white, stout, and finely formed petals, does not burst its pod, and it is entirely destitute of that greenish primrose centre that characterises Mrs. Sinkins and her progeny.

Several new named and seedling border varieties were shown by Mr. F. Hooper and others, such as Charmer, pink; Norah, blush and rosy purple centre; Flirt, pale pink with rosy purple lacing; Charles Lockyer, in the same way, but deeper in colour; and some unnamed varieties. Messrs. Ryder and Son, nurserymen, Sale, had a certificate for Souvenir de Sale, a large lilac-pink, self-coloured variety with fimbriated petals.

An old border pink named Fimbriata is well worthy of being grown for cutting purposes. It is of a soft rosy pink colour, but with deeply fimbriated edges to the petals.

A writer in a contemporary recently remarked that such flowers as pinks must be double before they are tolerated. I think if he had seen at the pink show a single form of Dianthus plumarius shown by Mr. A. Dean, of Bedfont, he would have changed his opinion. The flowers had about two rows of petals, a dark centre; blush tinted, and the petal edges deeply toothed. We do not want smooth edges in our

border pinks. There is room for fine single types, and for fimbriated edged flowers, also; and I think if the fringed edged single flowers are well looked after some very beautiful and acceptable varieties may be obtained, of great service for border decoration, and also for cutting from.

R. Dean.

THE STATELY FIVE-LEAF.

Rodgersia podophylla.

Amongst the many good things for which we are indebted to Japan the plant now figured should hold a conspicuous place. It is one of the noblest of hardy herbaceous plants, and once seen will never be forgotten. In leaf growth it rises to about three feet, the leaves spreading in five divisions of a quite massive character, and boldly cut on the margin into a series of angular lobes. In spring these stately leaves are of a fresh light green colour, but as the summer advances they acquire a rich bronzy tone of the most agreeable character, which enhances their dignified appearance. In the latter part of June or early in July the flower heads appear like panicles of snowy spray, the general tone being like the best examples of Astilbe japonica, but larger and far more beautiful. These flower heads have been described as "inconspicuous," but in truth they are conspicuous and supremely beautiful. The plant belongs to the family of saxifrages, and thrives in a moist, peaty soil, and requires a sheltered situation.



STATELY FIVE-LEAF, *Rodgersia podophylla.* (Flowers white, in light panicles.)

CHATTER AND CHIPS.

Rust on Grapes.

I am glad to see in the Magazine that this subject has received some attention, as I am always glad to learn the views of others, especially on the subject of grape-growing. I refer to it again for the purpose of saying that only a few days ago I met with a very bad case, where the greater part of the berries in a rather long house were very much disfigured by a kind of rust on the skin. It is a mixed house of grapes, by which is meant there are Black Hamburghs, Muscats, Alicantes, and Foster's Seedling, all in the same house, and of course under the same treatment. I found the gardener in great trouble about his grapes, and quite unable to account for the appearance of the rust upon them. After a careful look over the bunches I soon found that the Muscats and Alicantes were not affected with the rust. This set me thinking, and to put some very plain questions as regards the past treatment the vines had received. My questions elicited the information that the rust was observed spreading over the berries before they were large enough to thin out, and that so far as was known they had not been injured by contact with the hands or anything else, nor had they been syringed. Upon inquiry as to the management of the temperature in the early part of the season, I learnt that during one stormy day in April the thermometer had suddenly been allowed to run down considerably lower than the normal figure. This was just the kind of reply that I expected from the condition of the berries both at the top and bottom of the rods, for no part was worse than the other. The marks of the rust were pretty evenly distributed from the foot stalk to the crown of each fruit. In my own mind I soon saw that this very bad case of rust had been caused by a sudden wave of cold air entering the house and lowering the temperature which, acting on the very tender skin of the newly-formed berry, caused the disfigurement of which I speak. Everything connected with this case points to the conclusions to which I came, and in which the gardener agrees. The Muscats and Alicantes escaped because they were not even in flower at the time the injury was done. This instance shows how carefully vineries should be ventilated, especially in the early spring months.

Dry Vine Borders.

Vines which have all their roots in inside borders suffer more for the want of root moisture than many people suppose. I do not say that this is generally the case, but it occurs oftener than it is desirable to see. Notwithstanding the many cautions which have appeared in these pages, pointing out the waste and folly of providing drainage for borders made up under glass, some people will persist in having drains, believing, I suppose, that it is the proper thing to do. But surely if they give the matter a little thought, they would see the inconsistency of the proceeding. Those who provide deep drainage for inside borders appear to forget that the vine roots are dependent on the cultivator for all the moisture they get. Seeing that in the majority of cases it is a laborious job to thoroughly water an inside border in such a way that the roots obtain all the moisture they require, it does seem a folly to provide drainage to carry away the water which has given so much trouble to carry to the spot. This is, however, just what a good many do, yet they cannot understand how it is that their vines make weak growth, and produce only small berries. If the vines could speak they would explain that their roots were insufficiently supplied with moisture at a time when their condition most required it. It may appear to be an extravagant doctrine to preach, but I maintain that there is such a thing as over-ripened vines, the over-ripened growth being the production of dry borders. The behaviour of such wood so ripened is that the rods do not break regularly, and they produce small bunches and berries. The anxious reader must bear in mind, in studying this subject, that insufficient root moisture has a tendency to hasten the ripening of the growth first, and the berries next. Observation will show any careful watcher that when vine roots are in a dry border that the growth ripens considerably in advance of the berries as compared to what it does in properly cared for borders. The fruit I notice continues to make an effort to swell as long as it can, but for the want of water to assist in swelling the berries they do not get so large as they would do under more liberal treatment.

Watering Peas.

A regrettable occurrence came under my notice a few days ago in connection with the subject of watering peas, where a gentleman lost a good gardener and a man a good situation. It occurred in this way—The soil of the garden where the circumstance occurred is light and not very rich. The gardener, it appears, knew from previous experience that if he did not water the crops of peas just coming into bearing that they would soon give out for the want of root moisture, as they had done before. So he set to work and commenced supplying the water they so much needed. While he was in the act of doing so the owner came upon the scene, and in not very becoming language told the gardener that what he was doing was quite unnecessary, and that he was wasting his time. He knew, he said, that after the showery weather that had occurred the peas had had too much moisture instead of insufficient. The end of the affair was that both men evidently lost their temper, and there and then decided to part, which they did. I should not like to say that gardeners do not do unnecessary things and neglect other important work sometimes, but in the case in question my sympathies are entirely with the gardener, as what he was doing under the circumstances was right and proper. From what I saw of the other crops in the garden, and the rows of peas referred to in particular, I was convinced that the gardener was right and the proprietor wrong. As the former explained, the weather had certainly been showery, but the rainfall had not been sufficient to reach the roots of the peas except those just on the surface. He further explained that he saw indications of the haulm of the peas turning prematurely yellow near the ground, which every experienced gardener knows is a certain indication that the roots are wanting moisture. Acting on previous experience the man was doing his best to prevent a failure, but unfortunately the sequel proved that his efforts were not appreciated. I have not referred to this case with a view to deter gardeners from watering their peas or other crops when they think the operation needful. Indeed, quite the contrary, I advise them to help the peas if they need it. Notwithstanding the instance I have referred to, right is might, and those that do right will not suffer long. The fact of the matter is that in dry and poor ground it is impossible to grow good crops of peas without watering the roots, even when the weather is dull and showery, as the foliage shoots off the rain so to speak, so that while it may be raining the roots will be dry. It was this which misled the gentleman referred to. No doubt he felt that the weather was unpleasant for outdoor amusement, and from that concluded that his view of the requirements of the vegetable crops must be right. He would, however, have been wise had he allowed his gardener to work out his own ideas. Had he done so, he would not now be lamenting over the deficiency of his pea crop or the inferior quality of the few he has. Chatterbox.

POTATO DISEASE.

In a communication to the scientific committee of R.H.S., Mr. Plowright says:—It would be highly desirable if some simple experiments could be conducted this year. The long-continued rains will doubtless induce the disease, and as such experiments could very easily be made, it seems a pity the opportunity should be let slip. The effect of high moulding of alternate rows of some variety fairly suspectible is all that is required to show the protective influence of an efficient earth covering on the tubers; but the recent experiments in France and in America showing how powerful are the restraining influence of copper dressings applied to the foliage of the plants upon the development of the Phytopthora certainly ought to be tried. Now that we know the mycelium of the Phytopthora is localized, and that it does not extend "down the stems and along the roots," it is obvious that the spread of the disease takes place only by the enormously prodigious production of the conidia, hence it follows that any agent which can arrest this development, and also sterilize such conidia as may alight upon the healthy foliage, must have a powerful influence for good in checking the spread of the disease. The power that copper dressings have limited the spread of the Peronospora on the Vine has been known in France for many years.

A vote of thanks was given to Mr. Plowright for his valuable communication, and in accordance with his suggestion a sub-Committee was appointed consisting of Dr. M. T. Masters, Mr. C. B. Plowright, and Rev. G. Henslow (with power to add to their number), to carry out investigations at Chiswick upon the value of high-moulding, as well as of the use of sulphate of copper and sulphate of iron in preventing or arresting the potato disease. Dr. Masters reminded the Committee that most valuable results were almost accidentally obtained in 1888, when of two rows most deplorably attacked by Phytopthora one was earthed up with but little hope of its being any use to protect the tubers. The results, however, were astonishing, for of fifty tubers taken from a row moulded in the ordinary way thirteen were diseased, whilst of fifty taken from a high-moulded row five only were diseased.

The Fruiterer's Company on Friday last paid a visit to the Kent Fruit Gardens under the guidance of Mr. George Bunyard, whose nurseries they afterwards visited. From the *City Press* we learn that the party consisted of Alderman Sir J. Whitehead, Bart., Mr. Upper-Warden Brocklesby, Mr. Renter-Warden Martin, Mr. W. N. Froy, Mr. R. White, Mr. G. Farmiloe, jun., Mr. H. R. Williams, Mr. G. Hopcraft, Mr. H. M. Stroud, Mr. T. A. Hinton, Dr. Fotherby, Mr. J. Eagleton (clerk), Mr. Wilfred Whitehead, Mr. Salt, jun., and Mr. J. McVeagh (Sir J. Whitehead's private secretary). The visitors were conducted by Mr. Bunyard over his extensive Allington nurseries adjoining the station. These nurseries cover seventy-one acres of ground; they are in perfect order and contain many thousands of fruit trees, hardy herbaceous, and rock plants, bedding out plants, pot roses, creepers, and almost everything known to the English agricultural world. From Mr. Bunyard's Nurseries the party proceeded to the gardens of Mr. Leigh at Barham Court, Mr. Woodware, the gardener being in attendance. The party dined at the Star Hotel, Maidstone, where the Mayor of Maidstone joined them.

TREES IN UNSUITABLE SOIL.

By Edwin Molyneux.

The attention given in G. M. to the subject of rhododendrons in natural soil has led me to think that much information may, perhaps, be imparted to some persons about to plant shrubs and trees, as regards varieties which do not succeed in soils that are poor and calcareous. Probably there is in many places a soil similar to what we have here, and the experiences I can report may prove useful. Much annoyance, loss of time and money, might be annually saved if a knowledge of the soil and its peculiarities could be obtained preparatory to carrying out alterations in planting, whether in the case of shrubs, both evergreen and deciduous, and fruit trees also. Some kinds of apple and pear trees will succeed here magnificently in nothing but the natural soil; others will absolutely refuse to grow at all. Many kinds of shrubs will die right out by contact of their roots with the soil in a natural manner. Although position has something to do with the success or otherwise of the growth of trees, I do not think it is so important as the soil; except, of course, in the case of delicate or only partly hardy subjects. But speaking of what are known as hardy growing specimens, the matter of soil is a more important factor in success than is generally supposed. The natural soil of Swanmore may be described as heavy, cold, and retentive. Although such a soil does not absolutely require draining owing to the presence of a great number of flints being mixed with the staple, yet it needs aeration to mellow it. The abundance of flints prevents water laying for any length of time either on the surface or below it. Still, the soil is a very cold one during the winter and early spring; so much so, that at a distance of only one mile vegetation is earlier by fully a week in the spring than here, simply because the natural soil at the earlier place is more inclined to be of a loamy nature.

The two subjects which are striking examples in this respect are the common lilac and apple, which flower on the loam a week earlier than here, both, of course, being influenced by growing in a warmer soil. The coldness of the natural soil here is caused, I think, by the fact that at the depth of about one foot is a kind of mixture of clay and stones of a very close binding nature, through which the water but slowly percolates, and by capillary attraction the surface soil is maintained in a cold, moist condition. Where the land is trenched, or even dug over, and the rough stones taken out, the water does not lay long on the surface. In some parts of the garden a bed of chalk lies at about four feet depth, but so variable is the chalk stratum that a depth of eighteen feet must in some parts of the garden be dug before the chalk is found. It has been the fashion for a number of years here to use quantities of chalk for the land in addition to manure, laying it on the surface in large and small knobs, allowing the frost to crumble it in pieces. This has the effect of making the land "work" more freely afterwards. In some cases the land takes a long time before it is again workable after a heavy rain, which causes much delay in carrying out many operations. When such land is "got upon" when the surface is in a wet, soddened state, little good can be done with it, rendering it uncongenial to the root growth of trees and other subjects of a weaker constitution. The soil, therefore, is quite of a calcareous nature, owing to the continued impregnation of the soil by the chalk, which, as I have stated, is laid on the surface of the soil. The position is a high one, 395 feet above sea level, and somewhat exposed to the east, which is all against early vegetation. Of course, coupled with such uncongenial conditions about the roots of the various subjects, we have the treacherous spring to check our early growth, and, moreover, Bishops Waltham is much exposed to easterly winds.

The following varieties of evergreen shrubs will not succeed, neither will those deciduous trees of which I append a list:—

Evergreen Trees and Shrubs.

Abies Douglasi.
„ Canadensis, Hemlock Spruce.
Pinus cembra, Swiss Pine.
„ strobus, Weymouth Pine.
Retinospora filifera.
„ Pisifera argentea.
„ „ nana aurea.
„ plumosa.
„ „ aurea.
„ leptoclada.
Dacrydium Franklini, Huon Pine.
Juniperus sabina, Savin.
Sciadopitys verticillata, Umbrella Pine.
Thuja Warreana.
Ilex pendula argentea, Perry's Weeping Holly.
„ opaca.
„ altaclarense.
Rhododendrons of all kinds.
Kalmias of all kinds.
Hardy Azaleas.
Pernettyas.
Andromedas.
Heaths of all kinds.
Daphnes.
Osmanthus illicifolius variegatus, Holly-privet.
Desfontanea spinosa, flowering holly of Peru.
Vaccinums, Cranberries.
Ledum palustre.
Gaultheria shallon.

Deciduous Trees and Shrubs.

Clethra alnifolia.
Castanea vesca aurea, Golden Chestnut.
Amygdalus Persica fl. pl., Double Almond.
Cistus ladaniferus maculatus, Gum Cistus.
Platanus occidentalis, Western Plane.
Liquidambur styraciflua, Storax or Sweet Gum.
Althea frutex, Hardy Hibiscus.
Hydrangea paniculata grandiflora.
Quercus robur concordia, Golden Oak.

Fruits.

The following fruit trees are not at all successful in this soil in the open as pyramids:—Pears, Glou Morceau, Louise Bonne of Jersey, Marie Louise, Jargonelle, Beurre Diel.

Apricots are a total failure.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Greenhouse Plants in bloom comprise:—Agapanthus umbellatus alba; Begonias in variety, Erica Austini, E. Macnabiana, E. Marnockiana; Erythrinas; Fuchsias; Hæmanthus coccineus; Begonia fuchsioides; Kalosanthes Boieldieu; Lantana L'Esperance; Lapageria alba; Liliums; Nerine venusta; Nerium splendens; Phœnocoma prolifera; Pleroma elegans; Veronica Andersoni, V. imperialis; and Zonal Pelargoniums.

THE HOUSE.

In many cases the plants with which window boxes are filled are beginning to show signs of exhaustion, the powerful light and heat of the summer having tried their strength. It will be found that frequent watering has reduced the body of soil in the boxes, and the facts suggest how the plants may be refreshed, to aid them to the end of the season. The proceeding suggested is the supply of a top dressing, which should consist of rich earth in a somewhat fine condition, but is not to be sifted. Some rather fat soil from a hotbed, in a quite mellowed and sweet condition will serve the purpose admirably. Where gardening is carried on systematically, it will be sufficient to ask the gardener for some rich fuchsia compost, and spread this on the surface evenly amongst the plants, keeping the general level fully an inch or more below the edge of the boxes for convenience in watering. If there is not room to lay down a top dressing, some of the top soil from which all the goodness has been washed by the watering may be scraped off to make room for it, but in doing this special care must be taken to avoid injuring the roots of the plants. If a sufficiency of nice fresh compost cannot be obtained there is another but less desirable method of refreshing the plants. Take some old soil from the flower pots, or from a garden border, and mix with it some of one of the artificial fertilizers that are now so largely used. The quantity to be used will, of course, depend on the nature of the substance, but to keep on the safe side, not more than one fourth should be added to any given bulk of old soil turned out of pots. Mix well, and let the mixture remain exposed to the air for a day or two in a place where, in the event of rain, it will not be wetted. Then spread it over the boxes, and you will soon see a new and fresh growth of the plants, and you may expect them to continue flowering until the frost decides that there shall be no more flowers until next year.

CONSERVATORY AND GREENHOUSE.

Azaleas must be trained into whatever shapes they are to have when in bloom, and the plants should be set out in a shady place to ripen their wood. Specimens to be exhibited next year must be trained out now.

Conservatory to be kept gay by introducing a few specimen plants in good positions. Keep climbers regularly trimmed, and encourage the ripening of the wood of all hard-wooded plants, to ensure plenty of bloom next season.

Cinerarias to be potted from stock suckers and offsets; pick off seedlings; suckers not rooted to be put in as cuttings round the sides of pots, where they will make root in a week. Beware of slugs and woodlice, which are tremendously fond of the young plants.

Hydrangeas are showy for the summer, and a few may be grown to assist in dressing vases, steps, or balconies, as they may if kept rather dry, be put away into the greenhouse stage in winter. In spring they must be brought forward, and have good-sized pots, and plenty of liquid manure. The weak shoots must be thinned out, so that the principal shoots on which the next year's bloom is to appear may be as strong as possible. Very neat flowering specimens, only six inches high, may be had by taking off the points of the strongest shoots in August, inserting them in three-inch pots. Tie up their heavy leaves to a small stick; water freely, so as never to allow them to flag; place under bell-glasses till struck. The following season they will each produce a large truss of bloom.

Pelargoniums that have been trained out and pruned should be repotted as soon as they have broken regularly. Put them into the smallest pots into which their roots can be got, so as to allow of a series of shifts till they are once more in their blooming pots. Give plenty of drainage, and use as small pots as possible.

STOVE AND ORCHID HOUSE.

Stove.—All specimen plants in free growth must have attention now to secure a perfect ripening of the wood before the season closes. Let everything have now as much sun as can be borne without injury, which is best done by removing the shading from part of the house, and there placing whatever is likely to bear the exposure. Use water freely on the plants and beds to keep up a moist atmosphere, and give air at seasonable times liberally. Plants to be used for autumn and winter decoration ought now to be in a thriving condition; if any want a shift attend to it at once. Stop young plants of Euphorbia, Aphelandra, Justicia, Poinsettia, Ixora, Æschynanthus, &c. As the month progresses shut up earlier, give less and less water to the roots of the plants, and especially those which should be going to rest. If we have a period of dull chilly weather use fire-heat, for a chill will do more harm now than in a month or two hence, when vegetation will be in a state of repose.

Orchid House.—Stanhopeas that require repotting should have attention immediately they go out of bloom. Dendrobiums should be placed in a light and airy position to ripen their new growth.

FLOWER GARDENS AND PLEASURE GROUNDS.

Bedding Plants to be struck in quantities for next year. The great secret of keeping Verbenas and Petunias through the winter is to have them struck early, and either planted into boxes or pans by the middle of September, so as to be established before winter.

Dahlias require a little extra attention at the present moment. Thin the blooms and tie out the growths regularly, or they will spread about and get snapped with the wind. Set traps for earwigs, and use the sulphur-duster if there is any appearance of mildew.

Pansies.—Plant out from the cutting pans during showery weather, and shade till they make fresh roots. Make the last sowing of seeds the first or second week this month.

Roses.—Continue to bud roses and fruit trees, choosing damp dull weather; they take best just after heavy rain. In budding on the manetti stock enter the bud just above the collar, close to the ground, the proper mode of planting afterwards being to sink the base of the bud below the surface, so that the rose will root as well as the stock.

FRUIT GARDEN AND ORCHARD.

Throw nets over fruit bushes to keep off the birds, and give a little shade to keep a few bunches hanging for a late supply. Put wasp-traps about vines and peaches, or stick a few lumps of loaf-sugar among the branches, and as long as there is any sugar left they will not touch a single fruit. Nail in all good shoots on wall trees, that they may have the heat of the wall to ripen them. Encourage in every possible way the ripening of the wood of the season. If any trees have been allowed to get crowded, thin them a little now to admit the sunshine amongst the well placed shoots and spurs. Windfalls to be sent into the house every morning for immediate use. Gather fruit in dry weather, and, as a rule, not till quite dry. Form new plantations of strawberries.

KITCHEN GARDEN AND FRAME GROUND.

Winter Greens claim the first attention, and it is necessary to ensure at once a good supply and a variety. By this time Scotch kale, Brussels sprouts, broccolis, savoys, &c., ought to be strong, and where they have been planted between rows of peas, to stand the winter, should now be looked over, and every other plant taken out to make fresh rows if they are at all crowded. Cabbages of most kinds may be sown in the second week in August. Sow also prickly spinach on slopes in rich soil, and plenty of hardy green Hammersmith, Early White, and Black-seeded Cos lettuces. The summer-sown endive will now be strong enough to plant out on slopes or raised beds. Give plenty of water, alternating with liquid manure, to celery, and do not earth it up until it is well grown, the earthing being only to blanch it for use. Use grass-mowings to mulch the ground between crops that are likely to suffer from drought. Earth up the earliest rows of celery; earth up leeks; thin out the rows of parsley so as to get rid of every plant not well curled.

VILLA FARM.

The crop of yellow-fleshed or bullock turnips must now be sown, and it will be well to begin and complete the work as expeditiously as is possible consistent with its efficient performance. The varieties known respectively as the Purple-top Yellow Hybrid and the Green-top Yellow Hybrid are undoubtedly the best for the southern counties, and the Green-top Yellow Scotch and the Purple-top Yellow Scotch are the best for Scotland and the northern counties bordering on it. The yellow-fleshed turnips are nearly equal in nutritive properties to the swedes, and may be produced at a considerably less expense, but they are not so hardy, and ought not to be left out long after the first of December. The Yellow Tankard, which is about equal in hardiness to the foregoing, is specially suited for sheep feed, and is held in high esteem by the leading flock masters, as the sheep fatten more readily on it than on any of the other turnips. As the varieties here mentioned should be grown on the flat, excepting on very moist soils, and then the ridges should be rather low, about one-third less farmyard manure and artificial fertilizers than advised for swedes a short time since will be required, and if the weather happens to be dry, land that was ploughed up some time since ought not to be stirred much, as it is of the highest importance that the moisture be not driven out of it. The surface must be well broken down, for a good tilth is a prime necessity, but this can be done with roller and harrow without disturbing the soil far below the surface. The land should, in fact, be well rolled, more especially if it is at all light, as, when moderately solid, the plant comes stronger and more regular, and the fly cannot work so freely on it. To prevent this latter pest doing any considerable mischief to the crop, apply a dressing of lime at the rate of eight bushels per acre as soon as the young plant is coming through the soil, and if the rain should fall and wash it away immediately afterwards apply a second dressing. Soot is also useful for preventing injury to the crop from the fly; and, like the lime, will contribute in some degree to the fertility of the soil. The best time for applying either lime or soot is in the evening or early in the morning when the leaves are moist with dew.

The Phylloxera has made its appearance in one of the vineries at Chiswick, and at the recent meeting of the Scientific Committee, Mr. Morris directed attention to that fact, and invited the members to make suggestions for dealing with it. The phylloxera was stated to be undoubtedly present in a vinery containing young plants from Hungary. It was first observed on a single plant at one corner, but both root and leaf galls have been found on another plant at the other end. Although the presence of the phylloxera would suggest the opportunity for a careful series of investigations and experiments, yet it was the opinion of the committee that it was far too serious a matter, and they were unanimous in counselling instant destruction of everything growing in the house. The following process was suggested and will be carried out at once: 1. Syringe the whole of the interior of the fabric as well as the ground and vines with water, then to burn sulphur, the presence of the water being desirable in order to absorb the sulphurous acid gas; this process is to be repeated. 2. To burn every part of every plant as well as to calcine the soil thoroughly. 3. To remove and burn all rotten or defective wood that may be in the house; and lastly (4), to have the whole of the woodwork well scraped and repainted. The hope was expressed that these suggestions will be useful, and followed out elsewhere should the phylloxera appear in other gardens.

Reports on Fruit Crops, 1890.

APPLES.

Aberdeenshire.—A good crop in most districts.

Mr. George Stephen, Crathes Castle, reports: We have a good crop of the following, Golden Pippin, always a sure cropper; Lord Suffield, Maltster, Cellini, Early Julian, Kerry Pippin, Scarlet Nonpareil, Dutch Mignonne, Golden Winter Pearmain, Roundway, Magnum Bonum, Tower of Glamis, Kentish Filbasket, New Northern Greening, Ecklinville Seedling, Emperor Alexander, and Stirling Castle.

Mr. R. Farquahar, Fyvie Castle, observes: Generally a good crop; the crops of some few of the hardiest varieties such as Beauty of Moray and Warner's King being extra heavy.

Mr. J. Forrest, Haddo House, writes: A good crop both on wall and standard trees. The following varieties do well here on walls, Ribston Pippin, Blenheim Orange, Golden Noble, Golden Pippin, Cellini, Devonshire Quarrenden, King of the Pippins, Golden Spire, Ecklinville Seedling, Nonsuch, and Duchess of Oldenburgh. As standards, the best are Kentish Codlin, Manks Codlin, Beauty of Moray, Northern Dumpling, Lord Suffield, Warner's King, Northern Greening, and Stirling Castle.

Antrim,—Partial, and on the whole light.

Mr. C. Warwick, Shanes Castle, observes: Early varieties such as Red Margaret and Irish Peach have an abundant crop. The fruit on other varieties is light except King of the Pippins, which is bearing better than last year.

Armagh.—Generally below the average.

Mr. W. H. Baker, Tynan Abbey, remarks: We had a grand bloom, but owing to the late spring frosts there is but little fruit. There are a few old standards that seldom fail to give us a supply, namely: Blenheim Orange, Cox's Orange Pippin, London Pippin, Irish Peach, Lord Suffield, and the White Codlin.

Ayrshire.—Partial, and on the whole light.

Banffshire.—Variable, and generally light.

Bedfordshire.—Much below the average.

Mr. Charles Webster, Gordon Castle, says: Thin crop with the exception of a few sorts grown as espaliers. The best are Worcester Pearmain, Duchess of Oldenburgh, Ecklinville Seedling, Lord Suffield, Warner's King, Cellini, and Beauty of Moray. These have all good crops of clean fruit.

Berkshire.—Variable, but on the whole nearly an average crop.

Mr. J. Rose, Lockinge Gardens, describes Hanwell Souring, Lord Suffield, and Keswick Codlin, as bearing the best crops.

Mr. G. Stanton, Park Place, Henley-on-Thames, reports: Orchard trees without exception have good crops, especially Dumelow's Seedling, Blenheim Pippin, and Codlin. Bush trees on the paradise are irregular, some over-loaded and others without any fruit.

Buckinghamshire.—Considerably below the average.

Mr. J. Smith, Mentmore, writes: Very poor crop; Niton House, Schoolmaster, Worcester Pearmain, Mr. Gladstone, and a few other varieties are bearing good crops.

Cardiganshire.—Much below the average.

Mr. L. Hopkins, Llanina, New Quay, states that the best crops with him are being produced by Ribston Pippin and Lord Suffield, and Mr. R. C. Williams, Crosswood Park, mentions Lord Suffield, Hawthornden, Blenheim Pippin, and King of the Pippins as the most productive.

Carmarthenshire.—Crop generally light.

Cheshire.—Below the average in most districts.

Mr. W. Whitaker, Crewe Hall, remarks: Only a few of the free-bearing sorts have anything like a full crop. The sorts bearing best are, Lord Suffield, Keswick Codlin, Irish Peach, Ribston Pippin, Pott's Seedling, Grenadier, Norfolk Beefing, and Red Reinette.

Clackmannanshire.—Below the average.

Clare.—Generally good, heavy in some places.

Cork.—Crops good in most places.

Mr. W. Beswick, Bessborough Court, says: Most kinds have good crops, but exposed trees of late flowering varieties, especially Northern Greening, which is much grown about here, suffered from the rough winds and have light crops.

Denbighshire.—An average crop is reported from all districts.

Derbyshire.—A moderately good crop generally.

Devonshire.—Variable, and on the whole below the average.

Mr. G. Baker, Membland, Plymouth, writes: There is a fair crop of apples; many trees have light crops whilst of others the crop is heavy. Most of the free-bearing varieties are carrying good crops. In the orchards, things are not so satisfactory, the crop being hardly up to the average. Many trees are suffering from canker. We use the knife as little as possible only for thinning.

Mr. R. Nicholas, Castle Hill, remarks: Apples are very scarce in this neighbourhood. I have visited several orchards and find the crop very poor indeed. In the gardens here the trees are bearing fairly good crops of very fine fruits. This I attribute to the work of the bees. I have four strong stocks of bees in the garden, and when the trees where in bloom the bees were busily engaged in gathering honey from flowers and thereby ensured a good set.

Dorsetshire.—Much below the average.

Mr. W. G. Pragnell, Sherborne Castle, reports: The crop is scanty. The trees appear to bloom strong and well, but owing to the cold damp weather prevalent at the time, the fruit did not set properly. Those that did set fruit are much damaged, both flowers and fruit by maggot. The following varieties are giving the best results: Manks Codlin, Cox's Pomona, Cox's Orange Pippin, Kerry Pippin, King of the Pippins, Lemon Pippin, Lord Derby, Lady Henniker, White Nonpareil, Peasgood's Nonsuch, Burchardt's Reinette, and Mere de Menage.

Down.—An average crop in most districts.

Dublin.—Partial, and on the whole light.

Dumfriesshire.—A good crop in all districts.

Mr. C. Blair, Burnfoot, Langholm, remarks: King of the Pippins, Stirling Castle, and Keswick Codlin are as usual bearing heavy crops.

Durham.—Variable, but on the whole good.

Mr. R. Draper, Seaham Hall, says: Lord Suffield is the only variety that can be depended upon. Keswick Codlin is a failure this season. I find that sorts which flower late, or are retarded by climatic influences have the best crops but as a rule those which bear a good crop one year have but little fruit the next.

East Lothian.—Fairly good crops are reported from most correspondents.

Mr. R. P. Brotherston, Tyningham, writes: As in the case of all other fruits, many of the buds were eaten by sparrows and other small birds. The best sorts include Warner's King, Stone's, Pott's Seedling, Lord Grosvenor, Queen Caroline, Ecklinville Seedling, Keswick Codlin, Rymer, Northern Greening, Cox's Pomona, Sturmer Pippin, King of Pippins, Ribston Pippin, Duke of Devonshire, Duchess' Favourite, Irish Peach, Kerry Pippin, and Golden Spire.

Essex.—Variable; much below the average.

Mr. W. Dance, Gosfield Hall, Halstead, observes: Under an average, and on many of the old trees no fruit. Young healthy trees of the most fruitful kinds are carrying a good crop, the most noteworthy being Warner's King, Lord Suffield, Ecklinville Seedling, Duchess of Oldenburgh, Ribston Pippin, and Beauty of Kent. These, I would add, have been selected from four acres of orchard and four acres of kitchen garden.

Mr. J. Douglas remarks: Sturmer Pippin and Devonshire Quarrenden are well furnished with fruit, whilst Lane's Prince Albert and the very free-bearing Lord Suffield have missed a crop this year.

Fermanagh.—On the whole a light crop.

Fifeshire.—Below the average.

Mr. C. Smith, Dysart House, observes: Aitkin's No. 1, Lord Suffield, Stirling Castle, and Warner's King are bearing fair crops.

Forfarshire.—Variable, and on the whole rather below the average.

Galway.—A good crop in most districts.

Mr. William Farmer, Kylemore Castle, reports: We have an excellent crop of apples here this season, both on orchard and wall trees. In no season have I seen such a profusion of bloom as we had last spring, and it appeared to set well. But the cold, sunless summer has caused many of the fruits to drop. Nevertheless, there is a heavy crop. The varieties that do best here are Irish Peach, Cox's Orange, Oslin, King of the Pippins, Kerry Pippin, Fearn's Pippin, Warner's King, Ecklinville Seedling, and Lord Suffield.

Glamorganshire.—Below the average.

Mr. A. Pettigrew, Cardiff Castle, writes: There is a poor crop even in the best situations. All the trees here are young, clean, and healthy, and in good bearing condition. They flowered profusely and promised well for a good crop, but most of the flowers dropped. The following are a few of the most productive varieties this season?—Lord Suffield, Keswick Codlin, Beauty of Kent, Lord Grosvenor, and Pott's Seedling, a full crop. Dumelow's Seedling, Ecklinville Seedling, Annie Elizabeth, Rymer, Nelson's Glory, half a crop. Of the dessert varieties, Beauty of Hants, Irish Peach, and Cox's Orange are bearing an average crop.

Gloucestershire.—Much below the average in all districts.

Mr. J. Cleare, Toddington, Winchcomb, observes: A very thin crop, the varieties that are bearing the best being Lord Suffield, Manks Codlin, Hawthornden, Normanton Wonder, King of the Pippins, Beachamwell, and Cox's Orange Pippin.

Mr. W. Nash, Badminton Court, writes: The apple crop in this neighbourhood is, generally speaking, a thin one. In the gardens here we are fairly well off, but complaints of scarcity are frequently heard outside, particularly where the orchards are exposed to easterly winds.

Hampshire.—Variable, and on the whole below the average.

Mr. W. Smythe, Basing Park, Alton, observes: Apples are much under the average, the crop being very poor in many places; but we have a good crop here on many of the trees, more particularly in the case of Irish Peach and the Codlins.

Mr. E. Molyneux, Swanmore Park, reports: We have a good crop here considering that it is not considered an apple year. Warner's King, Ecklinville Seedling, Mere de Menage, Wormsley Pippin, New Hawthornden, and Nelson's Glory, of kitchen sorts, and Golden Pippin, Irish Peach, King of the Pippins, Cox's Orange Pippin, Worcester Pearmain, of the dessert varieties have very heavy crops.

Hereford.—Much under average.

Mr. T. Randall, Holme Lacy, writes: Apples here are almost a failure, the trees not having recovered from last year. King of the Pippins is perhaps the best and, in some cases, there are fair crops of this variety.

Hertfordshire.—Variable, and on the whole below the average.

Mr. J. Kipling, Knebworth House, says: In this district apples are thin. In our case a little better, about a third of a crop. The following varieties have fair crops: Brownlees Russet, Irish Peach, Duchess of Oldenburgh, King of the Pippins, Norfolk Beaufin, Dutch Codlin, Keswick Codlin, Herefordshire Pearmain, and Nonsuch.

Mr. E. Hill, Tring Park, observes: Lane's Prince Albert and Cox's Orange Pippin are the only two varieties that, with us, are this season carrying full crops.

Mr. F. Q. Lane, Great Berkhampstead, remarks: Prince Albert, Grenadier, Stone's, Schoolmaster, Worcester Pearmain, King of the Pippins, and Sturmer Pippin are carrying good crops in the orchard.

Mr. T. F. Rivers, Sawbridgeworth says: Duchess of Oldenburgh is bearing better than any other variety this season.

Huntingdonshire.—Crop very light.

Kent.—Crop light throughout the county.

Mr. F. Dewsberry, Cobham Hall, Gravesend, remarks: Only about half a crop in this district. The best bearing sorts are King of the Pippins, Lord Suffield, Manks Codlin, Keswick Codlin, and Lucomb's Seedling.

Mr. Henry Cannell, Swanley, writes: Apples are looking well and fruit will be fine but less plentiful than usual. Those who applied the grease composition to prevent the female of the moth (Cheimatobia brumata) from ascending the trees during the autumn made a sad mistake, for it killed many of the young trees and injured a lot of the old ones.

Mr. George Woodward, Barham Court, reports: Crop under average. Better prospects so far as the bloom was concerned I do not remember, but, to use a Kentish phrase, it all ran off. One thing I am pleased to note. Where washing and shaking the trees, and subsequently greasing the trunks, were carried out, the foliage looks healthy, and there are no caterpillars worth mentioning. There is consequently good reason for expecting better results next year.

Mr. George Bunyard, Maidstone, writes: Very partial, but better than for some years. The trees that bore well in 1889 have but little fruit this season. There is a great and marked diminution in the attack of the maggot, owing to the greasings and washings. In our nursery the best crops are on the paradise stock, Grenadier, Quarrenden, Bismarck, Cox's Orange Pippin, Stirling Castle, Duchess of Oldenburgh, Pott's Seedling, King of the Pippins, Lord Suffield, Queen Caroline, Baumann's Reinette, and Manks Codlin are the best. About two hundred varieties are fruiting this year.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON.

The above society held its summer show in the beautiful grounds, Westwood Park, on Saturday and Monday, August 2 and 4. So far as the arrangements were concerned, under the able and courteous secretary, Mr. C. S. Fuidge, aided by a few other willing workers, the exhibition was a complete success; nearly all the classes were well contested. Messrs. Cypher and Sons, of Cheltenham, carried the palm with specimen plants, and Messrs. Wills and Blandford also showed well in these classes, which filled a very large tent. Mr. Wills and Mr. Currey were the principal exhibitors of groups. Among fruit classes, Messrs. Iggulden, Ward, and Inglefield were the principal prize-takers; while Messrs. Wilkinson, Waite, and Pope were the chief among vegetable classes. The day was fine for the attendance of visitors up to five o'clock in the afternoon, when rain fell, which no doubt would seriously affect the receipts at the gate on the first day.

Plants.—In the principal class, viz., for twelve stove and greenhouse plants, six in bloom and six foliage distinct, Messrs. James Cypher and Sons, Exotic Nursery, Cheltenham, took first place with a beautiful collection of plants, including Latania borbonica, Kentia Fosteriana, Cocos revoluta, Croton Sunset, C. Thomsoni, Erica tricolor coronata, Clerodendron Balfouri, Bougainvillea glabra, Allamanda nobilis, and Ixora Pilgrimi; Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, second with Phœnix reclinata, Cocos revoluta, Statice profusa, and others; Mr. J. Currey, gardener to Colonel Pepper, Millford Hill, Salisbury, third. In the class for ten stove and greenhouse plants, five in bloom and five foliage, open only to gardeners, Mr. Blandford, gardener to Mrs. Hartlefoot, Moor Hill, Westend, made a splendid display. His flowering plants were particularly good. The group consisted of Latania borbonica, Diffenbachia Bausei, Dicksonia Antarctica, Areca Fosteriana, Croton Andreana, Lasiandra Macrantha purpurea, Ixora Fraseri, I. Duffi, Phenocoma prolifera, and a beautifully-flowered plant of Allamanda Chelsoni. For six stove and greenhouse plants, three in bloom and three foliage open, Mr. Cypher again came to the front, showing Dasylirion acrotrichum, Kentia Australis, Croton Queen Victoria, Ixora regina, Erica parmenteriana; Mr. N. Blandford was a creditable second, having fine plants of Ixora Fraseri, Allamanda Hendersoni, and Bougainvillea glabra; Mr. J. Currey third. For six miscellaneous plants, not open to exhibitors in the foregoing classes, Mr. J. Stratton, gardener to F. Harper, Esq., Milbrook, first, and Mr. E. Carr second. For a single specimen fine foliage plant, Mr. E. Wills was first with Latania borbonica; and for a single specimen in bloom, Mr. N. Blandford first with Erica æmula, and Mr. Wills second with Statice profusa.

Six stove and greenhouse ferns distinct, Mr. E. Wills a good first, showing Microlepia hirta cristata, Davallia Mooreana, Lomaria Gibba platyptera, Nephrolepis davallioides furcans, Davallia polyantha, and Adiantum cardiochlæna; Mr. Peel second, and Mr. Stratton third.

Mr. E. Wills was the only exhibitor of six fuchsias, and was deservedly awarded the first prize for well-bloomed pyramidal plants, and for a like number of begonias, the last named exhibitor was again to the front, showing large massive plants, with thick fleshy leaves, and flowers of great size and substance. Mr. Busby, gardener to F. Willan, Esq., Thorn Hill Park, was a good second, and Mr. Innes, gardener to H. J. Buchan, Esq., Wilton House, third, each showing well. For six double begonias Mr. Innes was to the front, showing in excellent form Rev. W. Lambert, Prince of Wales, Rosa Mundi, and Edith; Mr. Busby, second. For six pelargoniums, zonale, or nosegay, Mr. N. Blandford was a good first, showing well-flowered plants of Polly King, Zelia, Mr. W. Sanders, Brunhilda, Queen of Whites, and Mercides. Mr. Wills and Mr. Windebank took the remaining prizes in the order of their names, and for a like number of doubles, Mr. N. Blandford was again to the front.

For six achimenes Mr. Innes was first, having good pans of Violacea, Admiration, Longifolia alba, and others. Mr. N. Blandford put up six grand plants of gloxinias for the prize offered, and was deservedly placed first. Mr. Innes and Mr. Busby were second and third with smaller plants. For six coleus Mr. Innes was first with dwarf, bushy plants. Mr. Busby and Mr. Stratton followed as their names appear, and for six plants suitable for dinner-table decoration Mr. E. Wills first with a very pretty lot. For a single specimen orchid Mr. Cypher was first with a good-sized plant of Cattleya Gaskelliana. Mr. Evans, gardener to Lady Ashburton, Melshet Court, Romsey, was second with Cattleya crispa.

Groups Arranged for Pictorial Effect.—These, if not numerous, made an imposing display, showing considerable taste and care in arrangement. Here Mr. E. Wills was to the front with a very effective arrangement composed of the usual background of palms, with a groundwork of maidenhair fern, with edging of Panicum variegatum, with a goodly number of light palms, Francoa ramosa, celosias, hydrangeas, asparagus, and other good subjects. Especially good were the young crotons, the whole having a bright and rich appearance. Mr. J. Currey was a good second, but was a trifle heavier, though in every way a good group. Mr. Ladham, nurseryman, Shirley, third. Mrs. Kingsbury was first for a group of miscellaneous plants or nursery stock for an effective collection. Mr. G. Windebank second.

Orchids.—For the best collection of orchids Mr. S. Carr, gardener to W. A. Gillet, Esq., Fair Oak Lodge, Bishopstoke, was awarded the first prize, showing, amongst others, Odontoglossum vexillarium, Cattleya Gaskelliana, Aerides odorata major, and others. Mr. N. Blandford was second, having good Cattleya Dowiana among his plants.

Cut Flowers.—There were three tables dressed with flowers and dessert fruits, but up to the time of leaving no cards were put on. For a single epergne Messrs. Cypher were the principal exhibitors, and were awarded first for a very pretty arrangement; Miss A. Holly second. Bouquets were shown in good style. Messrs. Perkins and Son, Coventry, first for both bridal and ball-room, with very beautiful arrangements, the Dipladenia in the ball-room bouquet showing up to excellent advantage; Messrs. W. and G. Drover were second for bridal bouquet; and Mr. J. K. Chard second for a ball-room bouquet, each showing well.

Roses were well shown for the time of the year.

For twenty-four distinct Mr. S. G. Rumsey, Nurseryman, Worthing, Kent, was first, showing, among others, fine blooms of Dupuy Jamain, Madame C. Wood, Countess of Oxford, Madame Laing, J. S. Mill, Ulrich Brunner, Merveille de Lyon, Lady Mary Fitzwilliam, C. Lefebvre, Ferdinand de Lesseps, Marie Baumann, Duke of Edinburgh, The Bride, and others. Messrs. Perkins and Sons, Coventry, were a good second. For twelve blooms distinct, Mr. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, was a good first, his best blooms were Catherine Mermet, Charles Lefebvre, Souvenir d'Elise, La France, Madame Cusin, Duke of Teck, The Bride, Anna Olivier, and others; Mr. A. Pomroy, second.

Stove and Greenhouse Cut Flowers.—Mr. Budd, gardener to F. G. Dalgety was first for twelve bunches, with a very good lot, the Allamanda, Cattleya crispa, Stephanotis, and Ixora Pilgrimii being especially good; Mr. J. Evans was a good second.

For twelve bunches of Hardy Herbaceous Cut Flowers Messrs. J. Cheal and Sons were first, the Harpalium rigidum, Rudbeckia laciniata, gaillardias and phloxes being very good. Mr. West and Mr. Evans followed in the order given. Mr. W. Clements was first in three different classes for carnations and picotees, showing well in each instance. For twelve dahlias in eight varieties Mr. West was first, having fine blooms of Hon. Mrs. P. Windham, W. H. Williams, Gaiety, Mrs. Langtry, General Grant, Harrison Weir, Burgundy, and others; Mr. Neville a good second. For cut pelargoniums, single and double, Mr. Blandford and Mr. West were the prize-takers; and for pompon dahlias Mr. Evans was first.

Fruit.—There was a good collection of fruit. Eight competitors put up for the three prizes offered by the society. Foremost among these was one from Mr. W. Iggulden, gardener to the Earl of Cork and Orrery, Marston House, Frome, who had fine, well-finished Madresfield Court and Muscat of Alexandria grapes, large Sea Eagle peaches, Hero of Lockinge melon, Moor Park apricots and figs. Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was a very close second, so close that the judges called in a referee to decide. He had the same varieties of fruit except that nectarines took the place of apricots; the muscats in this lot were very good. Mr. G. A. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth, Marlborough, was a very good third, having heavy Black Hamburgh grapes, but the melon in this lot was not ripe, which told against it. The class for three bunches of black grapes brought five lots. Mr. G. A. Inglefield was a good first with three nice bunches of Black Hamburgh, Mr. F. Bennett, nurseryman, Brook Gardens, Tichfield, second. For a like number of bunches of any white variety Mr. N. Molyneux, gardener to J. Carpenter, Esq, Rooksbury Park, Fareham, was first with three handsome bunches of Muscat of Alexandria having fine berries, Mr. G. A. Inglefield second with smaller bunches but well coloured. For two bunches of any black variety Mr. J. Allen, gardener to Captain H. V. Montagu, Whirwell Priory, Andover, first with Black Alicante, Mr. H. Innes second with Black Hamburgh, and Mr. Curtis third. For a like number of any white variety Mr. Allen was first with good Muscat of Alexandria, Mr. Innes second with Buckland Sweetwater. For a single bunch of white Mr. N. Molyneux was first with a pretty piece of Muscat well coloured, and Mr. E. Verney, gardener to T. B. West, Esq., Langdown, Hythe, was second with a heavy bunch of Buckland Sweetwater. For a single bunch of any black Mr. Inglefield was first with Black Hamburgh, and Mr. Iggulden second with Madresfield Court. Mr. Evans had the best pine, a smooth Cayenne. The last named exhibitor also had the best flavoured scarlet-fleshed melon, a Blenheim Orange. Mr. Pope had the best green-fleshed with Hero of Lockinge. Mr. J. Allen had the best dish of peaches, not named, probably Grosse Mignonne, very fine, Mr. Iggulden second with Sea Eagle. Mr. J. Budd had the best nectarines, Elruge, and Mr. Allen had the best collection of six dishes of hardy fruits.

Vegetables.—There were three fine lots put up in the class for twelve varieties, and the competition was close throughout. Mr. J. Wilkinson, gardener to Lady Theodore Guest, Inwood House, Blandford, was awarded the first, having in his collection fine Autumn Giant Cauliflower, Rousham Park Onion, Perfection Tomato, Long White Vegetable Marrow, New Intermediate Carrot, Jersey Lily Turnip, Canadian Wonder Beans, Carter's Iris and Sutton's Seedling Potatos, Duchess Peas, and Lockie's Perfection Cucumber; Mr. C. J. Waite was a very close second, and Mr. Pope third. For nine varieties, Mr. G. A. Inglefield first with a good collection, having fine Perfection Tomato and Duchess Pea. In the competition for Messrs. Sutton's prizes, Mr. C. J. Waite was first, having King of the Cauliflowers, Golden Rocca Onion, Duke of Albany Pea, Perfection Tomato, and Windsor Castle Potato; Mr. Wilkinson second, and Mr. Pope third. For Messrs. Webb and Sons' prizes, Mr. Waite was again to the front, followed by Mr. Pope and Mr. Wilkinson in the order given. Mr. Waite's best dishes were Kinver Mammoth Cauliflower, Duke of Albany Pea, Golden Rocca Onion, and Stourbridge Glory Potato. Mr. R. West had the best eight dishes of potatos, showing very fine tubers of Mr. Bresee, King of Russets, First and Best, Reading Russet, Sutton's Seedling, and King of Flukes.

BEDDINGTON DISTRICT COTTAGERS' HORTICULTURAL SOCIETY, August 4.

The district embraced by the operations of this society comprises the parishes of Beddington, Carshalton, and Wallington, and whilst including many great gardens, it affords exceptional facilities to the working classes for engaging in the cultivation of vegetables and flowers. In no other group of parishes within the same distance of the metropolis are the facilities so great, and certainly in no district are the opportunities turned to better account. The cottagers have mostly gardens of considerable size attached to their cottages, and in addition large areas of land in the several parishes are devoted to allotment gardens, some of the land being owned by public bodies, whilst other portions are the property of private individuals. Recognizing the importance of judicious cropping and high cultivation in the management of both the allotment and cottage gardens, some of the leading horticulturists resident in the district decided early in the year to form a society for the purpose of encouraging the occupiers to cultivate their gardens in the best possible manner. This was accordingly done, the society having the Rev. Canon Bridges for its president, and A. H. Smee, Esq., as one of the two vice-presidents, and Mr. Cummins and Mr. Jay as honorary secretaries. The first exhibition was held in Beddington Park on Monday last, and a more complete success could not well have been desired, for the competition was keen, the produce of a high degree of excellence, and the weather simply delightful.

In addition to the prizes offered for competition on Monday, classes were provided in the schedule for the best kept cottage gardens, the best flower gardens, and the best allotments. In the several classes there were from fifteen to twenty entries, and the making of the awards was by no means a light task, so closely were they matched in point of merit. In the class for allotments, Mr. Harvey Hopkins was first with 62 points; Mr. W. Henn, second, with 60; Mr. F. Fuller, third, with 58; Mrs. F. C. Page, fourth, with 56; and Mr. G. Henn, fifth, with 55. Mr. W. Ames, who was not eligible to compete, was awarded an extra first prize for his allotment, so admirably was it managed. In competition for the best kept cottage garden, Mr. S. Bradley,

Mr. W. Reynolds, Mr. Woodbourne, and Mr. W. Pitchett were the prize-takers, their points being 63, 62, 56, and 53 respectively. The awards for flower gardens were made as follows: Mr. W. Lumley, first, with 33 points; Mr. E. Rogers, second, with 32; Mr. J. Taylor, third, with 30; Mr. F. W. Wood, fourth, with 28; and Mr. W. Molyneux, fifth, with 27. The cropping and general keeping of the majority of the allotments were remarkably good, and finer crops of potatos, peas, cabbages, broad beans, scarlet runners, onions, and parsnips that were to be met with on all sides could not well have been desired. Carrots were found to be suffering severely from the attack of wireworm, and the vegetable marrows were hard hit by the disease, perfectly healthy plants being quite the exception. The various flower gardens in competition for the prizes evinced much taste.

The exhibition held on Monday afforded additional proof of the excellent manner in which many of the gardens and allotments are cultivated. In every class the entries were numerous and the productions remarkably good; especially noteworthy were the cabbages, potatos, peas, and beans, which were staged in the best possible condition. There were immense numbers of baskets and bouquets of wild flowers shown by children, the entries in the two classes being sufficient to nearly occupy the whole of a large marquee. The chief prize takers in the plant and vegetables were Messrs. F. C. Page, G. Bowditch, McRae, W. Patchitt, G. Henn, W. Henn, and G. Harris.

The contributions not for competition included an interesting collection of hardy flowers and a beautiful wreath from Mr. J. King, Wallington; a collection of orchids and miscellaneous plants from Mr. G. W. Cummins, gardener to A. H. Smee, Esq., the Grange, Hackbridge, Odontoglossum Harryanum being especially well represented; a group of flowering and fine foliage plants from Mr. Thackray, Oxford Road, Wallington; and Mr. Glover, gardener to E. Ellis, Esq., Wallington; and a group of gloxinias, sarracenias, and miscellaneous plants from Messrs. J. Peed and Sons, Roupell Park Nurseries, Streatham.

The arrangements were admirably carried out by Mr. Jay and Mr. Cummins, the hon. secretaries, and the other members of the executive. The judges were Mr. J. Wright and Mr. G. Gordon.

LEICESTER FLOWER SHOW, August 5.

The great horticultural exhibition, held in the Abbey Park, Leicester, on Tuesday, was in every way a brilliant success, and proved worthy of the place and its people. All classes of plants, flowers, and fruits proper to the season were staged in immense numbers, and in a condition that did honour to the cultural skill of the large body of exhibitors, and there was an enormous number of visitors. The attendance was indeed such as to show that the residents in the town and neighbourhood take considerable interest in horticultural gatherings, and fully appreciate the efforts made by the municipal authorities to provide them with healthful enjoyment. The Abbey Park, in which the show was held, is one of the finest public parks in the provinces, and is admirably adapted to the purpose to which it was put on this occasion. Opened some eight or nine years since, it has from the first been under the charge of Mr. John Burn, the present superintendent, and bears on every side unmistakeable proofs of the taste and skill that had been brought to bear upon its management. Walks and turf are alike remarkable for their high keeping, the shrubberies and plantations represent a thorough acquaintance with the finest of the trees and shrubs at the command of the planter, and the flower gardens now in the full flush of their summer beauty evince a remarkable amount of taste, the arrangements of leaf plants being especially good. In addition to the flower show there was an exhibition of honey, beehives, and appliances generally for the apiary, and in the afternoon there was a conference on fruit culture held under the auspices of the British Fruit Growers' Association.

One of the most important of the many good features was formed by the fruit, of which there was an exceptionally good display. The competition was especially brisk in the class for nine dishes, and the post of honour was occupied by Mr. J. H. Goodacre, Elvaston Castle, Derby, who had finely-finished clusters of Black Hamburgh and Muscat of Alexandria grapes, and excellent Bellegarde peaches, Lord Napier nectarines, and Black Circassian cherries, and a well-ripened Queen pine; Mr. J. Edmonds, gardener to the Duke of St. Albans, Bestwood Lodge, Nottingham, was a very close second with a collection in which the Muscat of Alexandria, Black Hamburgh, and Madresfield Court grapes were exceptionally good; Mr. Peter Blair, gardener to the Duke of Sutherland, Trentham, was third with an excellent collection. Mr. Goodacre was first also in the class for six dishes with Muscat of Alexandria and Black Hamburgh grapes, Dymond peach, Lord Napier and Queen pine in excellent condition; Mr. Blair and Mr. J. Edmonds were second and third respectively, both staging capital collections. Mr. Blair had the premier award made in his favour in the class for four dishes; and Mr. J. Edmonds and Mr. R. Shaw, Garendon Park, occupied the second and third places. In competition for the prizes for one pineapple, Mr. J. Goodacre, Mr. Edmonds, and Mr. Blair were the prizetakers in the order of their names, all staging the Queen. Grapes were exceptionally good. For two bunches of Black Hamburgh, Mr. A. McKinish was first with superbly-finished clusters; and Mr. G. Lofley Knighton, Church Road, Leicester, was a close second. The prizes for two bunches of Muscat of Alexandria were awarded to Mr. McKinish, Mr. J. Edmonds, and Mr. Goodacre, all of whom had large bunches with good berry, and of the rich amber hue indicative of perfect ripening. In competition for the prizes for two bunches of black grape, Mr. P. Herrick and Mr. R. Shaw were first and second with Madresfield Court; the bunches rather small, but finely finished. The premier award for two bunches of any white grapes other than Muscat of Alexandria was made in favour of Mr. Blair, who had the Duke of Buccleuch in exceptionally fine condition; Mr. Goodacre was second with Foster's Seedling. Mr. W. H. Divers, Ketton Hall, Stanford, was first in the class for a dish of peaches with large, superbly-coloured fruits of crimson Galande, and in the corresponding class for nectarines he obtained premier honours for a fine dish of Lord Napier; Mr. Goodacre was second with Violette Hative, and Mr. A. McKinish was third with Pitmaston Orange. Mr. Shaw and Mr. A. W. Hainsworth were the most successful of the competitors in the classes for melons; and in the class for figs, the first and second prizes were awarded to Mr. Herrick and Mr. Blair, who had Brown Turkey and Negro Largo respectively.

The tent devoted to cut flowers was filled to its utmost capacity, and the display produced was remarkable alike for its interest and attractiveness. Roses were numerically strong and of great excellence for so late in the season. Messrs. Harkness and Son, Bedale, were especially successful. They were first for thirty-six varieties, single trusses, they were first with a fine box of blooms, in which those of La France, Marie Baumann, Sir Rowland Hill, May Quinnell, Mrs. Jowitt, Harrison Weir, Alfred K. Williams, Horace Vernet, Earl of Dufferin, and Merveille de Lyon were conspicuous. Rev. J. H. Pemberton, Havering-atte-Bower, was a close second; and Messrs. Perkins and Son, Coventry, were third. Messrs. Harkness and Son were first for twenty-four with finely-developed blooms, particularly noteworthy being those of Madame Alphonse Lavallee, Alfred Colomb, Duchess of Bedford, Comtesse de Nadaillac, Marie Baumann, and Horace Vernet. Matt Merryweather, Southwell, Notts, was a capital second. Messrs. Harkness also obtained premier honours in the class for twelve teas and also for twelve trusses of one variety. In the latter class they had Horace Vernet in superb condition; and Messrs. J. Cocker and Son, Aberdeen, were second with Her Majesty in excellent condition. The last named firm was also second for twelve teas. Hardy flowers formed an interesting feature, and Messrs. Harkness and Son were first with a collection remarkable for the high quality of the flowers and the taste with which they were arranged; Mr. T. Battenby, Blaygate, was a good second. Mr. Blair had the best collection of flowers of stove and greenhouse plants, and in the class for twelve varieties of zonal pelargoniums Messrs. J. R. Pearson and Son, Chilwell, were first with a collection of great excellence. Messrs. Perkins and Son, Coventry, were, as usual, highly successful in the classes for arrangements of cut flowers, being first in the two classes for hand bouquets, and also in those for wreaths and sprays.

The most important of the classes for plants was that for groups of plants which were so good as to form a distinct and effective feature. The successful competitors were Mr. Johnston, Stoneleigh; Mr. G. Barry, gardener to H. Snow, Esq., Stoneygate; Mr. J. Mawby, and Messrs. J. and H. Hinckley, all of whom had excellent arrangements. Coleus were well shown by Mr. Rogers. Tuberous begonias were represented by exceptionally fine collections from Mr. Hainsworth, Mr. Johnston, and Mr. G. Barry. Zonal pelargoniums made a bright display, the finest collections being those from Mr. Rogers and Mr. Hassell. Fuchsias were admirably shown, the finest collections being those from Mr. G. Bray and Mr. Rogers. The finest collections of ferns were those from Mr. G. Barry and Mr. Johnston, who were awarded equal firsts.

Seldom are vegetables so well shown as on this occasion. Mr. Lambert, Onslow Park, Shrewsbury, was first in the class for twelve dishes with produce that has seldom been equalled. Mr. J. Cox and Mr. Shaw were second and third with good collections. Mr. Lambert also occupied the post of honour in the class for six dishes, in which the prizes were provided by Messrs. G. Webb and Son. In the competition for the prizes offered by Messrs. Harrison and Son, Mr. R. Shaw was first; and in the class for a collection unlimited in extent Mr. W. Biddles, Loughborough, was first with an excellent collection.

The miscellaneous contributions included a beautiful group of flowering and ornamental plants from Messrs. B. S. Williams and Son, Upper Holloway; a fine bank of orchids from Messrs. Sander and Co., St. Albans; and a collection of begonias from Messrs. J. Laing and Sons, Forest Hill.

HEADINGTON (OXON), VILLAGE SHOW, August 4.

The weather, the attendance of visitors, the situation, and the quality of the exhibits, each and all contributed to make the tenth annual exhibition of the Headington Horticultural Society a complete success. The show was held in the pleasure grounds of the Manor House, Headington, the residence of Miss Watson Taylor, a portion of the park being known to have been the site of a Royal palace, the name of "Court Close" being still retained to denote the site of the old foundations.

In connection with the horticultural section, a live stock show is held, some 360 exhibits being staged; the horticultural department represented 340 separate exhibits.

As the district is "a home for gardeners," there is always a fairly high degree of quality manifest in the several sections, traders, gardeners, amateurs, and cottagers being much on a par.

Plants.—In this department but few classes are provided, there being a strong desire in the district to encourage out-door cultivation, but the groups of mixed subjects are usually presented with effect. On a space of six feet by four feet, the premier card went to Mr. John Mattock, Rose Nurseries, New Headington, who had a charming semi-circular pyramidal arrangement of crotons, coleus, lilies, begonias, pelargoniums mixed with adiantums, and surmounted by feathery palms, and edged with lobelias and cobea scandens; Miss Watson Taylor, second, with fuchsias, zonals, geraniums, begonias, petunias, achimenes, coleus, the apex of the cone formed by a spreading fern; Thomas Arnall, Esq., Brookside, being third, his design remarkable for the display of Lilium auratum (nine spikes with thirty-nine flowers), surrounded by neat examples of dracænas, coleus, ferns, begonias, hydrangeas, fuchsias, a fine piece of Pandanus Veitchi, edged blue lobelia. In the amateur division, the best three plants came from Mr. J. Green, Church Street, Headington, who put up fresh well-flowered examples of fuchsias, Harriet Lye, and Mrs. Marshall, and a densely bloomed zonal pelargonium, F. P. Raspail; the second card falling to a choice hardy fern, a tuberous begonia, and a nice bit of blue in the form of a Campanula fragilis; the third place being filled by a Begonia Weltoniensis, a coleus, and a bush of lemon-scented verbena in flower. The cottagers were strong in fuchsias and geraniums, the best window plant being a graceful Campanula fragilis. Petunias were also nicely grown and flowered, double forms predominating.

Cut Flowers.—The light soil of the district conduces to the development of every form of flowering plants, and whether it be herbaceous perennials, biennials, or annuals, good culture may be relied on. Mr. Mattock is always strong, and this season he was awarded premier prizes for table decoration, nine hand bouquets, a dozen trusses of zonals, and half a-dozen bunches of border flowers. His epergne was as chaste as well could be. The second prize went to Miss Alice Wootten-Wootten, Headington House, for baskets (in lieu of vases) of Iceland poppies and panicles of grasses. The cottagers had a few creditable pansies and dahlias, their bunches of garden flowers and ten-week stocks being excellent. Wild flowers were but few. Amateurs also staged well arranged bouquets in collections of six each.

Roses.—Of these Mr. Mattock put up as an extra a very fine arrangement of twenty-four triplets, beautifully clean, and equal to any mid-season developments. To the same exhibitor was awarded the premier card for eighteen distinct, the varieties being—back row—Mrs. J. Laing, Cornelia Koch, Ulrich Brunner, Souvenir d'un Ami, Madame Norman Neruda, The Bride—middle row—Marie Verdier (extra fine), Rubens, Annie Wood, Marie Van Houtte, Harrison Weir, Adam—front row—Horace Vernet, Comtesse de Nadaillac, Duke of Teck, Hon. Edith Gifford, Louis Van Houtte, and Baroness Rothschild; Mr. Alfred Evans, Marston, second, his finest forms were Ulrich Brunner, Comtesse de Nadaillac, Senateur Vaisse, Marie Verdier, Marie Van Houtte, Anna Olivier, Jean Ducher, Marie Rady, A. K. Williams, Catherine

Mermet, Alfred Colomb, La France, and Francisca Kruger. For twelve distinct, Mr. W. Narroway, Headington Quarry, who had bright examples of Alfred Colomb, Souvenir d' Elise Vardon (large, perfect form), Lady Sheffield, Catherine Mermet, Marie Baumann, Innocente Pirola, Duke of Teck, Madame de Watteville, Louis Van Houtte, Comtesse de Nadaillac, Madame Norman Neruda, and Marie Van Houtte; Mr. James Parker, jun., The Croft, Headington, second, for an excellent level lot of flowers, including Earl Dufferin, Lady Sheffield, Senateur Vaisse, Alfred Colomb, Louis Van Houtte, Innocente Pirola, Marie Baumann, Baroness Rothschild, Prince Camille de Rohan, Henrich Schultheis, A. K. Williams, and Niphetos; Miss Watson Taylor, a good third, with Alfred Colomb, Maréchal Niel, Mrs. J. Laing, Edouard Hausberg, La France, Camille Bernardin, Innocente Pirola, Anna Olivier, Madame Camille, and Pierre Notting. For nine, the high quality was well maintained, Richard Gurden (cottager), Headington Quarry, first, with Ulrich Brunner, Madame Brary, Alfred Colomb, Madame Norman Neruda, Lady Mary Fitzwilliam, Prince Camille de Rohan, Marie Rady, and Comtesse de Serenyi; John Saunders (cottager), Old Headington, second, for Mrs. J. Laing, Charles Lefebvre, La France, Senateur Vaisse, Charles Darwin, Alfred Colomb, Innocente Pirola, Marie Verdier, and Duchess de Caylus. The above were "open to all." In the cottagers' class for six, James Parker and Richard Gurden carried all before them, the former staging Louis Van Houtte, Hon. Edith Gifford, Madame Norman Nevada, Earl Dufferin, Amazone, and Marie Rady; the latter putting up Alfred Colomb, Comtesse de Serenyi, Charles Lefebvre, Francisca Kruger, Madame N. Neruda, and Catherine Mermet. In the amateurs' six Mr. Narroway was again first, his box all good, but the bloom of Souvenir d'Elise Vardon would have taken a medal anywhere for size and form; Mr. Arthur Stow (blacksmith) second, his three best flowers being Charles Lefebvre, E. Y. Teas, and Madame Lambard.

Fruit.—A very attractive department. For six dishes, T. Arnall, Esq. led with finely coloured fruit of Alexander peaches, Carter's Prolific raspberries, Morello cherries, Raby Castle currants, Crown Bob gooseberries, and grand clusters of highly finished Black Hamburg grapes; Mr. W. Coppock, postmastsr, Headington Quarry (whose garden is an old disused stone quarry), was second with well ripened dishes of Early Favourite plum, Bigareau Napoleon cherries, Sir C. Napier strawberries, Large Early apricots, Doyenne d'Ete pears, and Red Joaneting apples; Mrs. T. Jacob, Rose Cottage, Headington Quarry, third, with Bigareau cherries, Glory of Old Port gooseberries, Early Favourite plums, Black Hamburg grapes, Red Joaneting apples, and Althorp Crassane pears. The classes for three dishes and single dishes were well contested; apricots, raspberries, plums, morello cherries, sweetwater grapes, and bush fruits being plentifully presented; the gooseberries were unusually large and fully ripe. In the cottagers' classes were several grand exhibits of New Hawthornden and Cellini apples, Jargonelle pears, and gigantic gooseberries.

Vegetables.—A splendid lot of produce was brought together in competition, great interest centreing in the "specials." For Sutton and Sons', six dishes distinct, the first card went to Mr. J. Green (carpenter), who staged a nice brace of Improved Telegraph cucumber, dishes of Ne Plus Ultra peas, Prize-taker potatos, Perfection tomato, Early London cauliflower, and Champion Scarlet Runner bean, the last-named being the best dish we have seen this season; Mr. C. Bodimeade, gardener to Sir W. Markby, Headington Hill, second, who put up Ne Plus Ultra cucumber, Perfection tomato, Ne Plus Ultra peas, King of Cauliflowers, Ne Plus Ultra runner bean, and Scarlet Gem carrot (rather rough, or he might have changed positions). In two classes for carrots (prizes given by Jefferies and Co., seedsmen, Oxford), Albert Morris, Headington, secured both prizes (a steel spade and a steel digging fork), with matchless examples of "Model" (short), and "Long Red Exhibition" carrots, in a stiff competition. Prizes were also provided by Mr. J. Walker, Thame, and L. McGreal and Co., Oxford, for peas and onions, each class well contested. The roots and bulbs generally were very large and approaching ripeness.

Potatos.—Of these nearly 1,200 tubers were in competition, and as a whole were as near perfection as could be in the early days of August. Open classes—for three dishes of round—Mr. R. Ryman, Barton, was first for a dozen tubers each of Early Border, Duke of Albany, and spherical forms of Sutton's Seedling; Sir W. Markby, second, with Early Regent, Reading Russet, and a seedling (flattish round); while for Kidneys, Sir W. Markby, led, with level forms of Covent Garden Perfection, Reading Ruby, and Early Ashleaf; Mr. R. Ryman, second, with Cole's Favourite, Sutton's Seedling (large and shapely), and a variety said to be Hooper's Early Prolific. Amateurs.—*Round*—first, Mr. J. Green, for dishes of Early Regent, Schoolmaster, and Abundance. *Kidney*, first, Mr. C. Adams, Convalescent Home, Headington, with Late Beauty of Hebron, Brinkworth Beauty, and Myatt's Ashleaf; Mr. J. Green, second, for Prime Minister, Reading Ruby, and Sutton's Seedling. Cottagers.—*Three Dishes*—first, Red King, White Beauty, and Red Regent; second, Victoria, Reading Russet, and Fidler's Prolific; third, International, Sutton's Seedling, and Reading Ruby. Single dishes—*Kidney*, first and third, Sutton's Seedling; second and fourth, Cole's Favourite; fifth, International; *Round*, first, Reading Russet; second, Vicar of Laleham; third, Early Market; fourth, Adirondack; fifth, King of the Russets. Others presented were Reading Giant, Mr. Bresee, The Dean, Snowdrop, Blanchard, Radstock Beauty, Cosmopolitan, Red Emperor, and Sutton's Best of All.

BRITISH FRUIT GROWERS' ASSOCIATION, August 5.

A meeting of the British Fruit Growers' Association was held at Leicester on Tuesday last, in conjunction with the horticultural exhibition in the Abbey Park, and the results were highly satisfactory. Much interest was taken in the visit by the municipal authorities, and the representatives of the association were entertained at luncheon by the Mayor and Corporation. The chair at the afternoon meeting was occupied by James Ellis, Esq., M.P., who was supported by the Mayor and several of the aldermen. There was a large attendance, and the association was represented by Mr. T. F. Rivers, Mr. W. Roupell, Mr. Head, Mr. L. Castle, Mr. G. Bunyard, Mr. Pearson, and Mr. George Gordon.

The Chairman, in his opening address, referred to the importance of fruit culture as a national industry, and to the necessity for paying special attention to the peculiarities of the districts in which it is proposed to engage in fruit-growing for profit or otherwise. Papers were then read as follows: "Cherries and Plums," by Mr. Rivers; "Fruits for Leicestershire," by Mr. W. Ingram; "Apples for the Midlands," by Mr. A. H. Pearson; and "Pruning," by Mr. G. Bunyard. There was a good discussion, in which Mr. Gordon, Mr. Harrison, Mr. Roupell, and others took part.

ROYAL HORTICULTURAL SOCIETY.

Inspections at Chiswick by Floral and Fruit Committees.

The Floral Committee met at the Society's Gardens, Chiswick, on July 22. Present: W. Marshall, Esq., in the chair, and Messrs. Hibberd, Lowe, Druery, Walker, Herbst, Nicholson, Baines, Leach, Dean, Goldring, Paul, and Holmes. The committee inspected the collections of carnations, picotees, stocks, and pansies growing in the gardens when the following awards were made. *** Equivalent to first-class certificate; ** to award of merit:—

Carnation	***	Juliette (R.H.S.), bright rosy purple self.
,,	,,	Mrs. Frank Watts (Ware), white self.
Picotee	,,	Romeo (Paul and Son).
,,	,,	Augusta ,,
,,	,,	Pica ,,
Carnation	,,	Juno ,, rose self.
,,	,,	Snowdrift (Fisher, Son, and Sibray), white self.
,,	,,	Horace (Dan), scarlet self.
,,	,,	Maggie Laurie (Dicksons and Co.), delicate blush self.
,,	,,	Caledonia ,, bright purple.
,,	,,	The Moor (Dean), dark crimson.
,,	,,	Rowena ,, bright scarlet.
Picotee	,,	B. J. Bryant (R.H.S.)
,,	,,	Favourite (Turner).
Carnation	,,	Clown (Dodwell), yellow ground.
,,	,,	Oxonian ,, salmon self.
,,	**	Beatrice (Fisher, Son, and Sibray), buff self.
,,	,,	Fair Maid (Dean), blush.
Pansy	***	The Bride (Dobbie), creamy white, edged blue.
,,	,,	Duchess of Fife ,, orange, edged bronze.
,,	,,	Neptune ,, dark purple, top petals pale.
,,	**	Duchess of Sutherland (Dobbie) pale lavender.
,,	,,	Marchioness of Tweeddale ,, pure white.
Stocks	***	Large Ten Week (Putz) brilliant rose.
,,	,,	,, ,, purple.
,,	,,	,, ,, white.
,,	,,	,, ,, sulphur yellow.
,,	,,	Dwarf Ten Week ,, lilac.

Fruit and Vegetable Committee.

Present: T. F. Rivers, Esq., in the chair, and Messrs. Cheal, Crowley, P. Veitch, Balderson, Warren, Wythes, and Hudson. The committee inspected the collections of peas growing in the gardens, and made the following awards of merit: The Daisy (James Carter and Co.), a dwarf wrinkled marrow; Boston Hero (G. Bunyard and Co.), a tall, white, wrinkled marrow; Ambassador (H. Eckford), a tall, green, wrinkled marrow.

The Floral Committee, on July 31, again inspected the collections of carnations and picotees, also the pelargoniums, growing in the gardens, and made the following awards:—

Carnation	***	Mrs. Reynolds Hole (Veitch), terra cotta.
Picotee	,,	Grandiflora (Veitch), deep rose.
,,	,,	Alice Ayres (Veitch-Ware), white, slightly streaked.
Carnation	,,	Gloire de Nancy (Veitch), white, large.
,,	,,	Germania (Veitch-Benary), yellow.
,,	,,	Raby Castle (Turner-Veitch), rose-pink, fine constitution.
Picotee	,,	Admiration (Veitch), dark purple edge.
Carnation	,,	Guiding Star (Ware), scarlet self.
,,	,,	Will Threlfall (Paul), bright yellow.
,,	,,	Edith (Fisher, Son, and Sibray), pale pink, spotted scarlet.
,,	,,	Canary ,, ,, pale yellow.
,,	,,	Comtesse de Paris (Paul), pale blush.
,,	,,	Penelope (Hooper), while self.
,,	,,	Merlin (Lakin), deep crimson.
,,	,,	Boadicea (Douglas), purple flaked.
,,	,,	Caractacus ,, crimson bizarre.
,,	,,	Feuerball (Benary), deep scarlet self.
,,	,,	Mirakel von Zirbst (Benary), very dark crimson.
,,	,,	Albrecht Duesser ,, deep rose, crimson flake.
,,	,,	Orestes (R.H.S.), pale rose.
,,	,,	Countess of Ellesmere (R.H.S.), pale flesh, spotted with crimson.
Picotee	,,	Agnes Chambers (Turner), yellow ground, lilac edge.
,,	,,	Colonial Beauty ,, terra cotta, streaked.
,,	,,	Dorothy (Turner), terra cotta.
Carnation	,,	Scarlet Premier (Storrie), scarlet self.
,,	,,	Rose Celestial (Turner), rose self.
Picotee	,,	Atalanta (Dodwell), yellow ground.
,,	,,	Diana (Dodwell), white self.
,,	,,	Ariel ,, yellow.
,,	,,	Andromeda (Dodwell), terra cotta flaked.
Picotee	**	Grosken (Veitch), purple edge.
,,	,,	Alfred Grey (Dodwell), yellow ground.
Carnation	,,	Hypatia (Paul), white self.
Double-flowered Ivy-leaved Pelargoniums.		
,,	***	De Quatrefages (Lemoine), violet-magenta.
,,	,,	Souvenir de Charles Turner, flowers of a deep pink shade.
,,	,,	Galilee, No. 1, soft lilac.
,,	,,	,, No. 2, soft rosy pink.
,,	,,	Madame Thibaut, deep pink.
,,	,,	Le Printemps, rosy pink.
,,	,,	Comtesse Horace de Choiseul, satiny rose.
,,	,,	Gloire d'Orleans, bright pink.
Single-flowered, Ivy-leaved—		
,,	***	Gem, blush white.
,,	,,	Mrs. H. Cannell, deep mauve purple.
Zonals	***	Charles Mason (Pearson), fine scarlet, of good habit.
,,	,,	Mons. Poirer (Lemoine), flowers of a beautiful purplish shade, of good habit of growth.
Stock, Large-flowering Ten Week—		
,,	**	Aurora (Putz).
Fuchsia	**	Dunrobin Bidder (Melville), seedling from F. Riccartoni, a dwarf, free-flowering, bedding variety.
Mimulus	**	Moschatus compactus (Putz), of dwarf, even growth, free flowering, and useful for edging purposes.

WOODSIDE HORTICULTURAL SOCIETY ANNUAL SHOW.

The tenth annual exhibition under the auspices of this Society took place on Saturday in Woodside (near Aberdeen), and though the number of entries showed a slight decrease as compared with last year, the quality of the exhibits on the whole was very superior. Many exceedingly beautiful pot plants were shown, fuchsias forming a magnificent display. Mr. Duthie, Woodside, opened the show, and in his opening remarks eulogised the society, which, he said, could lay claim, under slightly different names, to a history of nearly fifty years. Proceeding, he said it would be in the remembrance of many of them how Dr King, an eminent Aberdonian, was instrumental in saving the lives of thousands in India during the terrible famine there by his knowledge of plants. When the people were perishing owing to the failure of the rice crop, Dr. King, by means of his botanical skill, was enabled to provide food for a very large number of districts by using the roots of plants that were not formerly known to be edible, and he thus became a public benefactor. Then, need he say that the efforts that had been put forth in comparatively recent years, and the vast amount of skill bestowed had added to the comfort of the people and to the wealth of the country. Gardeners had ever been, as a body, a specially intelligent class of men, and had produced many leaders of progress. Let them visit any carefully kept garden and examine the plants and flowers there, and compare them with the originals of those plants and flowers as they appeared first on the earth, and they would be struck with the vast amount of skill that had been expended in producing such magnificent results. Then let them consider the value that was to be attached to soil cultivation in forming a preventative of the formation of irregular, useless, it might be positively evil habits. Mr. Duthie, then, amid loud applause declared the show open. The most successful exhibitors were :—Division I. (professionals and amateurs)—Pot Plants—Messrs. Geo. Maitland, John Yule, and D. Fraser; Cut flowers—Messrs. Anderson, Yule, Maitland, and Munro; Fruit—Messrs. Anderson, Davidson, Fraser, and Maitland; Vegetables—Messrs. Anderson, Fraser, Maitland, and Yule. Division II. (working classes only)—Pot plants—Messrs. Duff, Glennie, Maitland, Scroggie, Penny, Grieve, and Glass; Cut flowers—Messrs. Grieve Laing, Reid, and Glennie; Fruit—Messrs. Grieve, Thom, and Glass; Vegetables—Messrs. Grieve, Glennie, Reid, Thom, Duff, and Scroggie. Mr. Alexander Thom gained the medal for twenty-five strawberries of best flavour shown by amateurs, and Mr. William Anderson, Lower Cornhill, gained a similar honour offered to market gardeners. Mr. Anderson also gained a similar medal for the best basket of vegetables. The whole arrangements, as carried out by the Committee, were of the most complete kind. The judges were Messrs. Grigor, Fairfield; Proctor, Devanha House; Fortune, Balgownie; and Macleond, Aberdeen. During the afternoon and evening the show was largely patronised.

Obituary.

It is our painful duty to announce the death, on the 2nd inst., of our dear friend Mr. C. Roach Smith, F.S.A., the eminent antiquary and amateur fruitist of Temple Place, Strood. He was born at Landguard Manor, Isle of Wight, and was destined to follow the trade of a druggist in the City of London. Early in life he gave his mind to the study of archæology, and formed a valuable collection of antiquities, which he gave to the British Museum in 1856. On retiring to his pleasant residence at Strood, he pursued fruit culture with ardour, and acquired great skill in the growth of vineyard grapes and the making of good wines, which it has been our pleasure to report upon in past issues of the G.M. His labours in archæology cover much ground, and his views have generally proved to be as accurate as they were in advance of all average knowledge. This was strikingly illustrated by his determination of the genuineness of certain Roman remains at Chester, the age of which was made evident to him by the growth of certain lichens that serve as a test to those who understand them. He was a busy writer and editor. His "Collectanea Antiqua," in six volumes is greatly prized by antiquaries. His "Roman London" is one of the best known of his works, but perhaps he reached his highest point in literary work in editing the "Inventorum Sepulchrule," a work begun by Bryan Fausset in illustration of the Saxon antiquities of Kent. In conjunction with Mr. T. Wright, he founded the British Archæological Association, which has proved one of the most useful institutions of its class. Recently a subscription was instituted for the purpose of presenting him with a medal, and as we subscribed to the fund and have heard nothing of its completion, we fear he has not had the gratification of accepting the medal.

Replies to Queries.

Autumn Flowers.—F. : It is now too late to sow seeds in your new garden to obtain a crop of flowers this season. If you must have flowers it would be better to buy pot plants of such things as please you, and plant them out or plunge them in the pots as they are.

Tomatos.—R. B. : The plants are not suffering from disease, but unless a considerable improvement is effected you will not gather sufficient fruit to pay for the space they occupy in the house. They appear to have been kept too close and too moist. Tomatos under glass require a free circulation of air about them, with but little atmospheric humidity. The overhead syringings should certainly be discontinued, and the ventilation be materially increased.

Calochorti.—T. G. : It is a quite common occurrence for calochorti to fail to bloom satisfactorily the second season, owing undoubtedly to imperfect ripening of the bulbs. The best course of procedure will be to put the pots in which they have flowered on a top shelf in the fullest sun, and there allow them to remain for a month. Then shake out the bulbs and repot. Keep them rather dry until they commence to make new growth, when they will require moderate supplies of water.

Dendrobiums not Flowering.—R. S. : The failure of the greater proportion of your plants of Dendrobium nobile, D. densiflorum, D. thyrsiflorum, and other species, was probably owing to imperfect ripening of the pseudo-bulbs in the season previous. Dendrobiums require a high temperature and a humid atmosphere when making their growth, but when that is completed they should have a position near the glass with but little shade. They should, indeed, be shaded during periods of brilliant sunshine only, and the material used should be very thin.

Ripening Grapes.—M. D. : Grapes, whether to be sent to the table early in the autumn, or to be kept over the winter for sending to table in February, should be well ripened by the middle of September, as after that period the solar warmth is not sufficient to ensure perfect maturity. Grapes that are properly ripened before the end of the month mentioned can be kept in good condition through the winter with less difficulty than those finished later on with the assistance of fire-heat. Your crop of Muscat of Alexandria is hardly so far advauced as it should be, and should therefore have the assistance of a little fire-heat when the temperature is rather low.

Names of Plants.—R. Everett : 1, Scolopendrium vulgare crispum (normal); 2, Polystichum angulare proliferum; 3, Lastrea æmula. Plant in chocolate box, Spiræa ariæfolia.—H. Clark : 1, Thalictrum minus; 2, Prunella grandiflora, quite worth cultivating, but needs a moist soil, though on heavy lands in winter it is apt to perish; 3, Acorus calamus; 4, wild liquorice, or rest harrow, Ononis arvensis, a native beauty.—W. S. S. : 1, Helianthemum dichotomum; 2, Globulea canescens; 3, Rhipsalis grandiflora; 4, Viola reniformis.—W. Henshall : The tree is Rhus cotinus, a fine subject for a prominent sunny position in the front of a shrubbery. The flowering plant is Epilobium angustifolium.

Fuchsias.—W. M. : The fuchsias have no doubt exhausted the soil in which they are growing, and unless they receive assistance they will soon cease to produce sufficient flowers to justify their remaining in the conservatory. To use liquid manure is not advisable because of its objectionable odour, but artificial manure in a dry state may be used. Beeson's and Clay's are both excellent manures for topdressing the fuchsias. Apply sufficient to cover the surface somewhat thinly, and then lightly stir the soil. In watering immediately after the application of the manure it is necessary to exercise a little additional care to avoid washing it over the sides of the pots. A light sprinkling of guano may be applied in precisely the same manner.

Fumes from Chimneys.—A. S. : We have no doubt whatever that the gases generated in glazing bricks and sanitary tubes are directly injurious to vegetation; and in your case, as you are on a level with the tops of the chimneys, and at the same time so near to them, the deplorable state of your stove and greenhouse plants is fully accounted for. It is a question, however, if you have any remedy. Much will depend on whether the nuisance came to you, or you went to the nuisance. The only adviser to be trusted is a respectable solicitor of the district. As you put the case in your letter, we imagine you have a fair claim to compensation, but our imaginings will not avail you; the opinion of a man of business on the spot should be obtained, and, as a matter of course, you will have to pay for it.

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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
17	S	**11th Sunday after Trinity.**	4 49	3 52	7 17	6 19	8 26	3 3	3 18	0 12	0 28	62·1
18	M	Battle of Gravelotte, 1870.	4 51	3 39	7 15	7 28	8 42	3 34	3 50	0 43	0 59	62·0
19	Tu	Earl Russell born, 1792.	4 52	3 26	7 13	8 36	8 56	4 6	4 22	1 15	1 31	61·8
20	W	Abergele Railway Accident, 1868.	4 53	3 12	7 11	9 46	9 13	4 37	4 53	1 47	2 2	61·6
21	Th	The fifth Duke of Northumberland d. 1867.	4 55	2 58	7 9	10 59	9 30	5 9	5 26	2 18	2 34	61·5
22	F	Battle of Bosworth Field, 1485.	4 57	2 43	7 7	After.	9 49	5 43	6 2	2 51	3 8	61·4
23	S	☽ First Quarter.	4 59	2 27	7 5	1 29	10 16	6 22	6 45	3 27	3 47	61·3

Orchids in Flower.		Day of Yr.
Burlingtonia Knowlesi	Brazil.	1890
Laelia autumnalis	Mexico.	229
Laelia majalis	Mexico.	230
Oncidium pulchellum	Jamaica.	231
Oncidium Batemanni	Brazil.	232
Oncidium flexuosum	Brazil.	233
Cattleya Dowiana	Mexico.	234
		235

CRYSTAL PALACE.—THE FRUIT EXHIBITION, with the National Dahlia Society's Grand Show.

FRIDAY and SATURDAY, September 5 and 6.

Schedules and Entry Forms on application to Mr. W. G. Head, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close on August 29 for Fruit, and August 30 for Dahlias.

GRAND EXHIBITION of HOME-GROWN HARDY FRUITS in the GUILDHALL, LONDON, October 6th, 7th, and 8th, 1890.

The WORSHIPFUL COMPANY of FRUITERERS being desirous of promoting the cultivation of USEFUL HARDY FRUITS in the HOMESTEADS and COTTAGE GARDENS of Great Britain, have organized an exhibition to be held as above, when they will offer for competition :—

MONEY PRIZES amounting to over £200, GOLD, SILVER-GILT, and SILVER MEDALS, and FRAMED CERTIFICATES of the Company.

The above Prizes will be offered for Exhibits of Fruit by COTTAGERS, TENANT FARMERS, AMATEURS, and GARDENERS in three geographical divisions in England and Wales.

The Framed Certificates of the Company will be given for exhibits by Trade Growers and Nurserymen.

Prizes will also be offered for exhibits of Jams and Preserves by Manufacturers, and also, in a separate class, for home-made Jams and Preserves.

It is hoped that all who are interested in Fruit Culture will make this Exhibition known in their districts.

For Schedules and all other particulars, apply to the Clerk to the Company, 40, Chancery Lane, London, W.C. Mr. O. C. T. Eagleton.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.

GREAT FLOWER, FRUIT, AND VEGETABLE SHOW, City Hall, Candleriggs Street, Glasgow.

TWO DAYS.

WEDNESDAY, 3rd September, from 12 noon to 10 o'clock, p.m., by permission of Colonel Glencross and Officers, the Band of the 1st Battalion Lancashire Fusiliers will perform. Mr. R. W. Tucker, Bandmaster.

THURSDAY, 4th September, from 10 a.m. to 10 p.m., by permission of Colonel Lysons and Officers, the Regimental Band of the 1st Battalion Highland Light Infantry will perform, Herr W. Iff, Bandmaster.

Admission :—First day, from 12 o'clock, 2s ; 1 o'clock, 1s. ; 5 o'clock, 6d.

Second day, from 10 o'clock, a.m., 1s. ; and from 2 o'clock, 6d. Schools admitted from two to six o'clock, at one penny per scholar.

Season Tickets admit both days.

All the Railway Stations and Tramway cars within a few minutes' walk of City Hall.

167, Canning Street, Glasgow. Franc Gibb Dougall, Secretary.

SANDY (BEDFORDSHIRE) FLORAL AND HORTICULTURAL SOCIETY.

TWENTY-SECOND GREAT AUTUMN SHOW OF PLANTS, FLOWERS, FRUIT, AND VEGETABLES, POULTRY, PIGEONS, RABBITS, CAGE BIRDS, AND DOGS.

FRIDAY, August 29th.—£250 in Prizes.

Ten Stove and Greenhouse Plants in Flower.—First Prize, £12 ; Second, £8 ; Third, £4 ; Fourth, £3.

Show Ground close to G.N.R. and L. and N.W.R. Stations.

Plant vans horsed free of charge.

Schedules on application to William Green. Secretary, Sandy.

Exhibitions and Meetings for the Ensuing Week.

Wednesday, Aug. 20.—Royal Horticultural Society of Jersey.—Summer Exhibition.

Thursday, Aug. 21.—Royal Horticultural Society of Ireland.—Summer Exhibition.

Thursday, Aug. 21.—Abingdon Horticultural Society.—Annual Exhibition.

Thursday, Aug. 21, and Friday, Aug. 22.—Shropshire Horticultural Society.—Annual Exhibition.

Thursday, Aug. 21, to Saturday, Aug. 23.—Aberdeen Horticultural Society. Annual Exhibition.

Saturday, Aug. 23.—Leith Horticultural Society.—Annual Exhibition.

Auction Sales for the Ensuing Week.

Monday, Wednesday, and Saturday, Aug. 18, 20, and 23.—Mr. J. C. Stevens, at 38, King Street, Covent Garden ; Dutch Bulbs.

Monday and Thursday, Aug. 18 and 21.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside ; Dutch Bulbs.

Tuesday, Aug. 19.—Messrs. Protheroe and Morris, at Bow, E. ; Greenhouse, &c.

Thursday, Aug. 21.—Messrs. Protheroe and Morris, at the Hornsey Nursery ; Glass Erections.

Friday, Aug. 22.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside ; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d. ; each additional line, 6d. ; half a column, £1 15s. ; a column £3 ; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

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No. 1,320, New Series.—Vol. XXXIII.

The Gardeners' Magazine.

SATURDAY, AUGUST 16, 1890.

Common-sense Exhibiting

has made some little progress in the past few years, but there is yet much to be done to secure the extinction of pernicious customs and falsifying features. It was a new thing to see at the Daffodil Conference at Chiswick, the flowers associated with their own leaves, and we cherish hopes of seeing gladioli served up similarly accompanied. It is possible that we may participate in a carnation show, in which the flowers will appear without the embrace of circular cards, and we have had the pleasure of reporting instances of pinks, carnations, and picotees displayed with leaves of their own, and looking so beautiful, that from the artistic point of view, the cards had no longer "a leg to stand on." The florists will fight for the cards for many a day to come, for they keep the bursting flowers in a state of apparent completeness, and "use is a second nature" in exhibiting as in other matters. We have, on our own account, feeling the pressure of reason against an old prejudice, striven to see in our "mind's eye," a show of these flowers from which cards were excluded, and we confess that after a meditation tending to melancholy, we had to postpone decision, and put ourselves in an attitude of waiting for the experiment. Such a reform would be like turning the world the wrong way, such a wrench would it occasion to the veterans; but we do not doubt it will come, and that we shall live through it and learn to wonder that we should have waited so long for it. The question of securing natural foliage for all such purposes will be very simply disposed of when the requirement is insisted on. The cultivators will not rob their best plants of leaves to be wasted as exhibition dressings, but will grow surplus plants of the cheapest kinds to cut from as required, and therein will be found a solution of the question that at present appears to perplex many.

The chrysanthemum shows reveal many violations of taste that have foundation in the apparent oblivion of exhibitors of the teachings of Nature. The natural form of a chrysanthemum plant, as seen in the garden for example, when there is no training or stopping practised, is altogether buxom and pleasing. The stiff training of the single stems for specimen blooms is not within the province of criticism. It is a convenient and serviceable mode of production, and workshop methods are not now under consideration. When those long-legged plants are staged in groups with an exhibition of pots below and an even mass of globular flowers above, with nothing to vary the monotony and no attempt to break up the level mass by associating plants varying in height, there is an end of taste, and it is a grave mistake to describe the group as "ornamental" or "decorative." Groups of chrysanthemums occasionally appear with so much advantage to the exhibitions they embellish that the judges are without excuse when they give prizes to poles that end in mops, even when the mops are good of their kind and make some amends for their ugliness by their richness of colour. Our readers know that our sympathies are with the florists altogether in respect of the forms of flowers and the properties to be sought for exhibition purposes, but those sympathies rather quicken than deaden our dislike of ugly lumps and meaningless masses where "decorative" qualities are demanded by the schedule. A group of plants should present a beautiful and natural appearance. Why invite groups if mere poles and mops are to prevail. Far better would it be to rest content with cut flowers and ignore plants entirely than to present them in such a way as to convince observers that chrysanthemums, which have endless capabilities in the way of beauty, may yet be presented by their professed admirers as things only suited to deface and defame the exhibitions. In our reports from time to time we have been careful to note the difference between good and bad examples of grouping, but it is observable that judges will persist in repudiating the requirements of taste in order to judge these groups by the quality of the flowers. If that is the just way of judging "groups staged for effect," then it will be equally just to judge cut flowers by their stalks and leaves or by the boards on which they are displayed, for the one will be no greater departure from common sense than the other.

When urging, as we have done, the exhibition of tomatos in clusters as grown, the objection has been raised that it is but rarely the entire

bunch, when of considerable size, can be obtained fully ripe throughout. An effectual reply to that objection was given on Tuesday last, at the meeting of R.H.S., when Mr. A. F. Barron sent up from Chiswick a grand lot of clusters to represent some of the varieties that are included in the trial cultures of this year. The largest of these presented fruits well coloured throughout, and they had the common-sense advantage of displaying the relative capabilities of the varieties in a way that with single fruits is simply impossible. For one dish of fruit it may be needful to cut all the fair specimens produced by a dozen or a score of plants, and however handsome those specimens may be, they convey a false impression of fertility. To show tomatos in clusters is to follow the suggestions of Nature, for the most fruitful kinds produce many fruits in a cluster, and those are the kinds, *ceteris paribus*, that should obtain encouragement at exhibitions. At every remove from the merely artificial towards the natural in the exhibition of horticultural productions, there will be a direct gain to the attractiveness and instructive usefulness of the affair. It is really saddening to observe how Nature is wronged by exhibition customs; but, on the other hand, we may find some comfort in the observation of healthy progress in these matters, and the clusters of tomatos shown at Westminster on Tuesday last mark the most decided advance in the way of common-sense that has enlivened the business of the present season.

Shrewsbury Floral Fete will take place on Wednesday and Thursday next.

Newcastle-on-Tyne Autumn Show, Wednesday, Thursday, and Friday next.

Warwickshire Agricultural and Horticultural Exhibition, Tuesday and Wednesday, September 2 and 3.

Leek Horticultural Exhibition, Friday and Saturday, September 5 and 6.

British Association for the Advancement of Science will meet at Leeds on Wednesday, September 3, under the presidency of Sir Frederick Augustus Abel, F.R.S. The usual round of excursions, popular lectures, &c., will be arranged for in connection with this meeting to add the recreative element to the more serious scientific work.

British Fruit Growers' Association presents members with a full report of the Strawberry Conference in a neat booklet, which we hope will be the model for further publications of this association, the main object of which is to diffuse sound information on the cultivation of fruit in the United Kingdom. To have the papers read at the Conference in this compact form is a convenience, and we find added to them a paper on forcing strawberries, which, we feel assured, will prove generally acceptable.

Kew Bulletin for August contains reports on Natal Aloes, Gambia Mahogany, Ceylon Cacao, Chestnut Flour, Ramie, as food for silk worms, &c., &c. A supplementary feature deserves special notice; it is a "list of the staffs of the Royal Gardens, Kew, and of botanical departments and establishments at home and in India and the colonies, in correspondence with Kew." The officers in various establishments who owe their training for curatorships and similar offices are indicated in the list by asterisks, and they make a striking demonstration of what Kew has done, and is doing, as a school for botanical workers.

A Portrait of the late Mr. Benjamin Samuel Williams, admirably copied from a photo, and printed on a large handsome sheet, has been distributed within the past few days from the Victoria and Paradise Nurseries, Upper Holloway, where, through long years of working and waiting, the worthy founder of that business accumulated his collections of orchids and stove and greenhouse plants. The portrait will be greatly prized by all who are favoured with copies of it, for it keeps one in remembrance of a good man whose hand was always ready for useful and beneficent work; as ready to send a waggon load of plants at his own expense to enrich a window flower show or school treat, as to take his part in making and managing institutions, having in view the advancement of gardeners and gardening.

Gardeners' Orphan Fund is in a difficulty as to the close of the official year, and it will rest with the committee of management to make proposals should a change be considered necessary. The difficulty is this—that the year terminates in July, when as a matter of course, all subscriptions are due. But many subscribers hold to the idea that the year of the Fund is coincident with the year of the almanac, and they therefore consider that when called upon to pay in July, there should be no demand made upon them until the end of the year, compliance with which demand would necessarily bring the entire thing to something like a dead stop, for only those who have paid can be allowed to vote at the annual meeting. But granting that the official year be changed to January in place of July, will it be needful to hold the annual dinner at the same time? We submit that it will not. January is a bad time for any kind of festivity, and scarcely less a bad time for any business whatever that calls men from the country to London. But as an election may be managed through the post, and a dinner cannot be eaten that way, we submit that if altering the time of the close of the official year is considered necessary, it may still be reserved for the diners to meet in July, or at all events at some less objectionable season than January. The next meeting of committee will take place in the rooms of the Horticultural Club Hotel Windsor, on Friday, October 31, under the presidency of William Marshall, Esq.

Dr. R. Schomburgk's Report on the Botanic Garden at Adelaide for the year 1889, equals in interest any of its predecessors. We learn from it that although the weather had been unkind, the vegetation of the garden had been generally of a satisfactory nature, the floral display in particular "superior to anything previously seen in the garden." The cultivation of spirals (*stachys tuberifera*), has proved successful; a new vine has been imported from Mexico (*Vitus Mexicana*), and appears likely to suit the climate of South Australia. The wood pea, *Lathyrus sylvestris*, has acquired importance as a fodder plant. The Trojan Fig has proved suitable for cultivation, but the Smyrna Fig drops its fruit, and will probably prove useless. The Tagosaste proves to be serviceable for fodder and is a good tree plant.

The Meeting in Furtherance of the B. S. Williams Memorial in the rooms of the Horticultural Club, Hotel Windsor, on Tuesday last, was the first in which the horticultural public have been appealed to on the subject, and we have to record that it was altogether satisfactory. Business of the kind must be entered upon when the occasion for it arises, and as it is impossible to make selection of times and seasons, this particular fund has been instituted when there were not many of those specially interested in the matter at command for the purpose. To wait until "everybody" is in town would be to neglect what appears to the promoters not less than a sacred duty, and the sympathies of many who are at present out of reach may be surely counted upon as to be made manifest in due time. Such a work necessitates an immensity of letter writing, and those who have to do it need time and opportunity, for there is no established machinery of a self-acting kind to turn out memorials ready made; the whole matter is one of detail, and delay tends to augment rather than diminish the difficulties that are inseparable from such an undertaking. Hoping that many friends who read this will yield to their own generous impulses and send us their names and promises of contributions without waiting for direct attack through the post, we now commit the case to our readers, reminding them that what is in view is the advancement of horticulture in certain specialities that happily associate themselves with remembrance of the work and teaching of the man to be commemorated. The Williams Memorial should call forth a large and liberal expression of admiration of one of the worthiest of modern horticulturists in aid of a distinctive landmark in the history of horticultural exhibitions.

B. S. WILLIAMS MEMORIAL FUND.

In the interval between the committee meetings and the commencement of the lecture at meeting of R.H.S. on Tuesday last, a meeting in furtherance of the B. S. Williams Memorial Fund was held in the rooms of the Horticultural Club, Hotel Windsor, Dr. M. T. Masters, F.R.S., in the chair. Amongst the persons present were Rev. H. H. D'Ombrain, Messrs. William Paul, H. J. Veitch, William Bull, James O'Brien, J. Cheal, H. J. Pearson, H. Cannell, H. Herbst, H. M. Pollett, B. Wynne, J. Dominy, A. Outram, J. A. Laing, W. Richards, H. B. May, and others. The persons present being constituted a committee,

The Chairman called on Mr. Shirley Hibberd to state what steps had been taken towards organizing the memorial, and on what basis it was intended to make an appeal in furtherance of the object of the meeting.

Mr. Hibberd reported that at a preliminary meeting a proposal to establish a fund out of which to provide money prizes and certificates for the encouragement of the cultivation of stove and greenhouse plants and orchids met with general favour. In view of obtaining a collective opinion on this or any alternative proposal the present meeting had been called, and it was of the utmost importance that definite conclusions should be arrived at. He then read the circular that had been distributed to the more immediate friends of the late Mr. B. S. Williams, and a number of letters received in response thereto. The writers included Baron Schroder, Sir Trevor Lawrence, Dr. Robert Hogg, William Robinson, Sir Joseph Terry, J. H. Krelage, F. Sander, Holbrook Gaskell, William Thomson, Joseph Broome, John Watson, Reginald Young, Henry Perkins, Wm. Smythe, Stephen Osborn, A. F. Barron, W. Holah, Owen Thomas, and others.

The writers agreed in approving of the course that has been taken thus far, and a general conversation ensued upon the proposal of prizes and certificates. Mr. Hibberd submitted a sketch for a pictorial certificate, which was received with favour as a novelty in the way of certificates and an appropriate memento. It includes a portrait of the late Mr. B. S. Williams, and coloured figures of about a dozen selected plants amongst the many that are associated with his name and, as a matter of course, is suitably inscribed. When framed it will form a beautiful adornment, very different indeed from the things called certificates that we have been familiar with hitherto.

As regards the application of the fund, it was urged by several persons present that an act of beneficence might suitably be associated with the scheme of the money prizes; and the Gardeners' Orphan Fund found favour as entitled to participate. The proposal to give medals in recognition of special merit in plant growing obtained attention, but was soon dismissed as unsuitable, the late Mr. Williams having frequently expressed his objection to them, while he never ceased to declare that money prizes were most to be desired, and brought the best results at exhibitions.

A resolution, proposed by Mr. H. Cannell and seconded by Mr. H. J. Veitch, was then put to the meeting and unanimously adopted. It runs thus:—"That this committee desires to raise a fund to perpetuate the memory of the late Mr. B. S. Williams, and by investing a sufficient sum to be enabled to place a certain number of orphans of gardeners on the Gardeners' Orphan Fund as Williams Memorial Orphans, and also give prizes in money with Williams Memorial certificates for excellence in the cultivation of plants."

A list of subscriptions amounting to about one hundred pounds was made at the table, after which a vote of thanks to Dr. Masters for presiding was unanimously adopted, and the meeting terminated.

It is intended to publish the list of subscriptions, but the committee wish to obtain further promises before doing so; and it is hoped intending subscribers will communicate with Mr. H. J. Veitch or Mr. Shirley Hibberd on the subject, naming the amounts they propose to contribute at the earliest date possible.

BREEDER TULIPS.

The approach of autumn gives new interest to the subject of tulips. The exhibition of the National Tulip Society having been held on the last day of the great Whitsun exhibition at Manchester, a much larger number of visitors than is usual were able to inspect the beautiful flowers staged in such large numbers, for it was one of the largest—and some of those well qualified to judge said the best ever held in Manchester. When there are as many as six competitors in the class for twelve blooms, double that number in the class for six blooms, and nearly three times six in the classes for three blooms, it will at once be understood that the culture of the florists' tulip is by no means languishing in the North, though there is not a single grower to my knowledge in the South.

As the visitors looked over the flowers one heard expressions of wonder as to how it was the self or breeder tulips, bizarres, roses, and bybloemens differed so widely in colour to the broken or rectified flowers. It was not surprising that this remarkable distinctness of character should have attracted the attention of those unacquainted with the physiology of this remarkable flower. When raised from seed the tulip possesses one extraordinary characteristic, which, as a physiological fact, appears to be very uncommon indeed in the case of flowers. A raiser of tulips from seed would be almost certain to take his seed from the finest broken flowers, both feathered and flamed, and yet when the seedlings bloom they will with very rare exceptions bloom self coloured. Only occasionally—I might say very occasionally—a seedling tulip blooming for the first time will miss the breeder stage, and appear in its permanent character as a rectified or broken flower. The Rev. T. D. Horner recently informed me that one or two seedlings raised by himself, which bloomed with him this year for the first time, were rectified. It is generally five or six years before a seedling tulip flowers for the first time, and then in the breeder or self coloured form. They may keep to this breeder stage for years, but it is not their final one. A flower may remain in the breeder stages two, three, or four, up to ten and twelve, and even a greater number of years, but season after season as they are grown, now one and now another, in no order of rank or age, will rectify or break into either a feathered or flamed flower, or some mixed attempt at either. Mr. Samuel Barlow pointed out to me in one of his beds a breeder tulip that he said he had grown for over twenty years without its ever having passed out of the breeder into the broken stage, and this is all the more remarkable when it is remembered that the bulb which produced a blossom this year perishes, and a new one is formed annually. The root fibres will support the seed vessel; but the old bulb no longer nourishes it in any way, it will be found at taking up time merely as a few loose skins wrapped round the new.

As a matter of course the grower is able to distinguish the class to which the breeder tulip belongs by means of the colour of the base and the petal being considered together. If the base of the flower is yellow, it is a bizarre breeder; but if white, or so nearly approaching white as to justify the use of the term, then it is a rose or bybloemen, the difference being determined according to the body colour of the petal. If the breeder has red, scarlet, rose, or pink self-coloured petals, then it will some day break into a rose flower. But if in conjunction with the white base the flower has lilac, slate-coloured, mauve, violet, or purple petals, then the breeder will break into a bybloemen. The bizarre breeder takes on several colours, from bright scarlet and red down to pale brown and almost yellow.

A beautiful breeder tulip—a rich, bright-coloured flower—will sometimes break into a handsome and valuable feathered or flamed flower, but not always; neither does the result follow as a matter of course. It would be, perhaps, safer to say that as a rule handsome breeders break into inferior rectified broken forms; and, on the other hand, a dull and ugly-coloured breeder will break into a rectified flower of surpassing beauty and value.

As a matter of course, many breeder tulips, when they break, are worthless, especially when they seem to mix up in themselves something of the characteristics of two types, say the bizarre and the bybloemen. "A seedling with, for instance, a lilac body colour and yellow base, is worthless, for it combines the colours of the two classes, and will break into an inadmissible flower known as a tricolor. It will have two ground colours, white and yellow, streakily or otherwise mixed, deriving its white through the bybloemen lilac of the self-colour, and its yellow through its base as a bizarre. Seedlings do not strictly follow the class of their parents, and in this sportiveness often fail through trying to belong to two classes at once." The Rev. F. D. Horner states in one of his papers on the tulip, that he has never seen or raised a bizarre body colour with a white base, but very often a bybloemen body with a yellow base. "Tricolors," as they are termed, come from these, since the remaining variety of scarlet body colour with a yellow base, or white, would be either a scarlet bizarre or a rose. A pink petal, however, with a yellow base, would not break into a scarlet bizarre colour, and would be a rose-marked flower with impure ground colour. Some colours, especially in the bizarre breeders, are dull, and might be thought even ugly. But as a rule, the plainer and weaker colours in the breeder flowers, like the ugly duckling in the story, who was a young swan, generally produce the richest flowers in the rectified state.

One could almost wish some of the beautiful breeder tulips would never break into the rectified form, as they are so rich in colour or delicate in tint. Mr. Samuel Barlow has some bizarre breeder tulips raised by the late Mr. John Hepworth, of Huddersfield, that are rich bright scarlet selfs of exquisite shape and splendid in colour. I saw one in his bed that has a kind of rich brownish-fawn colour, margined with gold, a singularly attractive flower. Grand bybloemen breeders are Sir Joseph Paxton, Dr. Hardy, Richard Yates, and Sulphur. Among the bizarre breeders, Rose Hill, Annie McGregor, Mr. Barlow, Mabel, and Miss Burdett Coutts. Among the rose breeders, Beauty of Lichfield, Glory of Stakehill, Talisman, Olivia, and Queen of May. Even in a cut state breeders are charming, and at the tulip shows prizes are offered for collections of six and of three blooms, and also classes in which they are shown singly, their exquisite tints always attracting much attention; and I quite agree with the Rev. F. D. Horner when he states that though cultivators of the florist's tulip "like to break the breeders out, they yet value them very much in their bright unfigured morning dress."

Various suggestions have been made and methods adopted for facilitating the breaking of the breeder into the rectified form. Change of soil, change of district, of climate, of time of planting, roasting the bulbs in the sun, allowing the tulips to carry seed; these and other expedients have been resorted to, and it is asserted they accomplished the end sought, though many cultivators assert that nothing can hasten the process; that when they will break, and how to break them, no one knows, for it is a change "hidden in the silent mystery of the flower's nature." All the eccentric experiments, all the coaxings, bribes, tortures, and hardships to which the tulips have been subjected have availed nothing. Nature has made no revelation, and still maintains absolute silence. Who can but wonder at such a singular physiological fact? It should incite many to cultivate the florist's tulip if only for the purpose of experiencing or noting the peculiar changes in the flower.

One other singular fact deserves mention. When a tulip changes from the self to the broken state it always adopts a shorter stature, and it seems to take on a more refined and sometimes a more delicate habit. I have it on the authority of the Rev. F. D. Horner that the foliage is less vigorous when the flower rectifies, and shows, long before the bud colours, a mottling and streaking with lighter green, the habit of rectified tulips, and it stands as a certain sign that such a bulb, whether it flower that year or not, has passed from the transient to the permanent stage of its existence. R. D.

Calls at Nurseries.

MESSRS. JAS. CARTER AND CO.'S, FOREST HILL.

Although the nurseries of the great seed firm at Forest Hill do not reveal such wonders as those of Dedham and St. Osyth, where distance from towns ensures seclusion, pure air, and ample space, the convenience of a trial ground and laboratory combined with a certain amount of proper nursery work within hearing distance of the metropolis makes amends for all disadvantages that might be emphasized by comparisons. In a walk over the place on Saturday last, we were agreeably surprised to see that proximity to London has not as yet dimmed the brightness of vegetation in the pleasant open space occupied by these nurseries; the hollyhocks, the dahlias, the asters, and miscellaneous outdoor stuff, being gay with colour, and showing satisfactory growth as the result of good management and a generous soil. The collections here are in no sense restricted by reason of lack of space, for there is a fine free range of what may be called woodland scenery, considering where we are, and observing how steady is the advance of bricks and mortar on all things rural in the vicinity of the great metropolis.

Amongst the collections here are the crossbred wheats and barleys that Messrs. Carter have been steadily working at for some years past in the interests of all growers of cereals, but more especially in view of special requirements of certain of our colonies. The varying conditions of practice as determined by soils, climates, and the order of the seasons in various parts of the world give rise to special requirements in the growth and stature and qualities of cereals, and these special requirements have in many instances been admirably met by systematic cross-breeding with certain ends in view, the selected varieties having certain required characters fully established in their constitution. Perhaps the most general of the several results secured in the named seedling cereals is a surer holding of the grain in the husk than obtains in varieties commonly cultivated, the result being that in places where ripening takes place rapidly and labour is scarce and dear, the ripe crop may be allowed to stand a greater length of time than would be possible, or at all events, convenient, in the case of the unimproved kinds. Reluctance to shell out is a quality of some importance in countries where grain ripens rapidly in an arid atmosphere under a fervid sun.

The trial of peas this year at the Forest Hill Nurseries includes 360 varieties, a fact of some importance considering that every year witnesses the introduction of new kinds, and a few of the old kinds keep a place in the lists, refusing to be dispossessed by the later candidates for favour. Here we found on Saturday last Ne Plus Ultra in perfection, and for a late supply it makes a serious challenge to others of its class. There are some fine new peas here that hold their own when submitted to the large comparison, and, in fact, the comparison establishes their right to favour. One of these will probably obtain a lead in profitable pea culture for its habit and productiveness. It is called *The Daisy*. In growth it is robust and short, needing no stakes, and when left to itself forming a stout plant, self-supporting, only eighteen inches to two feet high, and so productive that as we saw the square piece, it might be described as "all peas," as though the well-filled bright green pods had been heaped up in ridges. The pods are of medium size, very slightly curved, with short neck and nose, and contain six to eight full-sized peas. It is not of the largest size either in pod or peas, but large enough for usefulness, and the colour is light bright green, useful on the table, tender, and well flavoured. It was to see this beautiful pea before harvesting—for which it is now ready—that we made a call on Saturday last, and we feel that we may say that since we first saw Stratagem we have not seen a more useful variety for the rough and ready system that suits the market grower and the private garden where a great supply of a good pea is a matter of importance. The Daisy has been in gathering for a month, and its season is now over, and the seed crop is ripe. Were its merits now known, as in due time they certainly will be, the breadth now at command would be far from sufficient to meet the demand for it, so that for a time this is likely to be scarce and one of the things inquired for.

A great harvest of seed of Chinese primulas has been secured here this season, including all the more striking of the "Holborn" group, and especially

the famous *Holborn Blue*. A house of cockscombs, grown for seed, afforded us some gratification by reason of their dwarf compact growth, ample heads, and fine colour. Tuberous begonias make a brave display in one of the houses, but more than all else the new strains of petunias afforded us the rare advantage of a new pleasure. Hitherto the Continental green-edged petunias have been unpleasant, though promising things. Messrs. Carter have carried the idea forward, and now we see established a most beautiful strain, the flowers of which have soft, rosy, crimson or purple centres, with broad margins of a delightful tone of green. The flowers being large and fantastically waved, the unique colouring compels admiration, and we have to confess that this is "something new under the sun." Another novelty in the way of petunias is the "Clematis-flowered" group, one lot of which gives a capital imitation of the flowers of Clematis Jackmanni set upon neat-habited petunia plants. The purple-blue colour of these clematis-petunias is singularly pure and rich, and gives a quite new tone to a display of late summer flowers, whether in the open or under glass. The clematis group, however, present several equally acceptable colours, one in particular of the brightest rosy carmine being surprisingly fresh and pleasing.

In a house of tomatos a grand show is made by their large red and yellow fruited variety, Blenheim Orange. This is the queen of tomatos, and we must look amongst the red varieties for the king. The plants here are in pairs in large boxes in which they appear to grow with less vigour than planted out, and to bear equally well and ripen their bunches more evenly. Such popular kinds as Perfection, Ham Green Favourite, and Trophy, are of course grown in quantity for seed, and the sorts are separated sufficiently to keep them true to their several characters. The Chiswick variety named Conference is not making a great show as compared with other kinds, but it carries a good crop, and is of the highest quality. The Peach tomato makes a quite poor figure, and as judged by its growth here is not likely to rise in public favour. A quite new and grand variety recently obtained from America deserves a special note. The name is *Lorillard*. The plant is stout and free, the fruit large, flattened spherical, quite smooth, of a rich deep red colour, altogether profitable and handsome. The stout footstalk and the broad short calyx segments distinguish it. But above all it is exceedingly firm and heavy, carries well and is of the finest flavour. Lorillard will surely prove a favourite, and we are disposed to regard it as an improvement on Perfection.

A collection of cactaceous plants is in course of formation here, and a nice lot bear witness to skilful handling. We do not forget the days when we visited Mr. Mongredien's garden, to see his collection of succulents; nor do we forget how they were by a cruel fate, made to read the world a lesson on the danger of applying grease to vegetable tissues. The grease applied killed the mealy bug on Mr. Mongredien's cactuses, which was well; but the cactuses died as the result of the application, which was ill. Forest Hill was a good imitation of the country then with a suburban flavour; but there is now but little of the country left, and we must record our gratification that Messrs. Carter preserve a tract of genuine rurality for their business, which probably gains more than it loses by the pressure of population on the scene, While they have their great seed farms at Dedham and St. Osyth, with their dry sunny climates, for all the larger business, the Forest Hill establishment serves as an appendage to the offices, and a laboratory for the fine art department in hybridising and other delicate work.

CHERRIES FOR PROFIT.

By Mr. T. Francis Rivers.

Read at Conference of British Fruit Growers' Association, Leicester, August 5, 1890.

The cherry is, and has been always, one of our most important industrial fruits, coming into use almost as soon as the strawberry, and remaining for some weeks after. A May Duke Cherry tree loaded with its crimson fruit is a sight beloved by boys and birds. The Norman orchardists declare that the orioles who arrive first pass the word to their followers that the cherries are reddening in Normandy, and when the signal is given they descend in shoals on the trees. It is certain also that in many parts of England it is almost hopeless to keep a crop of fruit from these busy thieves. I know from my own experience that it is quite hopeless, and I am compelled to grow all my fruit under glass.

The tree is hardy, and will bear abundant crops of fruit very far north. In St. John's "Wild Sports of the Highlands" he speaks of the wood pigeons feeding on his plentiful crops of cherries in Morayshire, near the Bay of Findhorn. It flourishes and fruits freely in all dry sandy soils, but does not thrive in deep rich alluvial districts. On the high and dry Epping plain, where I believe water has been sought for and not found at a depth of 800 feet, the Bigarreau and Heart Cherries thrive exceedingly; and I have also seen abundant crops of May Duke Cherries in the dry and sandy soils of Woburn Sands, near Bedford. When establishing a cherry orchard this condition of the tree should be always considered, and the knowledge will be of considerable use in winning a profit from a soil which the farmer or grazier would pass by as unsuitable for his purpose.

For practical purposes the cherry may be divided into four classes—the Guignes or Heart Cherries, the Bigarreaus, the May Duke, and the Morello. The Guignes or Heart Cherries are the earliest to ripen. The earliest large cherry of this class is the Guigne d'Annonay, which is large, sweet, and very good, purplish black in colour, ripening in an unheated orchard house about the first week in June, and in a warm hot season the last week in May. The next in order, and in my opinion the finest of the class, is the Early Rivers. This was raised some years since from the Early Purple Guigne, a very delicious and fine cherry, but rather too tender for out-of-doors culture in this country. Under glass the Early Rivers ripens the first week in June, and will hang in good condition until the second week in July. For some time I hesitated to recommend it for cultivation as a standard tree in orchards, but I now find that it is as hardy as the May Duke, and it produces abundant crops of fine large black fruit a fortnight before the May Duke. I can safely recommend it as one of the most profitable cherries existing. It has lately been planted on a large scale in Kent, with the most successful results, and I am, therefore, supported in this opinion by the experience of others. The Belle d'Orleans is a very early Heart Cherry, bright red and white in colour, ripening also in the beginning of June, but flowering too early to escape damage from frost. The Governor Wood is a bright yellow and red Guigne, ripening about the middle of June, very hardy and vigorous, a most abundant bearer, and a profitable market cherry. It is a popular sort in America, from whence it was introduced in England some years since. The next in order to ripen is the Early Red Guigne, a very dark red cherry, of large size and delicate flavour, worthy a place in a collection, but not adapted for general cultivation. The Elton, a well-known early sort, ripening before the Bigarreau. The next in order are the well-known Turkey Black Heart, the Bedford Prolific, a hardy variety of the Black Tartarian, which is too tender in this country unless grown under glass or on a wall, the fruit of which will hang on the tree under glass until August, when the Late Purple Guigne, a very fine, large, and rich cherry, ripens, hanging through August and late into September; the Guigne de Winkler, a bright red, very juicy and sweet sort, ripens in September, and lasts well on the tree until October, closing the series of Guignes, which differ from the Bigarreaus in the quality of the flesh, which is very tender, sprightly, and delicious.

The Bigarreau Cherries are perhaps better known than the Guignes, the fruit is more solid in texture, and hence better adapted for carriage. The Bigarreau Jaboulay or Early Lyons is the earliest large fruit of this series. This is a very large and fine cherry, earlier than the May Duke by some days, requiring a wall or an orchard house. The Bigarreau de Schreken is an early black sort of recent introduction, very hardy and good. The Early Black Bigarreau, the Early Red Bigarreau, the Bigarreau Noir de Guben precede the White Bigarreau, and are abundantly fruitful. The White Bigarreau is the cherry grown for the markets in Kent, the orchards being said to realise fabulous profits. The variations of this sort are the Bigarreau Monstreuse de Mezel (when well grown the fruit of this sort is enormous), the Bigarreau Napoleon or Late Mottled Bigarreau, and numerous other synonyms very large and late. The Emperor Francis, a recent introduction, is very late, hanging long into September, under glass this is a very large bright red sort, exceedingly handsome on the tree. The Late Black Bigarreau ripening after their light red and yellow cousins, may be described as very large, firm, and rich flesh of a lustrous black. Placed in their order of ripening they consist of the Bohemian Black Bigarreau, the Bigarreau Noir de Schmidt (an enormous fruit), the Large Black Bigarreau, and the late Black Bigarreau. The Tardive de Lich and the Belle Agathe are late sorts, lasting well into October. I have named many varieties which I do think are generally known, but as I have cultivated them all under glass, I have been able to take special notice of their different habits, and those who cultivate them in an orchard house will, I am sure, find the study of the variations a source of peculiar interest, and also of great benefit to the fruit-growing community, as it is only by cultivation under glass that new and possibly valuable sorts can be tested.

The Bigarreaus and Guigne cherries are of the highest value as dessert cherries, and as the fruit is said to be entirely devoid of acidity they are a very welcome diet to the invalid, to whom the tender and delicate flesh of the Guigne is better suited than the firm and sometimes rather hard Bigarreau. The May Duke cherry is perhaps the most popular of the tribe; at all events, we are most familiar with it. No boy ever seems to be surfeited, and can consume an indefinite quantity. There are not many varieties, but some are distinct from our old English sort—not in quality, but in the season of ripening. The Empress Eugénie is an early variation, having a maturity of some ten days earlier. The Royal Duke, the Duchesse de Palluau, the Gloire de France, the Archduke, and the Late Duke all follow in succession. If protected by netting from birds these cherries will hang some weeks on the trees, giving a continual supply of fruit, either dessert or the kitchen.

There are some palates which are very well satisfied with the acid cherries of the fourth class, which comprises the Kentish, the Flemish, and the Morello. Of these I think the Kentish and the Morello are the best. The value of the Morello is well established, as it is the cherry for preserving either in bottles or spirits. Cherry brandy has long been a popular cordial in England. On a north wall protected with netting it will last very late into the autumn, and when black and thoroughly ripe the fruit is very refreshing and grateful. The cultivation of the cherry in orchards is not difficult. As I have said before, it is essential to success that a dry calcareous gravel be selected, but I think that instead of planting standard trees at twenty-four feet apart, of which the prospect of profit to the planter is somewhat remote, I should plant dwarf trees in rows fifteen feet apart row from row and twelve feet apart tree from tree for all Guignes and Bigarreaus, and rows twelve feet apart row from row, with nine feet plant from plant, for the May Duke and Morello. These trees are easier to manage, the fruit can be gathered without ladders, and the space between the rows can be utilized for vegetable crops or for a certain number of years by strawberries, gooseberries, or currants. The trees should be pruned as little as possible, as the Guignes and Bigarreaus are very impatient of pruning. My own experience is that this should be done in the autumn, superfluous shoots shortened, and the wood reduced about the beginning of October. If severely pruned both these classes are inclined to gum, and then comes disease. The May Duke and Morello classes may be pruned in the summer and autumn without detriment, but as they are always inclined to produce fruit in quantity, the trees, after a certain age, will not require much pruning, but it will be necessary when the trees are grown in rows to keep the growth as far as possible in the line of the rows.

The Montmorency cherries are very dwarf-growing kinds, which merit a place in English fruit gardens; they are dwarf, easily grown, and abundantly fruitful; they are grown in large quantities near Paris, and sold in the markets very early in the summer, being used for the delicious cherry compôtes so popular in France.

The stocks for grafting cherries are of two kinds, the Mazzard, or wild cherry—the seedlings from this are necessary for the Bigarreau and Guigne cherries—and the Cerasus Mahaleb or Cerise de St. Lucie, which is a good stock for the May Duke and the Morello. The advantage gained from the employment of the Mahaleb stock is that it may be planted on a poor chalk soil. It will grow freely in the most unpromising situation provided the soil is dry. It is, of course, only an alternative, as the May Duke and Morello grow perfectly well on the wild cherry stock. With the exception of the Governor Wood and the Early Rivers, the Guigne and the Bigarreau will not grow on the Mahaleb stock, and it is useless to try it. I hope I have said enough to demonstrate that cherry culture is not unprofitable in England, and I am certain that many districts may be utilized for the production of this very useful fruit.

Those who wish to grow and taste cherries in perfection must grow them under glass; the fruit attains very great perfection, and is protected from rain and birds. An unheated span-roof house, about eighteen feet wide, will give a very large supply of fruit, the trees being placed down the centre of the house, so that the sun shines on both sides of the tree. When grown in pots they can be removed at will, a convenience not obtained when the trees are planted in the soil.

Mr. M. Webster, lately foreman at Caversham Park, Reading, has taken charge of the gardens of Dr. Kirby, Kelsey Park, Beckenham, Kent.

MR. J. JAMES.

In recording the death, a week since, of Mr. J. James, of Farnham Royal, formerly of Redlees, Isleworth, we have to feel that a limb has been lopped from the horticultural tree whose business and pleasure it is to overshadow the world with present blessings and the promise of good things to come. In presence of the losses we have of late had the painful duty to report, we feel urged to impress upon the young men that are rising into usefulness and public favour, first that there is more than enough of useful work that they may do, and next that there is ample room for them in the bustling world to which horticulture supplies a restful and refreshing source of new strength and quiet inspiration. The "fever called living," may be known to the men who give their minds chiefly to work in the garden; but theirs, in the main



Mr. J. James, of Farnham Royal.

is a peaceful career, and a contrast, edifying and restraining, to the hurry of life that prevails around them.

Our dear old friend, Mr. James, was born at Little Missenden, near Amersham, Bucks, in or about the year 1825, and had for a school-fellow the late Mr. John Woodbridge of Syon. Brought up to his father's occupation chiefly, that of a woodman, he early in life developed a strong taste for gardening, and when about twenty years of age he was invited to undertake the garden at North Hyde, Middlesex, attached to the residence of Mr. Bariff, a gentleman deeply attached to the culture of florist flowers. Here tho twain florists, employer and gardener, devoted themselves to cultivating and exhibiting their favourites for several years, when the death of Mr. James's father, who held the position of chief woodman or forester on the Amersham estate, induced him to return home and take up those duties. This occupation he followed four years. Then the late Mr. Watson, of Redlees, Isleworth, who had know Mr. James well when at North Hyde, sought him out, and induced him to come to Redlees, and embark in the cultivation there of those florist flowers, the which had also found such encouragement in the adjoining garden. That association with Mr. Watson endured for nearly thirty years, when, after a successful co-partnership as employer and gardener and joint exhibitors at all the metropolitan and local shows, the death of Mr. Watson severed the connection. During the Redlees association Mr. James became a most successful cultivator of azaleas, pelargoniums, calceolarias, cinerarias, and other choice flowers; his seed strains of the latter kinds obtaining a world-wide reputation.

In 1882 he quitted Redlees, and purchasing a small property in his native county of Bucks, at Farnham Royal, and near to the famous Burnham Beeches, he built some capital glasshouses and there entered much more largely into the growth for seeding of cyclamens, chinese primroses, cinerarias, calceolarias, &c., his strains of these flowers being of the finest, and the show made in the blooming season of each has probably not been excelled and rarely equalled in the kingdom. Especially in cinerarias and calceolarias the advance made at Farnham Royal during eight years was remarkable, the quality of the flowers allied to excellence of habit far exceeding the best products of the Redlees days. Since his original purchase of land at Farnham Royal Mr. James considerably extended the area of his property, and some twenty acres, including a delightful larch wood, and a fine sloping field of seven acres now planted with standard fruit trees, come to his successors. In a quiet, unostentatious existence, his mind chiefly occupied in the improvement of the property he had thus acquired, and in cultivating the florists' flowers he so much loved, his later years were passed peacefully amidst the warm esteem and respect of his neighbours. One of the latest floral products was a remarkably good strain of gold-laced polyanthuses, one of the best strains in fact seen for many years past. It seemed that for him to touch any flower was to greatly improve its quality, but such results might well be looked for in a man who was himself so experienced and expert a florist. With his death is snapped one more link which bound us to the past, and the event directs our attention to the future. Others will take up the work, for floriculture, like the streamlet, flows on for ever.

Few, perhaps, amongst our present readers will be unmindful of Mr. James's valuable services to horticulture and floriculture as a contributor of original practical papers to the Gardeners' Magazine during a period of more than twenty years. Reference to the G. M. for June 27, 1868, will indicate the thoroughness of Mr. James on matters that came directly within his chosen sphere of operations. The article we refer to is on the cultivation of Herbaceous Calceolarias, and whoever will give it attention now will have to admit that no better treatise on the subject has ever appeared, while but few, amongst many essays on the subject would be found worthy to be compared with it, even for a moment. Scattered through our volumes from 1868 to 1888 and later, will be found similarly practical, direct, and lucid papers on what may be termed the higher floriculture, in which such subjects as the calceolaria, cineraria, pelargonium, cyclamen, and amaryllis are conspicuous, and in which our deceased friend was not only an adept, but an acknowledged first master. His style is a model of simplicity, and the order and the matter justify the use of the word "thorough" in characterizing it.

The friends of Mr. James were well warned of the fate that was impending, and he himself knew for some time in advance that he was suffering from a weakness of the heart that could have none other than a fatal termination. Some time since he exerted himself beyond his strength, and the muscular structure of the heart suffered irreparable injury. Thenceforth his continuance in this "city" was simply a question of time, not of science or even of health. The vital machinery was undone and repair was impossible. He had time to reflect and to arrange for the closing of the curtains on his quiet but useful and honourable career, and the rest he has gone to he had well earned by a blameless and useful life always tinctured by a kindly spirit and a willingness to bear burdens and do good to the extent of his power.

WORKSOP AND SHIREOAKS.

The famous Worksop manor estate, great in the annals of horticulture, has been sold, with 1,644 acres of land, to Mr. John Robinson, brewer, of Nottingham, for £30,000, the purchaser also agreeing to pay £25,000 for timber on the estate. The Duke of Newcastle placed the matter in the hands of Messrs. Farebrother, Ellis, Clark, and Co., Sir Whittaker Ellis, M.P., being the auctioneer. The estate is bounded on the east and south by Clumber Park and Welbeck Abbey, the seats of the Dukes of Newcastle and Portland; Thoresby Hall, Hardwicke Hall, Rufford Abbey, and other places which have figured largely in the annals of the English nobility, are within easy distance of the manor, while the forest of Sherwood is within a short drive through the most picturesque woodland scenery. The manor house itself is placed in a richly-timbered park of 260 acres, and is surrounded by attractive pleasure grounds. In addition, twenty farms, some of which are well adapted for good residential properties, were offered, including Shireoaks Park and Manor Lodge. Sir Henry Watson purchased Park Cottage for £4,000, and the other lots, with four exceptions, were sold at reasonable figures. The total amount realized was £106,020.

The following notes on the history of Worksop and Shireoaks are from the *Times* of July 26:—

"This estate is of exceptional beauty and of great historical interest. Leland, writing in the reign of Henry VIII., says: 'By Worksoppe is a parke of six or seven miles in compace, longging to the Earl of Shrewsbury.' John Harrison, in his 'Exact and perfect survey and view of ye Manor of Workesop with the Priory Mannor,' made in 1636, speaks of 'a spacious Parke, being seven miles and a half, and halfe a quarter in compass, and contayneth by measure, according to the statute, 2,303 acres, two roods, and 31 4-5 perches. About the midst thereof standeth a very stately house, called the Mannor, and built of freestone, being very pleasantly situated upon a hill, with gardens correspondent to the same,' and he adds, 'This parke is well adorned with timber, and not meanly furnished with fallow deare; the number of them at this present is about eight hundred. There is a little river running through this parke very profitable, not only in regarde of the troute and other fish therein contained, but especially in regard of the water-mill, well built of stone, standing upon the said river, neare unto the parke and the towne of Worksop.' Evelyn, in his 'Sylva,' mentions Worksop Park amongst those 'sweet and delectable country seats of the nobility which everybody must have seen, admired, or heard of,' and he dwells in detail on the noble trees, particularly the fine old oaks, beaches, and cedars around the mansion. One tree, blown down in the storm of 1865, was a beech covering 1,000 square yards, and containing forty tons of wood. At Whitegate, 'a tree did stand that was from bough to bough end—that is, from the extreme ends of two opposite boughs—180 feet; the contents of ground upon which this tree perpendicularly drops is above 2,827 square yards, which is above half an acre of ground; and by the assigning of three square yards for one horse, there may 942 be well said to stand in this compass.' In another place Evelyn adds, 'And my worthy friend, Leonard Pickney, Esq., lately first clerk of his Majesty's kitchen, did assure me that one John Garland built a very handsome barn, containing five bays, with pan, posts, beams, spars, &c., of one sole tree growing in Worksop Park.'

"Mr. Robert White, the historian of Worksop, in his writings, tells us that Worksop Manor was formerly the seat of the ancient Lords of Worksop. It descended by marriage to the Duke of Norfolk, and remained in that family until 1840 when the entail was cut off, and the estate was sold to the then Duke of

Newcastle for £375,000. The Manor House stands in a grandly timbered park of 265 acres. To the north-west of the park is a wood commonly known as the 'Menagerie,' which contains a variety of beautiful trees, including the acacia, cedar, yew, and tulip; but its miniature lakes and pleasant walks are much neglected, and the place is now more appropriately designated by its ancient name of the 'Wilderness,' as given by Harrison in his survey of 1636. The designation of the 'Menagerie' was obtained from the fact of the Duchess Mary of Norfolk having kept a collection of birds there. As far as known, no animals were housed in that picturesque place. Mrs. Delany, in a letter dated Welbeck, September 14, 1756, when she was staying with her friend Margaret, Duchess of Portland, thus refers to the spot:—'We went on Sunday evening to the Duchess of Norfolk's Menagerie at Worksop Manor, but I only saw a crown bird and a most delightful cockatoo, with yellow breast and topping.' The mansion was pulled down by the Duke of Norfolk, with the exception of some buildings on the left, including the east court, and a new house was built, the former building being converted into a conservatory and terrace. The late Lord Foley resided here thirteen years, and, Mr. White states, 'the taste which he and the Lady Foley displayed in and about the house, aided by their large collection of choice articles of *virtu*, will ever be fresh in the memory of those who were privileged to enjoy a sight of the same; and it is a cause of deep regret that a family so amiable and benevolent should have been removed from the neighbourhood.' The mansion formerly had a fine *facade* of Steetly stone, 303 feet long, in the centre of which was a Corinthian portico, supported by six columns. A light balustrade surrounded the edifice from the tympanum to the projecting part of the ends, which marked the termination in the style of wings, and upon this were displayed a series of vases. In the centre was a sculptured pediment, on the three points being placed statues representing 'Virtue,' 'Peace,' and 'Plenty.' On the west side of the principal group was a distant view of the old Manor House, which, with all the furniture and the rest of its contents, was consumed by fire in October, 1761. The new house, extensive as it was, formed only a fourth part of the original plan, which was designed to enclose a central court. Had it been completed it would have been one of the largest houses in the kingdom. The old house contained 500 rooms. It was undergoing alterations which had cost the Duke of Norfolk £22,000, and was nearly completed, when, on October 26, 1761, the whole building was burnt to the ground, including the library, a valuable collection of pictures, fine furniture, and part of the Arundel marbles. Wanley, in his 'Private Memorandum Book,' 1721, refers to the 'Duke of Norfolk's old English books at Worksopp' (Lansdowne MS., 667, f. 6). The loss was estimated at £100,000.

"This historical domain, includes another most interesting hall and estate—also sold—Shireoaks Hall, with 735 acres of land. Shireoaks derived its name from a group of oak trees which stood at the place where three counties met—Derby, Nottingham, and York. Evelyn, in his 'Sylva,' refers to the last of these. After the dissolution of Worksop Priory, King Henry VIII., in 1546, granted the manor or grange of 'Sherokes, in the hamlet of Sherokes, in the parish of Worksopc, in the county of Nottingham,' to Robert Thornhill and Hugh Thornhill, from whom it passed to the family of Hewet by purchase. The Hewets acquired wealth as clothworkers in the reign of Queen Elizabeth. One of them, Sir William Hewet, was Lord Mayor in 1559-60. Through his only child, a daughter, he became the ancestor of the Osbornes, afterwards Dukes of Leeds, and, the historian of Worksop tells us, greatly enriched and elevated that family, conferring on them, among other estates, property in Harthill and Wales. Thomas, also a London merchant, was the purchaser of the Shireoaks estate, which in 1575 he left to his son Henry. The latter married a daughter of a distant relative, one Sir W. Hewet, of Killamarsh and London, a rich merchant, who died in 1599 and was buried in St. Paul's Cathedral. There a tomb and epitaph were placed to his memory. The inscription was pompous enough to attract the attention of one of the wits of that age, whose caustic verse lives after the original has been forgotten. The reference in the second line is to the arms of the Hewets—gules, a chevron between three owls argent:—

'Here lyes rich Hewet, a gentleman of note:
'For why? he gave three owls in his coate.
'Ye see he is buried in the Church of St. Paul;
'He was wise, because rich, and now you know all.'

Henry Hewet was the father of the first Sir Thomas Hewet, of Shireoaks, who was High Sheriff of the county of Nottingham in the third year of Charles I. Another of the family, Sir Thomas Hewet, who spent much of his life abroad, was Surveyor-General of Woods to King William III., and of Works to George I. He made great alterations at Shireoaks, rebuilt a large portion of the house, formed several fine avenues, cascades, and fishponds, and erected for himself a costly banqueting house in the wood of Scratta. He also formed the deer park, and altogether made Shireoaks Hall a beautiful residence. 'Some faint traces of its ancient glory even yet resting upon it, though it is now reduced to the condition of a farmhouse, and its park enclosed for cultivation.' A member of the family, the Rev. Dr. John Hewet, a chaplain to Charles I., lost his head, like his Royal master, being beheaded on Tower Hill for holding correspondence with the exiled family. In May, 1854, the late Duke of Newcastle, better known as 'the Crimean Duke,' proved, after five years of single-handed perseverance, the accuracy of Sir Roderick Murchison's geological theory that coal existed under the Permian measures. He sank at Shireoaks two shafts, and on February 1, 1859, at a depth of 1,527 feet, the 'top hard coal,' 3 feet 10 in. thick, was reached. The coal was placed on the Royal Navy List, being found excellent for steam purposes, and a medal was awarded to the Duke at the Exhibition of 1862 for 'perseverance in opening out a new district under very difficult conditions.' The colliery enterprise has since been greatly developed in the district, and in the spring of this year the Duke of Portland cut the first sod of another shaft to be opened on his property within sight of Welbeck Abbey."

The History of Botany, by Julius Von Sachs, has been translated into English by Mr. H. E. F. Garnsey, M.A., and revised by Isaac Bayley Balfour, and the translation is published by the Clarendon Press. It is a good book, altogether free from the objectionable features of the "Text Book" of Sachs. The work of English botanists does not appear with any prominence in this history, but the book is one that will be valued here not less, perhaps, than in the country of the author.

PREPARING AND PACKING VEGETABLES FOR EXHIBITION.

By Edwin Molyneux.

Those who have acquired experience in exhibiting vegetables know quite well that the preparation of them is an important item towards success or otherwise. Those who are entering upon this phase of horticulture, perhaps for the first time, will soon see the necessity of devoting some special care to preparing the various kinds that are needed to make up a prize collection of vegetables at any show. At an exhibition purely of cottagers' products the difference may be seen in a striking degree between those vegetables that have been got ready for the exhibition table in a careful manner and those that have simply been "bundled together" without any knowledge of their requirements in a proper sense. It is surprising how apt some cottagers are in calculating the requirements of some vegetables that are intended for show over others who will stage potatos unwashed and onions with their roots attached, while others will polish up the potatos and carrots that not a speck of dirt of any kind can be seen. Having so often observed exhibitors stage their vegetables in such a careless manner, I propose as plainly as possible to point out what is best to be done with each kind preparatory to staging.

Potatos show as plainly as anything the want of preparation or the advantage of it, when seen on the exhibition table. The tubers should be carefully dug the day before they are required. If necessity compels their being lifted earlier, no harm will be done as they can be kept very well for some weeks packed in moist sand, avoiding that which is wet as it is likely to spot the potatos. On the other hand, if too dry the skin of the potato does not keep fresh looking, but shows an inclination to contract. The tubers should be carefully washed the day before the exhibition; place them in clean soft water to soak, taking them out one at a time, gently rub the dirt off so that the skin is not broken nor bruised; a soft brush will be useful if carefully used. Then with a small portion of soft soap rub over the skin gently, thoroughly cleansing the surface and with a small piece of soft wood or with the brush remove the soap and dirt from the eye of the potato, afterwards swilling the tuber in clean cold water. This preparation leaves a smooth clear skin, provided of course the tuber is free from scab as it should be. When the potatos are thoroughly dry, wrap each one in soft paper; if left exposed long the skin quickly assumes a dull colour, afterwards changing to green. When greening occurs, the tubers are useless for exhibition. Soft dry moss is the best packing material for potatos, placing some between each tuber, which must remain rolled in the soft paper. The greasing of potatos is a foolish practice and should never be allowed by the judges.

Tomatos should be selected for evenness of size, thoroughly ripe, carrying a good colour. The smaller the spec in the centre of each fruit the better; some sorts show but little of this. The fruit should be taken when perfectly coloured, or sooner if they show any signs of cracking of the skin about the stem, as is sometimes the case. They are best hung up in a cool, airy house, if thoroughly ripe; otherwise a higher temperature will hasten them in ripening. Some persons remove the fruit early, with a view to ensure their being in a better condition of ripening, but I think the fruit colours much quicker when left upon the plants. The skin should be gently polished with a clean soft cloth, which improves the colour somewhat. They should be wrapped separately in soft tissue paper, placed on dry, soft moss one layer thick in a separate box of suitable size, and should not be mixed with the other kinds of vegetables. Safe transit of tomatos is important, as the tender skin when ripe is easily bruised, which deteriorates considerably from their appearance.

Cauliflowers require great care for some time previous to the date of the show to present them in the best possible manner. Directly the heads are formed the sun must not shine upon them, or the pure white heads, which are so desirable, will quickly assume a pale yellow colour. Three or four of the outer leaves should be broken over the heads, which will maintain the colour in the flower. If the midrib of the leaf is simply cracked the leaf still lives, and of course maintains its freshness, which plan answers better than covering the heads with independent leaves, as these latter so quickly shrivel, and leave some part exposed perhaps to the sun. It is well to examine the leaves for several days previous for caterpillars, which quickly disfigure the heads if allowed to remain among the leaves. If there is any doubt about the heads keeping the allotted time in a growing state, which is best seen by the breaking open of the flower, they may be kept quite fresh five or six days, by pulling up the plants with roots intact, placing these in water, tying the leaves up over the heart, and placing them in a cool shed where the sun cannot shine upon them. In preparing cauliflowers the day previous to the date of show, the small leaves which cover the heart should not be removed, all others may, except three or four underneath the flower. These may be shortened back to within about four inches of the stem; these serve to make staging easier. If one foot length of stem also is left, so much the better for the same reason. On the morning of the show, when staging is being done, the final touches are put to the cauliflowers, which enhances their appearance. All the leaves are cut off to expose as much of the front of the flower as possible. If the heads can be syringed with clean water just before staging, so much the better, their appearance will be considerably improved.

Peas require some care in selecting; take only those that are deep green in the colour of the pods, which should be quite full of peas. The longer the pods are, the more weight will they carry if there is a total absence of ripening, which is easily known by the pale colour of the pods. Moreover, they should be free from irregularity in size and form, and should have the "bloom" intact. This is easily preserved if care be exercised in cutting them, which is best done with a

pair of scissors, laying the pods separately in a shallow box on soft moss. In this manner they travel safely. The box can be packed at the bottom of the hamper or otherwise, for convenience in transit. Peas keep fresh several days if the stalk end of the pods are placed in water in a cool cellar. After that time the pods lose colour and freshness.

Onions should have the outer loose skin removed, so that a smooth skin is main ained. The leaves should be cut off close to the stem; this latter being useful in staging operations. The roots should be cut within half an inch of their base, the remainder to be removed while staging is being done. The onions look much fresher in that way than when the trimming has been performed previously, which causes the centre of each to be quite brown in colour; and in the case of such varieties as White Elephant for instance, this is a blemish.

Carrots so quickly lose the fresh appearance of their skins when exposed long to the air that these roots should be one of the last articles taken from the ground to prepare. All small roots should be trimmed off, leaving only the tap root intact. Any defects, such as wire-worm marks, signs of splitting, &c., are blemishes to be avoided in selecting this vegetable. Choose the roots as even in size as possible, of uniform colour; wash them perfectly clean with soapy water, being careful not to bruise the tender skin, which will be much easier seen when the carrots have been out of the ground twenty-four hours. As soon as the roots are dry wrap them carefully in soft paper, packing them in soft dry moss. From four inches to six inches of leaf stems should be left on the roots, the length varying according to the length and size of the carrots.

Beans need but little preparation; the main point is to select them as even in size as possible, and quite tender, avoiding those which are irregular in shape, owing to their having partly-matured beans inside. This, as a rule, is a sign of coming age. Such specimens should be discarded, whether in the case of French or Runner varieties. Small shallow boxes are best for packing the beans in for travelling, laying them on damp soft moss. It is a good plan to examine the plants daily a few days prior to the date of the exhibition, as both kinds of beans are easily preserved that length of time after they are cut, and the stalk end placed in water in a cool position.

Turnips need perhaps the most careful handling of any vegetable in the root crops, so easily does the skin show signs of rough usage. If it is at all bruised discolouration quickly follows. From some land turnips are most difficult to obtain free from skin blemishes. Such are certainly defects, and must be avoided if a really good dish is to be staged; and in dry seasons especially good turnips carry much weight with practical judges. Uniformity of size is a considerable point to be gained in choosing the roots. The one straight root should be perfect; all other roots should be removed previous to washing them, which is best done in clean cold water, using a sponge to ensure tender usage. About six inches in length of the leaves should be left on the turnips, which are best packed in a similar manner to that employed for carrots.

Cucumbers will keep fresh for fully a week, if necessary, although, of course, it is well known that to cut them when required is preferable. But amongst those persons who have not several hundred plants to choose from it is a different matter. Where one house only, and that a small one, is made to do duty for other crops at the same time, a method of preserving cucumbers in a cut state may be of service to many beginners in this vocation. The moment the cucumbers are large enough for the purpose they should be cut, handling them carefully, so that the "bloom" is preserved. At the bottom of a suitable box, which is fitted with a close lid, place a layer of nettles. Why these should be the best I know not, but they certainly are, keeping fresh much longer than any other kind of greenery. On the nettles lay the cucumbers perfectly straight, handling them in a careful manner for the reasons above stated, always laying them down in the same manner as previously. Shut down the lid of the box, which should then be buried quite one foot deep in the garden, under a north wall if possible. They keep well in this way, being so much cooler than in a warmer position on the opposite side of the wall. Some persons are troubled with crooked cucumbers, which are not then in a proper state to stage. If not too old these are easily made straight. Procure one piece of smoothly planed deal about four inches wide and a trifle longer than the cucumber. Fasten the board to the wires just at the base of the cucumber, which should be laid upon the board in a straight manner, securing it in position with a piece of bast. The whole should hang downwards in a natural manner, and in a few days the cucumber will be quite straight and much improved in appearance. The colour should be deep green.

Vegetable Marrows should be selected with a view to their being tender, even in size, and quite a match in colour and shape. They will maintain their freshness fully a week after being cut if the stalk end is placed in water in a cool house. The tender skin of vegetable marrows bruises more quickly than anything I know amongst vegetables by rough usage; tissue paper should be wrapped round them first, then a strip of cotton wadding, which completely preserves them free from harm during transit.

Beet requires some care in washing it, especially if coming from heavy soil, which is the more difficult to remove from the skin, which, at this time of the year, is peculiarly tender, consequent on its immaturity. All small roots should be carefully pared away; the soil gently washed off with a sponge in clean water; about four inches of the leaf stems should remain on the roots. Uniformity in size combined with deep colouring are the most important points to study. Packing should be done in the same manner as for carrots.

Celery and Leeks need very similar treatment in their preparation. The former, especially, should be free from slug markings, or other imperfections of the leaves; the outside leaves should be removed until the blanched ones are found, which part should be staged as long as possible, trimming off the roots quite close, and removing the leafy parts of the stems. Length and thickness of the blanched parts of both celery and leeks are the more important points to obtain. In the case of the former vegetable, an entire absence of hollowness of the stems is absolutely essential. Any signs of "pipiness" are detrimental to celery as forming a good exhibition dish. If the extreme root-end is not cut off until staging is being done so much the better; it is then in a fresh condition. For travelling, the leaves should be secured with bast and wrapped in paper.

In Packing for Conveyance, there is nothing so good as strongly-made and squarely-formed hampers, which admit of closer packing than the round or oval pattern. At the bottom a thick layer of moss should be placed; on this the small shallow boxes which contain such things as peas, &c., should be first laid, then another layer of moss, and then such articles as potatos and such like which lay closely together and cannot take any harm under ordinary handling providing plenty of moss is employed between the different articles. Cauliflowers, artichokes, and such like which have greenery attached, should be packed into the hamper last as being the more safe position for them to occupy.

Notes of Observation.

SUTTON'S PEA No. 3.

With this note I send on a sample of Sutton's new pea, No. 3, the most prolific variety I have known. In height the plant is four feet, and it is covered with pods from top to bottom. The colour of the pods is bright grass green, the peas are of great size, full rich green. A grander pea one could not desire. Wm. Clarke.

Bessborough.

[The pods are slightly curved, the measure five inches in length, and a trifle over one inch in breadth. The peas are of the largest size, have a fine appearance on the table, and are of excellent quality, though somewhat thick skinned.—Ed.]

WHITE EVERLASTING PEA.

This is said not to come true from seed, but it does. I have had twenty-five plants from one packet of seed, and all are true, and the flowers equal to the samples enclosed. The seed was sown two years ago, and the plants are now in full vigour, flowering abundantly.

Bessborough. Wm. Clarke.

STEPHANOTIS IN THE OPEN AIR.

Some time since, in speaking of the capabilities of the invaluable Stephanotis floribunda you mentioned my name, and referred to a plant of mine you had seen flowering in the open air. I have one now out of doors, which I put out in the beginning of June. The blooms that were then full out soon after dropped off; but the promise of a second bloom is now complete, the plant being full of buds that are just bursting in a most satisfactory manner. It has made new wood since being put out, and has suffered no check, notwithstanding that it has had to contend with unkind weather. It will afford me pleasure to show this plant to visitors; and indeed I should like for many persons who understand the merits of the case to see and judge for themselves. The hardy nature of this plant is generally unsuspected; but at this time it may be seen here in full bloom, and all the blooms have come since it has been in the open air. B. W. Knight.

North Trade Nursery, Battle.

RHUS GLABRA LACINIATA.

The fine plant, described at page 102 of G.M., was not known when De Candolle elaborated the genus. It is not an English origination, but was found in a wood in Chester county, Pennsylvania. Rhus cotinus is *not* a native of America, as Mr. Early correctly suggests. Nuttall discovered a species in Alabama, which Torry and Gray thought *might* be the same. It has recently been discovered by Dr. Charles Mohr, and found to be distinct. It is known as Rhus cotinoides. Thomas Meehan.

Germantown, Pa., U.S.A.

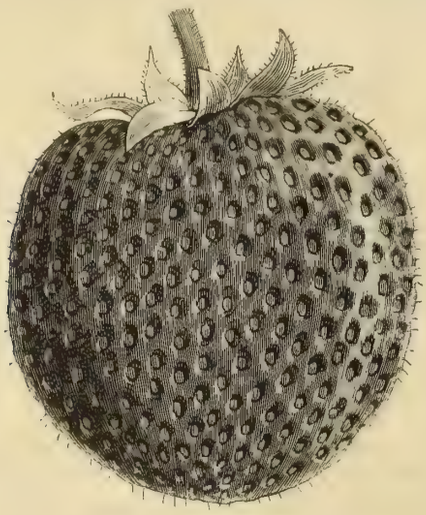
A Handbook for Lincolnshire has been added to Mr. Murray's series, and there remain only four counties to be provided for in this scheme of conducting tourists through the land. In the botany of the county the names of interesting plants are given, but no mention of localities. The "eradicator" is thus to a certain extent disadvantaged, but then the honest botanist who does not go forth to destroy is made to share in his ignominious lot. What a dreadful thing it is the world will not be honest, for if it would be we might learn where in the county of Lincoln to look for some interesting plants.

Clianthus Dampieri has given a few pleasing variations of itself, one of which was figured in E. G. Henderson's "Illustrated Bouquet" many years since, and has not been surpassed in beauty until quite recently. It is far surpassed now by a variety named here *German Flag*. In this variety, the three colours, black, white, and red, are brilliantly produced, and a cluster of fully developed flowers has a delightful appearance. Our esteemed friend, Mr. R. L. Lakes, of St. Austell, has obligingly forwarded blooms of this fine novelty, and we have seen it doing well in a snug corner on a wall of the orchid house at Kew. As a "doer" it is peculiar, as the seedlings appear not to take kindly to a terrestrial existence, and when grafted on Clianthus puniceus it is scarcely reconciled to the realities of life.

MR. LAXTON'S NEW STRAWBERRIES.

Mr. Laxton can illustrate his admirable paper on "Seedling Strawberries," by the interesting results of his labours as a raiser. Although he produces a vast number of seedlings, he is prudent as to what he keeps that he may add nothing to the lists that shall be other than creditable. There has been much said about Noble, but it has admirably maintained the character we gave it on its first appearing. That it is wanting in flavour is admitted, but where an abundance of early and handsome berries are required, Noble must lead the way with prudent men for the present, and probably for many years to come. The few who complain of lack of flavour are outvoted by the many who recognise the immense value of an early gathering and a full basket. A highly-promising novelty is

Competitor, which ripens as early as Noble, but is larger, of finer flavour, and appears likely to answer well in cool aspects as a second



NEW STRAWBERRY, *Competitor*.

early, the appearance and flavour rendering it a proper "competitor" with the favourites that are highly-flavoured. This variety is the offspring of the American Kerr's Prolific, fertilized with the pollen of Forman's Excelsior. The plant is vigorous and prolific; the fruit globular and flattened, or slightly conical; the colour brilliant scarlet.

Cardinal is a second early; the fruit large, conical; the colour scarlet; the flavour characterized by a peculiar sweetness. Appears to have a touch of the Chilian in its constitution.

White Knight, a mid-season fruit, is a seedling from Noble, fertilized by pollen of King of the Earlies. It is peculiarly distinct; the fruit large conical; the colour light scarlet around the crown, the remainder white. This has a hautbois flavour, but more piquant. It will be an interesting companion strawberry to the Bicton Pine, as by a little shading it may be ripened wholly of a white colour.

Latest of All is a seedling from British Queen, fertilized by pollen of Helena Gloede. The fruit is very large, cockscomb-shaped; the



NEW STRAWBERRY, *Latest of All*.

flesh white, with rich vinous flavour. The plant is robust, with thick, leathery foliage; the flowers are larger than those of any other variety, and the fruit ripens ten days later than that of British Queen. Mr. Laxton considers that this will prove of the greatest value to market growers.

Albert we have not seen. Mr. Laxton describes it as a good grower, and abundant bearer; the fruit large, glossy scarlet; very rich in flavour, and somewhat piquant.

THE KEW COLLECTION OF BRITISH FERNS.

By Charles T. Druery, F.L.S.

(Concluded from page 474.)

We have now made the tour of the main collection containing the cream of the varieties, but in the large oblong enclosure of the herbaceous department, and also flanking the museum adjoining it, there will be found several beds occupied by numerous interesting varieties well worthy of inspection, though they embrace no types widely different from those we have already studied. The same remark applies to a few plants in the Alpine rockery, where, however, the grand growth of the normal Osmunda regalis compels admiration, and regret that a little room could not be found here for the moisture-loving species to which we have referred. They would amply repay the accommodation.

In this connection we would point out that most of the varieties which we have seen, and indeed the majority generally, beautiful as they appear out of doors, are capable under glass of assuming much greater delicacy and development. It must be remembered that the climate of south eastern Britain is not nearly so congenial as that of the western coasts, the rainfall is much less and the winds are much drier, both adverse factors which can only be partially overcome by the sympathetic and appreciative care which is manifestly lavished upon the Kew collection by Mr. Dewar. In cold frames or cold conservatories, however, these outdoor conditions are so far modifiable that we can attain to absolute perfection of growth, the only points to be insisted upon being that no heat be employed in the winter and that they be not then allowed to become dry. Any artificial warmth stimulates the plants into premature growth and shortens the rest of some five months or so which their nature demands, the result being, weakened growth eventually, and an invincible plague of vermin from which, if grown cold and hard with ordinary care they are free. An example of this may be seen in the few British ferns located in the Temperate House, the only healthy ones being two varieties of the Sea Spleenworts (Asp. marinum ramosum and imbricatum), a species which is only found on our warmest coasts, and though found there in very exposed positions is somewhat tender. Strange to say, this fern thrives even in a tropical house where it assumes quite abnormal proportions. This and its frequent companion, the Maidenhair (Adiantum capillus veneris), are the only two British species which will not stand the average rigour of our inland winter climate.

Having now accompanied our readers through undoubtedly by far the finest national collection of indigenous ferns which any country in the world could show, we are sure they will share our surprise at the non-utilization by the general public of many of these charming forms for ordinary decorative purposes. As we have seen, the power of variation not only extends to differentiation of the frond type, but embraces reduction of size and condensation of habit of growth on the one hand, and an increase of stature and development on the other. Hence we have plants adapted for all situations. A collection of the dwarf forms, such as A. f. f. Edwardsii acrocladon, crispum, Lastrea pseudo mas crispa, crispa cristata, c. c. angustata, crispa gracilis, ramulosissima, P. angulare parvissimum, Lyellii, congestum, &c., &c., to say nothing of the normally small Asplenia, Polypodies, &c., would find a congenial home in their entirety in a fair-sized north window provided with a sloping stand. On the other hand the Lastreas, Athyriums, Polystichums, and Osmundas, afford examples of grand growth which renders fine full-grown specimens worthy rivals of the most expensive exotic foliage plants. Add to these capacities that they are amenable to the simplest culture and care, and with the two exceptions cited, perfectly hardy against frosts, and certainly we have all the elements which should recommend them to popular culture. Yet what are the facts? Here, there, and yonder we see what are termed Ferneries, indoor and outdoor. Indoors our native ferns are usually absolutely ignored, and the collection is represented by half-a-dozen exotic species repeated *ad nauseam*. Out-of-doors, if the fernist is especially patriotic, we may find as many as five normal species, common Lady Ferns, Male Ferns, Broad Buckler Ferns, Shield Ferns, and Hart's Tongue. If we see any others, they are probably regarded as rarities. So much for private culture, in the South of England at any rate, in some of the northern and midland counties the case is different. Now turn to the nurserymen. We have seen what our Native Ferns are and we are desirous therefore of starting a collection Will it be believed that within the entire area of this great metropolis and its wide extending suburbs there is not one who could supply the need. With exotics we can be stocked by the million, and all the corners of the earth are ransacked to supply the markets. If a new form be found in the Himalayas these nurserymen will pay a good round price for it, give it all the honours of pictorial representation in their catalogues, together with a fine name and a long price and find it pay. Let, however, the ardent fernist send them a native gem of first water and greater merits from one of our ferny coombes of Devon and it will be ignominiously rejected as a "bad spec." The supply follows the demand it is true, but in matters floral the demand often follows the display, and we are therefore sanguine that the recent Fern Conference at Chiswick and its accompanying exhibition will lead to a better appreciation of our native ferns and induce many to take up their study and culture, not by any means merely from a patriotic feeling, but on account of their intrinsic merit We have cured ourselves to a great extent of that absurd partiality for things foreign which has transformed many a meritorious singer and musician from an honest John Tomkins into a mongrel Signor Giovanni Tomkiani to the benefit of his pocket, but hardly of his self-respect. The neglect of our native plants is, we think, a remnant of this feeling, and it therefore behoves us to remove a stigma which every fern lover (to say nothing of the botanist), knows is altogether misplaced in connection with his favourites.

CATTLEYA BOWRINGIANA.

One of the most useful and ornamental groups of orchids in existence is formed by cattleyas, which are remarkable, not only for numerous instance the varieties of Cattleya labiata, such as Mossiæ, Mendeli, Trianæ, Gaskelliana, and others. Many of the smaller flowered kinds, however, cannot be surpassed in the rich colouring of their flowers, and the subject of the present note—Cattleya Bowringiana—which cannot



CATTLEYA BOWRINGIANA. Engraved from a drawing by Mr. John Weathers.

shades of beautiful colour which their flowers possess, but also for the great size and substance which these latter attain. As a rule the larger-flowered species have the most agreeable colours, as witness for be called a large-flowered species, is certainly a good example of having rich glowing blooms of a deep rose-purple.

This species, which is named after Mr. J. C. Bowring, Forest Farm

Windsor, is a native of British Honduras, whence it was introduced about six years ago, and where, according to Messrs. Veitch's Manual, "it is found on cliffs by the side of a rapid stream flowing over a succession of waterfalls, and where the atmosphere is always highly charged with moisture."

Six years is not a long time for an orchid to be in cultivation, nevertheless, the readiness with which C. Bowringiana has taken to our climate, and the freedom with which it produces its handsome blooms, have resulted in making it long ago a general favourite, now to be found in almost every orchid collection. A great point in its favour is that the three last months of year—October to December—is the regular season of flowering, and it thus serves as a very valuable link in the floral cycle between the late varieties of C. labiata and that gem of winter—Lælia anceps and its chaste varieties. Last season I had strong evidence of its free-flowering propensities when I saw over three hundred plants in flower at the same time in Messrs. F. Sander and Co.'s large Cattleya house at St. Albans. From one of these plants I was enabled to make the accompanying illustration. Many specimens had as many as thirteen and fourteen flowers on a peduncle, but the majority bore from eight to ten brilliant flowers. Great variation in colour exists, but chiefly in the lip. Sometimes the deep magenta-purple blotch in front of the creamy throat becomes lilac, or mauve, and sometimes very pale indeed, and occasionally sending off parallel purple-brown lines down the throat.

One is reminded of the old C. Skinneri by C. Bowringiana, but the latter species is more robust, has a different habit, and does not produce its flowers about April and May as C. Skinneri usually does.

When one remembers the flowers of C. Bowringiana first seen in this country and compares them with those of more recent date, it is almost impossible not to notice the great improvement in size, which has resulted no doubt from the effects of good cultivation, and we may hope that the better this species is treated the stronger will its constitution become, and enable it to bring forth its glowing clusters of flowers each succeeding year in greater abundance, size, and richness of colour.

John Weathers.

Isleworth.

THE CARNATION AND PICOTEE.

By James Douglas.

The season for blooming is considerably past its best as I write these lines, and, all things considered, it has been a good one. We have had an admirable display under glass; indeed, there are many fine blooms now, and the seedlings out of doors are a grand sight. Many plants have 200 blooms upon them. The carnation and picotee blooms withstand the rain and wind as well as most garden flowers do. But the effects of rain are always visible on a close inspection of the flowers, therefore it is absolutely necessary to protect the blooms in some way if they are intended for exhibition. The remarks made by the chairman of the Carnation Conference at Chiswick on July 22 on the debilitated constitution of the show carnations were not endorsed by exhibitors and cultivators.

Those who have grown and carefully nurtured the carnation and picotee for a series of years are well acquainted with the characteristics of every one of the classes. Indeed, the colours of the flowers are a pretty safe index of the constitutions of the different varieties. Of course there are no general rules without exceptions, and in this matter of constitution it is curious to observe the effects of a change in the colour of the flowers. What are termed "run" flowers are well known to cultivators. For instance, a scarlet bizarre has two colours on a white ground, and some varieties have a greater tendency to run than others. Robert Houlgrave (Barlow) is one of the most fickle in this respect; the white ground disappears, leaving the purple and marone colours only, and the leaves show the effects also in having a much darker green colour and making stronger growth when the flowers are run. A run flower is termed a "fancy" for exhibition purposes, and a flower with one colour only is a self; and wherever a large collection of flaked and bizarred carnations are grown there will appear amongst them annually about ten per cent., less or more, according to the season, of selfs and fancies. The close observer can distinguish in which plants the change has taken place by observing the greater vigour of the plants and altered colour of the foliage.

It must not, however, be assumed that although the selfs and fancies have a tendency to grow more vigorously than the others that the whole race are not vigorous out of doors. That some varieties are more vigorous than others is a fact beyond dispute. It is the same with carnations as it is with any other plants, in this respect, but with good cultivation they are all perfectly hardy planted out in the open borders. Mr. Rowan informs me that in his town garden—Manor Road, Clapham—he obtains, in some instances, better flowers from his carnations and picotees planted out in the open borders than he does from pot plants. Brunette (Kirtland) is one of the most delicate flowers, and yet Mr. Rowan cut his best flowers from border-cultivated plants. In fact, I can relate a curious incident of this same variety. We grow our whole collection of carnations and picotees in pots, so that they may be under complete control as to the time of flowering, and, amongst a few others, Brunette had certainly much declined in vigour. I therefore set out a few plants in the open borders, with the result that Brunette increased in vigour, and is as strong in constitution as ever it was.

Those persons who still persist in believing that the carnation and picotee are grown under glass for exhibition purposes, and that they are beyond the reach of the ordinary cultivator who does not possess glasshouses, should read Mr. Martin Rowan's paper on "The Carnation as a Town Flower," which will be published at an early date in the "Journal of the Royal Horticultural Society." If the plants were grown under glass they would flower too early and out of all character. The natural period of the flowering of the carnation and picotee out of doors is about July 20 in the south of England; but the recent tendency of the seasons has been to be rather later, and, indeed, the exhibitions of the National Society (southern section) have been fixed rather later than formerly; but even in recent years I have had the best blooms quite over by July 20.

In our dry districts we have to fight against insect pests, especially thrips. This troublesome parasite swarmed in the unopened buds this year, and had we not carried our plants under glass, where they were freely fumigated with tobacco smoke, I could not have exhibited at all. Surely no one will say the carnation is not worth growing because the flowers are liable to be attacked by thrips; and some pains must be taken to kill them! With some of us the things that cost most are appraised at a higher value. I verily believe that plants cultivated in flower-pots are more liable to be attacked by thrips, for those in beds and borders show no trace of it. But this immunity from the pest may be owing to the heavy rains, which thoroughly drenched them after the others were removed under glass about three weeks before the exhibition on July 22.

Mr. Martin Smith's generous offer of valuable prizes for border carnations through the National Carnation and Picotee Society (southern section), will certainly do much to stimulate the culture of these beautiful flowers as border plants. This is as it should be, and doubtless other growers will be brought into the field. At the same time it must not be forgotten that the Carnation and Picotee Society was formed in the south to revive and stimulate the love for the carnation and picotee as a florist's flower in the more restricted sense of the word. Yet I may venture to say that those of us who started the society did not fail to see that it would be well to include in one comprehensive grasp every section of the carnation and picotee, and also to afford examples of pot culture. This was done in the first year of the society's existence, and has been continued ever since; indeed, the classes for cut blooms of border carnations are always the fullest; moreover, the general visitors with no knowledge of carnations seem always more attracted by the bright colours of the selfs, and erratic markings of the fancies. This is naturally expected from those who have not been educated in the properties of the flowers by long and careful study of their points of excellence. It is in the works of nature as in those of art. The poet Thomson asked, "Who can paint like nature?" We may well answer, Who can understand the works of nature by merely taking a cursory glance at them? We must linger over them lovingly, and the mind will expand in time. When we first begin to study valuable paintings arranged in beautiful order in the galleries, like rows of carnation blooms, we are not always attracted by the most refined and perfectly finished works; we must go again and again, and in time we may realize the truth "That a little learning is a dangerous thing."

WORK FOR THE BEE-KEEPER IN AUGUST.

The month of July has proved a bad one for the bee-keeper. Although the lime has been in bloom during the latter part of the month, the bees have not been able to take advantage of it more than one or two days a week, and then it was so washed that little nectar was left for them. In many districts feeding has had to be resorted to, but with us it has not been nearly so bad as in 1888, and fairly good colonies, that were not given over much space, have had sufficient to keep them steadily progressing. The result is, some have twenty-one well-filled sections now fit to come off; but some of the more promising stocks that bid fair to finish double that number during the five days at the end of June seem to get no further, and a lot of badly-filled sections is the outcome of the effort. Care should be taken now, even during settled weather, not to add to the number of sections now over the bees, but to change them about to those colonies that show the best disposition to enter and complete them.

Extracting.—Modern bee-keeping favours comb-honey, but I begin to see that many are wrong in putting all their eggs in one basket, for there is a growing demand for good examples of clear and bright extracted honey. The adulteration of many examples that were brought into the market no doubt had a bad effect on the enjoyment of honey in this form, but at the present time there need be no difficulty in getting a genuine article, as we never heard of anyone in this country endeavouring to manufacture honey without bees. During the month of August a very great deal of the extracting of honey from hives worked for that purpose will be done. As honey at this season of the year is getting short, extra care must be taken in opening the hives, and in other ways disturbing the bees, that they must not by any means be allowed to get at the honey in the open air, or the whole apiary will be thrown in an uproar, much to the annoyance of any persons who may be compelled to pass near the hives, as well as the uproar that is often caused among themselves by their endeavours to get at the liquid sweets of one another. In the apiary there is an endeavour, as in the time of old, that they should take who have the power, and they should keep who can, and the law of nature promotes survival of the fittest. Both in early spring and late autumn bees are very much given to robbing, and nothing aggravates this evil more than to allow bees to taste of honey in the open air. Therefore every care should be taken to prevent this by closing each hive again as soon as a couple of frames have been taken out.

Experienced beekeepers need no instruction as to how this should be done, as they will have the frames so placed that they may be easily removed. The proceeding consists in raising the frame a foot or so above the others then dropping it quickly, causing a sudden jerk in stopping, which will remove the greater portion of the bees, and with a stout feather brush off those remaining. This frame should be

quickly set aside and another one served in the same manner, when they must be immediately carried to some house or shed where hot honey-knives should be in readiness for uncapping them one side at a time. They are then put into the honey extractor; but here a little caution is necessary, as with heavy combs it is not safe to sling them too fast or to try to finish one side before the other has been uncapped, and a much greater rate may be made when the combs are partly empty. This work does not take nearly so long to do as it takes to describe; and when one can get an assistant to keep the extractor going while the frames are being carried to and fro, a lot of frames may be gone over in one hour.

A caution should here be given not to extract from any frames containing brood, for not only will injury be done to the young bees, but a bad sample of honey will be the result.

Since writing the above we have had a few fine days which the bees have not been slow in taking advantage of, and as the lime is still in bloom while I write, I can watch that continuous line of bees returning laden with nectar from those trees, and it is interesting to contrast the difference in the flight of the bees when comparing their outward and homeward journey. Those that leave the hives in search of nectar circle about in several directions as if undecided as to the proper line, but those returning make one direct line and never swerve from it. It is on these occasions that the weakness of the wing power of the honey bee is seen, and it can easily be imagined how many of them are lost when overtaken by a storm and get beaten down amongst grass and weeds, where many perish, when returning with their treasure. On this occasion, I see whenever the bees have to rise to pass over some object such as high hedges or walls, they frequently alight and take rest before they have the power to rise on the wing; and whoever may be supporters of the opinion that bees travel five miles in search of nectar, which no doubt they have been proved to have done, it is equally certain that when they have great distances to travel with their treasure they are not likely to yield very bountiful returns.

APIARIST.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

ORCHIDS IN BLOOM: Cattleya granulosa; C. Harrisoniæ; C. labiata pallida; Cycnoches Loddigesi; C. ventricosum; Cypripedium Fairrieanum; C. Lowi; Lælia autumnalis; L. majalis; Miltonia bicolor; M. candida; M. spectabilis; Odontoglossum grande; O. phalænopsis; Oncidium pulchellum; O. Batemanni; O. flexuosum; Promenea stapeloides; Saccolabium Blumei; S. furcatum; Sobralia liliastrum; Stanhopea Martiana; S. insignis; S. tigrina.

THE HOUSE.

THE adornment of indoor apartments with flowers will continue to receive attention, and amongst the flowers now available for indoor decorations are the single and pompon dahlias, which afford a remarkable diversity of colour, are elegant in appearance, and stand well in a cut state. The yellow, crimson, scarlet, rose, and white single dahlias are especially attractive when judiciously arranged with fern fronds of a rather bold character, and are as useful for dressing épergnes for the dinner-table as for filling vases in the drawing-room. In the pompons we have many beautiful shades of rose, lilac, and purple, and these can be turned to good account in combination with the colours mentioned in connection with the single flowers. We allude to these dahlias now to enable those of our readers who may be interested in providing a supply of cut flowers during the latter part of the summer and in the autumn to make their acquaintance, and determine how far they are suited to their requirements.

CONSERVATORY AND GREENHOUSE.

PELARGONIUMS belonging to the show and fancy sections that have been cut down and made new shoots an inch long must be repotted. Do not shake the earth off so as to destroy the ball entirely, but remove the outside, and trim in the roots slightly so as to get them into small pots. Those potted a month ago now want a shift. Have a sound compost.

PLANT HOUSES of all kinds should now undergo a thorough purification, and necessary repairs should be completed, that all may be dry and sweet before the fires are lighted and shelves are crowded with plants. At the present time, any kind of plants may be set out of doors if needful, or room may be found for them in other houses while repairs proceed; but in a few weeks hence it will not be so safe to turn the things out, nor will there be so much room to spare in houses only partially occupied.

STOVE AND ORCHID HOUSE.

STOVE PLANTS should not be shaded more than is absolutely necessary to protect them from injury, as an abundance of light is now essential to ensure the production of firm, short-jointed growth.

ORCHIDS require peculiar care now to secure a perfect ripening of the growth of the season and to prepare them for their winter rest. A general reduction must be made in the supply of moisture, and a general increase must be allowed of solar light. The cultivator will, of course, guard against any extreme in drying up or exposing to sunshine; a certain amount of moisture will be required even when the plants are perfectly at rest, and some more than others. It is certain that at this time of year shading should be used quite sparingly, and a condition of repose should be encouraged by a reduction of the temperature and the amount of moisture.

FORCING AND FRUIT HOUSES.

CUCUMBERS for winter fruiting must be raised at once, and cuttings are preferable to seed, as the plants have a shorter habit and are more fruitful. Take very small cuttings from the ends of newly-made shoots, pot them singly in small sixties, and shut up over a gentle bottom heat. A heap of grass-mowings mixed with dry litter will afford enough heat to start them and keep them going till new beds are made up. One half dry litter and the other half mowings shaken over will produce a steady lasting heat, of great value at this time of year, when it is not generally convenient or desirable to have manure wheeled in.

PINES swelling their fruit to have frequent supplies of liquid manure and abundance of atmospheric moisture. Young plants to stand the winter, for fruiting early next year, had best be removed from those swelling fruit, so as to keep them drier and more freely ventilated.

VINES.—The leaves of vines that have been forced early too often become brown and shrivelled at this time of the year through increase of red spider. Some cultivators comfort themselves with the idea that the wood will be better ripened in consequence, but that is a great mistake. The foliage should be maintained in a healthy condition until the last.

FRUIT GARDEN AND ORCHARD.

STRAWBERRIES.—This is the best time in the whole year to make new beds, to ensure good bearing next year. If rooted runners are plentiful, take the best only, and destroy all the weak ones; but with any varieties it is thought desirable to propagate to the utmost, sort the runners as to sizes, planting the forwardest and strongest in beds to bear, and the late weaker ones in separate beds for stocks; these latter will not probably bear till the year after next, and then will be strong plants. Strawberries to fruit in pots next year ought by this time to be strong and in need of a shift. The soil should be strong loam, well chopped over with rotten dung, and the plants be potted firm.

WALL TREES.—The principal duty of the cultivator now is to assist the trees in any way that may be possible in the ripening of the wood. Where the walls are covered with glass, the lights should be wholly removed; where the walls are overloaded with wood, some of it should be thinned out; where nailing has been neglected, it should be completed at once.

FLOWER GARDEN AND PLEASURE GROUNDS.

BEDDERS can only be kept in good trim by constant attention. Remove seed-trusses, yellow leaves, and rank growths. Put in cuttings of whatever is required, and pot off those already rooted. Shut them up for a week, and then expose them to all weathers till the time to house them.

CARNATIONS AND PICOTEES not yet layered must be attended to, or it is impossible for them to be well rooted before winter.

PROPAGATION OF HERBACEOUS BORDER FLOWERS is an important matter just now, as there is still time to obtain a good growth of many subjects before winter, but no time to spare. Seed sown immediately of any and every kind of hardy perennial that can be grown from seed will have a fair chance, though for many subjects an early date of sowing is to be preferred, but as regards the safety of seedling plants during winter, the late-sown plants, generally speaking, are the most hardy; those that are fat and strong are the first to perish during very severe weather. Subjects that may be increased by cuttings may also be dealt with now, and frames may be filled with but little labour and the certainty of a good return. Such things as the perennial species of Iberis, Arabis, Centranthus, Dianthus, &c., &c., may be multiplied without frames by selecting a sunny spot, and there making a bed of sandy soil for them; and, having put in the cuttings, shade them with mats or evergreen boughs for a few weeks, after which they will take care of themselves.

KITCHEN GARDEN AND FRAME GROUND.

CELERY.—Where the plants are forming stools instead of distinct hearts, it is advisable to remove with a knife the outside suckers, so as to reduce the growth, if possible, to one set of stems. This stooling is the result of free growth after the plant has received a check. Stooled roots are unfit for the table.

ENDIVE.—A last sowing may be made to stand the winter. All the sorts are good, but Picpus and Round-leaved Batavian are the best.

LETTUCE may still be sown, and plantations may be made from seed-beds sown last month.

ONIONS ought now to be ripening off, and if the weather continues dry no doubt they will ripen well. Where they appear gross, and not inclined to ripen, sweep them over with a long stick or rake-handle, so as to lay down the tops. Generally speaking, they fall over of themselves, and the bulbs ripen without assistance. Sow for winter and spring supplies.

POTATOS to be taken up as soon as ripe, or even before if there is a likelihood of their being injured by disease. Let them be well dried in the sun and stored away at once. Never pit them damp, but, on the other hand, never keep them lying about on the ground exposed to daylight beyond a reasonable time.

SPINACH for winter may be sown. In some places spinach sown in the middle of September goes through the winter well; but on cold soils, and in all eastern and northern districts, the winter spinach should be sown before the 20th of August.

VILLA FARM.

GOSLINGS that were hatched early in the spring and have had careful management in the way of feeding and other details will now be increasing in size at a very rapid rate, and so plump and otherwise satisfactory that, excepting those intended for killing at a very early date, will not require much, if any, special feeding to fit them for the table; those, however, intended for killing at Michaelmas must from the present time have special attention to ensure their being in prime condition when sent to the table. Cramming of any kind ought not to be resorted to, for the simple reason that birds in a nice plump condition are far to be preferred in every respect to those carrying a superfluity of fat. For killing at the season referred to the strongest of the goslings should be selected, and if they can be kept apart from those to be killed later on so much the better. But as geese which have the run of the stubbles are invariably of finer quality than those confined to enclosed yards, they ought, if convenient, to be allowed a certain range after the fattening process has commenced, and the food obtained from the fields by the birds themselves supplemented by supplies of corn and meal. When it is found more convenient, as is often the case, to shut the birds up in a yard, they must have access to abundance of pure water, receive liberal supplies of food, and be provided with a clean bed. The most suitable food for fattening geese is oatmeal or barley-meal mixed with skim-milk, or new milk for the matter of that. They may also be fed occasionally with crushed oats, or with pollard and bran mixed with milk, and scraps of vegetables from the kitchen may also be utilised, but mixtures of kitchen refuse, speaking in a general way, are most objectionable. Green food must be given in rather limited quantities during the fattening process, as it is too relaxing; and offal of all kinds must be rejected because of the disagreeable flavour it usually imparts.

PAGE'S NURSERY, HORNSEY, of old renown, will be cleared of its stock, glass, pipes, boilers, &c., under the hammer of Messrs. Protheroe and Morris, on Thursday next, August 21.

Reports on Fruit Crops, 1890.

APPLES.

Kilkenny.—An average crop generally.

Mr. W. Clarke, Bessborough Park, Piltown, says: In this neighbourhood there is an average crop. In our orchard the crop is short, but in the garden we have a good crop, the trees being younger. Some trees that I planted in January have from three to six apples each on them. Cox's Orange Pippin, Blenheim Pippin, Irish Peach, Yellow Ingestre, Lord Suffield, Keswick Codlin, and Tower of Glamis are all excellent varieties, and thrive in this district.

King's County.—Variable, and on the whole below the average.

Mr. J. Roberts, Charlville Forest, reports: Here we have not an all-round good crop, as some pyramidal trees in the kitchen garden and standards in the orchard are good, whilst others are bearing only half a crop, and a few have but little fruit. Ribston Pippin is bearing well on the walls, and some pyramids are fairly good. Blenheim Pippin is not bearing satisfactory crops, although the trees are very healthy.

Lancashire.—Partial, and below the average.

Mr. W. Tunnington, Calderstone, Allerton, says: We had a good show of bloom, which was in most cases destroyed by caterpillars. The following are carrying good crops: Keswick Codlin, Lord Suffield, T. D. Fish, Warner's King, Annie Elizabeth, Jolly Beggar, Small's Admirable, Dumelow's Seedling, Ribston Pippin.

Mr. W. B. Upjohn, Worsley Hall, remarks: A poor crop generally. Lord Suffield is good, and promising to be of fair size.

Mr. W. Kipps, Walton Lea, Warrington, observes: We have a good crop of Irish Peach, and light crops of Lord Suffield, Cellini, King of the Pippins, and Hawthornden. Of many varieties there is not any fruit.

Mr. J. Stoney, Allerton Towers, states: The crop is certainly under an average, several large trees in the kitchen garden having hardly a fruit upon them. The following varieties are, it may be interesting to state, the most productive in this neighbourhood: Dumelow's Seedling, Hawthornden, Lord Suffield, Irish Peach, Cellini, Golden Spire, Mere de Menage, Royal Codlin, Northern Greening, Warner's King, King of the Pippins, Ribston Pippin, and Scarlet Pearmain.

Leicestershire.—Below the average on all sides.

Mr. H. Cottrell, Bardon Hill House, remarks: Lord Suffield, Court Pendu Plat, Keswick Codlin, Malster, Golden Pippin, are carrying good crops. The trees of Malster have borne good crops for three consecutive years, and the fruit keeps well.

Lincolnshire.—Partial, and under average.

Mr. W. Ingram, Belvoir Castle, writes: The partial failure of the apple crop is not due to the exhaustion of the trees by heavy cropping in the two preceding years, as very few apples were produced in our orchards in 1888 and 1889. Although many fine healthy trees are quite bare of fruit, an examination of these orchards affords some examples of fair crops of the undermentioned sorts: Blenheim Pippin, Bramley's Seedling, grafted on old trees, very full crop, one of the best apples for this district; Frogmore Prolific, an excellent fruit, not so generally cultivated as it deserves to be; Malster, Worcester Pearmain, Baron Ward, Flower of Kent, Northern Greening, Golden Noble, King of the Pippins, and Stirling Castle.

Londonderry.—Variable, and below the average.

Mr. P. Divin, Roe Park, describes the crop as poor, and not equal to last year, whilst Mr. H. Carter, Downhill Castle, Coleraine, states of the produce as "A very regular all-round crop." Mr. Carter also says: We find the following varieties the best for this locality, which is within a stone's throw of the sea: Mr. Gladstone, Irish Peach, Keswick Codlin, Lord Suffield, Lord Grosvenor, Warner's King, Blenheim Pippin, Peasgood's Nonsuch, and a local variety called Ballyforden. In other orchards hereabouts there are good crops of these varieties.

Midlothian.—Rather light in most districts.

Mr. M. Dunn, Dalkeith Gardens, writes: The apple crop in this district is generally a light one, although in the gardens here when the trees receive due attention the crop is an average one, and the fruit is clean and swelling well. The best crops this season are borne by Worcester Pearmain, King of the Pippins, Ribston Pippin, Cox's Orange Pippin, Blenheim Pippin, Ecklinville, Beauty of Kent, Malster, Oslin, Tower of Glamis, Prince Albert, Loddington, Golden Spire, Margaret, Scarlet Pearmain, Cox's Pomona, Yorkshire Beauty, Golden Noble, Early Julian, Pott's Seedling, Lord Grosvenor, Frogmore Prolific, and Yorkshire Greening. On the other hand, such free bearing sorts as Duchess of Oldenburgh, Keswick Codlin, Lord Suffield, Cellini, Stirling Castle, Warner's King, and Wellington have but few, if any, fruits.

Mr. W. Smith, Oxenford Castle, remarks: Apples are much under average, excepting King of the Pippins, Stirling Castle, Mank's Codlin, Lord Suffield, Worcester Pearmain, and Lane's Prince Albert, which are bearing full crops of fruit.

Middlesex.—Partial, and generally below the average.

Mr. Anderson, Laleham House, remarks: The sorts with good crops are King of the Pippins, Selwood's Reinette, Empress of Alexander, Sam Young, Cox's Orange Pippin, Gloria Mundi, and Beauty of Kent.

Mr. G. Wythes, Syon House, observes: There was an abundant bloom, and the promise of a heavy crop, but the bloom was much injured. There is a good show of fruit of Mank's Codlin, Cockle Pippin, Lord Grosvenor, Irish Peach, Devonshire Quarrenden, Keswick Codlin, and King of the Pippins, with a few Ribstons. The trees are much disfigured by the grub.

Monmouthshire.—Considerably under the average.

Nairn.—Generally a light crop.

Mr. J. Maitland, Cawdor Castle, remarks: Old standards are loaded, but on walls and espalier trees the fruit is very thin. Codlins, Jenny Sinclair, Oslin Fulwood, and last, but not least, Blenheim Pippin, bearing a full crop.

Norfolk.—Below the average on all sides.

Mr. W. Orr, Stow Hall, writes: There was every appearance of an abundant crop, but in reality there is not more than half one. Some of the older varieties, such as Hawthornden, Codlins, and Ribston Pippin are bearing a heavy crop.

Northamptonshire.—Much under average in all districts.

Mr. J. Hughes, Eydon Hall, says: Orchard standards of Blenheim Pippin, Devonshire Quarrenden, and Keswick Codlin have heavy crops. Bush trees of Annie Elizabeth, Duchess of Oldenburgh, Worcester Pearmain, Grant's Pippin, Small's Admirable, Irish Peach, and Cox's Orange Pippin are also bearing well.

Northumberland.—Variable and light.

Mr. R. Henderson, Chillingham Castle, remarks: The crop is very light here this year, excepting Prince Albert, King of the Pippins, Keswick Codlin, Ecklinville Seedling, Mere de Menage, and Styford Pippin.

Mr. G. Harris, Alnwick Castle, says: Of kinds planted within the last two years Domino, Grenadier, Tyler's Kernel, and Bismarck are fruiting very freely on the paradise stock.

Nottinghamshire.—A light crop is reported from all districts.

Oxfordshire.—Below the average on all sides.

Pembrokeshire.—Much under the average.

Perthshire.—An average crop in most districts.

Mr. J. Brown, Abercairny, says: A good average crop, and such as King of the Pippins, Ecklinville, Stirling Castle, and the Codlins are bearing heavy crops.

Renfrewshire.—Crop generally good, both in quantity and quality.

Rutlandshire.—Much under the average; the best crops are those of trees in gardens.

Scilly Isles.—Very light.

Shropshire.—Below the average is the burden of the report from correspondents.

Mr. John Lambert, Onslow Park, Shrewsbury, reports: Apples very thin, almost a failure, through blight. The best bearers are Lord Grosvenor, Bramley's Seedling, Frogmore Prolific, Ringer, Tyler's Kernel, Irish Peach, White Juneating, Lord Suffield, Warner's King, Baumann's Red Reinette, Ribston Pippin, White Hawthornden, and Northern Greening.

Staffordshire.—Variable, but in the majority of districts there is a fairly good crop.

Mr. E. Gilman, Ingestre Hall, states: We have a good average crop. The sorts bearing best with us are Small's Admirable, Beauty of Hants, Keswick Codlin, Lord Suffield, King of the Pippins, Golden Drop, and Worcester Pearmain.

Mr. Bannerman, Blithfield Hall, remarks: Crop under an average, Kentish Fillbasket, King of the Pippins, and Lord Suffield have fair crops.

Stirlingshire.—Below the average in most districts.

Suffolk.—Crop generally light.

Surrey.—Partial, and on the whole the crop is light.

Mr. E. Butts, Leigham Court, Streatham, writes: There is about one fourth of a crop in this neighbourhood. Blenheim Pippin, King of the Pippins, Hawthornden, and Ribston Pippin are the most productive this season. Some sorts, notably Ribston Pippin have the leaves much blistered.

Mr. Thomas Osman, Ottershaw Park, Chertsey, writes: Fletcher's Seedling and King of the Pippins have good crops. The first-named is not known so generally as it should be, as it is a good bearer and the fruit keeps well.

Mr. J. G. Dean, Titsey Park, Limpsfield, writes: The trees blossomed well, more especially Scarlet Nonpareil, nevertheless there are not more than half a-dozen fruits upon the largest trees of that variety. Of the 120 sorts grown here seven only have a full crop, and these are Dr. Harvey, Aitken's No. 2, Sturmer Pippin, Winter Queening, Mere de Menage, Wormsley Pippin, and Hambledon deux Ans.

Sussex.—All our correspondents agree in describing the crop as below the average.

Mr. J. Rust, Eridge Castle, reports: Apples will be scarce; but we have good crops of Northern Greening, Duchess of Oldenburgh, Crimson Queening, Bess Pool, Irish Peach, Mannington's Pearmain, Margil, Small's Admirable, New Hawthornden, Hanwell's Souring, Sam Young, Evargil, Betty Geeson, Lady Henniker, Pott's Seedling, Hick's Fancy, Beauty of Kent, Ringer, and Golden Harvey. My advice to intending planters is: Do not discard the old kinds until you have proved the new sorts will suit your locality. I would also urge upon all fruit growers to keep plenty of bees to fertilize the flowers.

Sutherlandshire.—An abundant crop is reported.

Warwickshire.—Crop light.

Waterford.—Much below the average.

Mr. P. Aberne, Lismore Castle, remarks: A very partial crop, and our usually good croppers are almost devoid of fruit. This is very disappointing after such a favourable spring and an unusually fine show of bloom.

West Lothian.—A poor crop generally.

West Meath.—A failure, more or less complete, in most districts.

Westmoreland.—But little fruit in any of the districts.

Mr. F. Clarke, Lowther Castle, states that the caterpillars have done much damage; and Mr. D. Leslie, Appleby Castle, reports a very good crop on trees having the shelter of walls.

Wicklow.—A thin crop in the majority of cases.

Wigtonshire.—Rather below the average.

Mr. J. Day, Galloway House, states that the best crops are being borne by young trees.

Wiltshire.—Variable, but on the whole fairly good.

Mr. H. W. Ward, Longford Castle, remarks: Although the trees in the orchards are very lightly cropped, those horizontally trained alongside the central walks in the kitchen garden are heavily cropped. These include Keswick Codlin, Annie Elizabeth, Red Astrachan, Red Juneating, Summer Nonpareil, and Blenheim Pippin (the last-named as a standard).

Worcester.—Crop considerably below the average.

Mr. W. Crump, Madresfield Court, writes: On the whole not more than a quarter of a crop, although here and there a few trees stand out conspicuously for their bearing qualities, notably Golden Spire, Malster, Hawthornden, Prince Albert, May Queen, Mank's Codlin, and Keswick Codlin. This failure I mainly attribute to the injury done to the early foliage of the trees in 1889, by the depredations of the caterpillar of the winter moth, the season afterwards being insufficient for the thorough maturation of the fruit buds formed by second growth. The flimsy character of the opening flowers corroborated this view. Moreover, a long spell of dry, easterly winds, coupled with an attack of the apple weevil, would help to extinguish our apple prospects. Trees are more healthy this season, and our hopes, although deferred, are much brighter.

Yorkshire.—Variable, but on the whole fairly good.

Mr. J. Allsop, Dalton Hall, reports: Espalier and bush trees have got heavy crops, two thirds of which we are thinning off. Orchard trees vary considerably, some healthy trees carrying full crops, whilst others have no fruit.

Mr. J. B. Riddell, Castle Howard, remarks: Apples in general have a good crop, the varieties promising an exceptional yield of fruit this season being Blenheim Pippin, King of the Pippins, Lord Suffield, Rymer, Keswick Codlin, Rose Hill Juneating, Mere de Menage, and Worcester Pearmain. In low-lying situations apples are a failure.

PLUMS.

Aberdeenshire.—An indifferent crop is reported by all correspondents.

Mr. J. Forrest, Haddo House, writes: Plums were much injured by frost when in bloom, and there is only a middling crop; Pond's Seedling, Kirke's, Rivers' Early, Coe's Golden Drop, Early Orleans, Jefferson, and Goliath do well here, but are all grown on walls.

Antrim.—Partial failure in most districts.

Mr. Charles Warwick, Shawes Castle, remarks: Early Prolific just coming in; this is one of our first plums to ripen, and always a sure crop. Victoria is good, as also is Green Gage. All varieties are carrying a good even crop.

Armagh.—Generally below the average.

Mr. W. H. Baker, Tynan Abbey, says: Generally a failure hereabouts; The Mogul, Jefferson, and Golden Drop are the only three kinds bearing an average crop.

Ayrshire.—Much below the average.

Mr. William Priest, Eglinton Gardens, Irvine, remarks: Not half a crop, which is very disappointing after the grand show of bloom we had; very few set on standards, Victoria being the only variety with half a crop. On walls the crop is a little better.

Banff.—Crop poor in all districts.

Mr. Charles Webster, Gordon Castle, reports: Almost a failure, except a few trees of The Czar and Victoria.

Bedfordshire.—A failure more or less complete in all districts.

Berkshire.—Generally a failure.

Buckinghamshire.—Crop indifferent on all sides.

Mr. G. T. Miles, Wycombe Abbey, says: So few that the crop is almost a failure. The universal bearer, so to speak, Victoria, has but few fruits this year in this district.

Mr. J. Smith, Mentmore, states: Small things in plums, damsons a moderate crop, other plums a failure.

Cardiganshire.—Variable, and on the whole below the average.

Carmarthenshire.—Crop very poor, wall trees being the most fruitful.

Cheshire.—Much below the average on all sides.

Mr. W. Whitaker, Crew Hall, observes: Under the average, a few varieties bearing medium crops. Those bearing best are Victoria, Kirke's, Crewe Seedling, and White Magnum Bonum. Damsons are hardly an average crop.

Clackmannanshire.—Crop under an average.

Clare.—Plums an average crop, damsons light, is the general verdict.

Cork.—Variable, but on the whole fairly good.

Mr. W. Beswick, Bessborough Court, writes: Crops good, but a great part of fruit on standards and bush trees rusty owing to the storms when the fruit was small. I should consider this to be a profitable crop for market growers in this district.

Denbighshire.—A failure in most districts.

Derbyshire.—Variable, and generally a failure.

Mr. E. Wilson, Hardwick Hall, Chesterfield, says: A few fruits on the Victoria, other varieties very thin. Damsons, of which great quantities are grown in this district, are about half a crop.

Devonshire.—Crop very poor in all districts.

Mr. G. Baker, Mambland, observes: Partial, and below the average. Trees that fruited well last year are bearing the best this season. No Green Gages.

Dorsetshire.—A complete failure, and in some cases trees much injured by blight.

Down.—Fairly good crop in most districts.

Mr. J. Taylor, Mountstewart, remarks: A good average crop. The best plum for this district is the Victoria.

Dublin.—Partial, and in most districts a failure.

Mr. G. Smith, Vice Regal Gardens, says: Trees on walls have only a sprinkling of fruit. Damsons are quite a failure.

Dumfriesshire.—Variable, and on the whole the crop is fairly good.

Mr. Charles Blair, Burnfoot, Langholm, reports: Crop good, Victoria and Coe's Golden Drop the best. Damsons are a fair average crop.

Durham.—Failure, more or less complete, is reported in all districts.

Mr. R. Draper, Seaham Hall, Sunderland, writes: There are not any plums worth speaking about. The only kind that can be depended upon in this locality is the Victoria; other kinds do not succeed.

East Lothian.—Crop very light, practically a failure.

Essex.—A moderate sprinkling of fruit here and there, but generally a failure.

Mr. W. Dance, Gosfield Hall, Halstead, remarks: Much under an average; Rivers' Early Prolific, which always has a good crop, is bearing very well both on wall and standard trees.

Fermanagh.—Fairly good crop in some districts.

Fifeshire.—On the whole very light.

Mr. C. Smith, Dysart House, says: Plums are not extensively grown in this district. Victoria shows a fair crop, but fine varieties are poor.

Forfarshire.—A good crop in most districts.

Mr. James Mitchell, Panmure House, Carnoustie, remarks: There is an average crop, except on trees that were heavily cropped in the two past years.

Mr. James Whitton, Glamis Castle, reports: There is an average crop of such sorts as Victoria, Goliath, Prince of Wales, Pond's Seedling, and Magnum Bonum. The display of flowers on plums in spring was too good. Exhaustion, coupled with several sharp frosts, cleared off the earlier plums, and made the later kinds much thinner.

Galway.—Complete failures in orchards and light in gardens.

Mr. W. Farmer, Kylemore Castle, Galway, remarks: The crop on standards and pyramids is a failure, but such varieties as Victorias, Green Gage, Denniston's Superb, and Jefferson on walls are carrying good crops.

Glamorganshire.—A failure more or less complete on all sides.

Gloucestershire.—A light crop here and there, but on the whole very poor.

Mr. J. Cleare, Toddington, Winchcombe, writes: Plums are largely grown in this district, and are a fair crop, and in favoured parts of the plantations there is a good crop, especially of the Pershore, a local variety, and the Victoria.

Hampshire.—Crop practically a failure.

Mr. E. Molyneux, Swanmore Park, says: Plums are a failure, except Victoria, Early Orleans, and Magnum Bonum, which are bearing rather heavy crops.

Herefordshire.—Complete failure.

Hertfordshire.—A few fruits here and there, but generally a complete failure.

Huntingdonshire.—Crop extremely light.

Mr. T. Fillbrook, Houghton, states: Not half a crop. Rivers' Early Prolific, The Czar, and Victoria are the best with us, but even these are very thin.

Kent.—Much below the average; in some districts a complete failure.

Mr. F. Dewsberry, Cobham Hall, Gravesend, says: Almost a failure. Victoria and Orleans are the best.

Mr. H. Cannell, Swanley, observes: Victoria and many of the finer kinds are thin, but there is a fair crop of damsons.

Mr. G. Woodward, Barham Court, Maidstone, says: Trees badly infested with aphis, necessitating weekly washings with quassia and soft soap to prevent their being irreparably injured.

Mr. George Bunyard, Maidstone, remarks: The only kinds bearing are Victoria, Kent Bush or Waterloo, and Gisborne. The trees were hard hit; but in the orchards in this district in 1889 and 1890 bloomed feebly, and the frost settled them.

Kilkenny.—Very light in most districts, with some complete failures.

Mr. W. Clarke, Bessborough Park, reports: In this neighbourhood a very light crop. In the garden some varieties are very good, Victoria, Kirke's, Angeline Burdett being the best. We have a fine lot of healthy trees, but there was very little bloom.

King's County.—Crop practically a failure.

Lancashire.—A complete failure generally of both plums and damsons.

Leicestershire.—Partial, with many failures.

Mr. H. Cottrell, Bardon Hill House, writes: Trees have suffered very much in this district from green-fly, but many of them are bearing a good crop. The most productive varieties this season are Orleans, Victoria, Magnum Bonum, and Early Orleans.

Mr. G. Maynard, Cole Orton Hall, remarks: Standards are a failure, as also the trees on walls, except those of Victoria on a north wall, which is bearing a good crop. There are a few fruits of Pond's Seedling.

Lincolnshire.—A complete failure is reported by all correspondents.

Londonderry.—Variable, and probably not more than half a crop.

Mr. P. Divin, Roe Park, remarks: Plums not much grown, but there is a good show of fruit of all kinds, including Green Gages.

Mr. H. Carter, Down Hill Castle, writes: We have outside about half a crop, and I attribute our loss to the glass coping, which prevented the trees having the full advantage of the night dews during the dry weather that prevailed at the time the young fruit was commencing to swell. Another year I shall take the coping off if the same kind of weather prevails. Indoors we have prodigious crops of Green Gage, Guthrie's Green Gage, Coe's Golden Drop, Pond's Seedling, Reine Claude de Bavay, Automne Compote, Jefferson, and Victoria. These are all planted out and fan-trained.

Longford.—A good crop is reported by the majority of our correspondents.

Midlothian.—Variable, and on the whole very light.

Mr. M. Dunn, Dalkeith, writes: Plums, like apples, are bearing rather irregularly this season. Victoria is the popular plum, but many trees of it are fruitless, while other varieties are bearing tolerably well. Pond's Seedling, Sultan, and Pershore on standards, and Early Transparent, Jefferson, and Early Prolific are bearing the best crops. These varieties seldom fail in our light, warm soil, well enriched with manure. In a house without artificial heat all the best varieties of plums bear splendid crops of the finest fruit. No hardy fruit pays better than do the plums for the protection of an orchard house.

Middlesex.—Generally a failure.

Monmouthshire.—Almost a complete failure, and trees in some districts much blighted.

Nairn.—Failure in most districts.

Mr. J. Maitland, Cawdor Castle, states that young trees of Victoria are bearing a good crop.

Norfolk.—Failure more or less complete.

Northamptonshire.—Nearly a failure in most districts.

Mr. J. Hughes, Eydon Hall, remarks: Under the average. Like the apples, the trees flowered profusely, and the weather appeared to be favourable to their setting the fruit, yet only a few varieties are carrying a crop, Rivers' Early Prolific, Prince Englebert, and The Czar being the most fruitful.

Northumberland.—A light crop in some districts; a failure in others, Victoria being the most productive.

Nottinghamshire.—Nearly a failure.

Oxford.—A sprinkling of fruit here and there; practically a failure.

Pembrokeshire.—Failure on all sides.

Perthshire.—Variable; on the whole a light crop.

Mr. James Laurie, Murthly Castle, says: Good crop on wall, but on standards a failure.

Mr. J. Brown, Abercairny, remarks: The crop on wall trees is under an average, but on standards there is a fair average.

Mr. P. M. Fairgrieve, Dunkeld House, says: Light crop on wall trees, but on bush trees there is a very good crop.

Renfrewshire.—An average crop in gardens and orchards.

Rutlandshire.—Variable, but mostly a failure.

Shropshire.—Fruit very thin on all sides.

Staffordshire.—Much under an average.

Stirlingshire.—Much below the average.

Suffolk.—Practically a failure.

Mr. J. Wallis, Orwell Park, writes: Plums are unusually scarce. No doubt the heavy attacks of insects last year crippled the trees, the blossoms in spring being sparse and poor. Fruit trees of all kinds appear this season to be recovering their health, and are comparatively free from insects.

Surrey.—Complete failure is the burden of the reports from all parts of the country.

Sutherlandshire.—Under the average.

Warwickshire.—Crops light in all districts.

Waterford.—Fairly good crops generally.

Mr. Aberne, Lismore, says: A very fair crop, Victoria, Jefferson, and Washington being the heaviest croppers. The fruit of the Green Gage is scarce.

West Lothian.—Nearly a complete failure.

West Meath.—Variable and, on the whole, light.

Westmoreland.—Much below the average.

Mr. D. Leslie, Appleby Castle, states that he has fairly good crops on walls of several kinds.

Wicklow.—Fairly good crops on all sides.

Mr. D. Crombie, Powerscourt, remarks: Good crops. Victoria, Rivers'

Prolific, and Prince Englebert very full crops. Green Gage about half a crop.

Wigtonshire.—Crop very light, with some failures.

Mr. J. Day, Galloway House, says: We have not half a crop, and some trees are quite fruitless. The best are Victoria, Kirke's, and Lawson's Golden Gage. The last-named I consider to be the best plum grown here, being a constant bearer, and excellent both for the dessert and cooking.

Wiltshire.—Light, with numerous failures.

Mr. Ward, Longford Castle, writes: 1890 will rank as one of the worst years for plums on record. Even the heretofore heavy cropping Victoria is very thinly fruited. The two best cropped varieties amongst a large number here are Early Favourite and Early Prolific, young, vigorous trees, growing against an east wall. A tree of Guthrie's Late Gage, occupying a southern aspect, and protected when in bloom, is the only tree of the Green Gages that is carrying a full crop.

Worcestershire.—Nearly a total failure.

Yorkshire.—A failure throughout the county.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY.

Meetings of Committees, Aug. 12.

The Drill Hall at Westminster presented a gay appearance on Tuesday last, many good things being associated with the large and varied collections of useful and beautiful plants, flowers, and fruits. There were but few visitors, and committees were not in full force, the general tone being, as usual at this time of year, out-of-town-ish.

There were on the central table many beautiful orchids from Messrs. Sander and Co., Messrs. Veitch and Son, Messrs. B. S. Williams and Son, and other contributors. Messrs. Veitch put up a large lot of gladioli with a liberal allowance of natural foliage, with collections of African and French marigolds and beautiful and scarce hardy trees and shrubs. Messrs. G. Paul and Son presented cut roses, phloxes, carnations, and Tropæolum speciosum. Messrs. Peed and Son, of Norwood Road, presented a large group of gloxinias intermixed with adiantums, making a very lively display, but the regularity of the two kinds of plants resulted in a kind of diaper instead of a picture; the regular "dot and go one" in grouping plants is a grave mistake. Messrs. B. S. Williams and Son presented a large collection of dracænas, and amongst them some beautiful novelties, one of which obtained a special award from the Floral Committee for novelty and usefulness. From Messrs. Cheal came single and pompon dahlias; from Messrs. H. Cannell and Sons new cactus dahlias and a giant heliotrope; from Kelway and Son, Langport, Somerset, a large lot of magnificent gladioli, not so liberally aided with their own leaves as those from Messrs. Veitch; from Mr. Wythes, head gardener at Syon House, a handsome lot of chimney campanulas, one of them called *Compacta*, being bold in the spike with large flowers of a shaded lilac colour, distinct, and particularly handsome; from Kew came chironias and other curiosities of an interesting kind. The Society's garden at Chiswick supplied cut carnations from the collection planted out there. Fruits were plentiful and attractive. Messrs. Veitch sent eighty varieties of gooseberries, with currants, apples, pears, &c. Messrs. Paul and Son sent a fine lot of gooseberries. From the Society's garden at Chiswick came tomatos and other useful fruits.

Floral Committee.

Present: William Marshall, Esq., in the chair; Dr. Masters, Rev. H. H. D'Ombrain, Messrs. Cannell, G. Paul, S. Hibberd, H. Herbst, W. Goldring, W. C. Leach, G. Nicholson, H. B. May, C. Jefferies, H. Turner, E. Mawley, W. Kelway, J. Fraser.

One of the first things placed on the table was the new clematis-flowered *Petunia Holborn Blue*, from Messrs. Carter and Co., which obtained an award by acclamation. This is a single flowering form, the plant of neat habit, free, and manageable, the flowers of average size, self-coloured, brilliant purple-toned blue. It will be greatly valued provided it comes true from seed, which we will assume it will do, for such is the way of distinct strains of petunias. The beautiful little *Dracæna Miss Glendinning*, from Messrs. B. S. Williams and Son, is a model for a table plant, the growth moderate, the leaves narrow, the prevailing colours deep crimson shading into purple and bronze. Amongst Messrs. Cannell and Sons' begonias we noticed one named *Octavie*, the flowers like half-opened rosebuds, new and beautiful. Some extra handsome African marigolds from Mr. R. Dean, of Ealing, display a few tones of delicate lemon and orange yellow that are not commonly seen in these flowers, and the form of this strain is all that can be desired. Yellow-ground picotees from Messrs. Turner, of Slough, were highly attractive, and two varieties were selected for awards of merit Amongst Messrs. Kelway and Son's gladioli we noticed one distinguished by award of merit named *Stanley*; it is large, the form good, the colour delicate tinted buff, margined with veins of rosy carmine. *Empress of Germany* is large, superb petal, white, with margin richly lined purplish red; an extra grand flower. *Duke of Fife* is carmine shading to white; *Marion Lee*, white, veined rose; *Dorothy Tennant*, flesh, veined rose, with yellow blotch; *Lassia*, not exactly new, but worthy to be printed in italics, the colour scarlet crimson with violet stripe on lower petals, the spike majestic. Amongst Messrs. Veitch's trees and shrubs were *Eucryphia pinnatifolia*, an evergreen shrub allied to Hypericum, the flowers white with conspicuous fringe of stamens; extremely beautiful. *Abies tsuga*, which may be labelled Tsuga Sieboldi, a fine Japanese spruce, the merit of which was recognized by an award. A filiform variety of Cupressus Lawsoniana obtained approbation, and attention was given to new Japan maples and a large-leaved lime. But more important than these, perhaps, were Messrs. Veitch's new pitcher plants, equally distinct and beautiful. *Nepenthes Burkei prolifica* takes its varietal name from the fact that every leaf produces a pitcher. These are small, the colour greenish with orange russet margin, quite a beauty. *Nepenthes Burkei excellens* has medium roundish pitchers, the dark bronzy lip of which clasps the tendril in a singular manner as though to steady itself when moved by the wind. These two gems are worth a place in the choicest stove collection, as they are singularly effective as basket plants.

Orchid Committee.—Present: H. J. Veitch, Esq. (in the chair); Dr. Masters, Messrs. J. O'Brien, E. Hill, J. Dominy, H. Ballantine, H. M. Pollett, A. H. Smee.

From Messrs. Sander and Co. came an example of the glorious Cattleya Dowiana, which one never wearies of seeing; C. Gaskelliana, and other showy subjects. Of more special interest in the contributions from St. Albans was *Cattleya Nilssoni*, with smallish flowers of a mauvy-blush tint, the front lobe of labellum purple. Also *Cattleya Schofieldiana*, very distinct, the sepals and petals green with dark spots, the base of the labellum purple, the front lobe white. From Messrs. Seegur and Tropp, of Dulwich, came a collection of species and varieties of satyrium, all grown out of doors; the colours rose, yellow, and white; with them the typical *Satyrium candidum*, with small whitish flowers. From M. S. Cooke, Esq., Kingston, Cypripedium superbiens. From Mr. J. T. Rogers, Fernbank Nurseries, Petworth, Cypripedium incurvum, which may also be labelled Cypripedium callosum. From F. Wigan, Esq., East Sheen, Oncidium Lawrenceanum. From Sydney Courtauld, Esq., *Masdevallia Lowi*, a beautiful novelty, the three divisions equal, the colour a curious shade of dull purple. From Messrs. B. S. Williams and Son, Cypripedium Ashburtoniæ superbum, with grand dorsal sepal green with dark spots, the apex pure white; C. œnanthum, and C. grande. From Messrs. Veitch and Son, Cypripedium + H. Ballantine, a hybrid of C. purpurata, and C. Fairreanum; *Sobralia Warscewiczii*, a neat flowering plant, with mauvy purple flowers.

Fruit Committee.—Present: Sir Charles Strickland (in the chair); Messrs. J. Lee, R. D. Blackmore, H. Weir, F. T. Rivers, G. W. Cummins, P. Crowley, J. Cheal, G. Bunyard, W. Warren, J. Wright, W. Bates, G. Wythes, H. Balderson, F. Q. Lane, A. Watkins.

Messrs. Veitch's collection of gooseberries included White and Yellow Champagne, Pitmaston Green Gage, Ironmonger, Green Walnut, Matchless, Trumpeter, and others. Amongst the currants were La Constante, which ripens late, Knight's Large Red, White Dutch. Amongst the apples were fine samples of Lord Suffield, Professor, Oslin, Irish Peach, Mr. Gladstone. A silver gilt medal was awarded this collection. Messrs. Paul and Son's silver medal group contained gooseberries Overall, Stockwell, Drill, Catherina, Roaring Lion, all good sorts, worthy of general cultivation. Mr. Burton of Bexley sent peaches: Osprey, Albatross, Princess of Wales, and Sea Eagle. From the Society's garden came twenty-seven varieties of tomatos, the more noteworthy of which were Perfection, President Cleveland, Ham Green Favourite, Chemin, Prince of Orange.

The several committees made awards as under:—

Dracæna Miss Glendinning (B. S. Williams and Son). A narrow-leaved variety of moderate growth, the leaves margined deep purple, distinct and beautiful. First-class certificate.

Abies tsuga (Jas. Veitch and Son).—An elegant tree having the general habit and appearance of the Canadian Hemlock, with foliage of a bright colour. This is also known as *Tsuga Sieboldii*. First-class certificate.

Sequoia sempervirens alba spica (Veitch).—A garden variety of slender growth, the points of the shoots creamy white. First-class certificate.

Tilia euchlora (Veitch).—A large leaved lime, the leaves glossy, rich, deep green, a noble avenue tree. First-class certificate.

Masdevallia Lowi (Sydney Courtauld, Esq.)—A distinct and pleasing plant in the way of M. Shuttleworthi, but distinct from it. The plant was small and bore but one flower, the divisions are equal and the tails very short. The colouring consists of a close powdering of purple on a white ground, the extreme ends of the tails greenish white, the centre slightly touched with gold. First-class certificate.

Sobralia Warscewiczii (Veitch).—A handsome plant, the flowers of medium size, sepals light mauve, the petals a deeper tone of the same colour. First-class certificate.

Cypripedium + H. Ballantine (Veitch).—Distinct, but combining the characters of its parents, C. purpuratum and C. Fairreanum, but apparently not quite so good as either. First-class certificate.

Phalænopsis Micholitzii (Sander and Co.)—A botanical curiosity, the sepals and petals of a greyish green, the lip has a central raised ridge of hairs. Botanical certificate.

Saccolabium Hendersonii (Major Mason).—In the way of S. roseum. Botanic al certificate.

Gladiolus Empress of Germany (Kelway and Sons).—Flowers extra large and of noble form and proportions, ivory white veined with rose. Award of merit.

Gladiolus Stanley (Kelway).—A grand flower, flesh-coloured, veined with rose, each petal having a tint of yellow washed in upon the flesh-coloured ground. Award of merit.

Nepenthes Burkei prolifica (Veitch).—The pitchers smallish, but very freely produced, mottled dull green, with margin of orange russet. Award of merit.

Nepenthes Burkei excellens (Veitch).—The pitchers of medium size, mottled bronzy green, the margin rich deep bronzy purple; a beauty for basket culture. Award of merit.

Hydrangea hortensis flora pleno (Veitch).—A double rose-coloured hydrangea that appears full of great possibilities for market culture. Award of merit.

Cactus Dahlia Robert Maher (T. S. Ware).—A beautiful flower in form and proportions, the colour clear pale yellow. It was regarded at the table as the best of the yellows in the cactus group. Award of merit.

Verbena Uranie (H. Cannell and Sons).—A large flowering variety of fine quality, the colour mauvy blue with white eye, reminding one of a phlox. Award of merit.

Sarracenia Claytoni (A. Wipf).—A distinct form of rigid growth, the summits of the pitchers superbly coloured vinous purple shading to crimson; much to be desired for colour. Award of merit.

Petunia Holborn Blue (Carter and Co.).—A new and distinct strain of these useful flowers. Single, of moderate size, the form neat, the colour full purplish blue. The flowers admirably imitate those of Clematis Jackmanni, and being well adapted for bedding should acquire popularity. Award of merit.

Yellow-ground Picotees (Turner).—*Mrs. Walford* and *Countess of Jersey*, to each an award of merit.

Cucumber Express from S. Mortimer, Rowledge, Farnham, a cross between Purley Park Hero and Tender and True, and of excellent quality. First-class certificate.

Hedychium Gardnerianum.—Messrs. Carter presented a fine growth of this fine old plant to illustrate its decorative value, and were awarded a cultural certificate.

Musa Paradisaica was admirably presented by Mr. Wythes, of the gardens at Syon House, and obtained for him a cultural certificate.

Hypericum oblongifolium from Messrs. G. Paul and Son, was much admired as one of the best of the St. John's Worts for large groups and beds, its habit being neat and compact, and the handsome yellow flowers are produced in great abundance. Award of merit.

STOW-ON-THE-WOLD HORTICULTURAL SOCIETY, August 13.

The annual reunion of the florists and gardeners of the eastern Cotswolds was held on the above date, in the palatial pleasure grounds of T. W. Stubbs, Esq., Quar Wood. The weather was breezy, with fitful showers, but the intermittent gleams of sunshine revealed a landscape of a most enchanting character. The mansion and flower garden are situated on the brow of the hill on which the town of Stow stands, and being flanked on either side and behind by a deep stretch of timber trees the force of the gales is to an extent broken.

Two tents sufficed for staging the products; the competition in the plant classes was less keen than in some previous seasons, and the trader's extras were correspondingly fewer. Appended are a few notes on the best things.

Plants.—For ten specimens the card went to R. N. Byass, Esq., who had large examples of Latania borbonica, Pandanus Veitchi, Cocos Weddelliana, Agapanthus umbellatus (very massive), Adiantum Farleyense, Croton majesticum, Cissus discolor, Phœnix reclinata, Aspidistra lurida variegata, Rynchospermum jasminoides, and Hibiscus variegatus; T. W. Stubbs, Esq., second, his premier plant being a magnificent Allamanda Hendersonii, well flowered, and three-quarter examples of Acacia dealbata and A. grande; Asparagus plumosus, coleus (two), begonias, fuchsias, &c. A Sartoris, Esq., third, with palms, caladiums, Pandanus Veitchi, Stephanotis floribunda, Dracæna amabilis, Anthurium Scherzerianum, Cissus discolor, and Hibiscus variegatus.

In the amateurs' section were a few fairly bloomed double zonal geraniums, begonias, &c., the best plants in this section being the ferns, which included both exotic and hardy. There was one group of exotic ferns which secured A. Sartoris, Esq., premier honours, all fresh and of fine growth; including Gymnogramma sulphureum, Pteris cristatum, Adiantum Farleyense, A. formosum, A. gracillimum, and A. cuneatum.

Cut Flowers included a fair share of roses, show and cactus dahlias, and other good things. The herbaceous perennials were good, A. Sartoris, Esq., presenting the best dozen bunches, including Chrysanthemum maximum, Helianthus multiflorus, Lilium auratum, Pentstemons, Harpalium rigidum, old clove carnations, Echinops ritro, Gaillardia maxima, Achillea ptarmica, and Chrysanthemum Precocité; R. N. Byass, Esq., second with gatherings of Achillea ptarmica, the white Anemone Japonica, Potentillas, white and red everlasting peas, old clove carnation, pentstemons, scarlet Lychnis, Phlox The Bride, &c.; P. Thursby, Esq., third, his bunches of Gentiana asclepiades, Montbretia Pottsi, Pentstemon, and Chrysanthemum maximum being fine. A couple of epergnes and a bride's bouquet were of average merit, and there were a few nice carnations of border quality.

The Wild Flower arrangements were meritorious. One, a dinner-table bouquet, presented by Mr. W. Matthews, had numerous varieties of field flowers very nicely posed, and illustrated the forms common to the neighbourhood.

Fruit was very choice, though a somewhat limited display; J. M. Cheetham, Esq., presenting the premier dishes of peaches, Black Hamburgh and Muscat grapes; R. N. Byass, Esq., taking second for black grapes; and A. Sartoris, Esq., second for peaches; the latter presenting the finest dish of tomatos (Perfection). In the amateurs' division the Rev. D. Royce, Lower Swill, had some well-finished clusters of Black Hamburgh grapes, the other fruits being Orleans plums, a small but fine melon, Jargonelle and Bon Chretien pears, Lord Suffield, Quarrenden, and Early Margaret apples, Giant gooseberries, and currants of sorts. The cottagers were strong in window plants, annuals, and bush fruits. Vegetables were the main feature of the display, the collections being unusually numerous in each section. In the first division for eight dishes the card went to Mr. John Baker, Bampton, who had a dish of finely-selected Ne Plus Ultra runner beans (his dish in the bean class being matchless for length, size, and colour), Pragnell's Exhibition beet, Anglo-Spanish onions, Telegraph cucumbers, Sutton's Seedling potatos, White celery, Long carrots, and Ne Plus Ultra peas.

Potatos.—These numbered nearly 1,600 tubers in competition. They were mostly large, a condition that seemed to meet the approval of the judges, as bulk was generally regarded as a strong point. For six dishes Mr. W. Jessop was awarded first for Mr. Bresee, Snowdrop, Edgecote Purple, International, White Elephant, and Trophy; Mr. J. Baker second, with The Dean, Reading Ruby, Chancellor, International, Snowdrop, and Beauty of Hebron; Mr. A. Keen third for Beauty of Hebron, Sutton's Abundance, Sutton's Satisfaction, Trophy, Schoolmaster, and Reading Russet. In the single dishes the cards went to *coloured round*—first and second, Reading Russet; *white round*—first, Abundance; second, Schoolmaster; *coloured kidney*—first and second, Mr. Bresee; *white kidney*—first and second, Reading Giant. Cottagers: six dishes, first, Peerless Rose, White Elephant, Vicar of Laleham, Beauty of Hebron, Trophy, and International; second, White Elephant, Snowdrop, Edgecote Purple, Sutton's Seedling, Early Rose, and Beauty of Hebron; third, Prizetaker, Reading Giant, Edgecote Purple, Magnum Bonum, White Elephant, and International. Single dishes: *Coloured round*—the first to Reading Russet; second and third to Vicar of Laleham; *white round*—first and second to Sutton's Abundance; third to Schoolmaster; *coloured kidney*—first and second to Mr. Bresee; third to Prizetaker; *white kidney*—first, International; second and third to Reading Giant.

Miscellaneous Exhibits included choice assortments of herbaceous perennials from Mr. J. Cooper, Chipping Norton, and Heath and Sons, Cheltenham, who had also fine cactus dahlias; from Mr. F. Taylor, florist, Chipping Norton Junction, who had roses, show cactus, and pompon dahlias; and a prime lot of giant gooseberries from P. Thursby, Esq.

In the evening the grounds were illuminated, and a generally fair attendance of visitors was reported.

NATIONAL CARNATION AND PICOTEE SOCIETY.

Exhibition of Northern Section, Manchester, August 9.

The Botanical Gardens at Old Trafford were gaily dressed for this occasion, and at night the electric light gave its welcome to great numbers of visitors, who enjoyed the feast provided for them, with the aid of agreeable weather. The competition was smart, the flowers quite up to the high standard long since attained, and some new winners appeared, which gave new life and promise to the society.

Twelve Carnations, dissimilar.—First, Mr. T. Lord, Todmorden, with Master Fred, James Douglas, Thalia, J. D. Hextall, Edward Adams, Richard Bealey, Unexpected, Alisemond, Tim Bobbin, William Skirving, Richard Dean, Robert Lord; second, Messrs. Thomson and Co., Sparkhill Nurseries, Birmingham, with C. H. Herbert, Robert Thomson, William Skirving, George, James Douglas, Rifleman, Alisemond, Florence Nightingale, Harrison Weir, Thalia, James Merryweather, Robert Houlgrave; third, Mr. R. Sydenham, Bristol Road, Birmingham, with Gordon Lewis, Robert Houlgrave, Rob Roy, John Harrison, William Skirving, Matador, Sarah Payne, Florence Nightingale, Thalia, Duc d'Aumale, Alisemond, Robert Lord; fourth, Mr. B. Simonite, Sheffield; fifth, Mr. H. Geggie, Bury.

Twelve Picotees, dissimilar.—First, Messrs. Thomson and Co. with Princess of Wales, Campanini, Favourite, John Smith, Lady Louisa, Mrs. Sharp, Juliette, Mrs. Payne, Zerlina, Thomas William, Mrs. F. Ricardo, Mrs. A. Chancellor. Mr. R. Sydenham second with Dr. Epps, Favourite, Mrs. Sharp, Seedling, Mrs. Gorton, Hilda, Sylvia, Morna, Mrs. A. Chancellor, Lady Holmesdale, John Smith, Ethel; third, Mr. E. Shaw, Moston, Manchester; fourth, Mr. Geggie; fifth, Mr. Beswick, Middleton, Manchester.

Twelve Carnations, nine dissimilar.—First, Mr. A. R. Brown, Handsworth, Birmingham, with Fanny Hudson, Thalia, Edward Rowan, Edward Adams, Alfred, Squire Whitbourn, Alisemond, George and Tim Bobbin; second, Mr. S. Barlow, Stakehill House, Castleton, Manchester, with Robert Houlgrave, E. S. Dodwell, Sir Garnet Wolseley, Squire Llewelyn, J. D. Hextall, Squire Meynell, Master Fred, Cristagalli, Robert Houlgrave, William Skirving, Dan Godfrey; third, Mr. J. Edwards, Moston, Manchester; fourth, Mr. G. Bleachley, Whitefield, Manchester; fifth, Mr. J. Whitham, Hebden Bridge, Yorkshire.

Twelve Picotees, nine dissimilar.—First, Mr. A. R. Brown with Imogen, Favourite, Jessie, Campanini, J. B. Bryant, Mrs. Sharp, Clara Penson, Lady Louisa, John Smith, Thomas William, and Morna; second, Mr. J. Whitham with Gertrude, Clara Penson, Brunette, Thomas William, Ann Lord, Fanny Helen, Becky Sharp, Favourite, Dr. Epps, Miss Flowdy, and John Smith; third, Mr. J. Edwards; fourth, Mr. J. Bleachley.

Six Carnations, dissimilar.—First Mr. T. Helliwell, with Sybil, Robert Houlgrave, J. D. Hextall, Master Fred, Squire Whitbourn, Sportsman; second, Mr. G. Thornley, Middleton, Manchester.

Six Picotees, dissimilar.—First, Mr. A. W. Jones, Handsworth, Birmingham, with John Smith, Muriel, Sylvia, Campanini, Mrs. Payne, and Mrs. Sharp; second Mr. T. Helliwell, Todmorden, with Brunette, Ann Lord, Clara Penson, Favourite, and Mrs. Niven; third, Mr. T. Barlow; fourth, Mr. W. Taylor, Middleton; fifth, Mr. W. Bacon, Derby; sixth, Mr. G. Thornley.

Twelve Self Fancies or Yellow Grounds.—First, Messrs. Thomson with Terra Cotta, Almira, Blushing Bride, Gladys, Annie Douglas, Alfred Grey, Germania, C. H. Herbert, Ruby, Dodwell's s. 167, and a seedling yellow ground bizarre; second, Mr. T. Lord with Germania, Thalia, R. Butler, Mrs. Price, Rob Roy, Captain Cuttle, John Bull, The Bride, Mercury, and R. H. Elliott; third, Mr. A. R. Brown with Patricia, Purple Emperor, six of Dodwell's seedlings, Germania, Lady Edwards, Rose Celestial, and Terra Cotta; fourth, Mr. J. Edwards.

Six Self Fancies or Yellow Grounds.—First, Mr. A. W. Jones with Germania, The Bride, Alfred Grey, Agnes Chambers, Mrs. Alfred, and one of Dodwell's; second, Mr. J. Beswick; third, Mr. W. Taylor.

Carnations, Single Blooms.—*Scarlet Bizarres.*—First, Mr. Barlow, with Robert Houlgrave; second, third, fourth, and fifth, Thomson and Co., with C. H. Herbert. *Crimson Bizarres.*—First, third, and fifth, Mr. Lord, with Master Fred; and fourth, with Richard Headly; second, Mr. Thornley, with Master Fred. *Pink and Purple Bizarres.*—First, Messrs. Thomson and Co., with Sarah Payne, second with seedling, and fourth with Rifleman; third, Mr. Lord, with William Skirving; and fourth, Mr. Helliwell with E. S. Dodwell. *Scarlet Flakes.*—First, Mr. Lord, with Robert Cannell; second, Mr. Geggie, with seedling; third, Mr. Helliwell, with Sportsman; fourth, Mr. Lord, Alisemond; fifth, Mr. Sydenham, Alisemond. *Purple Flakes.*—First, Mr. Simonite, with President; second, Thomson and Co., with George Melville; third, Mr. Sydenham, with George Melville; fourth and fifth, Mr. Lord, with James Douglas and Gordon Lewis. *Rose Flakes.*—First, Mr. Lord, with Tom Bobbin, second with Thalia, and third with seedling; fourth, Mr. Helliwell with Sybil; and fifth, Mr. Brown, with Thalia.

Picotees, Single Blooms.—*Heavy Red Edge.*—First, Mr. Jones, with John Smith; second, Mr. Brown, with Mary D. Anstiss; third, Mr. Sydenham, with Dr. Epps; fourth, Mr. Taylor, with John Smith; fifth, Thomson and Co., with Dr. Epps. *Light Red Edge.*—First, Mr. Lord, with Violet Douglas; second, third, and fifth, Mr. Jones, and fourth, Mr. Whitham, all with Thomas William. *Heavy Purple Edge.*—First, third, and fourth, Mr. Jones, with Muriel; second, Thomson and Co., with Mrs. Chancellor; and fifth, Mr. Edwards, with Zerlina. *Light Purple Edge.*—First and second, Mr. Jones, with Sylvia; third and fourth, Mr. Shaw, with Clara Penson; fifth, Mr. Sydenham, with Sylvia. *Heavy Rose Edge.*—First, Mr. Sydenham, and second, Mr. Brown, with Lady Louisa; third and fifth, Messrs. Thomson and Co., with Campanini and Mrs. Payne; fourth, Mr. Jones, with Mrs. Sharp. *Light Rose Edge.*—First, Mr. Barlow; third, Messrs. Thomson and Co.; and fourth and fifth, Mr. Shaw, with Favourite; second, Mr. Jones with Nellie.

Premier carnation, Master Fred, from Mr. T. Lord; premier picotee, Lady Louisa, from Mr. J. Edwards. Mr. Charles Turner, Royal Nursery, Slough, put up a fine lot of yellow grounds.

Novelties were not of great importance, but a few claim record. Mr. C. Turner obtained first-class certificates for yellow grounds *Romulus* and *Remembrance*, fine in build and clear in colour. Messrs. Thomson and Co. put up a beautiful S.B., named *C. H. Herbert*, for which a first-class certificate was awarded. Mr. Benjamin Simonite obtained a like award for his C.B., *H. Pomeroy*; and Mr. Edwards secured the same honour for H.R.E., *Mrs. Edwards*.

Obituary.

We have to announce the death of Mr. Andrew Mackenzie, in early life a gardener and prolific writer on horticultural subjects; in later years Superintendent of the Corn Exchange, Edinburgh.

On the 8th instant, at Farnham Royal, Mr. J. James, formerly of Redlees, Isleworth. In another part of this sheet is a biographical notice of this good old friend.

In our record of the death of Mr. C. Roach Smith, we spoke of a medal that had been in preparation for presentation to him. We learn that a few days before his death he had the satisfaction of receiving the medal, and with it a purse of money, the surplus of subscriptions after all expenses were paid. This is satisfactory. His age appears to have been about 85 years.

Dr. St. George Mivart has accepted the post of Professor of the Philosophy of Natural History in the University of Louvain.

Replies to Queries.

Chrysanthemums, New Milford: You cannot do better than use a top dressing prepared as you propose, and without the addition of the potash.

Pharbites.—Send flowers to us at Kew. They should be packed with fresh parsley, without any added moisture, in a small wooden box. In a chip box they will be smashed.

Asparagus.—Willings: The time to cut down is when the straws are completely withered; so long as they are green, they are useful to the plant, but when dry to the bottom they may be removed. At that time the surface soil should be pricked over, care being taken not to touch the roots anywhere; weeds should be thrown out, and where young plants have risen and are not wanted, they should be thrown out also. This being done put on a good coat of fat manure and leave the bed to the care of the elements.

Layering Carnations.—R. M.: It will be advisable to proceed with the layering of the carnations as soon as the greater proportion of the flowers have lost their beauty. This is necessary to admit of the layers being potted up early enough to become nicely established by the winter. To raise a stock from layers is comparatively speaking a simple matter, and almost every shoot that is properly layered will make a plant. The letter A in the accompanying figure shows where the parent plant is standing, and the first step is to select a shoot of sufficient length, and bare a portion of the stem



LAYERING THE CARNATION.

by removing a few of the lower leaves. The second step is to cut a tongue on the under side. This is done by cutting the stem half through in a slanting direction, and then passing the knife up the middle of the stem for about three quarters of an inch. The layer is then fixed firmly by means of two pegs shown in the figure. When this has been done the tongued portion of the stem is covered with soil. The dotted line represents the ground level, the soil being carefully removed with a trowel and put on one side for covering the layers. You can make the pegs from pea sticks or an old birch broom, or if you prefer you can use galvanized pegs which are obtainable at a cheap rate.

Six Dishes of Fruit.—Haf: The schedule calls for "six dishes of fruit" which is a bad way to put the case. You may certainly have two sorts of peaches or plums or pears in the six without fear of disqualification. But the judges will be justified in preferring six *distinct kinds*, if they can find them of quality equal to yours, because, being equal in quality and distinct, they will have more merit than repetitions. When schedules are vague exhibitors are not prohibited the exercise of reasonable judgment in the course they take, for they always know what is required and it is better to recognise the spirit than hang listlessly on the letter of the law.

Lilium auratum.—J. Harper: The stems that have been snapped by the wind if not broken off, may be kept alive by carefully tying them to stakes and the flowers should be removed from them. It is better to keep them alive than to remove them, for they have work to do for the bulbs below, and if that is not sufficiently accomplished, the growth will be weak next year. In many cases cultivators are careless of the leaves of lilies very much to the detriment of subsequent growth. When flowers are cut, a few leaves are needful, but the stem should be shortened the least possible consistent with the requirements of the case. It is customary to cut long stems and then shorten them, the result being a waste of leaves and a loss to the plants they can but ill afford.

One in Trouble.—We cannot tell you why your melons have behaved so strangely, but conjecture that possibly you have supplied them too liberally with water.

Aristolochia Sipho.—R. R.: This handsome plant is quite hardy in London and may often be seen adorning the walls of West-end houses. On the continent it is often employed to form a bower or out-door smoking-room, an institution not greatly needed in this rainy country. All it requires is a good loamy soil and the protection of a wall to which it must be regularly nailed, for it has no claspers to enable it to effect a holding naturally. Where it acquires a reasonable degree of vigour, it flowers annually, but is not for that reason attractive; its beauty consisting entirely in its large, roundish, bright green leaves, different from all other wall plants, and quite noble when the plant attains some size.

Bedding Plants.—Virex: You may propagate all kinds of bedding plants now, but as the high tide of the season is past we advise you to put all the cuttings in pots, for if planted in borders now they may be overtaken by damp chilly weather, and perhaps even by frost before they are fairly rooted. Zonal pelargoniums make the best plants for bedding when the cuttings are planted in open borders in July, and in favourable spots cuttings may still be treated in that way, and of course will have to be lifted for wintering under glass in time to save them from injury. Your climate is not one that admits of such practice, and therefore we repeat that your best course will be to put all your cuttings in pots that it may not be necessary to disturb them until the spring, when separate potting will be necessary.

Unfruitful Peach Trees.—J. B.: Before the peach trees can be brought into a fruitful condition, their luxuriance must be materially reduced and the best means of doing that will be by root pruning. This operation should be performed immediately the trees lose their foliage as they will then at once commence to make new roots and be well established by the spring. In pruning the roots strike a semi-circle at a distance of thirty inches from the stem of each tree. Outside of this line open a trench to a sufficient depth to reach the whole of the roots which should be cut back to the side of the trench. Then work the spade underneath the ball at a distance of about eighteen inches from the surface to cut through any roots that may have struck down perpendicularly into the subsoil. Take as heavy a crop as the trees will properly carry next year.

Early Cabbages.—H. M.: The "proper time" for raising cabbage plants for furnishing supplies during the spring and the early part of the summer depends in some degree upon the district, and if you had stated in what part of the United Kingdom you reside, we should have been able to have given you specific directions, instead of having to speak generally as to the time of sowing. The seed-time of the early cabbages ranges from the latter part of July till nearly the end of August, the earliest sowings being made in the north, and the latest in the south. To ensure success in the cultivation of this important crop it is necessary to have the plants of a sufficient degree of strength to be able to withstand the effects of severe weather during the winter without being so far advanced as to involve the risk of their running to seed as soon as new growth commences. Hence as the growth is less rapid in the north than in the south it is necessary to allow the plants more time, by sowing earlier, than is required by those raised in the southern districts. Sow the seed rather thinly in a bed occupying an open position, and transfer to the quarters where they are to be grown when of a suitable size. You will not require a large number of varieties. The best for the earliest supplies is Ellam's Dwarf Early Spring, which turns in quickly, and is of excellent quality. A portion of the crop of this variety should be planted on a south border or in a position sheltered from the north and east winds. For succession Hartwell Early and Imperial are two excellent varieties.

Layering Shrubs.—Hepworth: It is impossible for you to layer the trees and shrubs you speak of. You may propagate them by "super-position," but it is a clumsy and troublesome method and only likely to succeed when directed by an experienced hand. For layering it is necessary to have what are called "free bushes," the shoots of which can be pegged down in the earth. It follows that grafted trees that have tall stems are quite removed from the possibility of the operation. Trees on their own roots are without difficulty adapted to the process, because, if not branching from the ground line, they may be compelled by cutting down to make a free growth from the bottom, and the shoots thus produced will be convenient for layering. The process consists in cutting a "tongue" in the same way as in layering carnations, this tongue being cut on the wood of the year preferably, and at a point convenient for covering the cut part or tongue with earth. The top of the shoot must be brought up in exactly the same way as the top grass of a carnation layer, and it is customary to cut away a portion of the top of the shoot, though that does not hasten the rooting process. The best subject to operate upon for those who wish to obtain experience, is the common aucuba. This is commonly propagated by layering, although it is perfectly easy to multiply it by cuttings. Many forest trees and rhododendrons are increased by layers, and it is well for a "practical amateur" to acquire skill in the performance. For the gardener practice in layering is so essential that wherever young gardeners are trained, there should be opportunity given for practice in it.

TRADE CATALOGUES.

Cooper, Taber, and Co., 90, Southwark Street, S.E., *Bulb Catalogue*, 1890.

William Bull, 536, King's Road, Chelsea.—*Tuberous-rooted plants and bulbs.*

Roozen Brothers, Overveen, near Haarlem, Holland.—*Dutch and Cape bulbs and plants.*

Carter and Co., 237, High Holborn, London.—*Bulb Catalogue.*

John Fraser, Lea Bridge Road, Leyton.—*Strawberries and Grape Vines.*

John Peed and Sons, Roupell Park, Norwood Road, S.E.—*Bulbs.*

James Veitch and Sons, 544, King's Road, Chelsea.—*Catalogue of Fruits. Catalogue of Hyacinths and other Bulbous roots. Special List of New Roses.*

W. Cutbush and Sons, Highgate, London, and Barnet, Herts.—*Hyacinths, Tulips, and other Bulbous roots.*

W. Baylor Hartland, 22, Patrick Street, Cork.—*Key to Hartland Floral Album of Daffodils* (descriptions and prices of varieties figured in the "Album).

Dicksons, Chester.—*Dutch and other Bulbous Flower roots, &c.*

Jas. M. Thornburn and Co., 15, John Street, New York, U S.A.—*Trade List of American Tree and Shrub Seeds.*

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets After.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
24	S	**12th Sunday after Trinity.**	5 1	2 11	7 3	2 48	10 51	7 9	7 37	4 10	4 34	61·2
25	M	Michael Faraday died, 1867.	5 2	1 55	7 1	4 2	11 37	8 7	8 44	5 2	5 32	61·0
26	Tu	Louis Philippe died, 1850.	5 3	1 39	6 59	5 7	Morn.	9 27	10 12	6 9	6 52	60·9
27	W	Sir Rowland Hill died, 1870.	5 5	1 23	6 57	6 2	0 40	10 55	11 36	7 37	8 20	60·8
28	Th	*St. Augustine.*	5 7	1 4	6 55	6 41	1 59	—	0 12	9 1	9 37	60·7
29	F	*St. John Baptist beheaded.*	5 8	0 46	6 53	7 13	3 27	0 43	1 10	10 8	10 35	60·5
30	S	○ Full Moon.	5 10	0 28	6 51	7 35	4 56	1 37	2 1	11 2	11 26	60·4

Orchids in Flower.		Day of Yr.
		1890
Aerides odorata	East Indies.	236
Cattleya Harrisoniæ	Brazil.	237
Cattleya labiata	Brazil.	238
Cattleya Schofieldiana	Brazil.	239
Odontoglossum grande	Gautemala.	240
Odontoglossum phalænopsis.	S. America.	241
Saccolabium Blumei	Java.	242

CRYSTAL PALACE.—THE FRUIT EXHIBITION, with the National Dahlia Society's Grand Show.

FRIDAY and SATURDAY, September 5 and 6.

Schedules and Entry Forms on application to Mr. W. G. Head, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close on August 29 for Fruit, and August 30 for Dahlias.

GRAND EXHIBITION of HOME-GROWN HARDY FRUITS in the GUILDHALL, LONDON, October 6th, 7th, and 8th, 1890.

The WORSHIPFUL COMPANY of FRUITERERS being desirous of promoting the cultivation of USEFUL HARDY FRUITS in the HOMESTEADS and COTTAGE GARDENS of Great Britain, have organized an exhibition to be held as above, when they will offer for competition :—

MONEY PRIZES amounting to over £200, GOLD, SILVER-GILT, and SILVER MEDALS, and FRAMED CERTIFICATES of the Company.

The above Prizes will be offered for Exhibits of Fruit by COTTAGERS, TENANT FARMERS, AMATEURS, and GARDENERS in three geographical divisions in England and Wales.

The Framed Certificates of the Company will be given for exhibits by Trade Growers and Nurserymen.

Prizes will also be offered for exhibits of Jams and Preserves by Manufacturers, and also, in a separate class, for home-made Jams and Preserves.

It is hoped that all who are interested in Fruit Culture will make this Exhibition known in their districts.

For Schedules and all other particulars, apply to the Clerk to the Company, 40, Chancery Lane, London, W.C. Mr. O. O. T. Eagleton.

BATH AUTUMN SHOW, WEDNESDAY and THURSDAY, September 3rd and 4th.—Amongst the Prizes offered are for : 12 Foliage and 6 Stove or Greenhouse Plants, 1st £12, 2nd £8, 3rd £4; 6 Stove or Greenhouse Plants, 1st £4, 2nd £2 10s., 3rd £1 10s.; 6 Orchids, 1st £2, 2nd £1; Group of Plants, not less than 100 square ft., 1st £6, 2nd £4, 3rd £2; Collection of Fruit (12 dishes), 1st £3, 2nd £2, 3rd £1; 8 Bunches of Grapes (4 varieties), 1st £5, 2nd £3, 3rd £2; and 5 other classes for grapes in varieties. Prizes in proportion. Entries close August 29. For schedule apply to B. R. F. Pearson and W. Jeffery, Secretaries, 2, Northumberland Buildings, Bath.

Exhibitions and Meetings for the Ensuing Week.

Tuesday, Aug. 26.—Royal Horticultural Society.—Meetings of Floral and Committees.
Tuesday, Aug. 26.—Yarnton Floral Association.—Annual Exhibition.
Wednesday, Aug. 27.—Harpenden Horticultural Society.—Annual Exhibition.
Wednesday, Aug. 27.—Reading Horticultural Society.—Second Summer Exhibition.
Wednesday, Aug. 27.—Sherborne Horticultural Society.—Annual Exhibition.
Thursday, Aug. 28.—Oxfordshire Horticultural Society.—Summer Show.
Friday, Aug. 29, and Saturday, Aug. 30.—Montrose Horticultural Society.—Annual Exhibition.
Friday, Aug. 29, to Saturday, Aug. 30.—Dumfermline Horticultural Society.—Annual Exhibition.
Saturday, Aug. 30.—Falkirk Horticultural Society.—Annual Exhibition.

Auction Sales for the Ensuing Week.

Monday, Wednesday, and Saturday, Aug. 25, 27, and 30.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.
Monday, Aug. 25.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.
Thursday, Aug. 28.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs and Lilium Harrisii.
Friday, Aug. 29.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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No. 1,321, New Series.—Vol. XXXIII.

The Gardeners' Magazine.

SATURDAY, AUGUST 23, 1890.

Orchard and Garden Crops of 1890 cannot be described as abundant or of particularly good quality, but on the other hand the old story is retold with emphasis, that, however bad the case may be, it might have been much worse. It is a familiar experience that at well managed exhibitions there are usually but few indications of scarcity in any season, or with any subject of average popularity. If we make the rash assertion that there is this year no fruit produced, the very first fruit show that is held will give a contradiction. Not a few of the holiday makers on their journeys of late have been agreeably surprised to see apple trees laden with fruit, pear trees with at least a fair sprinkling, and even plums, of which they had heard there were absolutely none, plentiful in some places, and making a moderate show in many. Our reports tell of fruit everywhere, but the tale is that while there is no general plenty, comparatively few of the many kinds of fruit cultivated are this year giving more than half or a third of an average crop. Apples lead the way as the best fruit crop of the year, and are considerably below a fair average. Pears follow in the order of productiveness, being less proportionately than the apple crop, though fortunately a few of the most valued varieties are bearing fairly well. Cherries must rank high in relative productiveness. Plums are at the bottom of the scale; and may be pronounced a failure. But even plums are making some return for the ground they occupy, and some useful notes may be made of the varieties and the climates that are the most productive.

In a general view of the case it must be said that the season opened with a fair promise, for the trees were mostly in good health and showing well for bloom. In not a few instances, however, it was remembered that caterpillar and other plagues had taken toll of leafage in the year preceding, and that a certain weakness must now be looked for in trees that had suffered. Probably the loss of crop in many instances may be attributed to debility consequent on reduction of leaf action and the effort of renewing leafage in the year 1889. As the plums are the scarcest of the season's fruits, it may be of interest to recall the fact that the trees flowered with extravagant freedom, and were unable, through the prevalence of a low temperature at the time of flowering, to sustain the great demand upon them for material to make a crop. But common as it is to account for the barrenness of fruit trees by recalling the occurrence of spring frosts, careful observers are by no means tied up to the doctrine that failures are always attributable to such agencies, and for our part we very much doubt if, in the present season spring frosts have exercised any such direct and general influence as to furnish a reply to the question, Why is there no fruit? When, in 1889, the trees were disleafed, or nearly so, by insect plagues, the plum trees suffered more severely than fruit trees of other kinds, the apples probably standing next in the order of suffering. It was then remarked by many persons whose memory and experience recalled previous occurrences of the like visitation, that the loss of leaves in 1889 would have to be paid for in the loss of fruit in 1890. Events correspond to the prediction, and a balance of probabilities gives it the colour of reasonableness.

Assuming, as we may properly do, that the trees were weakened by insect enemies last year, and that as a consequence they are but poorly productive this year, there follows the very practical lesson that insect plagues must be suppressed by all reasonable means on the instant of their appearing, or the consequences may be such as to constitute a painful and even ruinous rebuke of our indifference or fatuity. In a paper read at the Leicester Conference, Mr. A. H. Pearson counsels the observance of a policy of "masterly inactivity," in respect of which there is this to be said that the scheme of Nature is based on compensations, and what is lost in one way is made up in another. Mr. Pearson tells us that oak trees have often been punished as the plum and apple trees have been punished, but the oaks of to-day are full of health and beauty. He tells us that though disease well-nigh obliterated the potato, there were potatos enough and to spare within a few years of the event. All this is true, but there is one weak point in the argument, and it is that it ignores the element of time. Men have to live while oak trees recover, and they do not suffer

greatly in having to wait, although the poor lose the harvest of acorns that in many parts of the country is of some importance to them. They have to wait also for the potato to recover from the partial extirpation consequent on disease, but we cannot say they live through the trial, for it is a fact that while some live in misery, many die because that misery overpasses the limits of human endurance. And in respect of the fruit famine of the present year, the orchardist will live: at all events a fruit famine is less deadly than a potato famine, and the loss of a year's income will prove to many men such a serious matter that the doctrine of masterly inactivity cannot be accepted as disposing of the questions pressed upon us by the facts. Therefore, all that relates to the possible suppression of insect plagues, whether by the employment of poisonous washes, or, as Mr. Pearson properly suggests, the protection of birds and the sufficient feeding of the trees, will have an interest that will continue until preventive and remedial measures attain to something like system, and can be made to cover costs and risks by results in the direction aimed at.

The harvests of this year in this country will not carry us any great distance forward in the rectification of agricultural deficiencies. Not yet do we see complete recovery from agricultural depression; but many difficulties have certainly disappeared, and the prospect brightens, though but slowly. The hay crop was saved only by long-continued efforts, at a cost incommensurate with its value, and the final result is not one that gives reason for jubilation. The cereals are better all round than was anticipated, for wheat had a bad time for flowering, and has been terribly injured by wind, and yet there is a wheat crop below the average, a crop of barley of full average, and of oats above the average. Of potatos it is early to speak, but the present prospect is at least fair, although in many parts of England disease prevails, and in Ireland has attained to serious proportions. Over great tracts of country, more especially northward, the plant is healthy, and promising an abundant return, which a brief continuance of fine weather will render secure. As we know not what the weather will be, we must wait for the end of the story as Nature may determine it.

Garden crops have generally proved plentiful and good. The rainfall has been favourable to all fast-growing green crops, and wall fruits have given fair returns for reasonable care, although this is not a great wall-fruit season. The crops under glass are generally satisfactory, and the extension of glass for fruit culture may be looked for as a necessary expansion of the prevailing system of horticulture. It is everywhere seen that glass pays its way by bringing the production of choice fruits within the region of certainty, subject only to conditions that are in great part under the control of the cultivator. For all the higher classes of stone fruits glass has become a necessity, for it seems to be absurd to trust to walls for a crop once in five years or so, when glass, costing but little as compared with the service it can render, ensures to the operator an annual crop, and one that is often of superior quality than the open wall produces.

Two points of special interest present themselves to our notice in reviewing the crops and their belongings. One is that our friends in the north report good fortune in many things that make but a poor show in the south. In many instances they have better fruit crops, and in many more better potato crops. Their temperature has been more equable, though, in common with temperature in the south, often so low as to threaten disaster. We have had but a cold season, and that point considered, we appear to be coming through it much better than might have been expected. The other point of special interest is that prices have been advancing slowly, and almost imperceptibly, for fully a year past, and are now rising less slowly and with increased decision. This means good fortune for many; but while individuals profit by advance of prices, the community is disadvantaged in the mass, and in the end the gain to individuals is less than in the first instance appeared. Increased prices do not benefit nations; there is no sure prosperity unless there is plenty for all, which means reasonable prices and moderate profits.

A List of Surplus Plants offered in exchange with Botanic Gardens is published by Professor Maxime Cornu on behalf of the Paris Botanic Garden. It is an interesting catalogue, containing tender plants mostly, but in the list of hardy plants some good things appear. There is a considerable list of unnamed species, which in a general way means a list of many novelties. Amongst them we note new acacias, a bambusa, a berberis, five species of ficus, an iris, a ligustrum, a melastoma, two rhododendrons, three solanums, &c.

Daffodils have not many Enemies, but the Narcissus fly, of which there are three or four species, does not permit it to escape entirely. At a meeting of the Scientific Committee, the Rev. W. Wilks exhibited bulbs of double maximus narciss that had been attacked by *Merodon equestre*, and the interior eaten away. Bulbs so damaged do not flower, but they make amends for this by producing a number of bulbils, and the result of an attack, therefore, is an increase of the stock.

Apples Imported in July show a decrease of 515 bushels as compared with the importations in the corresponding month of last year, the quantities being 12,453 bushels and 12,968 bushels respectively.

Bath Floral Fete, September 3 and 4, will wind up with fireworks, which, for some indefinable reason, we announce with a sense of sadness. But if fireworks are wanted by the people of Bath, they have a perfect right to have them, and to enjoy what they pay for. Still, regarding Bath as a genuine home for horticulture, we wish it could do without fireworks at its flower shows.

Malformed Orchids appear to be more frequently produced than formerly, or it may be that the proportionate production is not increased, but as more orchids are grown, and are more closely observed, the actual number of malformations is of necessity augmented. One of the most interesting examples came before the Scientific Committee of R.H.S. on the 12th inst., in a plant of Cypripedium superbiens, from M. S. Cooke, Esq., of Kingston Hill. This had three flowers, two of which bore double labella, while the third was twin-petalled. Dr. Masters suspects that the malformations are an indirect result of hybridization.

Water-Gas has been Tried at Harrogate, in competition with coal gas as supplied by Harrogate Gas Company, and in illuminating power and purity of the light produced, it is pronounced superior to the established article. One at least of the requirements of modern times is a means of illumination less prejudicial to vegetation than coal gas. The electric light, so far as we know at present, is not adapted for use in all cases in which living plants require to be illuminated; and the necessary absence of sulphur in water gas suggests that in cases where injury to vegetation would be of serious importance, this illuminant should have the preference.

Fruit Culture in Ireland.—Mr. George Gordon and Mr. Lewis Castle, the vice-chairman and honorary secretary respectively of the British Fruit Growers' Association, have recently made a tour through Ireland for the purpose of inquiring into the present condition and the possibilities of fruit culture in that country, and a report of great practical importance may in due course be expected. Before leaving Ireland they were invited to meet the Council of the Royal Horticultural Society of Ireland in Dublin, and at the meeting several questions of considerable interest were discussed. The Council also offered to render every possible assistance in obtaining any further information that may be required.

Cooling's Beauty of Bath is one of the best of early dessert apples, and an extremely pretty thing for a table decoration. It was ripe on the 1st of August, and gave a good crop at Bath in this season of scarcity. The fruit is somewhat below medium size, flattened spherical, or, as we say in astronomy, an "oblate spheroid," smooth, even, and handsome; the eye is closed with spreading segments; the stalk short and stout; the skin greenish yellow, much overspread with a mottling of purple red, which on the side next the sun deepens into a richly mottled crimson cheek. The flesh is tender, and agreeably flavoured—in every way an excellent dessert apple of its season.

An Addition to Epping Forest is in prospect by the appearance in the market of Higham Park. We learn from the *City Press* that the park, which is noted for its beautiful lake and shady woodland paths, was some short while since in the market, the owner being desirous of disposing of it for building purposes. The fact came to the knowledge of Mr. E. N. Buxton, who was happily struck with the idea that the lake and woodland would be a most desirable addition to the Forest. In response to the representations made to him, the owner has consented to sell the twenty-seven and a-half acres for £6,000. It is hoped, if £3,000 can be raised in other ways, that an equal sum will be contributed by the Corporation from the "Capital Fund" under the Epping Forest Act. Towards the £3,000, Mr. E. N. Buxton, Sir Fowell Buxton (verderer), and a relative, have generously offered £1,800, while at a public meeting recently held, the inhabitants of Walthamstow authorized their Local Board to contribute £500. The Woodford Local Board have also agreed to contribute £250. Donations of other sums from public bodies and private persons are anticipated. There is, therefore, every probability that Mr. Buxton's efforts will now be crowned with success, and that the Corporation, as conservators, will consent to purchase and dedicate this most attractive spot as a permanent addition to Epping Forest.

Hollyhocks are Making a Gay Show in gardens where they receive a reasonable degree of attention, and although we cannot say the disease is extirpated, we can certainly say it has ceased to be formidable, and the lovers of the flower have but to determine on fully enjoying it and there will not be found any serious obstacle to the realization of the desire. In cases where disease occasions loss, it may be suspected that neglect of premonitory symptoms enables it to obtain a hold which it would not have if precautionary measures were taken in the first instance. If nothing more were attempted than the removal of affected leaves, the plants would in most instances be safe, and, as we have often insisted, and now repeat, where they are treated as hardy plants, and know nothing of glass or artificial heat, they are scarcely less safe than any plants that are prized in gardens. Mr. Smith, of Martell Road, West Dulwich, has forwarded for our inspection a fine lot of flowers of the named varieties we have often recommended. They represent free and healthy growth, and their beauty justifies the care that has been bestowed upon them. The conditions that obtain at West Dulwich are no more favourable than in gardens generally, and the chief secret of success there is that they are propagated without the aid of artificial heat, and are encouraged to make vigorous growth in deep, well-made borders.

THE GLADIOLUS.

By James Douglas.

This splendid garden favourite is now in its fullest development of floral beauty, and when the effect is seen of perhaps a thousand or more seedlings, an involuntary exclamation is likely to escape from the lips of "How beautiful!" This is one of the garden flowers that requires least attention, and yet a grand floral display cannot be obtained by those who will take no trouble at all. Even cabbages and pumpkins need the diligent hand of the gardener to bring them up to the highest degree of excellence.

The main point in the culture of the gladiolus is the preparation of the soil in which to plant the bulbs. I have always found that if the ground can be prepared early in the autumn by trenching and manuring well, and, moreover, if in addition the surface is lightly forked over in fine weather during the winter and early spring, it will by March be in the best possible condition for planting. I believe Mons. Souchet, who grew the gladiolus so successfully when gardener to the Emperor Napoleon at Fontainebleau, had his ground prepared by allowing it to lie in a state of fallow all through the summer as well as the autumn and winter. This necessitates the same treatment as I have recommended above, viz., occasional forking over of the surface to keep the ground clear of weeds and to expose as much as possible of it to the action of the atmosphere. It is difficult, I know, in these days to get people to believe that the ground needs any other preparation except to remove one crop, dig it over, and plant another. But gardening and farming are much the same in this respect, and it is a fact that cannot be disputed that farming does not pay any better, if so well, as it did now that there is a rush to get two crops out of the ground and sometimes three in one year. At any rate, I have proved conclusively that if a good display of the gladiolus is expected it is best to prepare the ground as I have indicated.

Some ardent amateurs have said to me, "I would like to grow the gladiolus, but the best varieties are so expensive, and I would rather not grow them at all if I cannot get the best." Those who reason in this way do so without knowledge. The new varieties are necessarily expensive, and it is only fair to admit that some very fine new varieties are annually introduced to cultivation; but there are plenty of equally good sorts that have been in cultivation for years, and may now be obtained for something like nine to twelve shillings per dozen. These cannot be called expensive. One amateur says he purchased his gladiolus bulbs at half-a-crown per dozen, and was rather disappointed with the result when he saw how inferior they were to those he had witnessed at exhibitions. But on comparing the prices with what he paid for his own, the matter soon resolved itself into pounds, shillings, and pence. I will give at the end of this paper a list of really good sorts that can be purchased for less than a shilling each. Anyone who can afford a garden at all can purchase a dozen bulbs at least; plant them carefully three inches deep, with a little clean sand under and over each bulb. They require no other attention, except to keep the ground free from weeds; mulch over the surface of the ground as soon as dry, hot weather sets in, and water freely if it is needed. The result will be perfect spikes of bloom and healthy plants. From a dozen plants some good seeds should be obtained by fertilizing one good sort with another. Artificial fertilization of the gladiolus is a simple and easy process. The anthers are removed with the fingers from the seed bearer before the pollen is scattered. When the flowers are fully developed upon the seed-bearing parent, the stigmatic portion of them must be touched by the pollen from another good variety. This is easily done, as the stamens are poised on long stalks, and can easily be removed with the fingers. The seeds do not take long to ripen, and as soon as the carpels crack at the apex they may be gathered. The work of seedling raising is made much more interesting if the various crosses are named and registered.

March or early in April is the time to sow the seeds. They may be sown on fine soil out of doors, or those who have the advantage of glass lights, and can manage to sow in, say six or seven-inch pots, and place them over a gentle hot-bed; almost every seed will vegetate in about two weeks. The plants may be grown on all the summer in the pots in which the seeds were sown. They will form small bulbs doubtless, but they will be large enough to produce grand exhibition spikes the following season, provided the ground has been well prepared as I have advised.

We are not altogether dependent on the Gandavensis section for garden purposes now, as other good crosses have been made, notably that from which the hardy spotted varieties have been obtained. They are usually termed the G. Lemoinei section, as this variety was the first garden hybrid raised from G. purpureo-auratus. These varieties are easily distinguished, their most prominent characteristic being a yellow blotch on the lower segments, in the centre of which is a large marone spot. These can now be obtained at 12s. per dozen bulbs, in variety. There are also the early flowering varieties or species, of which the best are Byzantinus, Cardinalis, Colvilli, Colvilli alba (The Bride), Ramosus, &c. I have before me a retail list of varieties of G. Gandavensis, in which many beautiful varieties are priced at from sixpence to one shilling each, or say, eight to nine shillings per dozen. They are to be found in the winning stands at exhibitions, viz.: Africaine, Baroness B. Coutts, Bicolor, Flamboyant, Giganteus, Jupiter, Lulli, Madame Furtado, Horace, Meyerbeer, Murillo, Norma, Ondine, Ophir, Phœnix, Princess Mary of Cambridge, Shakespere, Le Vesuve, Dalila, Carnation, &c.

Messrs. J. Carter and Co. have again received the order for bulbs to be planted in the London Royal parks, and also in the parks and gardens under the control of the London County Council.

PLUMS FOR PROFIT.

By Mr. T. Francis Rivers.

Read at Conference of British Fruit Growers' Association, Leicester, August 5, 1890.

Plums.

About the end of July, when cherries cease to be plentiful in the markets, their place is taken by another fruit of greater economic value, and in which the cultivation in this country will some day be much more extended than it is at present. The plum, like the cherry, may be divided into classes, of which the principal divisions are the round fruited and oval fruited, freestone and clingstone. The earliest plum to arrive in the market in large quantities is the Early Rivers, or Early Prolific. This is a well-known and popular plum, raised about forty years ago. Although I understand that it does not succeed equally everywhere, I think that in suitable localities it is one of the most profitable plums in existence. My own orchards, on a calcareous clay, have always given me abundant crops. The Czar, a very hardy and fine plum, closely follows the Early Rivers. These two plums are valuable sorts, as they are abundantly fertile, and can be sent to market at a very early date, for although the foreign plums arrive in England by the end of July, the quality is not to be compared to our own productions. The Early Orleans is also a popular market plum, ripening with and after the Czar. The tree produces large crops, but the fruit is so liable to crack that a crop is often seriously damaged by a shower of rain.

During the month of August market plums are plentiful; those of which I have experience are the following—Ouillins Golden Gage, which I do not recommend anyone to plant. I have, I think, some 500 trees of this sort from ten to fifteen years old, and they have never yet paid the rent of the ground, the skin of the fruit being too thin for packing, and consequently it is difficult to send to market in good condition. Denniston's Superb is a most abundant bearer, and as it ripens some days before the green gage it commands a good price. The Belgian Purple is a large plum of good quality, and in some places I understand it is a profitable fruit. Prince Englebert, a large, oval, purple plum, produces enormous crops. Sultan, a large, round, purplish red plum, bears abundantly and always commands a good price; it is said to be one of the richest preserving plums known. At this time we have Gisborne's, of which Syston or Beef Plum appears to be a synonym; the Pershore; these are now followed by the Victoria, Prince of Wales, which has a bad habit of sometimes ceasing to grow; Belle de Louvain, a very large oval plum, closely resembling the Red Magnum Bonum, but ripening some weeks earlier; Pond's Seedling, always commanding a high price; Diamond, a popular plum in some districts; Monarch, a large and late purple plum, which I venture to predict will some day be very largely planted; after this the Autumn Compôte, sometimes lasting as late as October, and the late Black Orleans.

There are some sorts which I have not named as market plums, as I have not found them profitable in my district. These are Kirke's, which is very uncertain in its produce; Cox's Emperor, the fruit of which is produced in large clusters, and often rots on the tree, the skin being tender, like its parent, the Early Orleans; Mitchelson's, a great bearer, but a very inferior plum.

The Damsons come into bearing generally about the middle of September. The most prolific Damson that I know is Crittenden, Cluster, or Farleigh. The tree is an immense bearer, a sort of recent introduction. The King of the Damsons promises to be a valuable addition, as it is very large and very prolific. The Prince, or Shropshire Damson is well known and esteemed in the north.

The list of late plums closes with the Bullace and the Wyedale plums, the fruit of which will hang on the tree until late in November—a valuable quality, as it reduces the consumption of preserved fruit.

At the head of garden dessert plums, as distinguished from market sorts, the Green Gage and its varieties undoubtedly stand. Our variety of this family was introduced from France many years since, under the name of Reine Claude Diaphane, or Transparent Green Gage. When thoroughly ripe this can challenge the Green Gage for excellence; it also has the property of communicating a distinction to the seedlings derived from it. There are three which deserve a place in any garden. These are the Early Transparent Gage, the Golden Transparent Gage, and the Late Transparent Gage. Other Gage plums of great excellence are the Bryanston, the Ouillins Golden (although not an orchard plum, is an excellent garden plum), the Purple, the Reine Claude du Comte Atthems (a Hungarian Red Gage of excellent quality), the Guthrie's Late Gage, and the Reine Claude de Bavay. Of plums which are not Gages, but of fine flavour and quality, we have the Stint, the Early Favourite, the De Montfort, the Yellow Impératrice, the Jefferson, Angelina Burdett, Golden Esperen, Decaisne, Grand Duke, and Coe's Golden Drop.

The small Mirabelle Plums are very pretty and productive, and should be planted in gardens, as they make a delicious preserve. I hardly think, however, they would pay for market.

The plum does not make a lofty tree, and does not therefore require very much space. My own system, which I have found to answer very well, is that of planting dwarf trees in rows nine feet apart and nine feet tree from tree, the stems of the trees being a clear four feet to the branches. I find that trees of this size are more easily managed than standards, especially in the gathering season. Damsons, particularly the Crittenden, may be planted much nearer than plums; in fact, six feet is a suitable distance, so that the trees form fruitful hedges. I should recommend the distance, however, of nine feet between the rows. Like the cherry, the plum is impatient of pruning, and this I like to do in the autumn about the beginning of October. A calcareous clay appears to me to be absolutely necessary to the well doing of the trees.

There is, of course, an element of uncertainty in the production of fruit out of doors in this country, but this may be made a certainty by the employment of glass. The plum adapts itself very readily to pot cultivation under glass, and as the fruit may be removed to the outside for ripening during the summer months, a glass house may be made available for a large supply. Fruit from pots grown in suitable soil is always of excellent quality, and when ripened under glass is singularly rich and good when slightly shrivelled. The fruit will hang for some time when fully ripe. The property is very evident in the facility with which plums may be dried, an industry which has hitherto been overlooked in England, but which is now in the process of development, and with the assistance of improved methods we shall not hear in the future of plums rotting on the ground from the abundance of the crop, a waste which is sinful, as the plenty of one year is usually followed by the scarcity of succeeding years. It is in the hands of those who are interested in the land to prevent this waste, and one great factor of success will be that of holding such meetings as we are having to-day, bringing about discussion, and ultimately a wider knowledge.

THE BEDDING DISPLAY IN HYDE PARK.

It is always a pleasure for those who live in the country to take a run through Hyde Park, and note the manner in which the beds are annually planted. So much variation is imported into the arrangements that visitors from the country can always pick up a "wrinkle" or two which will come in useful in the arrangement of the flower garden plans for the ensuing year. With the object in view as here stated, I lately paid my annual visit, and will jot down in a rough manner what I admired amongst the more striking features of the bedding arrangements down the Park Lane side of Hyde Park. I was pleased to see that the cultivation of fuchsias for outdoor display was on the increase, whether in beds or borders or in groups of three plants of one sort on the grass, so arranged that they are on little mounds, the pots quite hidden, and the plants of good form and in perfect health. Fuchsias are grand subjects for a summer display. Under the partial shade of the branches of the tall trees on the slope, these fuchsias show to great advantage; surrounded by the green grass, they look quite charming. So much was I impressed with their appearance, that I shall be tempted to drop into this groove at the first opportunity. The most striking sorts are the following: Earl of Beaconsfield, the flowers are bright red, extra long in the tube, produced in rich masses in a drooping manner. This is an exquisite variety for the purpose. Madame Cornelisson has a white corolla and scarlet tube and sepals; is very free in flowering. Mrs. Marshall, white and rosy pink. One bed about fifteen feet long is filled with plants two to three feet high of this sort. Plenty of space has been allowed between each plant, thus leaving space for each to show itself to the greatest advantage. Daniel Lambert, Tower of London, Elegans, and Henry Brooks, all dark kinds, are noteworthy as possessing the quality of freedom in flowering and a graceful habit of growth. The plants arranged on the grass are pyramidal in form, and about four feet high, well furnished with branches which are not trained in too stiff a manner. Evidently fuchsias are good wet weather plants, and deserve extended cultivation.

The practice of growing other plants as specimens, and plunging the pots on the grass, is increasing, as, in addition to the fuchsias named, there were numerous specimens of ivy-leaved geraniums, such varieties as Madame Crousse being most largely employed. This is of free growth, and flowers profusely. One bed of this variety contains twenty-five plants about four feet high, with plenty of space between them, which enhances the effect, and as there is abundance of bloom upon the plants, this bed is quite a success.

Plumbago capensis and a dark heliotrope are also employed in this manner, but it cannot be said that either is a success, as the flowers produced were by far too few at the time of my visit, whatever they might have been during the month of July. A much better effect is secured by several specimens of a tropæolum, very similar (if not the same) to Comet; the flowers are dark red, freely produced. As many as three and four plants are grown in one large pot to obtain the necessary effect early in the season; those being associated with the Pink ivy geranium Madame Crousse, the effect is considerably heightened.

The advance made during the present year over the last season in the manner in which the tuberous begonias have succeeded is here most marked, four circular beds being filled with an extremely fine type of this begonia for bedding purposes. The colour is a rich orange-red, the plants of upright growth, with capital flowers and plenty of them. The manner in which those flowers that show a tendency,to droop are supported is worthy of note. Small twigs from partly used birch brooms are employed to prop up heavy blooms, so that the full beauty of the flowers can be seen. A broad edging of Poa trivalis variegata is planted next to the begonias, but that I did not care for because growing vigorously it somewhat conceals the begonias without putting something better in their place. In spite of this they are charming beds, and being situated in a prominent position they are, no doubt, very much admired. To compare them with pelargoniums is to see that they are not in it to run any way with the begonias. While the latter plants will make a brave show without sun-heat, the pelargoniums will scarcely put forth a flower at all, so dependent upon climatic influences are they. Considering the difference there is in storing a few thousands of plants of both kinds during the winter, the wonder to me is that any zonals are grown nowadays at all.

Carnations appear to be coming to the front for flower garden embellishment. When planted in masses of one colour they produce a good effect, and give variety, but they neither flower early nor late and for the short space of time they are in flower they hardly repay the trouble required to make a show for so short a period. Raby Castle and the Coroner are the sorts employed.

The most striking arrangement, I thought, was a large circular bed nearly the whole of which is filled with Canna Adrian Robin, which has rather narrow upright growing leaves, from three feet to four feet high, of an intense plum coloured purple, the ribs in each leaf being of a still darker shade. The plants have grown especially even in height, the tallest in the centre gradually sloping down to the sides of the bed. Next to the Cannas was a broad band of Chrysanthemum maximum, which was most profusely flowered, one foot six inches high. A narrow band of Viola lilacina, and an edging of Fuchsia Cloth of Gold next to the grass gives a finish to this bed, the latter being pegged down quite flat, too much so, I thought, in comparison with the remainder of the bed, which altogether was a charming arrangement, and well worthy of imitation by country gardeners.

One bed filled entirely with Fuchsia Annette was noteworthy, this sort being especially of vigorous growth, the leaves large and intensely green, giving it a subtropical aspect without the flowers, which are pale red. One bed composed of Chrysanthemum Precocite, orange yellow, very even in growth, and freely flowered, was a seasonable arrangement. The old Coleus Verschaffeltii, I noticed, is not much used, a variety called splendens being preferred; it is paler in tint than the older sort, but not superior; this being used in bands as contrasts to other plants. To obtain a good effect Coleus require massing in larger numbers. The Ageratums, I noticed are especially a poor lot, being almost flowerless and uneven in growth. Surely there are superior varieties to be had, certainly sorts which grow more even in size and producers of a more liberal bloom.

One large bed of Begonia Charles Baltet, if not remarkable for the quality of its flowers, gives a varied character to the whole bedding arrangement. This sort grows one foot six inches high, is of erect habit, the flowers very dark red, small and semi-drooping. Violas are a good deal used now as they associate very well with many other things and are not so fastiduous as to position as some plants. Blue Bell appears to be a favourite; a mass of it under Fuchsia Lord Beaconsfield in a large bed makes a nice contrast with the bright colour of the fuchsia blooms above.

Lobelias are rather largely used for edgings and rightly so, as when of good kinds they are showy; dwarf and compact in growth as a rule; and flower continually the season through. Blue King is an effective variety. The flowers are larger than the old speciosa, and of a paler shade of blue. Emperor William is a strong-growing sort, belonging to the pale-flowered section. As I saw it I liked it less than the previously-named variety. Earl of Beaconsfield is similar in colour, but dwarfer in growth; a really good kind. Pumila magnifica is a neat-growing dwarf sort, very profuse in putting forth its blossoms, which are dark blue. I noticed an excellent white lobelia, compact in growth, free in flowering, and pure in colour, but failed to catch the name. White lobelias are not generally employed in the bedding arrangements, but might be as they give variety when the best kinds are selected. One sort I failed to see. I allude to the old fashioned Cardinalis, with its long spikes of glowing crimson colour; this certainly deserves more attention in gardens than it receives. In the present case its absence was, perhaps, attributable to the fact that it flowers too late to be of use in the "season," which is generally looked upon as being at its height during June and the early part of July.

Veronica Andersoni variegata is effectively employed in a band about eight inches wide, behind blue lobelia. By pinching the growths it can be kept about six inches high.

Carpet bedding appears to be "going out"; at all events I did not notice so much of it as in some seasons. On the whole the arrangements of the plants for that style of decoration appeared in good taste. I thought the alternantheras particularly well coloured, especially when the season is taken into consideration. Paronychoides aurea appears to be making headway as a yellow variety, considering that it has not been out long. It is a good grower and colours well. Paronychoides major is also effective in colour, the shade of red coming between magnifica and paronychoides. One point always noticeable about these plants in Hyde Park is there are no gaps, the plants are always put in thickly, and as they grow freely there is no difficulty in obtaining the necessary effect.

Spergula pilifera aurea showed the want of sun to heighten its colour, as it was quite dull in appearance.

Conspicuous as "dot" plants were Carex vulpina and C. Americana variegata, the former growing nearly eighteen inches with narrow green leaves which recurve at the tips slightly, the latter sort grows about nine inches high with narrow leaves and a neat habit of growth, both sorts are light graceful plants for the purpose.

Succulent plants, growing as they mostly were from a base of Herniaria glabra, looked quite fresh and cool, making a capital contrast with the highly-coloured surroundings of such things as alternantheras and the like. Pachyphyton bracteosum and Echeveria farinosa I thought noteworthy for distinctness, and so was Sempervivum tabulæforme, planted in the raised edges of the beds, which made a pleasing change with Echeveria secunda glauca, which is the most generally employed subject for this purpose.

Those who have not practised or seen the edges of the flower beds raised and planted with suitable subjects, cannot imagine what an improvement is secured by this method as compared with the old plan of having the beds on the level. Let those whom I refer to try the effect on one or two, and if all are not quickly done in the same way I shall be surprised. I have not given any particulars on the arrangements of the carpet beds, as I fear I have already taken up too much of your valuable space, and as the details depend so much upon personal taste and local circumstances, I have left out this part, and simply noted some of the most striking features in the general arrangements of the beds.

A Country Gardener.

DISEASED TOMATO PLANTS.

I was interested in your reply to Mr. Castle, at page 468 of the Gardeners' Magazine for August 2, 1890, and although I cannot improve upon the advice you gave the correspondent in question, I should like to say that for the first time in a rather long experience I have had to combat with the same disease this season. As early as the middle of May I noticed that the plants in my early house were affected with the disease, but as it then spread but slowly I did not feel any alarm about it. As time went on, however, I found the foliage became more and more affected. At this point I decided to let the disease have its own way without interruption, at least for a time, as I felt that the experience would at least be worth something. At the end of a fortnight it was quite clear that if nothing was done to arrest the disease the whole of the plants would suddenly collapse; therefore I set to work and cut away every affected leaflet, leaving the mid-rib of each leaf and every other bit of healthy green, whether leaves or stems, that I could find. After this was done I top-dressed the borders with some rich stuff, and gave the roots repeated doses of sewage liquid, varied with an occasional dose of sulphate of ammonia.

Since then I have gone over the plants once a week and cut off any affected leaves, and in dull, damp weather I sometimes had a fire or placed a couple of petroleum lamps in the house to dry up the air. The result is that the disease has been in some measure arrested, and the fruit continues. Seeing that the same plants produced ripe fruit early in April, there is at the present time (August 6) quite a respectable crop of fruit upon them. The plants also continue to grow well, and set their fruit at the present time.

I have given the result of my experience in coping with the disease, to show that no one need be particularly frightened when it appears on their plants under glass. They will not be seriously injured if the affected leaves are removed, and every inducement given the plants to make fresh growth, as I find all the time they continue to make new growth the fruit sets and ripens quite as well as one could expect. The principal point is to encourage the plants to make fresh growth. If this is done, the disease will not do so much harm as a stranger to its action might suppose.

Within the last week I have taken some good, serviceable fruit from a line of plants of the Hackwood Park variety that was first attacked with the disease early in May, when they were ripening off their first bunches of fruit. I do not wish to be understood as meaning that the crop is none the worse when the foliage is injured by the disease. What I wish to show is that its effects are not so disastrous when the plants are well fed after it appears.

J. C. Clarke.

CARNATIONS AND PICOTEES AS BORDER FLOWERS.

In the autumn of 1889, a collection of carnations and picotees was made by the Royal Horticultural Society for trial as open border flowers in the present season. The collection for this trial was planted on a quite suitable sunny tract of ground in the society's garden at Chiswick. The flowering of the plants in the present summer may be regarded as satisfactory, the true characters of the several varieties appearing to be fully and fairly represented. On July 17, and again on July 22, the Floral Committee reviewed the entire collection, and with painstaking care selected fifty varieties for marks of approval, all except three being awarded three marks, the small remainder two. It may be said, therefore, that the result of these inspections is to recommend to public notice fifty named carnations and picotees of all classes that in circumstances corresponding to those of Chiswick are worthy of cultivation as border flowers.

1. *Mrs. R. Hole C.* (Veitch.)—Terra cotta; tall, strong grass; straggling habit.
2. *Grandiflora P.* (Veitch.)—Large rose edge, white ground; strong grass; good habit; medium height.
3. *Gloire de Nancy C.* (Veitch.)—Large white clove; fragrant; very strong grass; medium height.
4. *Juliette C.* (Benary.)—Bright rose purple; fine dwarf habit; medium grass. (Seedling.)
5. *Germania C.* (Veitch and Benary.)—Fine yellow self; medium height; fairly strong grass.
6. *Admiration P.* (Veitch.)—Picotee; purple edge; dark; very dwarf habit; moderate growth.
7. *Grosteen P.* (Veitch.)—Pale purple edge; fair height; good; strong grass.
8. *Alice Ayres P.* (Ware.)—White rose; striped; strong grass; medium height; very free flowering.
9. *Guiding Star C.* (Ware.)—Scarlet self; dwarf habit; strong grass; fine flower.
10. *Mrs. Frank Watts C.* (Ware.)—White self; fine dwarf habit; medium habit.
11. *Romeo P.* (Paul.)—Picotee; purple edge; fine flower; vigorous growth; tall.
12. *Augusta P.* (Paul.)—Rose purple edge; medium height; vigorous grass; very fine flower.
13. *Juno C.* (Paul.)—Rose self; very strong grass; dwarf habit; fine border variety.
14. *Hypatia C.* (Paul.)—White self; very free flowering; compact habit; medium height; very good grass.
15. *Will Threlfall C.* (Paul.)—Yellow self; good grass; tall; compact.
16. *Comtesse de Paris C.* (Paul.)—Pale rose blush; tall: medium grass; straggling habit.
16.*a Pica P.* (Paul.)—Picotee; dark red heavy edge; medium height; fairly strong grass.
17. *Canary C.* (Fisher.)—Pale yellow self; dwarf spikes; strong growth; straggling habit.
18. *Beatrix C.* (Fisher.)—Buff self; medium height; good compact habit; moderate flower; rather thin.
19. *Snowdrift C.* (Fisher.)—White self; dwarf compact habit; very strong grass; free flowering.
20. *Edith C.* (Fisher.)—Pale pink; streaked and spotted scarlet; fair height; good compact habit; free flowering.
21. *Penelope C.* (Hooper.)—White self; tall spikes; very strong grower; very free flowering.
22. *Merlin C.* (Lakin.)—White laced, deep crimson edge; medium height and growth; very fine and distinct.
23. *Horace C.* (F. Dan.)—Bright scarlet; very compact habit; medium height.
24. *Maggie Lawrie C.* (Dickson and Co.)—Delicate blush; medium height and grass; straggling growth; free flowering.
25. *Caledonia C.* (Dickson and Co.)—Bright purple; strong growth; tall; free flowering.
26. *Caractacus C.* (Douglas.)—Crimson bizarre; moderate growth: medium height; compact habit.
27. *Boadicea C.* (Douglas.)—Purple flaked; dwarf spikes; moderate growth; medium height; compact habit.
28. *Feuerball C.* (Benary.)—Deep scarlet; medium height; strong growth; very compact habit; large, fine flower.
29. *Mirakel Von Zirbst C.* (Benary.)—Very dark crimson; medium height; compact growth.
30. *Albrecht Duesser C.* (Benary.)—Deep rose crimson flaked; medium height; strong compact growth; fine flower.
31. *Fair Maid C.* (Dean.)—Blush; pale pink; medium height; compact growth; very fine flowering; fine border variety.
32. *The Moor C.* (Dean.)—Dark crimson; tall spikes; strong growth; compact; very fine.
33. *Rowena C.* (Dean.)—Very bright scarlet; tall spikes; very strong grass; compact; very free flowering.
34. *B. J. Bryant P.* (R. H. S. and Veitch.)—Picotee; deep crimson edge; medium spikes; good grass; strong; very free flowering.
35. *Orestes C.* (R. H. S. and Veitch.)—White ground; striped pink; medium height; good strong grass; compact habit; very free flowering.
36. *Countess of Ellesmere C.* (R. H. S.)—Pale blush, spotted crimson; medium height and growth compact; free flowering.
37. *Agnes Chambers P.* (Turner.)—Pale yellow ground; pink edge; tall strong spikes; strong grass; compact growth.
38. *Colonial Beauty P.* (Turner.)—Buff ground, edged with bright pink; medium height; moderate growth; compact.
39. *Dorothy P.* (Turner.)—Buff, flaked with bright pink, and medium height; fine grass.
40. *Rose Celestial C.* (Turner.)—Rose self; full flower; very dwarf spikes; strong, compact growth.
41. *Raby Castle, C.* (Turner and Veitch.)—Rosy salmon; good vigorous growth; medium height; compact habit.
42. *Favourite P.* (Turner).—Picotee; scarlet edge; tall spikes; strong grass; compact habit; free flowering.
43. *Scarlet Premier C.* (Storrie.)—Scarlet self; very tall spikes; strong grass; compact habit; very free flowering.
44. *Atalanta P.* (Dodwell.)—Yellow ground; striped with pink; dwarf spikes; medium grass; compact habit.
45. *Clown C.* (Dodwell.)—Yellow ground, striped with bright pink; fair height and grass; free flowering.
46. *Diana C.* (Dodwell.)—White self; medium height; strong grass; compact habit; fine flower.
47. *Andromeda C.* (Dodwell.)—Terra cotta, flaked with rose; tall spikes; strong grass; compact habit; very free flowering.
48. *Ariel C.* (Dodwell)—Yellow self; tall spikes; moderate grass; free flowering.
49. *Oxonian C.* (Dodwell.)—Salmon self; dwarf spikes; strong compact growth; free flowering.

FRUITS FOR LEICESTERSHIRE.

By Mr. William Ingram, Belvoir.

Read at Conference of British Fruit Growers' Association, Leicester, August 5, 1890.

I apprehend that the object of the visit of the British Fruit Growers' Association to Leicester is twofold; in the first place, to elicit information on fruit growing as it is locally practised, and the second to communicate facts on the same subject, which the extended practical experience of the members of the society enable them to do.

Fruit trees, like other living objects in Nature, are liable to be constitutionally affected in growth and fertility by circumstances of soil, climate, latitude, elevation, and other natural causes, and as this England of ours presents in a limited space greater climatic conditions and diversity in its geological character, and, therefore, soil, than any other portions of Europe, it follows that to have anything like an assurance of success in fruit growing we must know the conditions of soil that exist, and the varieties of trees that have shown by their vigour, fertility, and duration the mutual adaptability that is requisite between Nature inert and vital.

Pursuing the idea that certain physical conditions are important factors, and so necessary to be considered in the cultivation of fruit trees, it may be interesting to those of our visitors unacquainted with Leicestershire to mention a few salient features in the geology of the county, and one very remarkable one is seen in the range of hills that rise north of the town, and constitute the Charnwood district. This mountain range, for such it really is, attains an elevation of a little over 900 feet, and the rocks of which it is composed, consisting of granite, syenite, slate, and sandstone, are of considerable economic value. I mention the occurrence of this interesting range because in the long period of time since its obtrusion, its waste by atmospheric causes has been considerable, and the *débris* of these hard rocks has usefully modified some of our heavy soil, and apart from the slow operations of Nature, we have in the active working of the granite quarries great resources of dust and pulverised granite rich in feldspar, which both in fertilising action and in keeping the soil open is of especial value.

A general glance at the geological map of the county of Leicester, and very little consideration of the circumstances it reveals, will be sufficient to convey the fact that it does not enjoy any special natural advantages that would constitute it a fruit-growing county. It certainly does not possess the recommendations either of climate or the conditions of soil that distinguish districts pre-eminent for fruit-growing like Kent or Hertfordshire. Situated in the centre of England, and having a general elevation of from 300 to 500 feet above sea level over the greater part of it (the exceptional altitude being the Charnwood range which I have already described), it may be inferred from the rocky character of its more elevated parts, and its general altitude, that its climate is less genial than from its altitude alone we might be led to expect. Elevation, a great extent of cold clay land and marls, both of the trias and lias, also conduce to bring about this result. Whilst I have freely commented on the physical disadvantages of the county, I may with the same degree of freedom mention the favourable circumstances resulting from the climate and soil that belong to it. Its general cool climate has the effect of retarding the blooming of fruit trees, and this is an advantage appreciated by the practical man, when, as the great Churchman who died at Leicester Abbey said, "The third day comes a frost, a nipping frost." We often hear of the destruction of the fruit blossoms in the south-eastern counties when we are safe from the same calamity through the undeveloped condition of the buds. Although the river system of the county is of a somewhat restricted character, and there are not found the extensive valleys possessing rich river deposits such as are found contiguous to the Thames, the Trent, and the Lea, yet the materials from which these loams were derived exist in abundance, but in a concentrated form. Our granites, limes, gypsum, ironstone, and sandstone as they have been in the past so they remain still, a rich storehouse of mineral matters available for distribution by man's agency, or the slower but inevitable operations of nature in her system of soil making. As illustrating this opinion of the innate capabilities of the land of Leicestershire, I may say that whenever fruit growing has been taken in hand and pursued with knowledge and intelligence, a considerable amount of success has been achieved. The grapes grown by Mr. Henderson, of Cole Orton, had a name and a fame throughout the land. Beau Manor, shadowed by the cold rocks of Charnwood, in the skilful hands of Mr. Hamsher, has furnished fruit of great excellence. Gopsall and other places have also afforded instances to substantiate my argument, and orchards well placed and managed have suggested, rather than exhibited, what may be done in this county.

I must in this short paper deal rather in general principles than in details of culture. The influence of soils on the health of trees is pretty well, if not understood, certainly acknowledged. An unhealthy tree is at once the subject for the attacks of insects. Good cultivation, by promoting vigour, enables a tree to overcome its enemies. In a deep fertile soil, or a situation naturally adapted to the habits of fruit trees, vitality is increased and vegetable existence is prolonged. Showing how important is healthy foliage in aiding the fruitful development of the bud we have the example of the late and the present season. The blighted condition of the trees last and the preceding year was so marked that it invited discussion, and numerous remedies were suggested and tried. It is now sufficiently evident to us that the unfruitfulness of the present season is largely due to the injury sustained by the foliage of the trees last year, for no frost of sufficient severity occurred to destroy apple, pear, and plum blossom. This experience suggests the importance of maintaining the foliage of a tree in health and vigour.

The two very important matters which will, I hope, be considered and discussed at this meeting are drainage and shelter. In a county like this it is extremely difficult to lay down any rule for the former, but stagnant water should not be allowed to exist below an orchard. Shelter is all-important. We seem to be particularly exposed to the action of high winds. The

question of belts of trees and of the sorts to be employed is also worth consideration.

The selection of suitable apples, pears, and plums for private gardens, as well as those cultivated exclusively for profit, is a subject that demands practical local knowledge and consideration. Those who grow for home consumption must naturally select the kinds likely to afford a supply of fruit in succession from an early to a late period; while the grower for profit will confine himself to a few well-known prolific kinds, to come in early and late, so as not to be in competition with American importations. I have prepared a list of apples, pears, and plums, which I submit to the Conference:—

Apples.

(Forming part of the collection grown at Belvoir and named as meritorious.)

Kitchen.

Bramley's Seedling.
Frogmore Prolific.
Lord Suffield.
Stirling Castle.
Lane's Prince Albert (there are trees at least fifty years old at Belvoir).
Lincoln Pippin (good variety for jelly, handsome bloom).
Warner's King (great bearer).
Flower of Kent.
Golden Noble.
Jefferson.
Sturmer Pippin, D. and K.
Rosemary Russet.
Reinette de Canada.
Mère de Ménage.
Hawthornden.
Russian.
Domino.
Wellington.
Northern Greening.
Peasgood's Nonesuch.
Bess Pool.
Duchess of Oldenburgh.

Dessert.

King of the Pippins.
Cox's Orange Pippin.
Margil.
Early Red Apple.
Blenheim Orange.
Herefordshire Pearmain.
Old Golden Pippin.

Good Pears Grown at Belvoir.

Doyenné d'Eté.
Jargonelle
Doyenné Boussoch.
Williams' Bon Chrêtien.
Bergamotte d'Automne.
Beurré d'Amanlis.
Beurré Superfin.
Marie Louise.
British Queen.
Doyenné de Comice.
Beurré d'Aremburg.
Beurré d'Anjou.
Soldat d'Esperen.
Bergamotte Esperen.
Easter Beurré.
Josephine de Malines.
Knight's Monarch.
Beurré Rance.
Beurré du Buisson.
Olivier de Serres.
Winter Nelis.
Beurré Hardy.
Beurré Diel.
Huyshe's Victoria.
Huyshe's Bergamotte.

Plums.

Angelina Burdett.
Rivers' Early Prolific.
Kirke's.
Jefferson.
Green Gage.
Reine Claude de Bavay.
Purple Gage.
Early Orleans.
Coe's Golden Drop.
Yellow Magnum Bonum.
Imperatrice.
Victoria.
Prince Englebert.
Pond's Seedling.
Wine Sour.

Gooseberries.

Red.

Crown Bob.
Ironmonger.
Red Champagne.
Warrington.
Whinham's Industry.

Yellow.

Golden Drop.
Yellow Rough.

Green.

Greengage.
Rosebery.

Currants.

Raby Castle.
New Dutch.
Red Grape.
White Dutch.
White Transparent.
Black Baldwin.
Black Naples.
Black Lee's Prolific.

Raspberries.

Carter's Prolific.
Antwerp Red.

The following selection has been supplied to me by Mr. Thomas Warner, of Leicester:—

Apples.

Blenheim Orange.—Does only fairly well, and is never equal to south or south-western grown fruit.

Bess Pool.—A very good late apple, but shy bearer for the first twenty years after planting, after which it bears well every other year.

Bramley's Seedling.—This is a very good winter apple, and bears well as a young tree.

Annie Elizabeth.—A handsome apple, but of only second rate quality.

Caldwell.—One of the best late cooking apples, very hardy.

Keswick Codlin.—One of the best early cookers.

Cox's Orange Pippin.—Early and free bearer, first-rate quality, and very good keeper.

Duchess of Oldenburgh.—The best early cooking apple I know, a splendid grower, and fruits regularly.

Dumelow's Seedling.—One of the best late cookers; free grower and good bearer.

Greenup's Pippin—Handsome, good bearer and free grower; the best apple for making jelly; always commands a good price in the market.

Early Red Margaret.—A very good early dessert apple.

Juneating White.—Poor quality, but fruits and sells well; a decidedly profitable apple.

King of the Pippins.—Good in every way.

Lane's Prince Albert.—Very good, free grower and bearer.

Lord Suffield.—A bad grower but very fine fruit.

Northern Greening,—A splendid late cooking varie

Devonshire Quarrenden.—Very good, free bearer.

Ribston Pippin.—Too good to be left out, but, in my opinion, for this locality, superseded by Cox's Orange Pippin.

Sturmer Pippin.—A valuable late apple, good keeper; tree very hardy, and good bearer.

Warner's King.—Very large, free grower, and good bearer.

Warner's Seedling.—First rate quality, free grower, good and certain bearer.

Pears.

Beurré d'Amanlis.—Good bearer and first quality.

Beurré de Capiaumont.—Good bearer, fair quality.

Beurré Easter.—A very good late variety.

Beurré Rance.—The best late pear known. I have eaten them from standard trees the last week in May.

Bon Chrêtien.—One of the best market pears.

Hessle.—One of the best market pears.

Doyenné du Comice.—Very good. Equal in flavour to any pear I ever tasted. Grows well as a standard.

Jargonelle.—Very good.

Louise Bonne of Jersey.—Good; free bearer.

Beurré Diel.—Good market pear; second quality.

Marie Louise.—Splendid, but uncertain bearer.

Plums.

Bleeker's Scarlet.—Free bearer; good.

Damson Shropshire.—Free bearer; very good variety.

Diamond.—Fine cooking variety.

Early Prolific.—Free bearer; good, but rather too small.

Coe's Golden Drop.—One of the best varieties grown.

Early Orleans.—Good; free bearer.

Prince Englebert.—Good; free bearer.

Reine Claude du Bavay.—Great bearer, good quality; the best of the late Gages.

Syston.—Good bearer, poor quality, but a very profitable market variety.

Victoria.—The best bearer, good grower, and profitable as a market plum.

Cherries.

May Duke.
Bigarreau.
White Heart.
Morello.

In making out this list I have confined myself to trees I know do well as standards. Of course there are many more varieties worth growing, especially for dessert purposes, which I have not named; but I think those I have enumerated all do well in Leicestershire, and are good profitable sorts.—T. W.

GARDEN FLOWERS.

The gardens are gay with lilies, dahlias, and gladioli, but of the great family of so-called "hardy herbaceous" plants there are but few now that make any display of colour. To be sure, we must include the lilies in the family, although they belong rather to the "bibloemens," as a Netherlander might say, meaning that they are not "hardy herbaceous" exactly, and certainly not as an aster is, or a delphinium, or a dianthus. To keep up the display at this season we must invade the florist's garden to obtain dahlias, phloxes, carnations, and gladioli, and the sublime people who affect to look down upon floriculture may be properly reminded, now that garden flowers are becoming scarce, of their indebtedness to an art that has clothed the world with benefits.

Lilies now in high condition include in late places the richly-coloured *Pardalinum*, which in southern gardens has run its course, and will not last more than another week in the north. In the fullest perfection now is the glorious *Auratum*, and as it varies considerably it is of importance to secure good varieties, for even those that are unnamed are not all alike, not a few having narrow divisions that look poor as compared with the best types. It has been our practice to mark and watch the fasciated stems, and the result of our observations is that certain bulbs regularly produce these stems, with twenty, thirty, or even fifty flowers in a bunch. Everyone to his taste, and we quarrel not with those who are congratulating themselves on the possession of fasciated auratums that present huge clusters of flowers. But our dislike for them is such that since we became convinced it is the habit of the bulbs to produce monstrous growths from year to year, that as soon as they show themselves we dig them out and destroy them. A stately stem with its normal number of flowers posed as in a good type is superbly beautiful, but the clusters on fasciated stems are offensively ugly, and we have entered upon a solemn crusade against them. The beautiful *Superbum* is in perfect colour, and a great mass of them has a glorious appearance in the early morning. The deepening of the colour with age is one of the good features of this lily, as it ensures a variety of tones where there are many together, from the pale yellow of the newly opening flowers to the solemn crimson, deepening almost to black, of the flowers that are about to fall. *Tigrinum* is a distinct power in the garden, and the common form is the most useful; one can scarcely have too much of it now that colour is so much wanted.

Iris Kæmpferi makes but a poor show in a dry position, and it is a folly to plant it unless in immediate proximity to water or in a place where it can be supplied with water, or, better still, very weak liquid manure through June and July. On the margin of a pond or stream, where the soil is rich and deep, it is magnificent, and its range of colours—white, grey, blue, purple, lavender, and violet—give it a special distinctness, for we have no such colours now in other subjects.

Mutisia decurrens has been flowering freely for fully six weeks, and has given delight to all observers. In a general way it might be likened to Gerbera Jamesoni, but though a composite, it is very different to that beauty. The plant was well figured some years ago in the "Florist and Fruitist," and may now be found in a thriving state on the wall of No. 1 Museum at Kew, where they protect it from slugs by covering the ground around it with coke broken small. Unless safe against slugs it is impossible to keep this plant, but when safe it proves quite hardy and makes a pleasing object on a sunny wall.

Yucca filamentosa is not often enough seen in gardens. This and *Y. recurvifolia* are the two best for general use, and far preferable to our noble old friend, *Y. gloriosa*. The first-named is now flowering with us in a most pleasing manner, the soft creamy-coloured bells on the rigid stems having a most pleasing appearance, and in a certain sense, an aristocratic air.

Anemone japonica when well placed is a brilliant plant, but in some situations it has but a common appearance. It is in the midst of various greenery in a somewhat confined space that we see it at its best. On the other hand, the white-flowered variety looks well in any position; it matters not where it is placed, its beauty never ceases to be "effective," and we never weary of admiring. Of the purple or typical form, there are some better than others, and the paler kinds should be weeded out and got rid of.

Montbretia Pottsi is a pretty sparkler, and makes a capital bed. This and all other montbretias should be lifted annually; they flower much the better for it. The process evidently promotes perfect maturation, and has but to be

carried out with care, when the leaves have done their work, to be perfectly safe.

Gentiana asclepiades makes a gay show of blue and white sprays in damp half-shaded nooks; the best thing of its kind now flowering.

Aster macrophylla is distinct, bold, and useful. It forms a strong bush four to five feet high; the leaves cordate, the flowers smallish, with narrow ray florets of a blush colour with yellow disk, produced in the greatest profusion, and forming a great "head of bloom."

Aster corymbosa is in some respects like A. macrophylla, but rises only two to three feet; the flowers also in a great head, blush with yellow disk, but the character of the whole plant less pronounced than the one we have compared it with.

Echinops ruthenicus is a good plant of the rustic order and worth having as a curiosity, the floral finish of the thing being a globular "hedgehog." There are many forms of this plant, varying in height and the colour of the inflorescence; the best is one about two feet, with heads of the size of a chestnut in the husk; the colour full violet-blue. The paler kinds are useful in their way, but this full coloured form is the best for a place where there are not many curiosities wanted.

Rudbeckia occidentalis was made for shrubberies and half-wild gardens, and when fitted to a suitable place is an interesting object at this season. Height about seven feet, the flower heads with lax ray florets that hang from the green cone and move with the wind; a well-behaved plant, but quite of the big rustic order.

Silphium terebinthinum is a giant that appears to have been made for rustic scenes in a part of a great garden; it would be a dreadful intruder in any such place as a border in an ordinary garden. The huge leaves are much folded and highly picturesque, and will puzzle a young artist to draw them as they appear; the flowers are in small thyrses on stems of six feet or more; they are smallish for the size of the plant, and the colour is yellow.

Dianthus supplies a few good flowers in addition to the carnations and picotees, which are in the south fast passing away. The most important of them now are the several forms of *Dianthus Seguieri*, some of which are known as *D. Fischeri, D. collinus, D. montanus, D. ruthenicus, D. deltoides, D. dentosus, D. versicolor*, &c. The usual style of growth is wiry, with scant leafage in pairs after the usual dianthus pattern, the flowers mounted six inches to a foot high, and expanding to one inch or more in diameter, the colours ranging from bright light rosy crimson to blush with richly coloured eye, to violet lilac and deep marone. Its diversity of characters corresponds with its extensive distribution in southern Europe, the Caucasus, and a great part of Russia and Siberia. It is no easy matter to label the several forms correctly, but we will endeavour to assist collectors with a few characters. The typical *D. Seguieri* of the Caucasus is a thin, rather straggling plant one foot high, flowers in small terminal clusters, brilliant magenta rose. *D. S. atrorubens*, the tallest of the series, colour of flowers crimson shading to rich marone. *D. S. collina*, a trifle dwarfer, more compact, and less weedy than the type and flowering more freely, probably the best form. *D. S. rosea*, flowers rich carmine. *D. dentosus* is a beauty for the rockery, being of dwarf neat growth, the flowers violet tinted rose with rich violet spot.

Bupthalmum salicifolium is a good border composite not often seen. It forms a respectable tuft a foot high, the leaves narrow, the head of flowers forms a crown of golden stars, quite showy and thoroughly respectable.

Tagetes lucida and *T. patula* are commonly seen as double flowers in gardens, and need no praise here. But as single flowers they are eminently beautiful, and many would prefer the single forms if they could make fair comparisons. Well, the comparisons may easily be made by the simple plan of securing the seed and growing them. But now is the time to determine their relative beauty.

Eupatorium ageratoides, five feet high, white flowers; *E. purpureum*, seven feet, dark ovate leaves and a large head of purple flowers; *Helianthus decapetalus*, five feet, flowers yellow: these are fine subjects for large rustic scenes, but have no claim to admiration as choice border plants. The larger *Polygonums* are in the same category with *silphiums*, and the giant *senecios*. *Lysimachia Dahurica* is a neat plant with pale yellow flowers.

MIGNONETTE FOR SPRING FLOWERING.

From the middle to the end of August is a good time to sow seed of mignonette to flower in the spring. That is, however, soon enough to have plants of a suitable size when they are wanted in pots from four inches to six inches in diameter. To obtain what I may call specimen plants—that is, plants of a large size—the seed requires to be sown early in June; but the time I have suggested is quite early enough to obtain the kind of plants I have indicated. There is not much difficulty in getting a stock of plants of a useful size if the seed is sown at the proper time, and the plants brought on slowly during the winter.

Many fail to get what I may call respectable examples, because they give the plants too much warmth through the dark days of midwinter, and keep them too far from the glass, and too much crowded. The result of such treatment is that the plants are weak and flower prematurely. To have mignonette in flower at Christmas is not, I know, a difficult matter, and it is very well to do so in places where there is room enough to accommodate plants in various stages of growth. But where there is only room enough for a limited number of plants, more satisfaction will be obtained if the plants are allowed to come on gradually, so as to be in flower in the month of April. To do this a light and airy position in a structure that is only heated to keep out frost is all that is necessary. As a matter of fact, the plants will do better through the winter in a pit or frame from which frost is excluded than in a heated structure where they cannot get all the air they require to keep them in health. Plants raised at the time I have stated, and treated in a proper manner, will be stout and sturdy by Christmas, and only require to be kept out of the reach of frost with plenty of light and air on all favourable occasions to secure them in good condition.

Mignonette requires a fairly heavy soil, which should not be made too rich with manure; three parts loam and one part leaf soil is a very good mixture for them. The compost should not be sifted but well worked with a spade to get rid of the hard lumps.

With regard to sowing, I like to sow the seeds in the pots in which the plants are to flower, as I find they do best without any root disturbance. There is a certain amount of risk in shifting on pots of mignonette from one size pot to another. The plants have an awkward way of dying off a few days after the operation is completed without any apparent reason. In fact, disturbance of the roots is resented by this plant. I fill the pots full of soil and then sow a few seeds in each, reducing the number of plants to three for six inch pots, and a proportionate number for a smaller size.

A cold frame is the best place to raise the seedlings, as the pots should be kept cool and shaded until the young plants are well above the soil.

With reference to the after treatment it is not necessary to say much more. But I may remark here that no plant is more benefited by the judicious use of liquid stimulants than mignonette, providing it is not given in excess. The middle of February is soon enough to help the plants in that direction, and the best stimulant is liquid manure from the farmyard given twice a-week. Where that is not available, sulphate of ammonia used at the rate of half an ounce to one gallon of water and applied once a-week will afford the plants much assistance, and help to increase the length of the flower spike as well as to give the foliage a better colour. J. C. C.

Notes of Observation.

CLEMATIS MONTANA AND SOLANUM JASMINOIDES.

It is seldom we find two climbers better adapted for planting together than this clematis and the solanum. They are of rather similar habits, and run side by side with equal strength. For a porch few plants are more suitable, and, if a free intergrowth be allowed, the blooms of each will be evenly distributed, which is really necessary, as the clematis comes into flower before the solanum, which, however quickly follows, and continues to blossom up to Christmas. C. Mayor.

FRUIT OF BERBERIS DARWINII.

The fruit of this plant when plentiful, which in some places is not always the case, presents rather a fine appearance, hanging in great clusters from the branches. In taste it is brisk, with a flavour of its own, somewhat between that of the currant and grape. I should think it is edible, having tried it with no ill effects. Blackbirds and thrushes, too, I believe, consume it largely, the seeds, however, passing through them, without any apparent signs of decomposition. It is curious that the fruit of B. aquifolium is very bitter, and is, moreover, not esteemed by the birds. C. M.

POTATO, PURITAN.

This is an excellent potato amongst the second earlies, and those who grow largely of this class of goods tell me that it is superseding Beauty of Hebron. It appears that the colour of the Hebrons tells against that sort when placed side by side with Puritans. The last-mentioned is a white sort, both the skin and the flesh being particularly clear and white. It is also a wonderful cropper, producing plenty of tubers of fair average size, and but very few small ones. I have seen splendid crops of it this season. It has, however, one failing—it is very liable to take the disease. J. C. C.

WASPS.

The time is now at hand when wasps' nests should be taken, and various are the methods of so doing. We have tried most of them, and come to the conclusion that a squib of sulphur and gunpowder, lighted, thrust into the hole and covered with a sack is the most easy and effective. After a few minutes the nest may be dug out, put into a bag, and drowned. We have taken as many as eight or nine on one evening without any sting or difficulty. Of course, obstacles are sometimes to be met with, and one may not always be so successful. For instance, one nest we tried to take had two holes (the one on the top of the bank, the other over in the ditch), though we were not aware of the fact. Consequently, when the squib was inserted and covered up the wasps poured out in hundreds from the other hole, and we were severely stung. To avoid these evils the nest should be well examined by daylight and marked by a stick, on which is tied some white paper. Nests of the tree wasp and hornet are easily taken by holding under them a large saucer full of burning sulphur, with enough gunpowder to keep the mixture well alight. But the nest of the hornet is not very common, and should be kept after the hornets have vacated it at the end of the season. These insects, though larger, are nothing like so spiteful as wasps, and I have often stood within a few feet of a nest watching them at work. When hedges and ditches are being trimmed in late spring-time a good look out should be kept for small nests of the common wasp. I once received six, as big as a cricket ball, taken from the hedges surrounding a nine-acre meadow. By these means, and also by giving a penny each for queen wasps up to the end of April, their subsequent numbers may be greatly lessened in one's neighbourhood. Strong liquid ammonia is a certain cure for the stings of most insects, certainly of the wasp, but it should be applied at once. For this reason we all carry a little bottle of this chemical in a wooden case, with screw top. C. M.

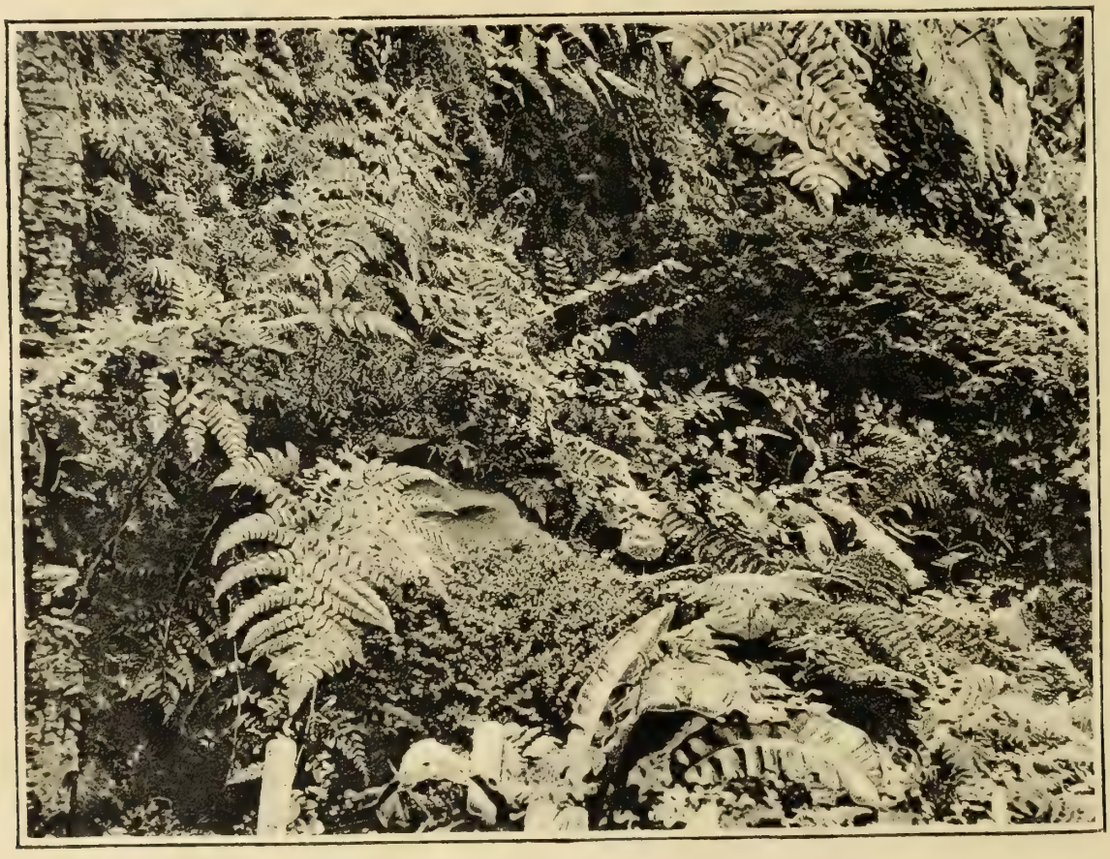
BEST-FLAVOURED TOMATOS.

I have no doubt it is a matter of taste, but I think that the old red sort of tomato is still the best-flavoured of any. I am not, however, alone in this opinion, for I have heard several people say the same thing of this sort. Indeed, there are people who prefer any of the corrugated kinds to the smooth ones. One lady in particular remarked with an emphasis that the ribbed kinds are much more luscious than the others. J. C. C.

FERNERIES IN THE BOTANIC GARDENS, GLASGOW.

Though under a ban, as it has been our painful task occasionally to explain and complain, the collections are well kept up here, and the tone throughout, under Mr. R. Bullen's admirable management, is so high that the visitor is never by any plant, or any structure, or any detail of the management, reminded of the debt and difficulty that cast a shadow on the place only seen and understood by those who are familiar with the facts. In a walk round we have been agreeably impressed with the richness of the collections of all kinds, and not the least important, the exotic ferns. These are accommodated in houses set apart for them, and also associated with other plants in the great winter garden, from which we have in past issues presented views illustrative of its general characteristics. With this note we now give a scene from the Winter Garden, in which specimen ferns play an important part. The tall plant in the centre of the group is Cyathea medullaris; that next to the right is Cyathea Burkei; beneath that again to the right is Dicksonia Scheidei; to the left of centre in Dicksonia antarctica.

The extent of this palatial glass-house may be in some sort appre-



GLASGOW BOTANIC GARDEN. Portion of North Wall of Mossery.

hended by consideration of the fact that it accommodated 2,000 persons without any inconvenience on the occasion of the then Benjamin Disraeli delivering his inaugural address at Lord Rector of Glasgow. It will not, therefore, appear marvellous when we say that in this house are gigantic specimen ferns representing Australia, New Zealand, Norfolk Island, China, Jamaica, Ceylon, Africa, and South America. In addition to the species named above, we have noted specimens of Alsophila excelsa, A. Australis, A. crinita, A. lunulata (magnificent), Cyathea princeps, C. Ortgesi (from Natal), and C. insignis (from Jamaica). There are Dicksonias with immense heads on stems of 15 to 20 feet. The Chinese D. Barometz is in fine development, as are also the unique D. fibrosa, D. Smithi, and D. Youngi. Marattias include M. elegans and M. cicutæfolia; there are great pieces of Todea barbarea and T. Africana. Without such plants, the vegetation of this house would be stiff and hard, for the flowering trees, with all their nobility of form and splendour of colouring, require the contrast of such perfect grace to give emphasis to their more masculine characters.

A peep at the mossery will speak for itself. It is picturesque; or it is nothing. But, being picturesque and altogether delightful, the direct way to understand it is to see it and take lessons *de facto*.

ARRANGING VEGETABLES FOR EXHIBITION.

By Edwin Molyneux.

The arrangement of vegetables in the most attractive manner for exhibition requires some care and taste, which can best be gained by experience. Although some of the success gained by those collections which are staged in the best manner is attributable to that fact in a degree, it does not follow that good staging alone is enough to win prizes. No matter how well this part of the business may be done, poor exhibits cannot be so polished up by the stager in form good enough to gain the coveted award. It follows that where the produce is of about equal quality in the individual dishes, the collection which presents the most attractive features in the staging must of necessity be entitled to the foremost position in the awards. At nearly all exhibitions there are to be seen two kinds of staging in collections of vegetables—good and bad. To constitute the former, every dish must be displayed in such a manner that not a particle of it is lost to either the eyes of the adjudicators or those of the public, who keenly criticise good points and bad ones also. As a rule, it is the latter which draw forth the most comment from the public. To protect the exhibitor against criticism of an adverse nature is my object in penning these few lines on the subject of staging vegetables. By giving a few details of arrangement I hope something will be learnt by those who have not previously had experience in this particular phase of exhibiting.

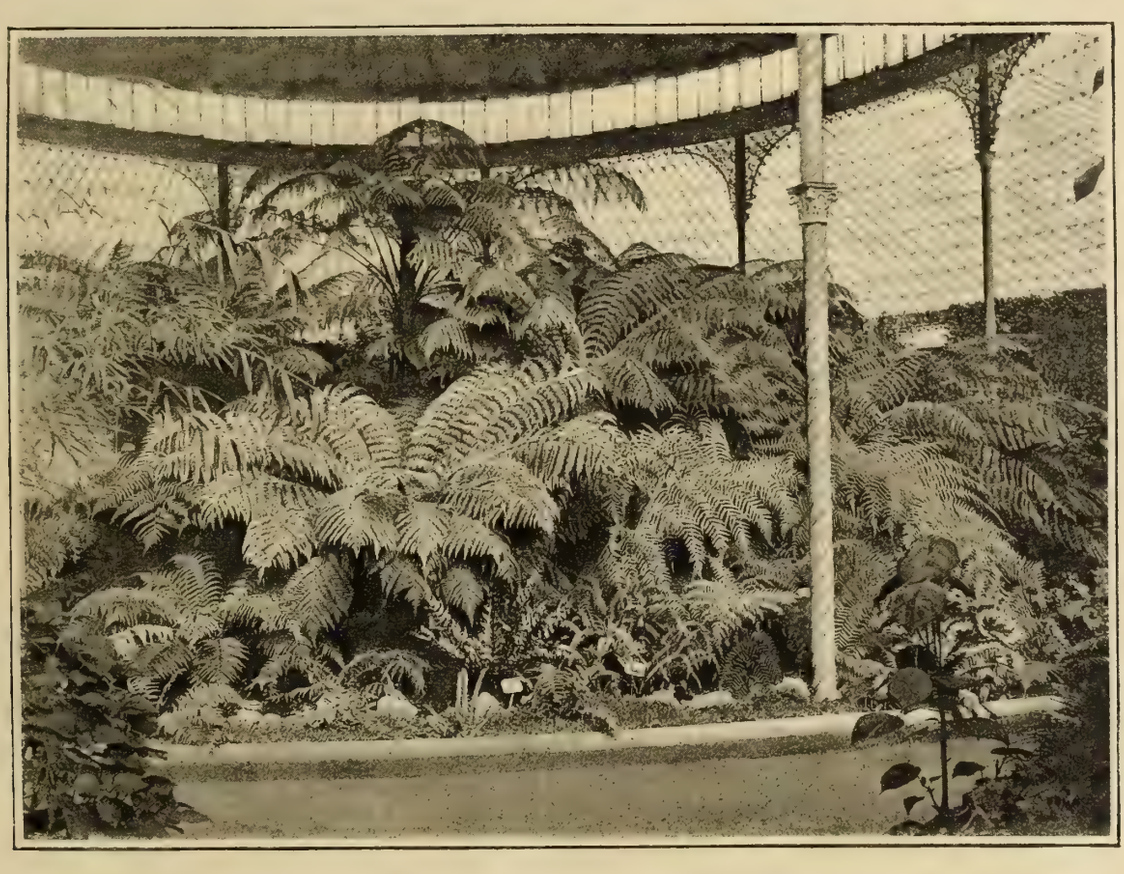
Experience in "setting up" a collection of six, nine, or twelve varieties of vegetables, leads the competitor to adopt new ideas gained from failures in the older plans of arrangement, and so we progress. Only a very few years since, nearly all the dishes of vegetables, with the exception of Tripoli onions, cauliflowers, and Globe artichokes, were not thought to be right unless they were placed upon plates, first covering each plate with parsley. But now quite the opposite idea has seized hold of the exhibitor. The exception now is to find a plate used in the arrangement of a collection of even six varieties. The plan almost generally adopted at the present time, of spreading out thinly all the exhibits upon the table in such a manner that all can be more easily examined, is certainly to be recommended; but for those who cannot present all the dishes in faultless condition the system here named has one drawback for those competitors who lack the best quality throughout. That faulty articles sometimes used to make up a dish of any particular kind—as, for instance, partly-decayed tomatos, or those which are unripe—by carefully placing these in the middle of a plate, covering the defective parts up with better specimens and a

liberal display of parsley, the judges have been somewhat deceived when they have taken for granted that all the produce was of a like quality throughout the dish in question. The best of judges may be slightly misled by tricks of this kind in the hurry of judging, caused by numerous entries and close quality of the exhibits, and by the lateness of the hour when they were enabled to commence their duties, owing to the non-compliance with the rules applicable to staging by the exhibitors. Unpunctuality in the completion of the staging of all exhibits renders the task of allotting the prizes in a satisfactory manner much more arduous to the judges, and in the rush occasioned by the reasons above stated, many a small point has escaped the eye of the "cutest" adjudicator.

In the staging of vegetables, as in every other horticultural subject, plenty of time should be allowed to effect the work in a thorough manner. It is no use for an exhibitor to allow himself but a few minutes, and expect to put up as attractive a collection of vegetables as his opponent who has spent perhaps a couple of hours. In vegetable arrangement plenty of time is a necessity to make the best effect. No exhibitor should allow himself less time than one hour to "set up" twelve varieties. The old-fashioned method of arranging vegetables in shallow wood trays of a certain length, is now almost obsolete, and so is kind that is coarse in the leaf and which is sometimes devoid of curl in the leaf at all.

Good parsley at this time of the year is not so plentiful in some gardens as it is at other times of the year; as, for instance, during May and June, or just before the roots of the previous year's sowing have run to seed. The most certain way to insure a proper supply at all seasons is to sow some seed of the Imperial Curled, which is as good as any other sort, in shallow boxes of sandy soil during the early part of February, placing the boxes where a little heat is obtained. By gradually hardening off the plants until they can safely be planted out into rows six inches apart, and as much in the rows, plenty of good parsley will be available by the early part of August.

In the arrangement of the vegetables the largest articles must be placed at the back, so that they are easily seen from the front of the table, and in such a manner that they do not obstruct the view from other smaller dishes, which should be arranged in a front position. Cauliflowers should occupy the central position in the back row, and be arranged in triangular fashion, two on the moss and one on the top of the other two. Onions should occupy the left side of the cauliflowers. The number of onions staged is generally twelve. If these are dipped in water preparatory to staging they will look all the fresher



GLASGOW BOTANIC GARDEN. Portion of Inner circle of the Winter Garden.

the basket system of arrangement, so much spoken of and applauded at one time. Managers of good exhibitions allot a certain amount of space to each competitor, side by side in the various classes, which is generally upon flat side tables in the tents, both for uniformity in arrangement and for convenience of judging. When judging is done by comparison it becomes a serious matter when the competing collections are some distance apart. Not that it is necessary to have the collections side by side in determining their relative positions nowadays, when judging is so much better carried out by the method employed by leading judges, viz., the awarding of a certain number of points to each article, according to its relative value. Therefore it will be seen that the arrangement of the collections together is not an absolute necessity to arrive at the estimate of relative quality of one without awarding its opponent its due.

Different societies do not allow the same amount of table space for vegetable collections. If the space set apart for twelve varieties is four feet long and three feet wide, an abundant opportunity is given to display the dishes in the most attractive manner. The stager should commence by covering the table with soft springy moss, from one to two inches thick. Over the moss parsley should be evenly laid, which forms a good contrast to the various vegetables above. Parsley which is quite of a curly character should be employed in preference to a

afterwards, and so will the cauliflower, previously named. The onions should be laid to face in one direction, the base row should have six bulbs, the next four, and two on the top will complete the dish, twelve being the number usually employed. Between each layer of onions a small quantity of parsley should be laid as a garnishing, which should follow round the ends of the group also, and which, with the white skin of the onions, gives a good effect. Globe artichokes should be arranged in a similar manner to the onions and on the opposide of the cauliflowers. In the centre and in front of the cauliflowers the tomatos should be displayed. Very few societies limit the number of tomatos in vegetable collections. The recognized number amongst exhibitors is twelve fruits. These laid upon a bed of moss and parsley in front of the white cauliflowers make a good contrast. They should be laid in rows stem downwards of four one way and three the other. Celery is generally laid one stick on each side of the tomatos in a slanting direction, the root nearest to the front of the table, the third stick is laid between the cauliflowers and the tomatos crosswise. Carrots are generally in front of the globe artichokes three on the moss, two upon them, and one—the finest specimen of course — on the top of the two, making in all a neat group. Beet is arranged in a similar manner on the opposite side of the table, in front of the onions. Peas should be arranged on a

mound of moss between, and a little to the front of the carrots and tomatos; the stalk of each pod should be turned towards the centre. In this manner the peas are made to form a neat hillock and still display the pods to the greatest advantage. Potatos should be spread out in the same manner as recommended for the tomatos. Runner beans should be laid in a neat heap, all in one direction, and quite straight; the same with French beans. Turnips require to be treated in exactly the same manner as the carrots. Cucumbers are best laid on the moss bed, precisely straight and parallel to each other. Vegetable marrows in the same way also as the cucumbers.

Some exhibitors arrange their onions in two blocks of six each; the same with turnips and some other articles; but which plan I much deprecate, as it destroys the effect of boldness occasioned by massing the various dishes in their respective sections. When the articles are all arranged any part of the moss which is exposed should be covered with parsley, which enhances the beauty of the vegetables. Any spaces between one article and another in each dish should be filled up with parsley, which renders the collection more solid in appearance, and the brilliant green is of great help. All the dishes should be named in a distinct manner, so that the public will have no difficulty in determining the exact name of any vegetable staged. When the work of arrangement and naming is complete newspapers should be spread over the whole, to be removed just prior to the appointed time for clearing the tents. The advantages of covering the vegetables with paper are threefold. In the first place the vegetables are maintained in a much fresher condition than would otherwise be the case with the heat of the sun upon them; secondly, they are protected from dust; and, thirdly, the covering prevents curious exhibitors from ascertaining what are the strong and the weak points of your position.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Stove Plants in Bloom.—Achimenes; Æchmea fulgens; Allamanda Hendersonii; Begonias; Dipladenia amabilis, D. insignis, D. insignis, D. Williamsi; Ixora Pilgrimi superba, I. Colei, I. Dixiana; Passiflora Buonapartea; Pentas carnea; Thunbergia laurifolia; Tydæas; Torenia asiatica; Spigelia splendens; Stephanotis floribunda; Vinca alba oculata rosea.

THE HOUSE.

Cage Birds often occasion anxiety by a prolonged moult, more especially when they are aged. It is advisable to check this at a certain point, because of its exhausting nature and the probability that the birds will be thinly clad when the autumnal chills occur. The question is, what can be done? In many cases that have come under our notice we have found great advantage in a mere change of scene and circumstances, such as putting the birds into other cages and removing them to other rooms, so that all being strange about them, the awakening of curosity proves highly beneficial. Birds that are customarily allowed to come out occasionally should have liberty more frequently when the moulting appears to progress badly. Some change of diet is also desirable, and the food should be nourishing and somewhat stimulating, the addition of pepper being often of great service. As a rule, moulting is a very simple affair, and soon over; its prolongation suggests bad conditions, and these should be mended if possible. A bird of almost any kind that is placed where cold draughts prevail will be constantly shedding feathers, this appears to be owing to the drying of the quills and their consequently shrinking. But whatever the reason for this action of cold, it is a fact that it occurs, and many a bird is stripped bare by it, while people look and wonder what is the cause of the shedding of the feathers. A matter of some importance is to remove from the cages all loose feathers as soon as possible. Parrots will sometimes play with a feather, and finding the toy a pretty one, will learn to pluck one when a toy is needed.

CONSERVATORY AND GREENHOUSE.

Bulbs for early bloom to be potted at once. Ornithogalum, Ixia, and Sparaxis force well, and Narcissus bulbocodium and the Roman and Paper White Narcissi will be useful if kept in ordinary greenhouse temperature for early bloom. Potted bulbs should be well rooted before they are in any way encouraged to grow above ground.

Cinerarias ought now to be strong from rooted offsets, and some will want a shift. Use good compost, moderately sandy, and plenty of drainage.

Calceolarias should now be propagated in quantities. A bed in a frame is preferable to pans and pots, as they can be lifted out for planting with good balls, and are not so likely to die off as those wintered in pots.

Conservatory may be kept gay with balsams, begonias, cockscombs, fuchsias, liliums, gladioli, coleus, heliotropes, and plants with fine foliage. Wherever worm casts are seen in pots turn out the balls, and the worm can then be picked out with a stick. Sometimes a dose of liquid manure will cause the worms to struggle up to the surface. Plants in conservatory borders which are now past their best to be taken up, and if worth keeping pot them, and place on bottom heat for eight or ten days, as they will winter better if the pots are full of roots.

Greenhouse.—It is most important to have the growth of all hard-wooded plants well ripened while there is plenty of sun heat. If any subjects requiring to be repotted have been neglected, there must be no time lost in giving them a shift, to enable them to make new roots before winter sets in. A border under a south wall is a good place for plants that require to be well roasted before being housed.

Pelargoniums.—If the weather is cold or wet, house the plants a little earlier than usual, but with air left on night and day for the first week.

STOVE AND ORCHID HOUSE.

Stove.—Structures containing plants in free growth must be moderately well ventilated, so as to induce a stocky habit, and prevent the formation of soft, sappy wood, which will probably not ripen well. Remove shadings as much as will be safe, and place subjects that are going to rest in the coolest part of the house. See that all the winter-flowering plants are sufficiently potted, and any that are pot-bound, and must not be checked by a shift, mulch with sheep's dung, or assist by means of liquid manure. Plants with ornamental foliage will be useful now that flowers are scarce. In giving water, take care to avoid a chill, and in every case see that the drainage is perfect, as there is time now to repair any small mischief before winter. As the month advances, let the heat of the house decline, and generally use as little fire-heat as possible, especially where the stock consists chiefly of plants that will be at rest all winter. Great care, however, must be taken that soft-leaved plants do not become affected with mildew. A few tropæolums struck now will be useful in the stove for winter blooms, and many ordinary garden subjects may be turned to account for decoration by getting young plants forward, and giving them a liberal shift before taking them into the house.

FORCING AND FRUIT HOUSES.

Peach and Nectarine Trees to have as much air as possible; therefore remove any of the occupants that require to be kept closer, in order to admit a thorough draught among the trees, and if the lights can be taken off all the better. If the wood is not well ripened now it will never be, and advantage must be taken of fine weather to make sure of it.

Strawberries for forcing should now be strong in pots; those still in three-inch pots to be at once shifted into others two sizes larger, using a rich firm soil well rammed in, and after potting keep them close in frames for a week, then set them on coal-ashes and keep well watered.

FLOWER GARDEN AND PLEASURE GROUNDS.

Annuals, to bloom early next season, should be sown at once on hard ground, in a dry position; if raised above the level all the better. The following are the best leading sorts to sow now, to be transplanted in March, to bloom in clumps or masses, when the bloom will be much finer, as well as earlier than from spring-sown seeds. It will suffice to name the genera only, and in selecting, the purchaser will be wise to give preference to the most popular species and varieties. Alyssum, Arabis, Bartonia, Clarkia, Collinsia, Erysimum, Eschscholtzia, Gilia, Godetia, Limnanthes, Lunaria, Malcomia, Myosotis, Nemophila, Platystemon, Saponaria, Silene, Viscaria, Whitlavia.

Intermediate Stocks to be potted in thumbs singly, and kept shaded till they make fresh roots. Sow Queens, Intermediates, and Bromptons; the soil to be a sound turfy loam, without dung: manure will make them too sappy to stand the winter well, but a poor soil will be likely to cause a large proportion of single flowers.

Pansies to be propagated now in quantity for planting out in October, and to pot for early blooming in pits in spring. Those lately struck to be planted out in beds of turfy loam, with a liberal admixture of sand and charred rubbish, but very little animal manure.

Roses layered now and left undisturbed till April next will then be found well rooted, and may be taken up and potted for bloom the following autumn. Roses lately budded to have the ties loosened. Where buds have failed others may be inserted, either on the stems of young stocks or on suitable shoots lower down than those previously worked. Prune pillar roses, so as to remove a moderate amount of both old and young wood; that left to be its full length, and at such regular distances that there will be good symmetrical heads next season. Short cuttings of Chinas and perpetuals will root now in the open ground under glasses.

Violets may be taken up from the borders, and potted in a mixture of rotten turf, rotten dung, charred rubbish, and road sand, equal parts, for early bloom. In taking them up do not break the roots more than can be helped, and have good balls to each patch. Shallow pans of seven inches wide suit them better than pots. Put them in a frame, sprinkle and shade, and give very little air for a fortnight; then let them be exposed to all weathers till the end of October, after which give them frame culture.

KITCHEN GARDEN AND FRAME GROUND.

Winter Stock sown last month will now be coming forward for planting out. A quarter from which onions have been cleared off is generally the best place for cabbages for spring use, because the ground, having been well manured for the onions, is in good heart, and yet so far relieved of manure by the onions that there will be no fear of a rank growth, such as will cause the plants to suffer from frost. Plant out as spaces become vacant, first digging deep and leaving the surface rough. The planting must be firm, and damp weather should be chosen for it. Thin winter spinach to six inches from plant to plant; thin the rows of lettuce that are to stand the winter, but not severely, because in the event of severe frost the plants protect each other if somewhat close together.

VILLA FARM.

With harvesting and numerous other operations on hand, it is necessary to urge the importance of not overlooking the roots, which, on so many villa farms constitute some of the most important crops. If allowed to go wrong now the season will be so far advanced that it will be impossible for them to recover befor the cold weather puts a stop to further material progress. The mangels will now have spread so far over the space between the rows that the use of the hoe must be discontinued; indeed, if the advice given earlier in the season has been acted upon the employment of this implement will be no longer required, as the ground will be quite free from weeds. The swedes also will be so far advanced that it will not be safe to use a hoe amongst them other than that worked by hand, and excepting in the case of sowings made considerably beyond the proper time, the sooner the use of the hoe is discontinued the better it will be. But there will be plenty to do amongst the yellow and white fleshed turnips, for those sown rather late will require thining, and all will require the horse and hand hoes to be kept busily engaged amongst them. In the case of these crops it is essential that the weeds should be kept well under, for if they are allowed to attain a good size before anything is done to check them some considerable difficulty will be experienced, owing to the increase in the moisture, and the decrease in the power of the sun, in making an end of them. Periods of rather moist weather afford perhaps the most suitable opportunities for singling out turnips, as those remaining are not so likely to be seriously injured as when the soil is in a very dry condition. For sowing now on land recently cleared of potatos and other crops, there are no better varieties than the Hardy Green Round and the Early Six Weeks. Both sorts will turn in very quickly, and the first-mentioned will stand well through the winter and be of much service for spring feed, and the latter will be most useful for late feed.

Importations of Potatos last month amounted in the aggregate to 368,049 cwt., as compared with 551,090 cwt. in the corresponding month of last year.

Reports on Fruit Crops, 1890.

PEARS.

Aberdeen.—Variable, and on the whole much below the average. A fair crop on wall trees in a few districts.

Antrim.—Light in some cases, but generally good.

Mr. C. Warwick, Shanes Castle, writes: Most varieties are carrying a good crop. Jargonelle is particularly fine, also Forelle and Glou Morceau. Beurre Diel is not so good as usual. The fruit is good and clean.

Armagh.—Partial, and on the whole poor.

Mr. W. H. Baker, Tynan Abbey, remarks: As in the case of the apples, the pears produced a fine display of bloom, but the flowers suffered materially from the severe frosts in May, with the result that there is a very small crop. Williams's Bon Chretien, Louise Bonne of Jersey, and the old Bergamot are amongst the few kinds carrying a heavy crop.

Ayrshire.—Crop light, with a good supply of fruit here and there.

Banff.—Considerably below the average.

Mr. C. Webster, Gordon Castle, says: The best crops are those borne by espaliers, the wall trees being the least productive. The varieties most productive this season are Louise Bonne of Jersey and Williams's Bon Chretien.

Bedfordshire.—Crop much below the average.

Berkshire.—A comparative failure throughout the county.

Mr. J. Rose, Lockinge Park, Wantage, observes: We have a very thin crop. On walls the best crops are those of Williams's Bon Chretien, Jargonelle, Louise Bonne of Jersey, Josephine de Malines, and Passe Colmar.

Mr. G. Stanton, Park Place, Henley-on-Thames, reports: Good crops on walls, especially on cordon trees. On standards and on pyramids on quince very few, the bloom having been injured by frost. Louise Bonne of Jersey, Glou Morceau, Williams's Bon Chretien, Fondante d'Automne, Beurre Diel, Beurre Hardy, and Doyenne du Comice best on cordons on the quince; Marie Louise, Passe Colmar, Gansel's Bergamot, Bergamotte d'Esperen, and Brockworth Park the best on the pear stock.

Berwickshire.—Fruit thin and poor.

Buckinghamshire.—Crop so light as to closely approach a failure.

Cardiganshire.—Much below the average.

Mr. L. Hopkins, Llanina, New Quay, says: The varieties bearing the most satisfactory crops this season are Automne, Bergamot, Beurre Hardy, and Beurre Easter, grown as espaliers and occupying sheltered positions.

Carmarthenshire.—Fairly good crops in many districts.

Cheshire.—Crop indifferent on all sides.

Mr. W. Whitaker, Crewe Hall, writes: The varieties bearing the best crops this season are Williams's Bon Chretien, Beurre d'Amanlis, Louise Bonne of Jersey, Thompson's, Marie Louise d'Uccle, Glou Morceau, Winter Nelis, and Easter Beurre.

Clackmannanshire.—Much below the average.

Clare.—An average crop in most districts.

Cork.—A good crop generally.

Mr. W. Beswick, Besborough Court, reports: Crops good, those of Beurre Rance, Beurre Bosc, Beurre Diel, Comte de Lamy, Beurre Giffard, Jargonelle, and Williams's Bon Chretien being exceptionally heavy.

Denbighshire.—Crops generally very light.

Derbyshire,—Crop thin and the fruit poor.

Devonshire.—Crop much below the average on all sides.

Dorsetshire.—Fruit thin and below the average in quality.

Down.—An average crop and the fruit good.

Dublin.—Crop generally rather light, but fruit is plentiful in some districts.

Dumfriesshire.—Fairly good in most places.

Durham.—Variable; very light in some districts, fairly good in others; on the whole below the average.

Mr. R. Draper, Seaham Hall, writes: Jargonelle and Bergamots have a fair crop, while some varieties that are exposed to the sea air are a failure. More inland I find there is a fair crop on trees in sheltered situations. Those on walls have much better crops than trees of the same varieties growing in the open.

East Lothian.—A moderately good crop in many districts.

Mr. R. P. Brotherston, Tyninghame Castle, observes: The best kinds are Jargonelle, Williams's Bon Chretien, Souvenir du Congrés, Knight's Monarch, Dr. Hogg, Beurre Bachelier, Beurre d'Amanlis, Louise Bonne of Jersey, Marie Louise, Ne Plus Meuris, Easter Beurre, Hacon's Incomparable, Winter Nelis. These hardly ever miss a crop, and in most seasons ripen very well.

Essex.—Crops very poor throughout this county.

Fermanagh.—Crop considerably below the average.

Fifeshire.—Partial and, on the whole, very light.

Mr. Charles Smith, Dysart Gardens, says: Like apples, a poor crop, Jargonelle, Vicar of Winkfield, and Winter Nelis being the only varieties having even a fair crop.

Forfarshire.—Variable; in some cases fairly good and in others a complete failure.

Galway.—Crop light in all parts of the county.

Mr. W. Farmer, Kylemore Castle, remarks: The pyramidal and orchard trees are a complete failure, but the crop on wall trees is very heavy. The varieties which succeed best are Louise Bonne of Jersey, Beurre Diel, Beurre d'Amanlis, Beurre Hardy, Duchesse d'Angoulême, Williams's Bon Chretien, Pitmaston Duchess, Fertility, Hessle, and Doyenne du Comice.

Glamorganshire.—Variable and generally light.

Gloucestershire.—Much under average in all districts.

Mr. J. Aplin, Hasfield Court, says: Fair crops, that of Jargonelle good, some of the perry varieties are bearing well in the orchards, and a considerable quantity of perry will be made in this district.

Hampshire.—Crop generally poor.

Mr. W. Smythe, Basing Park, remarks: There is a poor crop on standard trees, but on the walls there is a fair crop, and the trees are very healthy.

Mr. E. Molyneux, Swanmore Park, writes: The crop of pears is very poor. A few sorts, such as Beurre Diel, Williams's Bon Chretien, Louise Bonne of Jersey, and Catillac are the most fruitful of those grown as pyramids. On the walls as cordons and horizontally trained these varieties are fairly well sprinkled with fruit as also are Doyenne d'Eté, Duchesse d'Angouleme, Winter Nelis, Passe Colmar, and Jargonelle. The last named is bearing a good crop as a cordon, but in pyramidal form it is fruitless.

Herefordshire.—Crops much below the average on all sides.

Mr. T. Randall, Holme Lacy, reports: Pears are a specialty here, about eighty varieties being grown. The crop is under the average, but the fruit generally is looking well, Marie Louise, Gansel's Berga mot, Louise Bonne of Jersey, Williams's Bon Chretien, Beurre Clairgeau, and Josephine de Malines.

Hertfordshire.—Partial, and on the whol e not more than one-third of a crop.

Mr. J. Kipling, Knebworth House, Stevenage, writes: There is a very thin crop. On walls Josephine de Malines, Ne Plus Meuris, Vicar of Winkfield have about a third of a crop, and a few orchard standards of inferior kinds are fairly weighted with fruit. A considerable number of our best pears had but few flowers, whilst a few varieties on walls, notably Marie Louise, bloomed profusely, but, although the flowers were apparently perfect, failed to set any fruit.

Mr. Sawford, Danesbury, Welwyn, describes the crop as the worst he has known for several years.

Mr. E. Hill, Tring Park, says: Almost a failure here. We have a light crop of Williams's Bon Chretien, Bergamotte d'Esperen, Winter Nelis, and a few other varieties.

Mr. T. F. Rivers, Sawbridgeworth, writes: Williams's Bon Chretien is the only variety bearing a crop worth noticing. Pear trees grown in pots, and sheltered in a cold house during the blooming season, are now outside and bearing heavy crops of clean fruit.

Huntingdonshire.—Crop very light in all districts.

Mr. T. Filbrook, Houghton, remarks: Not half a crop; Marie Louise d'Uccle, and Pitmaston Duchess are the best I have.

Kent.—Crop so light as to closely approach a complete failure.

Mr. F. Dewsberry, Cobham Hall, Gravesend, says: A failure except on walls, and there the crop is very light. The best are Marie Louise, Louise Bonne of Jersey, and Glou Morceau.

Mr. G. Woodward, Barham Court, Maidstone, observes: Crop much under the average. It is worthy of note that here the trees on the pear stock have not a fruit, but those upon the quince are bearing a few fruits.

Mr. George Bunyard, The Old Nurseries, Maidstone, writes: Pears are a complete failure here. The only sorts bearing with us are Beurre Diel and Durondeau. In my opinion the winter was so mild that the trees did not properly go to rest; even pot trees dropped their fruits, and the first of March froze all the early bloom.

King's County.—Variable, and probably not half a crop.

Lancashire.—More or less unsatisfactory throughout the county.

Leicestershire.—Crop very light in all districts,

Mr. Maynard, Cole Orton Hall, remarks: Pears are nearly a failure. The best crops are those of Beurre Diel, Louise Bonne of Jersey, Doyenne d'Ete on walls; and Williams's Bon Chretien and Beurre de Capiaumont as pyramids.

Lincolnshire.—Partial and generally very little fruit.

Mr. W. Ingram, Belvoir Castle, says: There are more failures in the fruiting of pears this season than ever I remember. The few productive trees are on walls, and include Poire Peche, Bergamotte d'Automne, Citron des Carmes, Soldat d'Esperen, Doyenne d'Ete, Huyshe's Victoria, and Easter Beurre.

Londonderry.—A moderately good crop, especially on walls.

Mr. H. Carter, Downhill Castle, reports: This crop seldom fails in these gardens, and this year is no exception to the rule. The following varieties are all carrying good crops, Doyenne d'Ete, Jargonelle (very heavy), Fondante d'Automne, Williams's Bon Chretien, Louise Bonne of Jersey, Baronne de Melo, Marie Louise (always good and clean), Comte de Lamy, Beurre Giffard, Hacon's Incomparable, Winter Nelis, Beurre Superfin, Fertility, Winter Bergamot, Eastern Beurre, and Josephine de Malines.

Longford.—A moderate crop in some districts, poor in others.

Midlothian.—A good crop in all districts.

Mr. W. Smith, Oxenford Castle, reports: The following varieties on walls are bearing good crops, Beurre d'Aremberg, Crassane, Marie Louise, Glou Morceau, Louise Bonne of Jersey, Fondante d' Automne, Easter Beurre, Beurre Bosc, and Beurre d'Amanlis.

Mr. M. Dunn, Dalkeith Gardens, writes: Pears are generally a fair crop, although among them such free bearing orchard varieties as Hessle, Lammas, and Magpie are bearing very light crops. The best crops are borne by Beurre d' Amanlis, Hacon's Incomparable, both with heavy crops on standards, Marie Louise, Louise Bonne of Jersey, Williams's Bon Chretien, Doyenne du Comice, Thomson's, Beurre d' Aremberg, Beurre Diel, Glou Morceau, Doyenne d'Ete, Catillac, Fertility, Beurre de Capiaumont, Colmar d'Ete, Red Doyenne, Souvenir du Congres, and Black Achan. The fruit is clean and well-grown so far, but will require a fine autumn to bring it to good perfection.

Middlesex.—Crop generally very poor.

Mr. G. Wythes, Syon House, states: Pears are worse if possible than apples, there are dozens of trees in a very small space without a fruit of any kind. I do not remember such a general failure of this useful fruit; as we generally get a few trees that bear well under the most adverse circumstances, but such is not the case this season. The only trees bearing, of a large number, and many of them in favoured positions on walls, are those of Passe Colmar, the best; a few Glou Morceau, Duchesse d'Angouleme, Beurre Diel, and Winter Nelis. All the pyramids are bare, and the trees are making an extraordinary growth of soft wood, which will require a favourable autumn to ensure next season a supply of fruit buds.

Mr. T. Anderson, Laleham House, Staines, remarks: We have an average crop on walls, but few on pyramids and orchard standards. The best crops are those of Beurre Capiaumont, Beurre Diel, Beurre Rance, Beurre Bosc, Conseiller de la Cour, Glou Morceau, Chaumontel, Winter Nelis, Catillac, and Passe Crassane. No Williams's Bon Chretien.

Monmouthshire.—Much under the average.

Nairn.—Crop very light on all sides.

Norfolk.—A comparative failure throughout the county.

Northamptonshire.—Variable and, on the whole, light.

Mr. E. Cole, Althorp Park, writes: On wall trees there is a fairly good crop of fruit. Althorp Crassanc, Bergamotte d'Esperen, Beurre Diel, Beurre Clairgeau, Beurre Sterckmans, Easter Beurre, Ne Plus Meuris, Passe Colmar are bearing an excellent crop on walls. The most productive varieties grown as pyramids are Bergamotte d'Esperen, Beurre Clairgeau, Comte de Lamy, Huyshe's Prince of Wales, Louise Bonne of Jersey, and Williams's Bon Chretien.

Northumberland.—A very light crop on all sides.

Mr. G. Harris, Alnwick Castle, observes: Pears less plentiful than usual. Those having a crop are Jargonelle, Louise Bonne of Jersey, Beurre Superfin, Glou Morceau, Hacon's Incomparable, Beurre Diel, and Easter Beurre, with a sprinkling on others. Frost destroyed the bloom.

Nottinghamshire.—A partial failure on all sides.
Oxfordshire.—Much below the average.
Pembrokeshire.—Under average generally.
Perthshire.—Variable; good crops in some places, light in others.
Renfrewshire.—A good crop in most districts.
Rutland.—Below the average, wall trees being the most productive.
Scilly.—An average crop.
Shropshire.—A moderately good crop in many places, but on the whole below the average.

Mr. J. Lambert, Onslow Park, Shrewsbury, reports: Fair crops on walls; very thin on orchard trees. Aston Town and Williams's Bon Chretien are the two best in the open; Vicar of Winkfield, Brown Beurre, Beurre Bosc, Bellisime d'Hiver, and Madame Treyve are the best on walls.

Staffordshire.—Variable, but in many cases nearly or quite an average crop is reported.
Stirlingshire.—A fairly good crop generally.
Suffolk.—Crop light on all sides.

Mr. G. Palmer, Drinkstone Park, remarks: Almost a failure. Marie Louise, Josephine de Malines, Ne Plus Meuris, are, however, exceptions. There was a great deal of bloom on most of the trees during July. Foliage and growths clean and healthy.

Mr. J. Wallis, Orwell Park, Ipswich, says: The lightest crop we have had for some years, and without any distinction as to kinds.

Surrey.—Crop very light in most districts.

Mr. J. G. Dean, Titsey Gardens, Limpsfield, reports: On walls some few kinds have a good crop, such as Louise Bonne of Jersey, Doyenne du Comice, Marie Louise, Easter Beurre, and Vicar of Winkfield. The same kinds in orchard are a failure; also Beurre d'Amanlis. Winter Nelis, which generally does well here on the chalk, has not a fruit upon it this season. Knight's Monarch, too, generally does well here on the chalk; the fruit comes rather small, but ripens beautifully, far better than upon a west wall, where the fruit grows twice the size, but does not ripen well. I have given it heat to try to bring it to perfection; this, I find, causes the fruit to shrivel. All the pears produced plenty of bloom, but the frosts in March and April, combined with the low temperature of May, are, in my opinion, the cause of our unsatisfactory pear crop.

Sussex.—Crop very poor on all sides.

Mr. J. Rust, Eridge Castle, observes: Pears not average crop. The best on our stiff soil are on the quince stock. The old Jargonelle has set splendidly against a wall.

Sutherlandshire.—Crop light, and the fruit poor.
Warwickshire.—A moderate crop in most districts.
Waterford.—A good average crop in most places.
West Lothian.—A comparative failure.
Westmeath.—Crop moderately good in many districts.
Westmoreland.—Variable, and generally light.

Mr. F. Clarke, Lowther Castle, says: On walls early sorts are an average crop, while late kinds are very thin indeed. Standards in open are a failure.

Wicklow.—Crop light in most districts.
Wigtonshire.—Fairly good in many districts.

Mr. J. Day, Galloway House, writes: Pears throughout are very good, better than for several years past, and the following sorts are carrying heavy crops: Marie Louise, Beurre Diel, Beurre Rance, Williams's Bon Chretien, Ne Plus Meuris, Louise Bonne of Jersey, Monarch, Fertility, Jersey Gratioli, and Pitmaston Duchess.

Wiltshire.—Variable, and on the whole, light.

Mr. H. W. Ward, Longford Castle, remarks: Marie Louise, Glou Morceau, Josephine de Malines, Citron de Carmes (on walls), Beurre Gris, Ne Plus Meuris, and Beurre de Capiaumont on standards are fairly well cropped. But taken on the whole, the pear crop for 1890 is decidedly a scanty one. The trees, however, are, as might be expected in these circumstances, vigorous and healthy.

Mr. C. Warden, Clarendon Park, reports: Pears are far less abundant than apples and are far below an average, although a few kinds are bearing well, amongst which may be mentioned Marie Louise, Doyenne Boussoch, Beurre Clairgeau, Glou Morceau, Knight's Monarch, Flemish Beauty, Trout, Nelis d'Hiver, Beurre Bosc, Gratioli of Jersey, Uvedale's St. Germain, and Catillac.

Worcestershire.—Much below the average all round.

Mr. W. Crump, Madresfield Court, reports: About half a crop, and trees healthy. Doyenne du Comice, Louise Bonne of Jersey, Gratioli, Williams's Bon Chretien, Bergamot d'Esperen, Beurre Clairgeau, and Pitmaston Duchess are carrying good proportions of clean fruit.

Yorkshire.—Here and there good, but on the whole considerably below the average.

Mr. J. B. Riddell, Castle Howard, writes: Pears are promising; a fairly good crop upon both walls and bush trees. The following varieties are carrying heavy crops, viz., Beurre de Capiaumont, Beurre Diel, Jargonelle, Louise Bonne of Jersey, Marie Louise, Napoleon, and Williams's Bon Chretien. In low districts where they were loaded with fruit last year they are almost a failure this.

Mr. W. Culverwell, Thorpe Perrow, Bedale, remarks: Moderate in the open; on the walls good in many places. Bloom was good, but was destroyed by frost.

The Potato Crop is so healthy and promising over large tracts of country, that although in many places disease prevails, and is extending, the prospect is not seriously discouraging. In the West and South of Ireland it appears to have become general, and a cause of increasing anxiety to governing powers, as well as to the classes that will be burdened with increased rates in the event of the occurrence of famine. We fully expect that in England and Scotland heavy and healthy crops will be lifted in the districts that are especially favourable to this crop, our latest reports being generally cheerful in tone; at the same time it must be owned that a sense of security does not anywhere prevail, for the simple reason that the weather has been and continues unfavourable. To all concerned we feel bound to repeat the advice we have often given, to the effect that when there is established a crop that will pay for lifting, it should be secured without waiting for it to ripen. Experience proves this to be the prudent course, for every day the tubers remain in the ground they are in danger, and as to being unripe, they will ripen perfectly after they are stored.

Exhibitions and Meetings.

FARINGDON HORTICULTURAL SOCIETY, August 14.

Faringdon is a place of considerable importance historically considered, being, in a sense, surrounded by archæological objects, and in itself a most interesting locality. There is, for instance, Badbury Hill, a large earthwork, said to be Danish, but more probably British. The famous chalk range five miles southwards, affords not only extensive views, but a succession of relics of ancient days. Along the top runs the old British road, Ickleton Street, here called the Ridge Way. There are vast encampments or earthworks, several barrows, and some Druidical remains. There is Wayland Smith's Cave, the White Horse, the Blowing Stone, and Uffington Castle. There was a castle at Faringdon in the reign of Stephen, and previous to that period a royal palace. The town claims to have been one of the very few places which successfully resisted the prowess of Cromwell. Faringdon House was garrisoned by the royal troops, and in one of the skirmishes the church steeple was battered down. The church is large, barring some embellishments that do not embellish it, a handsome structure, and contains not a few interesting monuments.

Faringdon House (the residence of Mrs. Bennett) is an imposing mansion, built by one of the Pyes, to whom the manor belonged. It is approached by a long carriage way next the church, and has well-appointed lawns and terraced gardens, the north lawn possessing very large cedars and other ornamental trees. The place abounds in giant trees, which are elms and chestnuts near the mansion, but at the lower end of the park, a mile or so distant, a goodly quantity of oak timber may be found. The grounds are several hundred acres in extent, the northern boundary approaching the water meadows through which the infant Thames winds his wandering way. When you reach the boundary you are near the famous Radcot Bridge, the scene of a skirmish, when the Parliament troops under Cromwell captured two hundred prisoners.

From the upper portion of the grounds of Faringdon House a wide stretch of country lays open to view: on the near left is Buscot with its densely-timbered park; right in front in the far north is Leafield and the site of Wychwood Forest; while to the far-reaching right stands Cumnor Hurst, the vale of the Thames being marked by a narrow line of willows. It was here, then, in this lovely spot that the Faringdon Horticultural Society held its annual August show.

Three large tents were but sufficient to stage the products entered in competition. The schedule provided ninety classes in three divisions; in the open classes there were some choice exhibits of

Plants.—For a group arranged on twelve feet by six feet the best effect was produced by Mr. Martin, gardener to W. West, Esq., Barcot House, who had a grand Dracæna Youngi for a centre, backed and flanked by tall growths of Agapanthus umbellatus, Hyacinthus candicans, coleus, hydrangeas, cocos palms, celosias, lilies, begonias, &c.; Mr. S. Haines, gardener to Hon. D. P. Bouverie, Coleshill, was second, his arrangement being light and lively, the centre of tall spikes of Allamanda Hendersoni, Hyacinthus candicans, Campanula pyramidalis (blue and white forms), fuchsias, coleus, gloxinias, carnations, begonias, caladiums, Cyperus variegatus, &c.; Mr. George Jacob, Witney, third, with feathery palms, small crotons, alocasias, pandanads, variegated pine apple, variegated acer, coleus, geraniums, lilies, ferns, caladiums, and charming bits of Oncidium flexuosum, O. Forbesi, O. papilio, Cattleya Gaskelliana, C. Harrisoni, and Odontoglossum Harryanum, a nice collection but a trifle crowded.

For twelve plants Mr. Martin led with sturdy examples of Anthurium Scherzerianum, A. crystallinum, Croton majesticum, C. variegatum, Cissus discolor, Dracæna Lindeni, D. gloriosa, Caladium Chantini, Maranta zebrina, Asparagus plumosus, Kentia Fosteriana and Livistonia sinensis; Mr. G. Jacob, second, with smaller but fresh specimens of Dracæna Veitchi, Croton Warreni, C. Weismanni, C. Queen Victoria, Araucaria excelsa, Plumbago capensis, Areca lutescens, Clerodendron Balfouriana, Kentia Fosteriana, Cycas revoluta, and Latania borbonica.

Cockscombs were very fine. Mr. Lodge, gardener to Sir James Bacon, Compton Beauchamp, first, with combs twenty-two inches by five inches wide, but the foliage was indifferent; Mr. G. Jacob, second, with very fine-grown plants of full exhibition quality.

Exotic Ferns, as shown by Mr. Martin, were elephantine in size and in good condition, the varieties being Microlepia hirta cristata, Davallia Mooreana, D. fijiensis, D. polyantha, Adiantum Farleyense, and A. concinnum latum; Mr. G. Jacob, second, for bright-looking pieces of Alsophila australis, A. excelsa, Adiantum Farleyense, A. formosum, A. cuneatum, and Asplenium bulbiferum.

Coleus were very nice convex specimens in size, the colours bright and representing popular varieties. Mr. Martin and Mr. S. Haines shared the awards.

Tuberous begonias were generally well-flowered and of good quality, Mr. Martin and Mr. R. Tucker, florist, taking the cards.

Zonal Pelargoniums were dwarf, densely flowered, and represented popular forms of single and double varieties, Messrs. Martin and Haines being awarded the prizes. Fuchsias call for no special remarks; we only wish they did. Query, is the fuchsia passing from the land of love to the chaos of indifference? In the amateur division were many attractive plants, but several of the fuchsias had been lifted from the ground, and so did not represent pot culture, and as no varieties were named we pass them to observe that the premier specimen plant was a nice piece of Hoya carnosa.

Cut Flowers were fairly numerous; those in the first division being roses, dahlias, asters, and miscellaneous perennials, the latter only of special merit, the card for a dozen bunches going to Mr. Lodge, who had gatherings of Agrostemma coronaria, Malva moschata alba, Helianthus multiflorus plenus, Chelone barbata, Campanula carpatica, Anemone Japonica (white), Phlox ovata, and Geum coccineum plenum. Hand bouquets were limited in number, but the best were from Messrs. S. Haines and G. Jacob. The dahlias were mixed (cactus and show), but a very nice stand of cactus forms were awarded a first in the amateur section to J. P. Lockwood, Esq., who had Juarezii, Queen, Constance, Annie Harvy, William Pearce, King of the Cactuses, Picta formosissima, and Mr. Hawkins. The roses in the division were better than in the professional class, but among the several stands that of J. P. Lockwood, Esq., stood first, his premier flowers being Belle Lyonnaise and Ulrich Brunner; Mr. G. W. Habgood, second, the best form being La Rhone, Baron Boncenne, Madame Victor Verdier, and Prince Camille de Rohan. Baskets of garden flowers, bouquets of wild flowers, and collections of grasses were numerous.

Fruit.—This section was scarcely so full as we have seen it. The best collection of six dishes came from Mr. S. Haines, who had peaches, Moor Park apricots, very large figs, Jargonelle pears, and Black Hamburgh grapes; Mr. Lodge taking the second card for clusters of Muscat of Alexandria and Black Hamburgh grapes, light coloured Juneating apples, Violette Hative nectarines, Hale's Early peaches, and a melon, a cross with Hero of Lockinge and Harfield Grove. The best melons (Hero of Lockinge) secured the cards to Mr. S. Haines and Rev. H. Hooper, Great Coxwell. Mr. Keep, gardener to Mr. Bennett, and Mr. S. Haines, presented the finest dishes of peaches; the cards for grapes falling to Mr. Lodge (Muscats), and Mr. Keep (Sweetwater), in the white class; for Hamburghs, Messrs. Haines and Lodge divided the honours. Jargonelle pears, and Early Margaret and Blenheim Orange represent the best types in the apple classes. White Dutch and Raby Castle currants were very fine.

Collections of vegetables filled a large amount of table space, for

Sutton and Sons Prizes, the first card went to Mr. S. Haines, who had dishes of Sutton's Seedling potato, White Gem celery, Perfection tomato, New Red Intermediate carrot (a shade too taper for an intermediate form), Improved Reading onion, and Duke of Albany pea; Mr. Lodge, second, with New Red Intermediate carrot, Favourite cauliflower, Purley Park Hero cucumber, Sutton's Seedling potato, Pragnell's Exhibition beet, and Snowball turnip; Mr. Keep, third, his selection being Ne Plus Ultra pea, Abundance tomato, Satisfaction potato, White Leviathan onion, and Favourite cauliflower. In the society's class, the cards went to Mr. S. Haines, Mr. John Baker, Bampton, and Mr. Keep. The best braces of cucumbers were Tender and True; Mr. Lodge being awarded the premier prize.

Potatos formerly were very numerously exhibited; the cottagers staging a large number of varieties, the list of which has wisely been curtailed. In the amateur section for three dishes, Mr. C. A. Clack had the champion prize for very fine forms of Reading Russet, Windsor Castle, and Sutton's Seedling; G. F. Crowdy, Esq., second, for Myatt's Ashleaf, Improved Magnum Bonum, and Imperator. In the cottagers' class for six dishes, the best collection represented Mr. Bresee, Vicar of Laleham, Adirondack, Myatt's Ashleaf, Reading Russet, and Snowdrop. Nearly five hundred tubers were staged in competition, quality being more to the fore than at some shows of late. The best peas were the Duke of Albany, The Duchess, and Ne Plus Ultra. The best runner beans, Neal's Ne Plus Ultra. The awards in the first and second divisions were made by Mr. J. E. Jefferies, seedsman, Oxford.

CARDIFF HORTICULTURAL SOCIETY.

The second exhibition of this society took place on the 13th of August in the Sophia Gardens, which are separated from the grounds of Cardiff Castle by the river. These grounds are admirably adapted for the purposes of a flower show, there being an abundance of shade and pleasant walks. The day was very fine, there was a large attendance, especially to witness the fireworks in the evening. This was the second exhibition held by the society; it was a great improvement upon the last, and it is worked by an energetic committee of which Messrs. E. C. Blackmore and H. Gillett are the hon. secretaries.

A few of the plant classes were open to all comers, among them one for twelve stove and greenhouse plants in bloom, not less than six varieties. The first prize went to Mr. John Lockyer, Pontypool—this is the fullest address which can be given—who had fresh, clean, well-grown, and flowered specimens of Dipladenia amabilis, Bougainvillea glabra, Allamanda nobilis, Stephanotis floribunda, Ixora Prince of Orange, I. Regina, Eucharis amazonica, Clerodendron Balfourianum, &c.; second, Mr. James Cypher, Cheltenham, who had Bougainvillea glabra, Ixora amabilis, Allamanda grandiflora, some good Ericas, &c. Mr. Cypher had the best eight fine foliaged plants, having Crotons Morti, Thompsoni, and Angustifolius, Latania borbonica, Kentias australis, Forsteriana, and Belmoreana, &c.; second, Mr. A. Pettigrew, Cardiff Castle Gardens, with smaller, but well-grown plants in excellent condition. third, Mr. Clarke, gardener to Colonel E. S. Hill, M. P., Rookwood, Llandaff. Mr. Clarke was first with six fuchsias, large specimens grown with great freedom and finely bloomed; Mr. T. Hilliard, Cardiff, was second. Mr. W. Armytage, gardener to Colonel Page, Llandaff, was first with eight exotic ferns, having well grown plants of Adiantum formosum, A. Farleyense, A. cuneatum, A. tenerum, a golden gymnogramma, &c. Mr. Clarke was second with smaller plants, but a highly creditable lot. There was but one exhibitor of six zonal pelargoniums, Mr. T. Hilliard, who staged well-grown and bloomed examples of some of the older varieties.

In the class for amateurs and gentlemen's gardeners the plants were, in a few instances, of somewhat poor quality. Mr. Pettigrew had the best four foliaged plants; Mr. Clarke was second; the plants medium sized, but in good condition. Mr. C. Waldron, Llandaff, had the best four exotic ferns; Mr. H. M. Thompson, Cardiff, was second. Mr. Joseph Coates, Canton, had the best four tuberous-rooted begonias; small, but good examples. Mr. Clarke was second, and Mr. C. E. Jenkins third. Mr. Waldron had the best four zonal pelargoniums; Mr. Clarke taking second prize. The latter had the best six caladiums; Mr. Jenkins was second. Mr. Clarke also had the best six gloxinias; Mr. Thompson running him very close. Mr. Clarke had the best six table plants; Mr. Pettigrew was second. Messrs. Clarke and Hilliard had the best fuchsias in fours; the prizes awarded in the order of their names. Cut flowers were represented by roses in twenty-fours, equal first prizes being awarded to Mr. Stephen Tresider, Cardiff, and Ralph Crossling, Penarth. Mr. W. Tresider, Cardiff, had the best twelve double dahlias; and Mr. W Gardener was second. Mr. Pettigrew had the best twelve bunches of hardy herbaceous flowers, staging a very fine lot. Mr. J. Woodgate, Canton, was second, and Mr. C. E. Jenkins third. Mr. Pettigrew also had the best collection of exotic flowers, again staging some very fine bunches; Mr. C. E. Jenkins was second, and Mr. Armytage third. A special prize offered by Mr. W. Tresider for six blooms of cactus dahlias was won by Mr. Woodgate.

Wreaths and crosses were a very fine feature, Messrs. Phelps and Co. taking the first prize in each class with examples of superb workmanship; Mr. W. Tresider and Mr. F. Cass taking the second prizes. The latter had the best bouquet for the hand, and Mr. W. Tresider the best bride's bouquet. Bouquets and baskets of wild flowers were also a very good feature.

Fruit.—The best six bunches of grapes, not less than four varieties, came from Mr. T. M. Franklen, who had Black Hamburgh, Muscat of Alexandria, Alicante, and Foster's Seedling. Mr. Pettigrew was second with Black Hamburgh, Alnwick Seedling, Muscat of Alexandria, and Foster's Seedling. Mr. T. M. Franklen had the best three bunches of Black Hamburgh; Mr. H. W. Thompson was second. Mr. Franklen had the best three bunches of Muscat of Alexandria, and Colonel Turbervill was second. Colonel Turbervill had the best three bunches of Alicante, Mr. A. Pettigrew taking second place. Messrs. Franklen and Pettigrew had the best three bunches of Foster's Seedling. There were also classes for single bunches of grapes, for melons shown in pairs and singly, and for six dishes of dessert fruits, Colonel Page being the only competitor. The best six dishes of dessert apples came from Mr. J. A. Corbett; Colonel Page being second, and Mr. A. Pettigrew third. The best six culinary varieties came from Mr. Pettigrew, who had superb examples of Lord Grosvenor, Lord Suffield, Ecklinville, Potts' Seedling, Nelson's Glory, and Emperor Alexander; Mr. H. W. Thompson was second. Mr. Pettigrew had the best dish of Lord Suffield apples, showing very fine fruit; Mr. J. A. Corbett was second. Mr. Pettigrew had the best dish of dessert pears, staging very fine Jargonelle. Plums, peaches, and nectarines were sparingly shown.

In the division for market gardeners and fruiterers, Messrs. Phelps and Co. had the best nine dishes of dessert fruits; and Mr. F. Cass was second. Mr. R. Crossling had the best collection of apples in twenty varieties; Messrs. Phelps and Co. were second.

Vegetables were a good feature; the best collection of nine came from Mr. Genges Shewing, Gabalva; Major Collins being second. Colonel Page had the best collection of six varieties of potatos; Mr. Genges Shewing was a good second. The special prizes offered by Messrs. J. C. Wheeler and Sons, seed merchants, Gloucester, for a basket of salad were won by Mr. J. Woodgate, Colonel Page, and Mr. H. W. Thompson.

The plants shown by cottagers, also cut flowers and vegetables, were numerous and good. One characteristic of Cardiff is the excellent plants seen in the windows of the dwellings of the working classes, and many of these were shown in very fine condition.

The awards were made by Mr. Richard Dean, F.R.H.S., Ealing; Mr. Wattie, Newport; Mr. Battram, late of Cyfarthfa; Mr. Harris, Swansea.

TAUNTON DEAN HORTICULTURAL SOCIETY, August 14.

The twenty-third annual exhibition of this society took place as usual in the Vivary, which is at the end of the principal street, and remarkably well adapted for such an exhibition. The society is managed by a large and good working committee, of which Mr. W. B. Hellard is chairman, and Messrs. Howard Maynard and Alex. Hammett are the hon. secretaries. Of late years this society has grown to great dimensions, and it is now the largest exhibition of the kind held in the West of England. Good prizes are awarded, though it is to be regretted that so few third prizes are awarded, and all classes of subjects are largely and finely represented. Several very large tents are required to take the exhibits, and they are always full to overflowing. A heavy shower fell just as the work of judging commenced, but the weather soon cleared. Fine weather succeeded, and there was a very large attendance to witness the show and the fireworks later in the evening.

Plants are always a leading feature, and the class for twelve in flower brought three collections. On this occasion Mr. G. Lock, gardener to B. W. Cleave, Esq., Crediton, did not exhibit in the plant classes. Mr. James Cypher, Cheltenham, was first with a very fine lot indeed, including Ixoras Duffi, salicifolia (two species rarely seen in any other collection), regina and javanica; Allamandas Hendersoni and nobilis, Clerodendron Balfourianum, Bougainvillea glabra, Statice profusa, and Ericas tricolor coronata, Irbyana, and Austiniana. Second, Mr. J. F. Mould, nurseryman, Pewsey, his leading subjects being Allamanda Hendersoni and Ericas Jacksoni, Obbata purpurea, Eweriana and McNabiana, superb. Mr. W. Rowland, gardener to W. Brock, Esq., Exeter, was a good third. Mr. Cypher also had the best six plants, staging capital examples of Erica tricolor major, E. Fairrieana, E. Turnbullii, Statice profusa, Allamanda nobilis, and Ixora coccinea. Mr. E. Wills, gardener to Mrs. Pearce, Bassett, Southampton, was second, and Mr. F. J. Mould third.

In the amateurs' division Mr. Rowland was first with twelve plants, his leading ones being Bougainvillea glabra, Dipladenia amabilis, Stephanotis floribunda, Allamanda Hendersoni, and Clerodendron Balfourianum, all these being well grown and bloomed. The second prize was withheld. Mr. J. Currey, gardener to Colonel Pepper, Salisbury, had the best six plants, comprising Allamanda cathartica, Erica Eweriana, E. McNabiana, and Cycas revoluta. Mr. Wills was second, staging a fine Eucharis amazonica and a capital Erica obbata. Mr. Wills had the best four plants, Mr. Curry taking second place.

Tuberous-rooted Begonias are finely done at Taunton, large, well grown, and bloomed plants. The best eight came from Mr. W. Bond, gardener to Mrs. Eltham, Timberscombe. Mr. H. Godding, nurseryman, Taunton, on this occasion had to take second place. Mr. W. Bradbeer, gardener to W. B. Hellard, Esq., Taunton, was a good third. In the amateurs' class for six single varieties Mr. Hellard was first with some admirable plants; and Mr. S. Tottle, Taunton, second. Mr. G. Hawkins, gardener to W. H. Fowler, Esq., Trull, was first with six double varieties; Mr. Hellard second.

Orchids were represented by one group of four capital plants from Mr. Cypher. He had Cattleyas crispa and Gaskelliana, Saccolabium Blumei, and Odontoglossum Harryanum. The best newly-introduced flowering plant was Cattleya labiata striata, from Mr. Cypher. The best new foliaged plant was Asparagus scandens dependens, from Mr. W. James, gardener to Mrs. McAlister, Bampton; Mr. Cypher coming second with Gymnogramma schyzophylla glauca.

Zonal Pelargoniums in sixes and double varieties in fours were a good feature, the plants well grown and finely bloomed. Fuchsias were decidedly poor, for Taunton, and cockscombs very good indeed in all the classes. Japan lilies in fours were a good feature. The specimens shown at Taunton are always very good. Gloxinias, petunias, and balsams fairly good. We have seen the finest specimen of achimenes grown staged at Taunton in former years; on this occasion they were not up to the usual mark. There were several classes for specimen plants showing superior cultivation, but not of a nature to call for special remark.

Foliage Plants were as usual very fine, and Mr. Cypher was placed first with a superb eight, consisting of Crotons Sunset, Angustifolium, and Queen Victoria, Cycas revoluta, Latania borbonica, Kentia Forsteriana, and Cordyline indivisa. Mr. Rowland was second with a good lot of plants, but unnamed. Mr. Curry had the best six, represented by capital specimens of Crotons Weismanni, Prince of Wales, and Queen Victoria, Cycas undulata, Kentias Australis and Forsteriana. Mr. Wills was second.

Ferns were a good feature. Mr. W. Lloyd, gardener to Vincent Stuckey, Esq., Langport, was first with a well-grown lot, a fine Davallia Mooreana being conspicuous; and Mr. Wills was second. In the class for six Mr. W. Rowland was first, and Mr. Wills again second. Mr. Huxtable, gardener to F. W. Newton, Esq., Pitminster, was the only exhibitor of eight hardy

ferns, having a well-grown and balanced lot of plants; he also had the best four exotic mosses, Mr. Wills taking second place. Coleus were also shown, the plants well grown but of medium size.

Groups arranged for effect were a good feature, but the narrowness of the tents requires they be somewhat narrow and lengthened. This feature of the exhibition improves year by year. Some excellent artistic effects were arranged. In the open class Mr. Rowland was first, Mr. Wills second, and Mr. Currey third. In the amateurs' division Mr. Currey was first, and Mr. Rowland third, Mr. Wills again being second.

Cut Flowers.—The adverse weather had told somewhat upon a good many of the cut flowers, roses and hollyhocks being much damaged. The best forty-eight single blooms came from Mr. George Prince, Oxford, who had good blooms of Dr. Andry, Souvenir d'Elise Vardon, Duchess of Albany, Devienne Lamy, Alba rosea, Marie Baumann, Alfred Colomb, Grand Mogul, Mrs. John Laing, Xavier Olibo, Comtesse d'Oxford, Marie Rady, Horace Vernet, Catherine Mermet, Grace Darling, &c.; second, Messrs. G. Cooling and Son, Bath. Dr. Budd, Bath, had the best twenty-four varieties, three blooms of each; Mr. George Prince being second. In the amateurs' division, Dr. Budd had the best twenty-four blooms; Mr. Thomas Hobbs, Lower Easton, Bristol, was second. The Rev. F. R. Burnside, Hereford, had the best twelve, staging some fine blooms of teas, and he was also first in the class for twelve teas; Dr. Budd taking the second prize in both instances.

Dahlias were remarkably good in the cases of a few stands, Mr. George Humphries, florist, Chippenham, had the best twelve show varieties; Mr. T. Hobbs being a good second. In the amateurs' class for the same number, Mr. T. Hobbs was first and Mr. J. Newman, Kingswood, second. Mr. Humphries had the best twelve fancy varieties; Mr. J. Nation, Staplegrove, being second. Single dahlias, in bunches of three—too few to be effective—were shown by Messrs. G. Cooling and Son and Mr. A. A. Walters, florist, Bath. Cactus dahlias, also in bunches of three, by Messrs. Humphries and Godding.

Hollyhocks were small, and much stained by the weather. Asters, both quilled and French, poor, as compared with former years; and verbenas rough and weather-stained. Phloxes shown as twelve spikes were good; and so were gladioli in twenty-fours and sixes. Cut flowers of stove and greenhouse plants very fine; and the same can be said of hardy plants. Among the cut flowers were superb trusses of zonal pelargoniums shown by Mr. C. L. Collard, who took the first prizes for twenty-four and twelve.

Table Decorations.—The best table laid for ten persons was set up by Mr. G. Lock, Crediton, and superbly done, too; Mrs. McAlister was second; and Miss Farrant third. The best centrepiece came from Mr. James Cypher; Mr. Lock being second; and Mr. E. J. Hill, Bristol, third. Mr. John Cuff and Miss Poynter, both of Taunton, had the best hand bouquets; those made of wild flowers, also baskets and vases of the same, were a charming feature.

Fruit was very good throughout. Mr. Iggulden, gardener to the Earl of Cork, Marston, had the best ten varieties staged, Madresfield Court and Muscat of Alexandria grapes, Smooth Cayenne pine, Sea Eagle peaches, Lord Napier nectarine, Brown Turkey figs, De Montfort plum, Hemskirk apricot, Jargonelle pears and Blenheim Orange melon; second, Mr. J. Lloyd, Langport, with Madresfield Court and Foster's Seedling grapes, Dymond peaches, Pine Apple nectarine, Goliath plum, Smooth Cayenne pine, figs, &c.; third, Mr. J. Brutton. Mr. Iggulden also had the best six dishes, staging Black Hamburgh grapes, Hero of Lockinge melon, Bellegarde peaches, and Lord Napier nectarine; second, Mr. Daffurn, gardener to D. Cox, Esq., Weston-super-Mare, with a good lot also. Mr. R. Nicholas, gardener to Earl Fortescue, Castle Hill, South Molton, was first with a pineapple, having a Smooth Cayenne.

Grapes were very good. Mr. E. Hill had the best three bunches of Black Hamburgh; Mr. Iggulden being second. Mr. Iggulden was first with Madresfield Court; Mr. Lloyd was second. With Muscat of Alexandria their positions were reversed, Mr. Lloyd having some fine bunches. Mr. G. F. Luttrell had the best other white, staging Buckland Sweetwater; Mr. Iggulden coming second with Foster's Seedling.

Melons were fairly good. Peaches fine. Mr. Daffurn being first with Noblesse, and Mr. Brutton second with Bellegarde. Mr. Huxtable had the best dish of apricots, staging Smith's Early; Mr. Iggulden being second with Moor Park. Mr. J. Brutton had the best nectarines, showing fine Pine Apple; Mr. Daffwin second with Elruge. The best dessert pear was Jargonelle; the best green plums the Gage type; and some good purple varieties were shown. In the class for a dish of cherries, Mr. Nicholas had a dish of his new Castle Hill Seedling, a very fine late black variety, the other being Morello. The leading dessert apples were Irish Peach, Red Astrachan, very fine, Quarrenden, and Beauty of Bath. In the class for culinary apples Lord Suffield was finely shown. Bush fruits were numerous and good.

Vegetables were numerous and very fine, gardeners and cottagers alike showing finely. Potatos superb, though here and there showing traces of disease. Time did not admit of collecting particulars, though the vegetables made a fine exhibition of themselves, and the task of judging was an onerous one. We should like to see the practice of cutting potatos discontinued.

Miscellaneous Collections comprised a large group of plants of various kinds, cut flowers in great variety, including a fine lot of Germania carnations from Messrs. R. Veitch and Son, of Exeter; plants and cut flowers from Mr. J. Jarman, Chard; cut flowers from Mr. R. H. Poynter, Taunton; and a superb collection of forty-eight spikes of gladioli, from Messrs. Kelway and Son, Langport, including some promising seedlings. To three of these certificates of merit were awarded, viz.: Mrs. Fowler, Diducea, and Semolina.

The awards in the plant classes were made by Mr. Thomas Baines and Mr. W. Burton, both of London; and in the cut flower classes by Mr. Richard Dean, Ealing, and the Rev. H. H. D'Ombrain, of Ashford.

CO-OPERATIVE FLOWER SHOW, August 16.

The great Co-operative Flower Show held at the Crystal Palace on the above date, under the auspices of the Agricultural and Horticultural Association, was in every way a splendid success, and did honour to all concerned. As at the previous gatherings of the same kind the productions for which provisions were made in the comprehensive schedule were staged in immense quantities, the quality was high throughout, and the arrangements were remarkable for their completeness. Instituted five years since by Mr. E. O. Greening, these shows have made rapid and continuous progress, their development during the past three years being such as to surprise even the most sanguine of the promoters.

At the first of these shows held at the Crystal Palace in 1888, there were 3,000 entries, in 1889 the entries had increased to 4,191, and this year they numbered 4,546. Still more remarkable than the increase in the number of entries has been the improvement in the quality of the productions, there being a marked advance in all the sections, and the best possible proof afforded of the good work that is being done in bringing the members of the several societies into friendly rivalry. The great feature of the display was formed by the contributions from the gardens of working men who are members of co-operative societies. From cultivators of this class there were 3,390 entries, or about 75 per cent. of the total number. Of these 1,777 are entries of vegetables, 1,296 of flowers, 209 of fruit, and 101 miscellaneous exhibits. As indicating the relative popularity of the several classes of vegetables shown by artizans, it may be mentioned that there were 321 entries in the several classes for potatos, 254 entries of peas, 256 of onions, shallots, and leeks, 82 of beet, 60 of cabbages, 77 of carrots, 23 of cauliflowers, 60 of cucumbers, 81 of lettuces, 39 of parsnips, 71 of radishes, 42 of tomatos, 90 of turnips, 84 of vegetable marrows, and 57 of collections of six kinds each. In the section in which gardeners were allowed to compete, there were 559 entries of vegetables, 216 of cut flowers, 114 of fruit, and 50 of plants.

The classes for collections in the division in which gardeners were allowed to compete were especially well filled, and chief among the successful competitors were Mr. J. Martin, Bedminster; Mr. C. J. Waite, gardener to Colonel Talbot, Glenhurst, Esher; Mr. T. A. Beckett, and Mr. J. Mossman, gardener to G. D. Pollock, Esq. Mr. J. Molton, Oxford, and Mr. Beckett occupied a leading position in the class for runner beans with Champion and Giant White respectively. Mr. J. Molton and Mr. J. Mossman were first and second respectively for French beans, both staging Canadian Wonder. Mr. C. Osman, Sutton, Surrey, and Mr. W. C. Dance, Halstead, were first and second for long pod beans with Monarch long pod in excellent condition. Broad beans had a special class provided for them, and as the result the Windsor, now so seldom seen at exhibitions, was well represented. Mr. Mossman was a capital first. Especially good were entries of beet, and Mr. C. Osman, Mr. T. Everitt, gardener to Rev. E. Barton, and Mr. Beckett were the prize takers, the most popular variety being Pragnell's Exhibition. Carrots were presented in capital condition, and Mr. Beckett and Mr. J. Molton were first and second for short kinds, and Mr. A. J. Mackay and Mr. Waite occupied similar positions in the class for long carrots, both staging the New Red Intermediate. Turning to the cauliflowers, we find Mr. Waite first with fine heads of Dwarf Mammoth. The exhibitor last named had the premier award made in his favour in one of the class for red celery, and in the other Mr. Mossman and Mr. Osman were first and second respectively. In the two classes for red celery the most successful exhibitors were Mr. J. Martin, who had Giant White in excellent condition, and Mr. Mossman, who staged remarkably good examples of Sandringham Dwarf White. There were two classes for cucumbers, and in one the first prize was awarded to Mr. G. Martin; and in the other Mr. Beckett occupied the post of honour. Telegraph was shown by the majority of the exhibitors. Mr. Waite was first in each of the two classes for peas, staging Exhibition Marrow in one and Stratagem in the other. In the classes for lettuces and onions the principal awards were made in favour of Mr. Beckett, Mr. O. Goldsmith, gardener to Sir W. Farquhar, Bart., Mr. Waite, and Mr. Martin. Potatos were of great excellence, and the first prize was awarded to Mr. Beckett for remarkably good examples of Clipper, Lady Truscott, Regent, Prolific, Satisfaction, and Snowflake; Mr. W. Cousens was a close second. For a dish of white kidneys Mr. Martin was first with Satisfaction, and Mr. O. Goldsmith second with Reading Giant; Mr. T. Holton obtained premier honours in the class for coloured kidneys, with Edgcote Seedling; and Mr. Beckett was second. In competition for the prizes for a dish of white rounds, Mr. Martin obtained premier honours for Sutton's Seedling, and Mr. O. Goldsmith was second with Satisfaction. In the corresponding class for red rounds Mr. Beckett occupied the post of honour. There was a keen contest for the prizes for salads, and in the result Mr. Beckett and Mr. Waite were first and second respectively.

The most important of the several classes for fruit was that for a collection of six kinds, and here Mr. Waite obtained premier honours with Gros Maroc and Foster's Seedling grapes, Princess of Wales peaches, Pine Apple nectarines, and Morello cherries in exceptionally good condition. Mr. L. Budworth, gardener to C. Hill, Esq., was second with a collection remarkable for the high quality of the grapes. For four dishes Mr. G. Martin was first. Mr. Mossman and Mr. Dance were first and second respectively in each of the two classes for apples. Mr. Goldsmith had the best dish of Morello cherries. Mr. Waite obtained premier honours in the class for black grapes with good clusters of Gros Maroc, and in the class for white grapes Mr. Mossman and Mr. J. Collins were awarded equal firsts, both staging Muscat of Alexandria. For a dish of peaches, Mr. Waite was first with Princess of Wales, and in the corresponding class for nectarines Mr. Dance was first with Lord Napier. Mr. Dance and Mr. Mossman were the most successful exhibitors in the class for plums. Mr. Dance obtained first place for a melon with Hero of Lockinge, and Mr. Martin was second with Gilbert's Queen.

With reference to the productions staged by the artisans, it must be said that they were all more or less good, and the vegetables compared favourably with similar kinds shown in the classes open to gardeners. In addition to the flower show, there was a honey fair and an exhibition of various manufactures, the productions of co-operative societies.

SHREWSBURY FLOWER SHOW, August 20 and 21.

The great gathering of horticulturists in the Quarry, Shrewsbury, on Wednesday and Thursday, if it did not surpass those previously held in that historic park, proved so brilliant a success as to materially enhance the high reputation enjoyed by the Shropshire Horticultural Society for the excellence of its exhibitions and the ability brought to bear upon the management of its affairs. The exhibitions of this society have more than an ordinary degree of interest, for they prove to demonstration that the production of specimen plants has not, as we are frequently told, become a lost art in this country, and that flower shows can be made to pay. As in previous years, specimen stove and greenhouse plants, in bloom, and remarkable for the beauty of their foliage, were presented in a manner that has not been surpassed even at great exhibitions held early in the year, and in numbers sufficient to nearly fill a tent some three hundred feet in length, by about forty feet in width. Fruit was remarkable both for the quantities staged and the high quality of the whole of the entries; and of cut flowers and vegetables there were immense displays. As regards the possibility of making flower shows pay, it is evident that no difficulty is experienced in this matter at Shrewsbury. For many years past the visitors on the two days have ranged from forty to fifty thousand, and they poured into the grounds in such large numbers immediately on the gates being opened at noon on Wednesday, as to clearly indicate that there is no decline in the popularity of these gatherings. In addition to the displays of plants, flowers and fruits, and vegetables within the tents, a continuous

round of entertainments was provided outside on each day, and included a balloon ascent and a display of fireworks. The musical arrangements were, as usual, on a liberal scale, the bands engaged including those of the Horse Guards, the Grenadier Guards, and the Shropshire Yeomanry Cavalry. To speak too highly of the manner in which the various arrangements were carried out by Mr. H. W. Adnitt and Mr. W. W. Naunton, the honorary secretaries, would be a matter of some difficulty, so ably were their duties performed. It may, however, be mentioned, as a matter of some interest, that everything was ready for the judges at ten o'clock, and that when the gates were opened at noon, the visitors found the awards made, and the prize cards attached to the contributions that had been successful in obtaining a place.

Stove and Greenhouse Plants, for which liberal provisions had been made in the schedule, were contributed in such large numbers and magnificent condition as to produce an extremely beautiful display, and form a feature of great importance. The most important of the several classes was that for twenty specimens, to include not less than ten in bloom, in which the prizes were £25, £20, and £15 respectively. The class was well filled, and the premier award of £25 was made in favour of Mr. W. Finch, gardener to J. Marriott, Esq., Queen's Road, Coventry, whose collection was unquestionably the finest of its kind that has been presented to public notice during the current year. The whole of the plants were of immense size, and splendidly developed, and arranged with much taste, they produced an effect that will not be readily effaced from the memory of horticulturists who had an opportunity of seeing them. Prominent in the collection were Ixora Duffi, the finest of all the ixoras when caught at its best, as on this occasion, the specimen having over twenty trusses averaging twelve inches in diameter; I. Griffithi, bearing upwards of 200 trusses of its brilliantly-coloured flowers; I. Fraseri, not less remarkable in its way; Lapageria rosea, about seven feet in height, and five feet in diameter, and bearing many hundreds of flowers, the latter being very high in colour, the result of keeping the plant in a cold house several months preceding the date of the exhibition; Stephanotis floribunda, large in size and well nigh solid with its snowy white and delightfully fragrant flowers; Dipladenia amabilis, exceptionally well bloomed; and Allamanda Hendersoni, liberally furnished with its golden yellow flowers. The remaining flowering plants were Erica Marnockiana, E. Irbyana, E. jasminiflora alba, Miltonia spectabilis, Rondoletia speciosa, and Phœnocoma prolifera, all of which were remarkably good. The plants with ornamental leafage were Croton Montfortensis, C. angustifolium, and Croton Warreni, all of which were splendidly coloured; Cycas circinalis, Latania borbonica, Kentia Fosteriana, and Kentia Australis. Mr. J. Cypher, Cheltenham, was second, with excellent specimens of medium size. The most noteworthy of the plants in bloom were Bougainvillea glabra, Erica tricolor, E. Austiniana, Pancratium fragrans, Allamanda grandiflora, Ixora Pilgrimi, and Statice profusa. The principal plants grown for the beauty of their leafage were Croton Queen Victoria, C. angustifolium, C. Neumanni, and C. Sunset, all of which had their leaf tints highly developed. Mr. J. F. Mould, Pewsey, Wilts, was third, with a collection in which the brightly-coloured Erica Eweriana superba was represented at its best. The competition was very close in the open class for six plants in bloom, and here Mr. W. Finch was again first, with specimens remarkable for their size and finish. These comprised Dipladenia amabilis, Erica Eweriana, E. Marnockiana, E. Thompsoni, Ixora amabilis, with over 200 trusses, and I. coccinea superba, especially well flowered. Mr. J. Cypher was a close second, having especially good specimens of Francisca calycina major, Allamanda nobilis, and Ixora Javanica. Mr. J. F. Mould was third. There was a brisk contest in the class for nine flowering and ornamental leaved plants, and Mr. J. Farrant, gardener to Mrs. Insor, Abbey Foregate, Shrewsbury, and Mr. C. Flack, Malpas, were first and second respectively. For six Mr. Farrant was first and third, and Mr. Pearson was second.

There was a keen competition for the prizes for plants with ornamental leafage, and in the class for six coleus Mr. A. Myers, Sutton Lane, Shrewsbury; Mr. J. Baylis, gardener to Dr. Burd, Newport House, Shrewsbury; and Mr. Walford, College Hill, were first, second, and third, respectively, with neat and effectually coloured specimens. Dracænas were of exceptional excellence, and in the class set apart for them, Mr. J. Lambert, gardener to Colonel Wingfield, Onslow Hall, Shrewsbury, was first and second, his finest specimens being those of D. Anerleyense and D. Elizabethæ. Mr. C. Cadie, gardener to T. Kynnersley, Esq., Leighton Hall, was third with well coloured examples. The most successful exhibitor of caladiums was Mr. Farrant, who was successful in taking the first and second awards.

Ferns were strongly represented and constituted a very pleasing feature. In the open class for six Mr. J. Lambert worthily occupied the post of honour with finely-developed specimens of Cicrolepia hirta cristata, Asplenium nidus avis, Davallia Mooreana, Cyathea dealbata, and other well-known kinds. Mr. Lambert was first also in the limited class for six with a capital group in which Adiantum concinnum latum, A. Bausei, and Davallia Mooreana were particularly good. In the amateurs' class for four ferns the most successful of the exhibitors were Mr. G. Burr, who was first and second, and Mr. E. George who was third.

Softwooded Plants grown for their flowers were all more or less good, and produced a bright display of colour. Mr. H. Owen, The Cedars, Shrewsbury, was a capital first in the class for six tuberous begonias, the plants large, fresh, and well flowered; Mr. C. Myers followed closely for second place, and Mr. Oakley, gardener to Rev. J. Charter, Severn Villa, Shrewsbury, was a good third. Zonal pelargoniums were of exceptional excellence, the specimens of medium size, perfect in contour, and admirably flowered. Mrs. Burd, Mayfield, Mr. A. Myers, and Mr. H. Owen were the prizetakers for six double varieties with closely matched collections. For six single zonals Mr. A. Myers and Mr. H. Owen were first and second respectively. Mrs. Burd and Mr. Owen were the most successful of the exhibitors in the amateurs' classes for zonal pelargoniums and had specimens in every way equal to those contributed to the open classes. Gloxinias were admirably shown by Mr. W. J. Wyley, Council House, Shrewsbury, and Mr. R. Taylor, and good achimenes were contributed by Mr. Owen and Mr. Taylor. In competition for the prizes for six fuchsias Mr. G. Phillips and Mr. J. Bayliss were first and second, and in the class for three Mrs. Wace and Mr. R. Taylor were the most successful exhibitors.

Collections of Plants contributed their full share to the interest of the gathering. Mr. Phillips, gardener to the Hon. W. H. Herbert, Prestfield, was first for fifty, and Mr. R. B. Phillips and Mr. A. Jones were second and third. Mrs. Wace obtained premier honours in the class for twenty-five. The principal awards for dinner-table plants, which were admirably shown, were made in favour of Mr. J. Lambert and Mr. Farrant.

Fruit was shown in immense quantities and excellent condition, and obtained a full share of attention from the visitors. There were two competitors in the great class for twelve dishes of fruit, and here Mr. Dawes, gardener to the Hon. Mrs. Ingram, Temple Newsam, Leeds, surpassed himself by staging one of the best collections that has yet been placed upon the exhibition stage. The collection comprised Bowood Muscat, Buckland Sweetwater, Barbarossa, and Black Hamburgh grapes, the bunches large in size and finely coloured; excellent Royal George peaches, Lord Napier nectarines, Roman apricot, Transparent Gage plums, Brown Turkey figs, a good Queen pine, and a well-ripened melon; Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, was second with an excellent collection, particularly good being Foster's Seedling, Black Hamburgh, and Muscat of Alexandria grapes, Barrington peaches, and Lord Napier nectarines. The entries were numerous in the class for nine dishes, and here Mr. Lambert was first with large, splendidly-finished clusters of Muscat of Alexandria and Black Hamburgh grapes, and good examples of Rivers's Orange nectarines, Bellegarde peaches, Brown Turkey figs, Roman apricots, Kirke's plums, Morello cherries, and a good melon; Mr. C. A. Pearce, gardener to S. K. Mainwaring, Esq., Oteley, Ellesmere, was a good second with fine clusters of Gros Maroc, and Mr. S. Bremmell, gardener to H. F. Hayhurst, Esq., Wellington, third.

The grape classes were all well filled as proved by the fact that over two hundred bunches were staged. There was a keen competition in the class for six bunches of black grapes in three varieties, and the post of honour was occupied by Mr. J. H. Goodacre, with huge superbly finished clusters of Black Hamburgh, Muscat Hamburgh and Gros Maroc, Mr. G. Barker, gardener to G. Hayes, Esq., Rock Ferry, was a good second with Madresfield Court and Alicante in excellent condition. Mr. J. Bennett, gardener to Hon. C. H. Wynn, Rûg, Corwen, was third, and Mr. Dawes fourth. For three bunches of Black Hamburgh, Mr. G. Langley, gardener to Rev. T. M. Bulkeley Owen, Tedsmere Hall, West Felton, was first with clusters remarkable both for their size and deep colour, Mr. S. Bremmell, was a close second, and Mr. J. Bates, gardener to J. H. Harris, Esq., The Hayes, Stone, was a good third. For three bunches of any other black grapes Mr. Pearce was first with superb clusters of Gros Maroc, and Mr. G. Middleton, Rainford Hall, St. Helen's, and Mr. J. Barker were second and third respectively, with finely finished clusters of Madresfield Court. Very keen was the competition for the prizes for four bunches of white grapes, in two varieties, and in the result the premier award was made in favour of Mr. G. Middleton, who had excellent clusters of Muscat of Alexandria and Foster's Seedling; Mr. J. Wallis, gardener to R. Sneyd, Esq., Keele Hall, Staffordshire, was second with Mrs. Pearson and Muscat of Alexandria; Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, was third. There were ten entries in the class for three bunches of Muscat of Alexandria, and the first place was occupied by Mr. G. Middleton, with clusters distinguished alike for their large size and excellent finish; Mr. J. Wallis and Mr. A. McVinish were second and third. The whole of the classes for grapes, in which two bunches had to be shown, were well filled. For two bunches of Muscat of Alexandria Mr. J. Lambert and Mr. Langley were first and second with admirably finished clusters. Mr. Bremmell was first with any other white grape, staging Foster's Seedling in fine condition; and Mr. J. Wilding was second with Trebbiano. Mr. Bremmell and Mr. Langley were first and second for two clusters of Black Hamburgh; and in the corresponding class for any other black grape, Mr. Pearce was first with fine clusters of Gros Maroc.

Both peaches and nectarines were plentiful and good. In competition for Messrs. Wood's prizes for a dish of peaches and a dish of nectarines, Mr. Blair was first with large, richly-coloured fruit of Barrington and Lord Napier, and Mr. J. Wallis was second. For a single dish of peaches, Mr. A. McVinish, gardener to N. C. Curzon, Esq., Derby, was first with Princess of Wales. Mr. J. G. Morris, Allerton Priory, was second with the Nectarine Peach, and Mr. E. Gilman, gardener to the Earl of Shrewsbury, Ingestre Hall, Stafford, was third with Barrington. For a dish of nectarines, Mr. C. Davies, Maidstone, was first with Humboldt, and third with Elruge; and Mr. Gilman was second with Lord Napier. There were over twenty entries in the class for a dish of apricots, and Mr. G. Pearson, gardener to Lord Berwick, Altingham Hall, and Mr. J. Langley were first and second with good fruits of Moor Park. Mr. Davies obtained premier honours in the class for a dish of white or yellow plums with Jefferson, and Mr. W. Palmer, Thames Ditton, was second with the same variety. In the corresponding class for red or purple-yellow plums Mr. C. Davies was again first, staging Kirke's in fine condition. Mr. Blair and Mr. Lambert were second and third with good examples of Victoria. Melons were staged in considerable numbers, and on the whole were fairly good in quality. In the green fleshed class, in which there were eighteen entries, Mr. J. Craven and Mr. Bennett were first and second with Hero of Lockinge, and Mr. J. Wilks was third. In the corresponding class for scarlet-fleshed melons the awards were made in favour of Mr. Langley, Mr. Blair, and Mr. Lambert. There were fifteen dishes of Morello cherries, the best being those from Mr. J. Langley, Mr. McVinish, and Mr. C. Davies, Mote Park, Maidstone. Several good collections of hardy fruits were shown, and the first and second prizes were respectively awarded to Mr. Owen, gardener to Sir R. Sutton, Bart., Combermere Abbey, and Mr. Pearson.

Cut Flowers were not less liberally contributed than was the fruit, and the immense display of carnations, dahlias, gladioli, phloxes, asters, roses, and miscellaneous hardy and other flowers proved highly attractive. The post of honour in the class for twelve bunches of flowers of stove and greenhouse plants was occupied by Mr. Blair, with a collection comprising beautiful bouquets of Cattleya crispa, Odontoglossum crispum, O. Harryanum, O. vexillarium, Oncidium splendidum, and Masdevallia Harryana; Mr. W. Grain, Blakebrook, Kidderminster, was a capital second, and Mr. G. Pearson was a good third. In the corresponding class for hardy flowers, Mr. Langley was first, with an excellent collection in which were beautiful wreaths of the brightly coloured Tropæolum speciosum; the same exhibitor was also second. Mrs. Wace and Mr. G. Burr were successful in taking the first and second places in the class for six bunches of hardy flowers. For twelve spikes of herbaceous phloxes, Messrs. Jones and Sons, Coton Hill Nursery, Shrewsbury, were first with small spikes of high quality, being closely followed by Messrs. Dickson, Chester, for second place. Especially good were the carnations and picotees. Mr. Thompson Helliwell, Stone Villas, Todmorden, was successful in taking both the first and second prizes for twelve carnations, staging finely developed blooms. In the corresponding class for picotees, Mr. R. Sydenham, Bristol Road, Birmingham, occupied the post of honour, with superb blooms, and Mr. T. Helliwell was second and third. Mr. Sydenham was first also for twelve self and fancy carnations, and Mr. T. Helliwell and Mr. W. Adams were second and third.

Vegetables receive liberal encouragement at Shrewsbury, and as the

result they were staged in large quantities and in exceptionally good condition. In the great class for twelve kinds Mr. T. Wilkins, gardener to Lady T. Guest, Inwood House, Hensbridge, was first with one of the best collections that has been placed upon the exhibition stage. It comprised Lyon leek, Pragnell's Exhibition beet, Perfection tomato, Ailsa Craig onion, Mammoth cauliflower, New Red Intermediate carrot, Prodigy pea, Lockie's Perfection cucumber, Satisfaction potato, Giant White celery, Ne Plus Ultra runner bean, and Globe artichokes. The several kinds were of high quality, and arranged on a bed of parsley they presented an attractive appearance. Mr. J. Lambert was an uncomfortably close second, and Mr. H. J. Corfield was third. Mr. Lambert occupied the first place in the class for six kinds with excellent examples of Perfection tomato, Ailsa Craig onion, Ne Plus Ultra runner bean, The Colonel potato, Autumn Giant cauliflower, and Lyon leek. Mr. Corfield was a good second.

The entries were so numerous in the classes for potatos, and the tubers so good throughout, that they constituted a feature of considerable importance. There were nineteen entries in the class for six kinds, and Mr. Lambert was first with exceptionally good tubers of Abundance, Edgcote Purple, Chancellor, The Colonel, Reading Russet, and Renown. The same exhibitor was also second, and Mr. C. J. Waite, Glenhurst, Esher, was third. Mr. Lambert was first and second also in the class for three kinds, staging in his first prize triplet The Colonel, Chancellor, and Vicar of Laleham; and in his second prize lot, Abundance, The Colonel, and Edgcote Purple. Mr. Thurtle, gardener to J. S. Phillips, Esq., The Mount, was third. Mr. Waite obtained premier honours in the class for single dishes of potatos with Satisfaction, and Mr. Lambert was second with Snowdrop. Mr. Langley and Mr. W. H. Jones were first and second for tomatos with good examples of Perfection. Special prizes were offered in this department by Messrs. J. Carter and Co., Messrs. Deverill and Co., Messrs. Sutton and Sons, and Messrs. Webb and Sons.

Miscellaneous Contributions were plentiful, and formed an interesting and attractive part of the show. Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, exhibited a large collection, comprising orchids, pitcher plants, and miscellaneous flowering and ornamental-leaved plants. Especially noteworthy were the sarracenias and nepenthes, and chief amongst the orchids were Lælia elegans prasiata, a beautiful form in the way of Turner's variety, but having larger and more richly coloured flowers, Cypripedium Ashburtoniæ superbum, and C. œnanthum superbum. The miscellaneous objects specially deserving attention comprised Ficus elasticus variegatus, Begonia Louise Closson, and B. Arthur Malet, two charming varieties belonging to the ornamental-leaved section, Bertolonia Souvenir de Gand, and Dracæna indivisa variegata, a distinct variety, with leaves marked with longitudinal golden lines. Messrs. W. and J. Birkenhead, Sale, had a large and thoroughly representative collection of British and exotic ferns. It comprised about three hundred species and varieties, and gave the visitors an opportunity of making the acquaintance of a large number of exquisitely beautiful ferns that are seldom met with in private collections or on the exhibition stage. Messrs. R. Smith and Co., Worcester; Messrs. Dickson, Chester; and Messrs. Pritchard and Son, Shrewsbury, exhibited collections of flowering and fine foliage plants; Messrs. Jones and Son, Shrewsbury, had a beautiful collection of floral arrangements; Messrs. H. Cannell and Sons, Swanley, exhibited collections of cut flowers of begonias and zonal pelargoniums; Messrs. J. Laing and Sons, Forest Hill, and Mr. J. E. Murrell, Shrewsbury, sent groups of begonias; Mr. Myers had a group of plants; Mr. Davis, Yeovil, sent large gatherings of begonias. The English Fruit and Rose Company, Hereford, presented several boxes of roses. Mr. Lister, Rothesay, exhibited a large collection of fancy and show pansies, and Mr. H. Eckford, Wem, Shropshire, sent a collection of flowers of his new sweet peas, and examples of several of his culinary peas. Mr. Weir, gardener to Sir R. Cunliffe, Bart., Acton Park, Wrexham, exhibited a black grape under the designation of the *Cape Muscat*, which may perhaps be best described as a Black Hamburgh with muscat flavour. No award was made, but the judges regarded it as a variety of considerable promise.

Replies to Queries.

Cuttings of Hollies.—B.: Make the cuttings four inches long; plant in a bed of sandy soil in a frame, which shut down close, and forget all about them.

Strawberries.—Philomelos: The certificate was bestowed on Crescent Seedling because of certain desirable qualities that were brought out by comparison with others in a trial culture that included all the more promising of the early kinds. It proved to be a few days earlier than any other of its class, and that point was considered as of the highest importance. We quite agree with you that Noble is a far nobler thing and more generally useful, but the date of ripening must ever prove a prominent factor in determining the merits of a strawberry, for a gain of a few days in the acquisition of colour may mean to the market grower a gain of hundreds of pounds. The very argument you use in depreciation of Crescent Seedling has been freely used in depreciation of Noble; and it is our duty occasionally to explain that in authoritative decisions on the relative merits of such things all known interests have to be considered.

Preparing for Planting.—Amphlet: You cannot begin too soon to make the ground ready, and in your climate autumn planting will be perfectly safe, and is strongly recommended. Consequently we cannot advise you at this late date to put a green crop of any kind on the ground. Remove the standing crops when mature, and trench the land and leave it rough until time for planting. You would do well to see and select and mark the trees you intend to plant as quickly as possible. In such work there is often hurry at the last moment, and ill-considered things are done that are not easily undone—to make a good beginning is a reasonable step towards making a good ending. We do not recommend traders, but we are bound to say that the men who make fruit trees bring much skill and experience to the business and spare no effort to turn out a creditable article. But methods vary, the manner of production is not everywhere the same, and therefore you will do well to look about and take time to determine the exact course of the business in view.

Names of Plants.—O. K.: 1, Lastrea filix mas; 2, Asplenium obtusatum; 3, Cystopteris bulbifera; 4, Lastrea dilatata; 5, Selaginella Mertensi; 6, Tiger lily.—B. S.: 1, Carpinus betulus; 2, Ruscus racemosus; 3, Spiræa not in flower; 4, Euonymus latifolius; 5, Sedum telephium; 6, shrivelled, but probably Nymphæa alba.—A. B.: 1, Cedrus atlantica; 2, Biota orientalis; 3, Liriodendron tulipifera; 4, an Olea not in flower; 5, Photinia serrulata; 6, Pyrus torminalis.—T. R. Polkington: 1, Blechnum occidentale; 2, Aspidistra lurida variegata, one of the best of window plants; 3, Davallia dissecta; 4, Davallia Nova-Zealandiæ; 5, Francoa appendiculata; 6, A crested Scolopendrium that we cannot name without a well-matured frond. There is no better book for your purpose than Loudon's "Arboretum Britannicum," consisting of four volumes of text and four of plates. It occurs frequently in the booksellers' shops, and is not costly. Although there are later books that of necessity contain later subjects, there is no book so useful for constant reference and consultation.

Coal Ashes.—Rob.: It is common to mix these with heavy soils, and to a certain extent the practice may be sanctioned. But there is so little that is useful to plants in coal ashes that as a fertilising agent there is not much to be said in their recommendation. For road making they have a special value when a sufficient foundation of hard stuff is first provided. Indeed, there needs nothing better for the frame ground in such places as are not commonly seen by visitors; but where appearances are of importance it is an easy matter to cover walks made of coal ashes with a thin skin of gravel. The advantage of thus disposing of them is that a garden will generally take all that are produced, which makes an end of the question of how to get rid of them. When dug into heavy soils they exercise a beneficial influence in promoting porousness and ameliorating the texture, and what little of alkalies they contain is secured for the service of vegetation. But you must not look on coal ashes as having any decisive manurial value, for to do so would be a grave mistake.

Correspondence.

CHANGE OF HABIT IN VEGETABLE MARROWS.

Can any of your readers explain, or give us their experiences, in reference to what is to me a strange "sport" in vegetable marrows?

I have three fine strong-looking plants, which, instead of following the time-honoured custom of their kind, have grown in a sort of pyramidal form, somewhat like a strawberry plant, but without the runners. There is no running out to vine, only a sort of abortive attempt to do so. The foliage is fine and vigorous, as they are in pretty good stuff and are well tended. Of course, the show of fruit is but limited, but what there is seems good. I have had to do with this useful vegetable all my life, but never before saw plants grown like these. It is not due to any peculiarity in planting or treatment, as the nurserymen who sold them to me has some that have come in the same curious way. Is it anything to do with the unusual climatic influences this season? I have others growing in the usual way. Amateur.

[It will be interesting should others of our readers report experiences corresponding with those of "Amateur." Not having seen the plants, we can but vaguely guess that this is a case of fasciation, in which case many stems will be found fused into one, and growth in a great degree arrested in consequence. We remember that, some thirty years since, Messrs. E. G. Henderson, of St. John's Wood, introduced to cultivation a "tree" vegetable marrow, that proved to be of little value, and it may be that this forgotten curiosity has turned up again to plague its possessors.—Ed.]

TRADE CATALOGUES.

T. R. Pearson and Sons, Chilwell Nurseries, Nottingham.—*Dutch bulbs.*

Little and Ballantine, Carlisle.—*Hyacinths, daffodils, tulips, &c.*

W. Clibran and Son, 10, Market Street, Manchester.—*Dutch and Cape bulbs.*

Van Meerbeek, Hillegom, near Haarlem, Holland.—*Dutch bulbs.*

E. H. Krelage and Son, Haarlem, Holland.—*Dutch Flower bulbs.*

John Watkins, Pomona Farm, Withington, Hereford.—*Strawberry plants, cider and perry in casks and bottles.*

William Paul and Sons, Waltham Cross, Herts.—*Bulbs and Winter Flowers.*

William Thomson and Son, Clovenfords, Galashiels.—*List of Orchids, Palms, &c.*

Obituary.

The interment of our deceased friend, Mr. Joseph James, in the elevated and very charming churchyard surrounding the parish church of Farnham Royal, took place on Wednesday afternoon last week. The spot selected for the grave, beneath a lofty elm, also afforded lovely views into Berkshire, including Eton College and Windsor Castle, whilst in the foreground spread out a pleasing view of a fertile portion of Bucks. The funeral cortége, which included a modern glass-covered car containing the coffin of plain varnished oak, covered with beautiful wreaths and crosses, reached the churchyard at 3.15. The mourners included the family of the deceased and numerous friends, and of gardeners and others present were: Mr. Atter, representing Messrs. Sutton and Sons, of Reading; Mr. Arthur Turner, Slough; Mr. Herbst, Richmond; Mr. A. Dean and Mr. W. Carpenter, Bedfont; Mr. Herrin, Dropmore; Mr. Maher, Stoke Court; Mr. Forbes, Burnham Beeches; Mr. Norbury, Brentford. The funeral service was conducted by the vicar, an old friend of the late Mr. James. Thus closed the visible story of one who had played no insignificant part in horticulture, and who was truly mourned by a large circle of friends.

We have to record the death of our esteemed friend, Mr. Henry Bennett, of Shepperton, known widely as the raiser of a number of seedling roses. Until quite recent years Mr. Bennett was engaged in agriculture near Salisbury, in the practice of which he applied all that scientific knowledge and clear perception that were displayed in his cultivation of flowers. The term "pedigree," by which he characterized his system of raising roses was perhaps fanciful, for although he kept records of the crosses effected, they were in principle in no way different from the crosses effected by other raisers, who for the most part select the plants for the purpose with discrimination and with a view to certain distinct results, and also keep records of the parentage. Perhaps his object was rather to indicate that his novelties were not the product of self or naturally fertilized seed, but of a system founded on observation. One of his great triumphs was the production of the vigorous habited rose "Her Majesty," which was sold to a firm in the United States for seven hundred pounds. His Puritan and Mrs. John Laing were considered great advances in the rose garden, and were peculiarly successful as commercial ventures. He leaves a number of proved seedlings of which possibly we shall hear in due time. As a member some years of the Floral Committee of the R. H. S. he was known to many, and was much esteemed.

On the 16th instant, at the Quarry, Hartshill, Stoke-on-Trent, Robert Garner, F.R.C.S., F.L.S., in the 83rd year of his age.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
31	S	**13th Sunday after Trinity.** SEPTEMBER.	5 12	0 10	6 49	7 56	6 24	2 25	2 49	11 50	—	60·2	Dendrobium chrysanthum. Nepal.	243
1	M	*St. Giles.*	5 13	0 9	6 46	8 13	7 49	3 11	3 33	0 14	0 36	59·8	Oncidium crispum grandiflorum Brazil.	244
2	Tu	Great Fire of London, 1666.	5 15	0 28	6 44	8 32	9 13	3 54	4 16	0 58	1 19	59·6	Oncidium Weltoni ..... Colombia.	245
3	W	Oliver Cromwell died, 1658.	5 16	0 48	6 42	8 52	10 32	4 37	4 57	1 41	2 2	59·6	Stanhopea aurea..... South America.	246
4	Th	Battle of Worcester, 1651.	5 18	1 7	6 40	9 16	11 50	5 15	5 36	2 22	2 40	59·5	Stanhopea graveolens ..... South America.	247
5	F	Malta captured, 1800.	5 20	1 27	6 37	9 44	After.	5 55	6 17	3 1	3 21	59·4	Stanhopea Shuttleworthi.. Colombia.	248
6	S	☾ Last Quarter.	5 21	1 47	6 35	10 16	2 15	6 39	7 2	3 42	4 4	59·3	Vanda cærulea ..... Khasya.	249

ROYAL BOTANICAL SOCIETY OF MANCHESTER.
A GRAND EXHIBITION of FRUITS, FLOWERS, and PLANTS, will be held in THE GARDENS, OLD TRAFFORD, on FRIDAY and SATURDAY, SEPTEMBER 12 and 13. For Schedules apply to the undersigned,
BRUCE FINDLAY, Botanic Gardens, Manchester.

BRADFORD AND DISTRICT CHRYSANTHEMUM SOCIETY.
FOURTH ANNUAL EXHIBITION, NOVEMBER 7TH and 8TH.
Schedules post free.
102, Godwin Street, Bradford. GEO. R. TAYLOR, Hon. Secretary.

GRAND EXHIBITION of HOME-GROWN HARDY FRUITS in the GUILDHALL, LONDON, OCTOBER 6th, 7th, and 8th, 1890.
The WORSHIPFUL COMPANY of FRUITERERS being desirous of promoting the cultivation of USEFUL HARDY FRUITS in the HOMESTEADS and COTTAGE GARDENS of Great Britain, have organized an exhibition to be held as above, when they will offer for competition :—
MONEY PRIZES amounting to over £200, GOLD, SILVER-GILT, and SILVER MEDALS, and FRAMED CERTIFICATES of the Company.
The above Prizes will be offered for Exhibits of Fruit by COTTAGERS, TENANT FARMERS, AMATEURS, and GARDENERS in three geographical divisions in England and Wales.
The Framed Certificates of the Company will be given for exhibits by Trade Growers and Nurserymen.
Prizes will also be offered for exhibits of Jams and Preserves by Manufacturers, and also, in a separate class, for home-made Jams and Preserves.
It is hoped that all who are interested in Fruit Culture will make this Exhibition known in their districts.
For Schedules and all other particulars, apply to the Clerk to the Company,
40, Chancery Lane, London, W.C. Mr. O. C. T. EAGLETON.

NATIONAL CHRYSANTHEMUM SOCIETY.
EARLY AUTUMN SHOW.
ROYAL AQUARIUM, WESTMINSTER.
WEDNESDAY AND THURSDAY, SEPTEMBER 10TH AND 11TH.
Chrysanthemums, Dahlias, Gladioli, Hollyhocks, &c., &c.
Schedules, &c , may be had free from
Frampton Park Nurseries, Hackney, London. WILLIAM HOLMES, Hon. Sec.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, SEP. 2.—EAST LOTHIAN HORTICULTURAL SOCIETY.—Annual Exhibition.
WEDNESDAY, SEP. 3.—DUMFRIES HORTICULTURAL SOCIETY.—Annual Exhibition.
WEDNESDAY, SEP. 3.—THAME HORTICULTURAL SOCIETY.—Summer Exhibition.
WEDNESDAY, SEP. 3, AND THURSDAY, SEP. 4.—GLASGOW HORTICULTURAL SOCIETY.—Autumn Exhibition.
THURSDAY, SEP. 4, AND FRIDAY, SEP. 5.—PAISLEY HORTICULTURAL SOCIETY.—Autumn Exhibition.
THURSDAY, SEP. 4, TO SATURDAY, SEP. 5.—DUNDEE HORTICULTURAL SOCIETY.—Annual Exhibition.
THURSDAY, SEP. 4, AND FRIDAY SEP. 5.—STIRLING HORTICULTURAL SOCIETY.—Annual Exhibition.
FRIDAY, SEP. 5.—BRITISH FRUIT GROWERS' ASSOCIATION.—Conference at Crystal Palace.
FRIDAY, SEP. 5, AND SATURDAY, SEP. 6.—CRYSTAL PALACE.—Exhibition of Fruit and Dahlias.
SATURDAY, SEP. 6.—DALKEITH HORTICULTURAL SOCIETY.—Annual Exhibition.

Auction Sales for the Ensuing Week.

MONDAY, WEDNESDAY, AND SATURDAY, SEPT. 1, 3, AND 6.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.
MONDAY, WEDNESDAY, THURSDAY, AND SATURDAY, SEPT. 1, 3, 4, AND 6.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.
THURSDAY, SEPT. 4.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids.
FRIDAY, SEPT. 5.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
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PHOTO-PRINT SUPPLEMENT.
With this Number is presented a Supplement of
A GARDEN OF LILIES.
Subscribers should see that Newsagents deliver the Supplement with each copy.

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The Gardeners' Magazine.

SATURDAY, AUGUST 30, 1890.

HARDY BULBS FOR SPRING FLOWERS acquire prominence as the days darken and the struggle deepens with the "weather and the crops." Though gloom and disappointment may accompany the pursuit of harvest under difficulties, hope does not suffer extinguishment, for if "man never is," yet, for all that, he is "always to be blest." The anticipation that the green leaf will redden and fall, and the winter of our discontent will follow, rather quickens than subdues the intellectual mirage that hope invents to persuade us to look forward with hope to the return of spring. The vast dimensions and ever-increasing importance of the bulb trade tell of the tenacity with which we hold to a belief in the constancy of Nature in the reproduction of seasons and their floral accompaniments, conjointly with incessant renewal of a desire for participating in the changes of the outer visible world that possesses the heart of man. Decline in trade political commotion, social discontent, and slender harvests will always check the demand for bulbs to furnish spring flowers, in common with the demand for luxuries of every kind, but in the worst times the trade continues, for the scheme of life in civilized countries includes always a considerable reserve of resources for its embellishment, and probably in average circumstances the status of civilization may be measured by the relative abundance of the superfluities of life. We have bad times now in the field, and we can scarcely say we have good times in the garden, but trade is sound, money is abundant, the national reserves increase; every prosperous and prudent citizen earns more than he eats, and a portion of the overplus will, as usual, be expended in the purchase of the raw material for the production of spring flowers. This ought to be a good season for the bulb trade, for although the summer crops are sadly deficient, and in rural affairs dulness prevails, national affairs, collectively considered, afford better reason for hope than for despair, and are not without consolations for such as confine their views to things as they are, regarding the facts of to-day as the basis of all their operations.

It might not be an easy matter to determine the class of bulbs that should stand first in a general review of the family. The daffodils would be placed first by many on account of their permanence as occupants of the garden and their immense popularity. They may be left for any number of years to take care of themselves, and will do very well; or they may be annually lifted and replanted with great advantage to the quality of the bloom; and they may be wrought into systems of forcing for winter flowers, and of massing for great outdoor displays in spring. In one particular they distance all their competitors amongst hardy bulbs for the gardens of the British Isles, and that is their high renown in literature and art; they have been humanized by the poets and poetized by the painters, and the history of the flower can only be properly studied in the midst of pictures and books. Even the trade view of the subject is not without literary and artistic illustration beyond the average of attentions in that way bestowed by the traders on the flowers that are in highest favour. An extremely interesting example of this is the "Album" of daffodils produced by Mr. Baylor Hartland, of Cork, which contains thirty-eight "speaking" likenesses of the more typical of the several classes or families of narcissi from the pencil of his niece, Miss Gertrude Hartland. Mr. Burbidge's treatise on "The Narcissus" is of necessity the basis of operations in all literary treatment of the subject: the Daffodil conferences and of the Narcissus Committee have contributed to the scientific study of the subject. When we turn to the realms of art it seems that the worshipper of daffodils is free, for any and everyone may be regarded as suitable for artistic treatment. The operator here is bound by none of the stringent laws that have been built up to hedge in the literary worker and keep him in perpetual recognition of the boundaries of groups, the relations of species, and the distinguishing characters of varieties as entitling them to formal recognition. This is all as it should be in the interest of the cultivator, for there is no more effectual method of arranging narcissi in the garden than in accordance with their natural affinities. The Corbularias, for example, constitute a group visibly separated from the mass in expression and re-

lative hardiness; the Trumpets and the Incomparables are homogeneous in character and flower so nearly at the same time that while they group well together they do not so well mix with other groups of the great family of narcissi. But even these are more effective when separately displayed, for the first-named take the lead in flowering and are well nigh past ere the second attain to their full splendour. Poeticus and Tazetta make later flowering groups of the greatest value, but the last-named are, in a general way, more to be valued for pot culture than for the open ground, for they force well, are delightful conservatory flowers in their season, and are scarcely hardy on cold soils, more especially in exposed localities. But having touched on the subject of hardiness, it appears necessary to remark that the Trumpets and Incomparables are as hardy as any flowers known to our gardeners, while all others are hardy in average seasons, but Corbularias and Tazettas certainly require to be separately considered when it is proposed to plant them in the open ground. The first grow too early and often suffer from spring frost, the second are impatient of frost when caught in the later days of spring, a circumstance that has no parallel in other groups, for no frost appears ever to harm the trumpets and incomparables, a fact which the keen observation of our great poet enabled him to present in poetic form as coming "before the swallow dares," for at that time garden flowers are not plentiful.

In respect of general usefulness Crocuses and early Tulips must rank second to daffodils in relative importance as spring flowers. They afford exactly what is wanted, cheap and cheerful colours in great variety, and lasting long enough to satisfy the mind in a season when every day brings cheerful changes. These, like the daffodils, have the advantage of permanence, for no one need lose them, but every one may ensure keeping them and increasing them by the most simple conservative treatment. Hyacinths take precedence of all bulbs for house culture, and to praise them as flowers for the window, the conservatory, and the exhibition stage would be scarcely less a folly than to "paint the lily." But for the open garden the hyacinth cannot compete on equal terms with daffodils, crocuses, and tulips. It lacks permanence, and must ever do so by the theory of its life. The bulb grows until it attains to a certain size and quality, and then spontaneously splits up to increase its number. It has indeed all the elements of permanency—or say, it is truly perennial; but then, in its permanent or perennial form it is not constant in quality or beauty. It is quite possible to keep and increase a collection of hyacinths, and we have more than once explained the requisite procedure. But the convenient course prevails of renewing the stock from year to year by fresh purchases, and the current catalogues will show that our friends of the bulb trade are well prepared as usual to supply all our wants. The hyacinths are in good condition this season; well grown, heavy, and perfectly ripe. Happily we may say the same of all other bulbs and corms, for the weather suited them both for growing and ripening, and the crop is generally regarded as satisfactory.

Inexperienced persons who consult trade catalogues are apt to take alarm at the prices. This need not be. The articles that are in greatest demand in any market are those that combine a certain degree of excellence with cheapness, without being either extraordinary in quality or much beyond the average in price. Demand does not always raise prices; it often lowers them by encouraging production. This is the case with bulbs for spring flowers. The very choicest subjects command fancy prices and those who want them must pay for them; but of certain kinds that have long been favourites because of their hardiness, beauty, and permanence of character, the quantities annually produced are so enormous that prices are kept down to a certain level that places them within the reach of all. Intending purchasers who are unused to the delight that an expert experiences in looking through catalogues may safely buy named varieties that are popular and are quoted at moderate rates. A few of the high priced varieties should always be secured by those who can afford them, for they will prove to be worthy of the cost; but the cheapest are beautiful and useful, and will give great delight in return for a moderate outlay and the most simple management.

A few words of advice to planters of bulbs may prove useful. Thin planting produces a poor effect, and will satisfy no one. It is far better to restrict the extent of the display than the number of bulbs. A certain number spread over a certain space may have but a poor appearance when in flower; but the same number spread over half the space may prove to be at once rich and satisfactory, and a justification of the restriction. Attempts are often made to arrange a variety of bulbs so that all shall flower simultaneously. A failure is the common result. Let us "take the goods the gods provide us" in a *succession* of flowers, and we shall find that Nature is accommodating and exceedingly well intentioned. The clumps of crocuses in a border may be enjoyed although the tulips in the same border do not happen to flower with them. When hyacinths and tulips are in alternate clumps or beds, the season of blooming of each is well adapted to bring out the true expression of each, and it will be found that each can be well enjoyed without the other. There are many ways of arranging and displaying flowers, but there is no way commonly known for ensuring that many kinds of spring-flowering bulbs shall flower simultaneously. It is true philosophy, therefore, to say we do not desire it; a reasonable feast lasting some weeks being better than a sudden surfeit of brief duration.

For all who desire to keep their stocks of bulbs there is a golden rule to be observed. They must be allowed to complete their growth, or the flowering in the following season will be poor. This is a matter that inexperienced amateurs often ignore to their own injury. They are so alarmed at the appearance of yellow leaves on their daffodils and tulips that they remove them before their work is completed, and perhaps lift the bulbs before they are sufficiently matured. The jobbing gardener likes "tidiness" at any cost, and whatever else will make an immediate effect by means of superficial work. His practice is to tie the leaves in knots to prevent them "sprawling about," and otherwise to put a stop to the vegetative activity that is absolutely necessary to enable the bulbs to flower another year. The ripening process is soon completed, and a little untidiness must be endured where the bulbs are valued after they have flowered. In a generally well-kept garden the yellowing leaves are unnoticeable, because there are so many other things to attract attention and secure admiration, and therefore to do justice to the bulbs can be hurtful to no one, however sensitive in respect of tidiness. With cheap bulbs and plenty of them the spring may be properly welcomed with seasonable flowers, and now is the time for serious consideration of the business.

American Forestry Association, will hold its annual meeting at Quebec, September 2, and three following days.

Cotton Seed Oil, so largely employed in the adulteration of olive oil, is declared by the State Analyst of New York to be not only perfectly wholesome, but preferable in many respects to other fats.

Pomeloe Culture is undergoing considerable extension in Florida, and the growers believe that fruit placed on the market during the summer season will yield a good return.

Vanda Kimballiana was admirably presented by Messrs. Low and Co. at R. H. S. meeting on Tuesday. It is a gem amongst the minor orchids, and will probably prove one of the most useful.

The American Association of Nurserymen has recently issued a report of its meeting held in New York in June last. It forms a *brochure* of about one hundred pages, and contains the papers read, and the discussions that followed.

Potato Crop in Great Britain has, according to the summary of the agricultural returns from the present year recently issued by the Board of Agriculture, an acreage of 529,661, a decrease of 14,294 acres, or 8·6 per cent. as compared with 1889.

Fruiterers' Company's Fruit Show.—The schedule for this has been received by us. Copies of the schedule, with entry forms, are obtainable on application to Mr. O. C. T. Eagleton, 40, Chancery Lane, W.C.

Mr. William Smith, gardener at Lorley Hall, Uttoxeter, will remain there and continue to manage the gardens for C. Sneyd-Kynersley, Esq., who has succeeded to W. Fletcher, Esq., and Mrs. Beeston in the possession of the property. Mr. Smith will also retain the charge of the Highfields gardens for Mrs. Sneyd-Kynersley, for whom he has been gardener and bailiff for the past seven years.

British Fruit Growers' Association.—The programme for the September meetings of the above association is as follows:—Crystal Palace, Friday, September 5, at 3.30 p.m., W. Rait, Esq., in the chair; "Ireland as a Fruit Producing Country," by Mr. George Gordon: "Peaches and Nectarines," by Mr. T. F. Rivers; "Plums for Market," by Mr. J. Smith, of Mentmore; and "Cherries for Market," by Mr. G. Bunyard. At the conference at Brighton on September 10, in conjunction with the exhibition, in the Royal Pavilion, the Mayor of Brighton has kindly consented to take the chair at 4 p.m., and several important papers will be read, including one on "Grapes for Market," by Mr. J. Roberts.

A Blue Geranium placed before the Floral Committee on Tuesday by Rev. W. Wilks was much admired, and obtained the distinction of a first-class certificate. It is reported to have appeared in the immediate neighbourhood of plants of G. armenum, and G. Endressi, and may be a hybrid between them. In some respects it comes near to our own G. pratense, but appears to be not only distinct from it, but better, the large white centre enhancing the beauty of the blue colour. Perplexing forms of G. Ibericum occasionally appear, but we have not seen one in the style of the present plant. The novelty is called *Shirley Blue*.

The Weather in all parts of the country has been cold and rainy, seriously checking harvest work and certainly not improving the potatos. An improvement was seen on Thursday with a return of sunshine with a rising barometer, but the temperature is still low for the season, and it is but too evident we shall have to reckon the year's productions regarded as a whole, considerably below an average. We can still speak hopefully of the potato crop, for the low temperature appears to have been as unfavourable to the fungus as to the growth of the plant. The prospect is encouraging; indeed, we anticipate a few weeks of enjoyable autumnal weather.

BEDDING ARRANGEMENTS IN THE ROYAL GARDENS AT KEW.

Although the bedding arrangements in the Royal Gardens, Kew, are comparatively limited in extent and characterized by their severe simplicity, they form an interesting feature and contribute liberally to the attractions of the gardens at the present time. The principal arrangements are, as in past years, alongside the principal walk leading to the lake in front of the principal museum and in front of the palmhouse; there are also some good beds near the group of plant houses of which the greenhouse and the ferneries form part.

At the upper end of the long walk is a bed that must not be overlooked, for, although not filled with summer bedders, it is so highly attractive as to be especially deserving of the attention of those who are directly interested in the embellishment of the flower garden. This is filled with Hypericum oblongifolium, one of the most beautiful and, perhaps, one of the least known of the St. John's Worts. This species is a native of the Himalayas, has an erect habit of growth, and produces in great profusion comparatively large yellow flowers. For planting in clumps along the front of the shrubbery border and in bold masses, as in this instance, the species has much to recommend it. On the opposite side of the walk is an arrangement differing widely from the foregoing bed, but not less worthy of note. It consists of dwarf bushes of the variegated maple, interspersed with the examples of the ailant which are cut down to the ground level annually and kept to a single stem. Under these conditions they make a strong growth, and their large, elegant, pinnate leaves produce a fine effect in contrast with the silvery foliage of the maple. There is nothing new in growing the ailant in this manner, but comparatively few persons have an adequate idea of the beautiful effects that can be produced by plants that are kept to a single stem by annual prunings. Immediately beyond this on the same side of the walk is a bed filled with erythrinas and dark-leaved cannas, both of which are flowering freely, and produce an effective combination.

Proceeding along the walk towards the lake we have to the right and left good beds of Mrs. Leavers pelargonium, still one of the best pink variety, being neat in growth, free in blooming, and having flowers of an effective shade of pink. The pelargonium is enclosed with a band of Iresine Herbsti and a margin of Mesembryanthemum cordifolium variegatum. On the left there is a bed of Raby Castle carnation, a comparatively dwarf variety, bearing large salmon-pink flowers. The carnations are interspersed with violas and enclosed with a band of Cuphea platycentra, a charming half-hardy plant held in high esteem some thirty years ago, but now very little grown. The growth is neat, the bright scarlet cylindrical flowers are produced in great profusion. Still further down are good masses of Henry Jacoby pelargonium, so well known as the finest of the dark crimson zonals, that to describe it is unnecessary; but it may be said with advantage the plants are flowering freely, and the great masses of deep crimson flowers are very effective. As a relief we have in the two contiguous beds Mangles's variegated pelargonium and Blue Bell viola, the pink and blue flowers and the silvery leafage forming a quiet but charming combination of colour. Proceeding down the walk are good blocks of Vesuvius, Star of Fire, Waltham Seedling, and other pelargoniums, all flowering freely, and with suitable edgings, producing a good effect. The beds of mixed petunias present a very attractive appearance, for notwithstanding the showery weather that has prevailed for a long time past, there is an abundance of flowers, and the colours are remarkably good.

The raised mound at the end of the walk is, as usual, embellished with leaf plants of dwarf growth. Surrounding the circular grass plot is a border about five feet in width, and this is planted with scroll and other figures of Alternanthera versicolor grandis, A. amœna, A. paronychioides aurea, Spergula pilifera aurea, and similar plants, the intervening spaces being filled with Sedum glaucum. The border on either side is "finished" with lines of Alternanthera magnifica and Echeveria secunda glauca. In front of the palm house the beds present a bright and effective appearance, but it is not necessary to allude to them in detail. In the section at either end of the scheme are charming beds formed with Blue Bell viola and a silvery variegated pelargonium in mixture and good blocks of Abutilon Thomsoni, enclosed with bands of Coleus nigricans and Euonymus radicans variegatus. In the two middle sections are good blocks of Verschaffelti coleus, enclosed with a broad band of a golden-leaved pelargonium.

Contiguous to the palm house are some fine blocks of the exquisitely beautiful Anemone japonica alba. The plants have not attained to so great a height as in some previous years, but they are blooming freely and the flowers are well developed. In two of the beds the purple and white forms are intermixed with pleasing results. Alongside the lake are several beds of tea roses, one of the most attractive at the present time being that devoted to Grace Darling, one of the finest of the teas raised by the late Mr. H. Bennett. This variety has a vigorous habit and blooms freely and continuously from early in the season until late in the autumn, the blooms being comparatively large and richly suffused with rose purple. Lilies contribute liberally to the attractions of the gardens at the present time. The fine specimens of Lilium auratum in the rhododendron bed skirting the long walk, are flowering in a manner that has not been surpassed, and their huge spikes, rising in some instances to a height of seven feet, show how beautiful is this fine lily when grown under conditions favourable to its full development. Many of the spikes are now at their best, but there are dozens of spikes in the bud stage and consequently there will be a good display for some time hence. One of the rhododendron beds contains numerous examples of the richly coloured Lilium pardalinum now in perfection, and singularly effective. Especially attractive also are the masses of the Tiger lily alongside the main walk and in other parts of the garden, which is especially useful for flowering thus late in the season and affording a particularly rich shade of colouring. There is still a good sprinkling of flowers of Lilium longiflorum in the beds devoted to this beautiful lily, and the several forms of Lilium speciosum produce a fine display.

Parsons and Bourgoize (Limited).—Registered by May, Sykes, and Batten, 2, Adelaide place, London Bridge, E.C., with a capital of 715,000, in £1 shares. Objects: To acquire the business of general carriers, growers of fruit, vegetables, &c., now carried on by Parsons and Bourgoize (Limited). The first subscribers are: J. de G. Bourgoize, San Blas, Guernsey; H. J. Parsons, 1, Edward's Terrace, Kensington; J. H. Parsons, King's Road, Guernsey; C. R. Maly, Esplanade, Guernsey; J. Vaflet, Amhead, Guernsey; J. Bishop, 5, Court Row, Guernsey; and W. Gumbley, Guernsey, one share each. There shall not be less than three nor more than six directors. The first are J. H. Parsons, J. de G. Bourgoize, and J. W. Reacher. Qualification, £200. Remuneration, 5 per cent. of net profits.

FIGHTING THE ENEMIES OF FRUIT TREES.

My remarks at the Leicester Fruit Conference respecting a policy of "masterly inactivity" have been subjected to some criticism. This I do not deplore; on the contrary, I rather rejoice that attention is in any way drawn to the subject, for even out of error good may arise. I note, however, that the remarks in your paper, and also those in the columns of a contemporary, are editorial, and I wonder if the reading or hearing public are apathetic, or whether the more practical number of that body have viewed the matter from the point at which I took my stand, viz., fruit growing for profit. My contention was that those who had large orchards, especially those whose orchards were planted with large standard trees, would do well to refrain from spending their money on force-pumps, strawtonizers, Paris green, and London purple, and the reason which I wished to adduce was that these remedies would not be profitable, inasmuch as the outlay would be greater than the result would pay for, even if the use of these remedies had the effect of saving the crop, which hitherto has not been the case as a rule.

I am fain to confess that my Hibernian nature, or the hurried writing of my paper—please say the latter—rendered my meaning a little obscure, and laid me open to the gentle criticism which has ensued. I would not for one moment deny the value of the experiments which have been tried, and I for one am truly thankful to those enterprising gentlemen who have undertaken them. When I read of orchards being sprayed over at three different times, at a very great cost, with the result that the trees were but little better than those in other orchards which had not been sprayed, I cannot but think that at present any outlay in this direction on a large scale would be unwise on the part of the fruit grower for profit.

You, Mr. Editor, I presume, regard the matter from another point of view; it is your mission to teach, to encourage, to lead the way, and every practical man must be fully sensible of the benefits conferred upon every branch of horticulture by the influence of the horticultural press. You are naturally anxious to fight the enemy which attacks our fruit trees, and to find out, as you say, some "preventive and remedial measures which can be made to cover costs and risks by results in the direction aimed at." I have not quoted word for word, but I give the sense, and admirable sense I consider it. I venture, however, to think that experiments in this direction should be made on a small scale, and that they are more a work for experimental gardens (say, Chiswick, for instance) and for amateurs than for the practical orchardist. I would not say this if I thought that the insect plague from which we are suffering this season, and from which we suffered last, "were come to stay," as our American cousins say, for then it would be necessary to either exterminate them or look forward to the speedy loss of all apple trees of any age and size. But I do not anticipate such a disaster; as you remark, "the scheme of Nature is based on compensations"; the most learned and observant cannot fully explain to us how the balance of Nature is maintained, nor can they tell why in one season certain moths, butterflies, or other insects swarm in a given locality, to which in other seasons they are strangers. I remember a year, perhaps twenty-five years ago, when the death's-head moth was common in Chilwell. I had six or seven specimens myself, none of our people had ever seen one before, and I have never found one since. Another season we had numberless clouded yellow butterflies, which, as a rule, are rare. Five years or so ago we had a visitation of painted ladies (I mean butterflies). At present we are suffering from a visitation of the winter moth. I remember one visit on a previous occasion, and I have heard of one thirty years ago. I trust they will depart as their forerunners did; meanwhile the orchardist should protect his greatest friends, the birds, most valuable of whom is the starling (when you don't cultivate cherries), and do all in his power to restore the weakened constitution of his trees by applying any suitable fertilizer he may have at his command. The smaller grower and the amateur may, and generally should, adopt the plan pursued by the nurseryman to rid his young trees, viz., hand picking every caterpillar which attacks the young buds, and afterwards spraying with a docoction of quassia chips, to which may be added three ounces of soft soap to each gallon. This will not injure the foliage and it will kill the caterpillar.

Doubtless many of your readers have remarked here and there a single apple tree, or a group of several, in cottage gardens adjacent to dwelling-houses well filled with fruit, whilst the same varieties in the larger orchards are bare. I think that generally-conceived-to-be nuisance, the house sparrow, has this to his credit. I shot a female early in the spring and found the caterpillar in its beak; he also rid our gooseberry trees from the caterpillar of the magpie moth. This is all I can say in his favour, others will tell of his misdeeds.

A. H. Pearson.

Chilwell, Notts.

The Meeting of British Association next week is greatly advantaged by the publication of a capital handbook to Leeds, produced under the editorship of Professor L. C. Miall, of the Yorkshire College. It covers all the ground that scientific visitors are likely to be interested in, the scenery of Airedale, the historic sites, the geology and the history of the town.

An Interesting Presentation is reported in *City Press* as having taken place at the Memorial Hall, Farringdon Street, London, on the 20th of August, under the presidency of Sir Andrew Lusk, Bart. The person honoured on this occasion was the Rev. David Doudney, D.D., Vicar of Bedminster, Bristol, and the occasion was the completion of fifty years editing of the *Gospel Magazine* by Dr Doudney, who is now in his eightieth year, and continues his services in the church as well as the editing of the magazine. Mr. Doudney has claims on the sympathy of the British public for the noble work he inaugurated at Waterford, where he set up a printing press for the purpose of teaching Irish lads the printer's art, having a hope that the industry might contribute in a material degree to the advantage of the Irish people, whose chief want appears to be industrial occupation. Mr. W. H. Collingridge, promoter and honorary secretary of the presentation, which consisted of an address and a purse of eight hundred guineas, gave the meeting an interesting account of Dr. Doudney's labours, and amongst other things stated that his success in training the boys of Waterford as printers was proved by the production at that press of a complete reprint of Dr. Gill's great commentary on the Old and New Testaments.

ROYAL HORTICULTURAL SOCIETY, August 24.

Floral Committee.

Present: William Marshall, Esq., in the chair; Rev. H. H. D'Ombrain; and Messrs. Shirley Hibberd, C. T. Druery, R. Dean, H. Herbst, W. C. Leach, H. Cannell, B. Wynne, W. Kelway, H. Turner, C. Noble, G. Paul, T. W. Girdlestone, J. Walker, and F. Ross.

The most important of the contributions to the meeting were the collections of gladioli, cut specimens of trees and shrubs and hardy flowers, and these in conjunction with the orchids and miscellaneous objects formed a small but attractive exhibition. Messrs. Kelway and Son, Langport, exhibited a collection of gladioli remarkable alike for its extent, the splendid development of the spikes, and the high quality of the varieties represented. It is a point of some interest that the whole of the varieties have been raised in the Langport nurseries. The award of the silver-gilt Banksian medal was made to the firm.

Messrs. Paul and Sons, Cheshunt, exhibited a large and extremely beautiful collection of hardy flowers for which they were awarded the silver Banksian medal. Specially deserving of mention were the huge bouquets of Erigeron philadelphicum, a charming species with pink flowers. Colchicum speciosum rubrum, a distinct form remarkable for its deep colour; Scabiosa caucasica, an attractive species, the flowers large and of a pleasing lavender colour; Helianthus strumosus, a handsome species somewhat similar in character to the well-known Harpalium rigidum; Chrysanthemum latifolium, a bold-growing species with large white flowers having a golden disc; Montbretia Pottsi, M. crocosmæflora, and M. aurea, three elegant bulbous plants, perfectly hardy and deserving of a widely extended culture; Rudbeckia subtomentosa, a handsome species, the flowers large and of a bright golden yellow and the foliage scented like new mown hay; Coreopsis lanceolata, a handsome species with bright yellow flowers; herbaceous phloxes in variety, fine clusters of fruit of the handsome Rosa rugosa, and Campanula carpatica and its white variety.

Of great interest was the collection of cut specimens of hardy trees and shrubs from Messrs. J. Veitch and Sons, Chelsea, to whom the silver Banksian medal was awarded. The collection comprised about one hundred specimens of the trees and shrubs remarkable for their distinct character or the beauty of their leafage. Amongst other trees and shrubs specially deserving of attention were Quercus Daimyo, a distinct species with large, handsome, deep green leafage: Q. cuspidata variegata, one of the most handsome of the variegated oaks; Aristotelia Macqui variegata, an attractive shrub, the leaves margined with yellow; Pyrus aucaparia aurea, remarkable for the rich golden hue of its leafage; Daphniphyllum glaucescens viridis, an evergreen shrub from Japan, perfectly hardy in this country, and admirably adapted for general planting; Cornus siberica spathi, the most effective of all the deciduous shrubs, with variegated foliage, the leaves being broadly margined with bright golden yellow; Cytisus capitatus, a handsome species, bearing large clusters of yellow flowers: and Cydonia japonica Moorloosi, a free blooming variety, with bright scarlet flowers. The firm also exhibited nicely fruited examples of the cranberry.

The contributions of dahlias were sufficient to produce a bright display. Messrs. J. Cheal and Son, Crawley, exhibited a representative collection comprising pompon, single and cactus varieties. The pompons included H. E. Searle, Fanny Weiner, Hector, and Lady Blanche. Chief amongst the single varieties were Eclipse, Mrs. Bowman, W. C. Harvey, Formosa, Miss Jefferies, and Northern Star. Mr. J. T. West, Cornwalls, Brentwood, sent two cactus dahlias named H. M. Stanley and Mrs. Stanley respectively, and the last-named received an award of merit. Mr. T. S. Ware exhibited blooms of Harry Foreman dahlia, a white cactus variety of considerable promise; the flowers are of full average size and remarkable for their purity. From the same exhibitor came several gaillardias, Admiration and Sunset being especially remarkable for their effective colouring and high quality. Rev. H. H. Dombrain, Westwell Vicarage, Ashford, contributed a stand of gladioli; in which were finely developed spikes of Formosa, Enchantress, and The Mikado.

From Messrs. W. Paul and Son, Waltham Cross, Herts, came fine trusses of Duchess of Albany rose, a superb hybrid perpetual in the way of La France, but perfectly distinct from that variety, the blooms being of greater depth and more pointed in the bud, and the colour a rich shade of purplish rose. It is even more free and continuous in flowering than La France, and is in every way one of the most valuable acquisitions of recent years. Mr. R. Dean, Ealing, staged good blooms of African marigolds and examples of White Mignon aster, a capital strain, dwarf in growth, and bearing medium-sized pure white flowers. Mr. G. Wythes, Syon House, sent well-developed spikes of Campanula pyramidalis, now in perfection. Messrs. H. Cannell and Sons, Swanley, staged a group of seedling begonias, lifted from the open ground, which presented an effective appearance, and was interesting as indicating the character of this fine strain of these flowers. The firm also submitted several coleus, all of which were distinguished by the bright colouring of their foliage. From the Society's gardens at Chiswick came a collection of dwarf asters in pots, and Messrs. Stuart and Mein, Kelso, sent a box of excellent hollyhock blooms.

Messrs. H. Low and Co., Upper Clapton, sent a box of well-developed blooms of the handsome Lilium Wallichianum and several flowers of L. Nepalensis, a beautiful species with marone and yellow flowers.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; Dr. Masters, and Messrs. J. O'Brien, Lewis Castle, H. Ballantine, J. Douglas, E Hill, and J. Dominy.

The contributions to the meeting of the committee were numerous, and included several objects of considerable importance. Messrs. H. Low and Co., sent about two dozen finely-flowered plants of the exquisitely beautiful Vanda Kimballiana, and were awarded the silver Banksian medal; E. G. Wrigley, Esq., Howick House, Preston, exhibited a group of magnificent cattleyas, chiefly of the type represented by C. Dowiana. In addition to those which received recognition were Cattleya aurea, a distinct species of great beauty, and a superb form of C. gigas. Mr. D. Cullimore, gardener to Malcolm S. Cooke, Esq., Kingston Hill, sent several beautiful forms of Lælia elegans, now in perfection. Mr. G. Wythes sent several good spikes of Satyrium carneum. Messrs. J. Veitch and Sons submitted Lælio-cattleya Proserpina, which received an award of merit; and Cypripedium H. Ballantine, a hybrid between C. Farrieanum and C. purpurata. Mr. Ballantine, gardener to Baron Schroder, The Dell, Egham, exhibited cut specimens of Cypripedium Morganiæ, the finest, perhaps, of all the hybrid lady's slippers; and Odontoglossum vexillarium Leopoldi, a beautiful variety, the flowers of medium size and bright in colour, and the labellum marked with a rich marone blotch. Mr. J. Douglas, Great Gearies, Ilford, staged an example of Cypripedium Numa, a hybrid by no means wanting in beauty.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. P. Crowley, Harrison Weir, J. Cheal, J. Willard, G. Bunyard, J. Wright, W. Warren, W. Allan, G. Wythes, H. Balderson, F. Q. Lane, A. H. Pearson, and J. Smith.

One of the most noteworthy of the contributions to committee was that formed by the large superbly-finished clusters of Mrs. Pearson, Duke of Buccleuch, and Gros Maroc grapes from Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich. The same exhibitor also had a very promising seedling black grape. It is large both in bunch and berry, and has a rich, luscious flavour, and may be kept in excellent condition until early in the year. Mr. Crasp, Canford Manor, Wimborne, sent a collection of apples and a good dish of Red Magdalene peaches, and was awarded a bronze Banksian medal. Mr. Wythes contributed good dishes of Sea Eagle and Princess of Wales peaches.

Messrs. J. Carter and Co., High Holborn, sent two dishes of fruit of Market Favourite tomato, a heavy cropping variety, the fruit of medium size, smooth, and bright in colour. They had also fruit of Blenheim Orange, a yellow fruited variety, remarkable for its high quality. Mr. Bones, Tower House, Chiswick, sent a large and handsome red tomato, under the designation of Tower House Favourite.

Novelties.

First-class certificates were granted as under:—

To Rev. W. Wilks, Shirley Vicarage, Croydon, for

Geranium Shirley Blue.—A supposed hybrid between Geranium Endressi and G. armenum. The plant is intermediate in growth between these two species, and the flowers are similar in size to the last-named, and of a brilliant blue colour, with light centre.

N. E. G. Wrigley, Esq., for

Cattleya Massiana.—An extremely beautiful species; the flowers large, the sepals light buff, shaded rose, the petals rose purple, the labellum large, rich golden yellow, veined with marone, velvety crimson at the top, and margined with purple.

Awards of merit were made as under:—

To Messrs. H. Cannell and Sons for

Dahlia Mrs. J. Douglas.—A cactus variety of considerable merit; the flowers of full size and similar in form to the well-known Juarezi; the colour pale buff shaded with rose.

To Mr. G. Harris, Orpington, Kent, for

Dahlia Canary Bird.—A beautiful show variety; the flowers of medium size, even in outline, and with high centre, colour bright canary yellow.

To Messrs. Paul and Son for

Potentilla formosa pallida.—A distinct and beautiful form of this fine species, with flowers lighter in colour.

Phlox Le Soleil.—An excellent variety belonging to the herbaceous section; the flowers are of large size and fine form, and borne in handsome spikes; the colour pale crimson with white eye.

To Messrs. J. Cheal and Sons for

Dahlia Northern Star.—A fine single variety, remarkable for its distinct colouring; the flowers are of medium size and regular in outline; the colour brilliant scarlet-crimson, each floret regularly margined with bright golden yellow.

Dahlia Eclipse.—A beautiful single variety; the flowers rather large and of good form; the colour deep rose, shaded deep golden yellow round the disc.

To Mr. J. T. West for

Dahlia Mrs. Stanley.—A pleasing cactus variety; the flowers rather small and of a bright rose-carmine colour.

To Mr. T. S. Ware for

Dahlia Maude.—A beautiful single variety, remarkable both for its fine form and pleasing colour.

To Mr. G. Wythes for

Mentzelea bartonioides.—An attractive annual, introduced from Mexico, and belonging to the Loasaceæ. It is neat in growth, has bright green deeply-cut leaves, and produces bright yellow flowers, with projecting yellow anthers.

To Messrs Kelway and Son for

Gladiolus Baron Schroder.—A distinct variety, at once beautiful and effective. The flowers are of fine form and borne in excellent spikes, and the colour is soft orange scarlet, the lower segment marked with a small violet blotch.

Gaillardia Wendell Holmes.—An effective variety; the flowers of full size, and richly-coloured crimson and gold.

Pentstemon Le Borda.—An effective variety, with finely-formed flowers, and well-developed spike; the colour rich plum with light throat.

Dahlia Rouge Chauviere.—A distinct pompon variety of high quality, and effective in colour; the ground rich golden yellow shaded carmine.

To Drewett Drewett, Esq., Newcastle-on-Tyne, for

Cypripedium Alfred.—A beautiful hybrid obtained from a cross between C. Stonei and C. Spicerianum. The plant as shown is moderately vigorous in growth, the leaves bright green, and the scapes twin flowered. The flowers are of medium size, and clearly indicate the parentage; the petals are long and narrow, and coloured greenish yellow, and reddish brown as in C. Stonei; the dorsal sepal is white, suffused with rose as in C. Spicerianum, and the labellum or slipper is brownish purple.

To Messrs. J. Veitch and Sons for

Lælio-cattleya Proserpine.—An interesting and extremely beautiful hybrid between Lælia pumila Dayana, and Cattleya velutinum. The growth is similar to that of the last-named of the two species, but much dwarfer; the flowers are about three inches in diameter, the sepals and petals pale rose veined with purple; the labellum amethyst purple with light throat.

To A. Wilson, Esq., for

Cattleya Hardyana, Wilson's variety.—An extremely beautiful variety of this handsome cattleya. The flowers very large, the sepals and petals rich purple; the labellum deep crimson with golden throat.

The Two Roses, *La France* and *Duchess of Albany*, have been described as one and the same, and as they are not one and the same Messrs. William Paul and Son, of Waltham, illustrated the subject at the meeting on Tuesday. Bunches of each were placed on the table and declared themselves to be quite distinct. The Duchess is of a full rosy colour, while the other is several shades lighter and has a characteristic silvery turnover. Both roses are wanted, and happy are they who can cut such flowers as were sent from Waltham to edify the open-minded.

Reports on Fruit Crops, 1890.

PEACHES AND NECTARINES.

Antrim.—Moderately good crops in most instances.

Mr. C. Warwick, Shane's Castle, writes: Early peaches are producing a good crop, but later kinds had their leaves badly blistered early in the season, and the fruit will be small. Early Rivers and Violette Hative are particularly good. The crop of nectarines is comparatively light.

Ayrshire.—Crops somewhat above the average.

Mr. W. Priest, Eglington Gardens, Irving, remarks: Peaches, where grown out of doors, are much better than they have been for some years, having been protected from late frosts.

Banffshire.—Crop of peaches very satisfactory.

Mr. Charles Webster, Gordon Castle, says: The crop of peaches is over an average, there being a heavy crop of all sorts.

Bedfordshire.—Crop of both peaches and nectarines above the average.

Mr. R. Carter, Waverley Park, Sandy, observes: Peaches and nectarines are bearing heavily, and the trees are very healthy.

Berkshire.—Variable, but on the whole the crop is good.

Mr. S. Haines, Coleshill House, reports: Peaches out of doors are remarkably good. I never saw them better. We commenced gathering Hale's Early from trees on open walls on July 19. Nectarines are looking well, and Lord Napier, Pine Apple, and Violette Hative are promising, although rather late, owing to so much dull weather and the low night temperature.

Mr. J. Tegg, Bearwood, Berks, remarks: The crop of peaches and nectarines is the best crop of fruit we have outside in these gardens.

Mr. George Stanton, Park Place, Henley-on-Thames: We have an average crop, but the foliage is much subject to blister. Trees on an east wall are more healthy, and less subject to blister than are those on a south wall. I have only protected with garden nets.

Berwickshire.—Crop moderately good.

Buckinghamshire.—Crops good throughout the county.

Cardiganshire.—Crops nearly an average; the crop of peaches being the most satisfactory.

Carmarthenshire.—Variable and somewhat below the average.

Cheshire.—Full average crops generally.

Mr. W. Whitaker, Crewe Hall, writes: There is a very good crop of peaches on walls, and the trees are healthy. The varieties bearing the most satisfactorily are: Alexander, Grosse Mignonne, Alexandra Noblesse, Osprey, Princess of Wales, Dymond, and Walburton Admirable. The best nectarines are Lord Napier, Rivers's Orange, Violette Hative, and Victoria.

Clackmannanshire.—Under an average generally.

Clare.—Crops decidedly poor.

Cork.—Crops below the average generally.

Denbighshire.—Fairly good crops in most districts.

Devonshire.—Partial and generally light.

Dorsetshire.—Crops thin, and the fruit later than usual.

Dublin.—Crops variable and generally below the average.

Essex.—Partial; in the majority of cases very poor.

Mr. J. Douglas, Great Gearies, Ilford, writes: There is a fair crop of peaches and nectarines on walls, and the fruit has the appearance of being of good quality. It has not been difficult to keep the trees clean this year. Red spider is most voracious in dry, hot weather, and of that we have had very little.

Mr. C. W. Dance, Gosfield Hall, Halstead, observes: We have had good crops under glass, but out of doors peaches and nectarines have been a complete failure.

Glamorganshire.—An average crop generally.

Mr. A. Pettigrew, Cardiff Castle, remarks: Peaches and nectarines are very good; the trees healthy and carrying good crops.

Gloucestershire.—Crops variable, but on the whole nearly, if not quite, an average.

Mr. W. Nash, Badminton, says: Peaches are numerous and promise to be very fine, and the foliage is clean and healthy.

Mr. J. Cleare, Toddington, observes: We have a good crop, the trees have suffered less from blister than usual, but greenfly has been very troublesome.

Hampshire.—Variable, and in many places very poor.

Mr. E. Molyneux, Swanmore Park, says: Peaches are not much grown outside here, but those we have—Grosse Mignonne, Royal George, Walburton Admirable, and Barrington—have extra fine crops. The trees are exceptionally healthy, and promise to finish a heavy crop satisfactorily.

Herefordshire.—Crops variable, but in most cases very poor.

Hertfordshire.—Very variable; light crops in many districts, good in others.

Mr. John Kipling, Knebworth, writes: We have more than an average crop. The trees were much troubled with leaf blister and aphis early in the season, but the trees are now in a clean and healthy condition and swelling off their crops satisfactorily. That there should be heavy crops of peaches and nectarines and a thin crop of plums, all growing on the same wall and under the same conditions, is rather remarkable. It appears unaccountable, unless it can be attributed to the fact that the peaches and nectarines were slightly in advance of the plums and had the advantage of rather warmer nights for a week previous to the latter coming into full bloom.

Mr. R. Ruffett, Panshanger Park, says: There are excellent crops. Aphis was very troublesome during the long-continued cold winds, but the trees were attended to, and the fruit promises to be good.

Huntingdonshire.—Crops moderately good, but in many cases the trees are much blighted.

Kent.—Good crops in most districts.

Mr. G. Woodward, Barnham Court, reports: There is a good average crop of peaches and nectarines. Early in the season blister was very prevalent, but I am happy to say that I have never seen the trees looking better than at the present time.

Kilkenny.—Rather variable; but on the whole the crops are very good.

Mr. William Clarke, Bessborough Park, observes: Peaches and nectarines are producing a good crop. We grow these fruits under a glass coping with sliding front lights. The weather was fine and bright at the time the trees were in bloom, with the result that they set a good crop. I fully appreciate the service the bees are able to render in this matter, and in December I move some hives to a back walk near the fruit trees. The trees are clean and healthy, and I would mention that to keep down insect pests I use fir tree oil. The trees are supplied with soot water and also with Thomson's patent manure, which, judiciously used, is found very beneficial.

Lancashire.—Fairly good crops are reported from the few districts in which they are grown outside.

Mr. W. Tunnington, Calderstone, Allerton, remarks: Early Beatrice and Hale's Early are the most satisfactory peaches with us outside. No other varieties have a crop worth naming. Of the nectarines, Lord Napier is, as usual, carrying a good crop. It appears to be the most useful sort outside with us.

Leicester.—Variable, and, on the whole, rather below the average.

Mr. G. Maynard, Cole Orton Hall, observes: Peaches and nectarines set well, but the trees were at the beginning of the season badly infested with greenfly. After ridding the trees of this pest they commenced to grow freely, and are now in a healthy condition. The peaches that do best with us are Dr. Hogg, Barrington, and Walburton Admirable, and the best of the nectarines with us is Lord Napier. We protect the peaches and nectarines, and also the apricots, with yew branches when in bloom, and find the protection of much value.

Leicestershire.—Crops generally satisfactory.

Mr. W. Ingram, Belvoir Castle, writes: Owing to the unusual dryness of the ground, it was necessary to mulch the borders in front of the south walls to which peaches were trained. The result was so far satisfactory that a fair average crop was secured. Alexander and Hale's Early have borne well, and Bellegarde and French Galande have moderate crops.

Mr. D. Lumsden, Bloxholm Hall, says: Excellent crops on open walls, where well protected with covers, early in the spring. The trees are healthy, and have a satisfactory appearance.

Midlothian.—Moderately good crops in the few gardens in which grown outside.

Mr. M. Dunn, Dalkeith Gardens, reports: There is a moderate crop of peaches, and it looks promising; the best varieties are Hale's Early, Alexander, Amsden's June, Waterloo, and other early kinds, which ripen best on open walls in this northern latitude. Most mid-season peaches do well in good seasons—such as Royal George, Bellegarde, Stirling Castle, Dymond, Dr. Hogg, Condor, Goshawk, Violette Hative, and Noblesse; but late peaches generally are not a success. There is also a moderate crop of nectarines, Pineapple, Lord Napier, Elruge, Humboldt, Goldonia, and Violette, bearing best. Nectarines are not, as a rule, so satisfactory as peaches on the open walls with us; and taking them one year with another, they do not pay for the room they occupy on good walls. Both peaches and nectarines thrive well, and are worth their room in a glass house from which frost can be excluded.

Middlesex.—Crops are good on all sides. Mr. G. Wythes, Syon House, Brentford, observes: Peaches are above the average and promise to be very good. The trees at one time were badly infested with aphis, but are now in splendid condition. There are abundant crops of Hale's Early, Dr. Hogg, Red Magdalene (Condor especially good): Dymond, Bellegarde, and Noblesse. Other varieties are equally good and set well.

Nairn.—Crop of peaches moderately good in the few gardens in which they are grown outside.

Norfolk.—Variable, and on the whole, below the average.

Mr. W. Orr, Stow Hall, remarks: The crop is fairly good, but the trees do not present a particularly satisfactory condition. Early Victoria has for the past four or five years been our best variety, the fruit is not large in size, or first class in flavour, but it is of good colour, and ripens at least two weeks before any of the other varieties grown here; we are usually able to commence gathering at the end of July. The variety bears regularly and well, productiveness being an important point in estimating the value of these as of other fruits.

Northamptonshire.—Excellent crops of both peaches and nectarines in all directions.

Mr. E. Cole, Althorp Park, says: We have not seen better crops of peaches and nectarines on walls before, although we had 17 deg. of frost when the trees were in bloom.

Northumberland.—Partial; complete failure in some places; fairly good in others.

Mr. G. Harris, Alnwick Castle, reports: Many of the peach trees outside have a full crop, both under Frigi domo and fishing net (double ply) protection. The fruit had a narrow escape on the 12th of April under the nets, when the thermometer registered 12 deg. of frost. Early free fruiting varieties do well here and produce fruit of good flavour. The greenfly has attacked the trees severely this season. Nectarines, generally, do not succeed here, but the Pine-apple has done fairly well, and Lord Napier promises to succeed, but Elruge is useless outside.

Nottingham.—Good crops generally.

Mr. Thomas H. Sutton, West Fields, Retford, remarks: Trees on walls that have received good protection in spring set splendid crops, and are making a good growth with healthy foliage.

Oxfordshire.—Average crops in most places.

Mr. Doherty, Wroxton Abbey, observes: Hale's Early, Royal George, and Violette Hative peaches are carrying good crops.

Perthshire.—Excellent crops are reported from the districts in which these fruits are grown.

Shropshire.—Fairly good crops in most cases.

Staffordshire.—Variable, and generally below the average.

Suffolk.—Crops moderately good in most places.

Mr. J. Sheppard, Wolverston Park, reports: Peaches are bearing a fair crop, although numbers have fallen in stoning, and the trees look well. The best with us are Noblesse, Bellegarde, Violette Hative, Stirling Castle, Barrington, and Walburton Admirable; the last-named for late use. The nectarines most in favour are Lord Napier, Elruge, Pitmaston, Pine Apple, and Humboldt.

Mr. J. Wallis, Orwell Park, says: Alexander has this year been larger in size, and finer in colour than we have had at any previous years.

Surrey.—Crops generally good.

Mr. E. Butts, Leigham Court, states: We have an average crop. Dymond is a grand variety for walls outside as it always sets well and produces fine fruit. There is a partial crop of peaches, Violette Hative, Dymond, and Stirling Castle, fair, other kinds very scarce. Although the trees here most of them were root pruned, and the roots kept near the surface, many of the young branches are diseased, and I am now cutting every shoot so affected close back into the old wood, and applying a styptic to the wounded part. Nectarine trees on same wall are similarly affected. There is a very partial crop throughout the neighbourhood where no protection was given.

Sussex.—An average crop.

Warwickshire.—A moderate crop generally.

Waterford.—Crops good in most districts.

Mr. P. Aberne, Lismore Castle, writes: A very abundant crop of both peaches and nectarines. The peaches which succeed best out of doors are Noblesse, Royal George, Barrington, and Walburton's Admirable. Peaches are a more certain crop in this country when protected by glass coping, which we have on our walls, and are a great success. Violette Hative, Elruge, and Pitmaston Orange are the only nectarines grown, and they are bearing abundantly.

West Lothian.—Crops moderate, both in quantity and quality.

Westmoreland.—Excellent crops in the gardens in which these fruits are grown outside.

Wigtonshire.—Crops good in most districts.

Mr. J. Day, Galloway House, writes: The crop of peaches is very good, and the trees healthy. Royal George, Noblesse, Hale's Early, Grosse Mignonne, and Early Grosse Mignonne, are found to be the best and most constant bearers here. Nectarines are not grown much outside. Trees of the Elruge are carrying fair crops.

Wiltshire.—Crops generally nearly equal to the average.

Worcestershire.—Crops fairly good in most districts.

Mr. W. Crump, Madresfield Court, remarks: There is a good crop of peaches of great promise, and of all kinds, trees healthy, and with difficulty kept clean. Alexandra ripening on outside south walls July 15th. Trees protected by a double thickness of herring net. The roots are annually or bi-annually brought to the surface, which helps to ripen and mature the wood, without which it is vain to expect fruit on heavy clay soils. Nectarines have also a sound good clean crop. Lord Napier is a favourite.

Yorkshire.—Good crops in all districts.

MR. GLADSTONE ON FRUIT-FARMING AND COTTAGE GARDENING.

At the annual show of the Hawarden and Buckley Horticultural Society, August 21, Mr. Gladstone give an address, in the course of which he spoke with some precision of the prospects of fruit-farming and cottage gardening as aids to social advancement and the increase of national resources. After disposing of a few generalities, he said: There is one thing that ought always to be introduced—that is to say, the main question of the day, whether we are gaining ground or losing ground. You are aware that this institution, which I hope is gradually acquiring solidity and a prospect of permanence in consequence of the increasing interest that is felt in it, this institution was founded for one single purpose in the main, namely—the promotion of cottage gardening. That was the main object, and if we failed in that, or if we were going backward in that respect, it would be a very poor consolation to think that we were making ground in any other directions; and the first thing, therefore, is to consider how we stand with regard to cottage gardening. Well, now, on the authority of those who are most competent to judge, I am rejoiced to be able to say that this year again has been a year of decided progress, and that the exhibits which have been sent in are considerably more numerous and more important than on any former occasion. I hope, therefore, that you will consider that there is a very great encouragement to persevere in a course of effort such as has heretofore been made, and that we may, as we hope, be able to record as each season comes round that the feeling which has been stirred up in the minds of the cottagers of the country is a feeling that gains strength instead of losing it, because, recollect that we are not now speaking of anything merely abstract; we are now speaking of the extension both of a sentiment and of a practice which tells in the most direct and in the most important manner upon the comforts of the people and upon enabling them to live in tolerable abundance as regards the necessaries and some of the conveniences of life. However, the plan when it was founded did not exclude what lies beyond cottage gardening — namely what is commonly called fruit-farming at large. Nay, it even goes beyond fruit-farming. But the great distinction which marks this extension of the original plan is that it brings in another and a very different class—namely, the farmers of the country; and I respectfully venture to say again to the farmers of the country that, although I know it is a very difficult thing to modify traditional practices, and although especially the first steps, the preparatory and initial measures in a new course, are attended with much difficulty, and often with but comparatively moderate results, yet I do venture to say with regard to fruit-farming and with regard to all the minor branches, not merely the question of fruit, but with regard to all the minor branches of production that are connected with this great and important profession—I do believe it will be immensely for the benefit of this country, and especially for the benefit of that class, if they continue to introduce a more systematic and more permanent regard to those branches into the pursuit that they follow with so much advantage to us all. You know, gentlemen, that in other countries, in Belgium especially, perhaps in France more than in any other country of Europe, and in certain parts of Italy, this most beneficial practice of following what is called the small culture in all its branches is very extensively pursued, and forms a very considerable element in the general industry and general prosperity of the country. As far as I know, the fruit-farming which has heretofore been pursued in England, or in certain parts of the country, is very important. Indeed, if we go to Somersetshire, for instance, why there it forms an important and lucrative portion of the pursuits of the farmer—and a very important portion of which is material to him—and a very important portion of the rent of the landlord. But of late years, within the last twenty years, and especially the last ten years, persons have taken to fruit-farming who formerly had nothing to do with it; and I am bound to say that all the intelligence I receive convinces me that upon the whole the results have been lucrative to those who have undertaken it. I do not say they have been uniform. There never can be uniformity in such things, because of the differences of climate and position, differences of skilled industry and capital. These things will always lead to a very great variety of results; but, upon the whole, there is no doubt these have been satisfactory. I hold in my hand, gentlemen, what I think is a rather important sign of the progress that the subject is making. This is a lecture delivered in a university on the subject of fruit-farming. You may depend upon it that is a sign that we are thriving and growing and getting up in the world if this subject, which a few years ago was confined to humble rural gatherings like ours, is beginning to show its face in a university. This is a lecture delivered by Mr. Hooper, who is a Kentish man occupyiug an important position in Kent, in the Horticultural College—a lecture delivered by him to the agricultural class in the University of Edinburgh. He goes through the whole of the particulars, and he evidently is under the belief that great things are to be done in this direction by patience and judgment with industry; and he also shows that a literature is rising on the subject, and quotes a number of works which he thinks may with advantage be consulted. And one reason why I refer particularly to him is this, that, as I have told you, the university which is chosen is not one of our southern universities; it is the University of Edinburgh. Well, now, that has partly to do with the fact that the students of the Scotch universities are of a condition in life more akin to that of the farmers than those of the English universities. But there is another reason, and it is this—that in Scotland men have their minds more open to the use of new resources in order to meet their difficulties, perhaps, than in England, and there is another point that it is material that you should observe, and it is this—when people are asked why we have not more fruit-farming in this country and when an example like that of France is laid before them they are very apt to answer, "Oh, we have not got so good a climate." Gentlemen, it is not climate that stands in the way, and if you want the proof of that look to Scotland. The Scotch have not got as good a climate as you have for raising fruit. I do not say that it is not well adapted to certain kinds of fruit—to strawberries, raspberries, and gooseberries—but take the whole range of fruit, it cannot be considered as good a climate as yours, and yet you see it is in Scotland that for the first time the students of the university are entertained by the delivery of a lecture upon this important subject. Depend upon it, gentlemen, there is no reason why on account merely of climate you should despond. There is another question which would have surprised probably our forefathers a good deal, but depend upon it, you have not got to the end of the expedients that may be and will be adopted for the purpose of restoring life, prosperity, and profit to agricultural pursuits. It is only by experience that we learn we must submit to suffer a little in order that we may become wiser, and one thing will come up after another. For my part, gentlemen, if I were a great deal younger than I am, and had to look forward over a great number of years to come, I should say, depend upon it the last thing that can happen in this country is that the land should lose its value. There may be periods of prosperity and periods of adversity, but upon the whole my belief is that the land of this country is destined not to decline in the long run, but, on the contrary, rather to grow in value as compared with the value that it now holds. There is another subject that demands a word, and that is the prize for butter, which was given last year and again this year. I am afraid that the results are not so absolutely satisfactory as they were last year, when we earned from the able gentleman who came here as a judge of the butter very high commendation for the butter of this district in comparison with the butter of other districts with which he was familiar. I understand that the butter which obtained the prize and some of the other butter was extremely good. The first thing I notice is that the cottager has beaten the farmer. The first prize is a prize given to a person having, I think, not more than two cows or three cows, and I am not altogether sorry as between the cottager and the farmer. It is not at all a bad thing that the cottager should sometimes beat the farmer, and for this reason. If the cottager beats the farmer it will put the farmer on his mettle, and he has plenty of means of competing with the cottager if he makes use of them. But if the farmer beats the cottager, then there is some fear that the cottager may lose heart and may say, "Oh, I cannot contend with the farmer. It is no use, and I will give it up." I advise the cottager to do his best against the farmer, and the farmer do his best against the cottager, and the result of that will be that they will both do better than they would have done if there had not been a competition between them. So it is not only the one who wins that would get better butter than he would have had, but the one who loses would get better butter. However, I understand that some portion of the cottagers' butter this year is not as good as last year, and would admit of great improvement. One thing you should always recollect, and it is that the market is unbounded. We had a good deal said last year about fowls and the laying of eggs, and some correspondence arose, and some people denied that so many eggs could be laid, and others asserted it. I read that correspondence, and the result of it in my mind was to believe that what had been said was by no means too sanguine. No doubt all these things, gentlemen, are skilled pursuits. They cannot be attained merely by wishing to do them, merely by an honest intention. There must be a close, careful adjustment of means to ends, and no doubt people will differ very much in the success with which they go through the process. But, upon the whole, the result of it is that there is every reason for perseverance, every reason to believe that the result will in general be satisfactory. I have just mentioned to you three things, gentlemen. With regard to milk and butter, I will say these are both of them articles which are of the most enormous consequence in the future, both to the food of the country, to the health of the country, and to the success and profit of those who produce them. I understand milk is not so important here as it is in those parts of country where milk is made in factories, but I understand that what is called "separated milk" is extremely good as a beverage, is most nutritious, and is habitually sold, as I am informed, at one penny a quart, One penny a quart is a very moderate price to give for any good and nutritious beverage. I suppose we are not all temperance men or teetotallers, but, at any rate, I assume that we look with great satisfaction upon the growing consumption of those drinks which are not intoxicating drinks. Depend upon it, both for sobriety and for health, the more milk the population are able to use, the more they can use it for themselves, and, above all, the more they can get it at moderate prices for their children, the better for them all it will be. I think I have said enough for the purposes that we have in view. I have asked you to bear in mind these two subjects. Our question divides itself into two branches—the branch of cottage gardening and the branch of fruit farming, together with those other purposes which concern the farmer rather than the cottager. Look at them which way you will, they do good. If you look at the cottage gardening it tends to promote good, wholesome tastes, and directly to increase the comforts and means of subsistence of the labourers and their families, even if they send nothing to market. And so again it is that the farmer—if the farmer is able to succeed in these pursuits—gets more strings to his bow. He gets a greater choice whereby to meet and confront the vicissitudes of the time, and by doing good to himself he does good to other people. He raises a demand for more labourers to be employed upon the soil, he helps to keep up the rural population of the country, he helps to keep up the wages of the rural population, which, though they are much better than they were, yet, in many cases are not altogether what we should wish them to be. I hope, ladies and gentlemen, therefore, that all of you who have met here to-day will go home with the belief that it was worth your while to come here; that the pursuit in which this association is engaged is a most healthful and beneficial and useful pursuit to all those who are concerned in it, and, for my part I hope—I trust—that these meetings may continue to be held, to be acceptable, and to be useful in this place and parish of Hawarden from generation to generation.

A SELECTION OF DAFFODILS.

From the "Journal of the Royal Horticultural Society."

In connection with the Daffodil Conference at Chiswick, on April 16, a paper of inquiry as to the best varieties for different purposes was circulated amongst the principal successful growers of daffodils throughout the country —amateurs and market growers and nurserymen. The answers received were not so numerous as had been hoped, but they were all from thoroughly reliable sources, so that the following tables, which have been compiled from the returns, may be considered to be representative. At the same time, it should be borne in mind that different soils and situations suit different varieties. For instance, one well-known grower says: "Horsfieldii has never given me one decent flower, though I have tried to grow it for the last twelve years. Grandis is my favourite for everything. Empress, also, is very fine." Whereas another almost as experienced grower writes: "I know nothing to equal Horsfieldii." The first gentleman lives on light, dryish sandy loam in the South, the latter in the Northern Lake district, where rain is never a stranger, and the soil is generally heavier.

Many of the white Ajax varieties are distinctly of delicate constitution, and there appears to be a pretty general consensus of opinion that the whole of the Spurius group are very particular as to soil, and often die out. Similar complaints are made by some of Mary Anderson, Ard Righ, Pallidus præcox, Obvallaris, Mrs. F. W. Burbidge, Vicar of Lulworth, and Double Cernuus.

None of the Corbularias (Hoop-petticoats), or Triandrus (Calathinus), or Juncifolius, or Rupicola, or Cyclamineus should, I think, be attempted out-of-doors by any but a very skilled hand or in a most favoured spot

The following lists have been drawn up from the returns of the principal daffodil growers, and may be explained by taking List I. as an example. In this case 17 growers sent in returns of what they considered to be the 12 best Single Ajax or Trumpet daffodils, and of these 17 experts 16 mentioned Empress as among the best 12; 15 mentioned Emperor, 15 mentioned Grandis, 14 mentioned Horsfieldii, and so on. Therefore, Empress is entitled to the first place, Emperor and Grandis are equal second, Horsfieldii takes the fourth place, and so on.

List I.

The twelve best Single (yellow or bicolor) Ajax for exhibition (17 voters):—

	Votes.		Votes.
1. Empress	16	10. John Nelson	7
2. Emperor	15	10. Obvallaris	7
2. Grandis	15	12. Ard Righ	6
4. Horsfieldii	14	12. Henry Irving	6
5. J. B. M. Camm	13	12. Bicolor	6
5. Maximus	13	15. Glory of Leyden	5
7. Golden Spur	12	15. Michael Foster	5
8. Captain Nelson	10	17. Dean Herbert	4
9. Countess of Annesley	8		

It may be remarked that, had Glory of Leyden been better known, it would probably have had a more prominent position assigned to it, but being so new and as yet so expensive, it is known to but few. It is a yellow flower, in size and form somewhat resembling the white Madame de Graaff.

List II.

The twelve next best Single (yellow or bicolor) Ajax for exhibition (13 voters):—

	Votes.		Votes.
1. Princeps	7	4. James Walker	5
2. Dean Herbert	6	8. Mrs. Geo. Cammell	4
2. Henry Irving	6	8. Golden Plover	4
4. P. R. Barr	5	8. Bicolor	4
4. Ard Righ	5	8. Edward Leeds	4
4. Michael Foster	5		

List III.

The six best Single White Ajax (17 voters).

	Votes.		Votes.
1. Mrs. J. B. M. Camm	11	6. Moschatus	5
2. Colleen Bawn	10	8. Cernuus	4
3. Cernuus pulcher	8	8. Dr. Hogg	4
4. Albicans	7	8. Pallidus præcox	4
5. Tortuosus (Leda)	6	8. Mrs. F. W. Burbidge	4
6. Madame de Graaff	5		

The same may be said of Madame de Graaff (Fig. 12) in this list as was remarked of Glory of Leyden in List I. Lady Grosvenor and Mrs. Vincent, if better known, would also certainly have found a place.

List IV.

The six best Double Daffodils for general purposes.

	Votes.		Votes.
1. Telamonius	13	6. Capax	9
1. Poeticus	13	7. Cernuus	8
1. Sulphur Phœnix	13	8. Incomparabilis	4
4. Orange Phœnix	12	8. Pseudo-Narcissus	4
5. Odorus	10		

List V.

The twelve best Single for exhibition of all other classes from Incomparabilis to Jonquilla, Polyanthus excluded (17 voters).

	Votes.		Votes.
1. Sir Watkin	17	9. Cynosure	6
2. Barrii conspicuus	14	9. Maurice Vilmorin	6
2. Duchess of Westminster	14	11. Minnie Hume	5
4. C. J. Backhouse	11	11. Flora Wilson	5
4. Princess Mary	11	11. Nelsoni	5
6. Poeticus ornatus	8	14. Gem	4
6. Catherine Spurrell	8	14. Sensation	4
8. Gloria Mundi	7	14. Poetarum	4

The same may be said of Gloria Mundi as was remarked of Glory of Leyden in List I.

List VI.

The 12 next best, as in List V. (14 voters):—

	Votes.		Votes.
1. Mrs. Langtry	9	4. Nelsoni major	5
2. Beauty	7	4. Beatrice	5
3. W. Wilks	6	4. Cynosure	5
4. Maurice Vilmorin	5	9. C. J. Backhouse	4
4. Amabilis	5		

List VII.

The 6 best Polyanthus for out-of-doors (11 voters):—

	Votes.		Votes.
1. Soleil d'Or	9	4. Newton	6
2. Bazelman major	7	5. Her Majesty	5
2. Grand Monarque	7	6. Orientalis	4

It is doubtful whether any of the Polyanthus Daffodils are quite hardy in the northern and north-midland counties.

List VIII.

The 12 best Ajax for garden effect, having regard to constitution, vigour, and varied season (17 voters):—

	Votes.		Votes.
1. Emperor	17	7. Countess of Annesley	8
2. Empress	14	9. J. B. M. Camm	6
2. Horsfieldii	14	9. Ard Righ	6
2. Grandis	14	11. Madame de Graaff	5
5. Obvallaris	10	11. Rugilobus	5
6. Golden Spur	9	13. Pallidus præcox	4
7. Maximus	8		

The voters must have assumed that they were not to include doubles, otherwise it is difficult to account for the omission of Telamonius plenus, the common great Double Yellow Daffodil, probably the most effective of any for garden purposes, and of grand constitution and vigour.

List IX.

The twelve best of all other classes, having regard to constitution, vigour, and varied season (sixteen voters).

	Votes.		Votes.
1. Sir Watkin	12	8. Amabilis	5
1. Barri conspicuus	12	8. Rugulosus	5
3. Poeticus ornatus	11	8. Odorus	5
4. Cynosure	10	11. Poetarum	4
4. Princess Mary	10	11. C. J. Backhouse	4
6. Nelsoni major	8	11. Frank Miles	4
7. Duchess of Westminster	9	11. Minnie Hume	4

From the foregoing list, and from notes added to some of the returns, we may safely infer that the best varieties for ordinary garden purposes, having regard to constitution, will be found amongst the following, and I name them in the order in which I should personally place them:—

A. *Single Yellow Ajax.*—Emperor, Glory of Leyden, Captain Nelson, Countess of Annesley, John Nelson, Troilus, Ard Righ, and Rugilobus. Not one of these equals Maximus in colour, but unfortunately it seems in some soils to be a shy bloomer, but it is a grand variety.

B. *Single Bicolor Ajax.*—Empress, Grandis, J. B. M. Camm, Horsfieldii, Princeps, Dean Herbert, Michael Foster. Empress, Grandis, and Horsfieldii are, to people unacquainted with them, very similar, and might sometimes be mistaken for each other. Horsfieldii is, perhaps, a trifle the largest, and a few days the earliest of the three, but it lacks the splendid substance of its rivals. Empress and Grandis are glorious flowers, the one opening a day or two before the other. Dean Herbert and Michael Foster are both good, but somewhat similar.

C. *Single White Ajax.*—Madame de Graaff, Lady Grosvenor, Cernuus pulcher, Colleen Bawn, Mrs. J. B. M. Camm, Mrs. Vincent, Cernuus. Madame de Graaff appears to be not only undoubtedly the finest, but also the best constitutioned of all the varieties of white Ajax.

D. *Double Daffodils.*—Telamonius, Poeticus, Orange Phœnix, Sulphur Phœnix, Incomparabilis, Odorus. The Double Jonquil should never be absent from gardens in which it will grow; it scents the air all round. Telamonius is still the best all-round daffodil for out-of-doors effect. It does well planted in the grass, but the foliage must not be mown off until it has quite died down.

E. *Single Incomparabilis, &c.*—Sir Watkin, Gloria Mundi, Nelsoni aurantius, Duchess of Westminster, Barrii conspicuus, C. J. Backhouse, Princess Mary, Catherine Spurrell, Cynosure, Maurice Vilmorin, Minnie Hume, Flora Wilson, Nelsoni Major, Gem, Sensation, Beauty, Splendens, Beatrice, Mrs. Langtry, M. M. de Graaf.

F. *Single Poeticus, &c.*—Ornatus, Recurvus, Poetarum, Odorus, Jonquilla. Ornatus blooms three weeks before Recurvus, and Poetarum comes in about midway between them.

G. *Polyanthus.*—Grand Monarque. The polyanthus section are mostly used for greenhouse culture, but, just as almost all the other sections previously mentioned, will bloom very fairly well out of doors. Grand Monarque does magnificently in my own garden in Surrey, but speaking generally, all the other classes (A to F) should be tried before the beginner turns his attention to Polyanthus Daffodils out-of-doors.

W. Wilks.

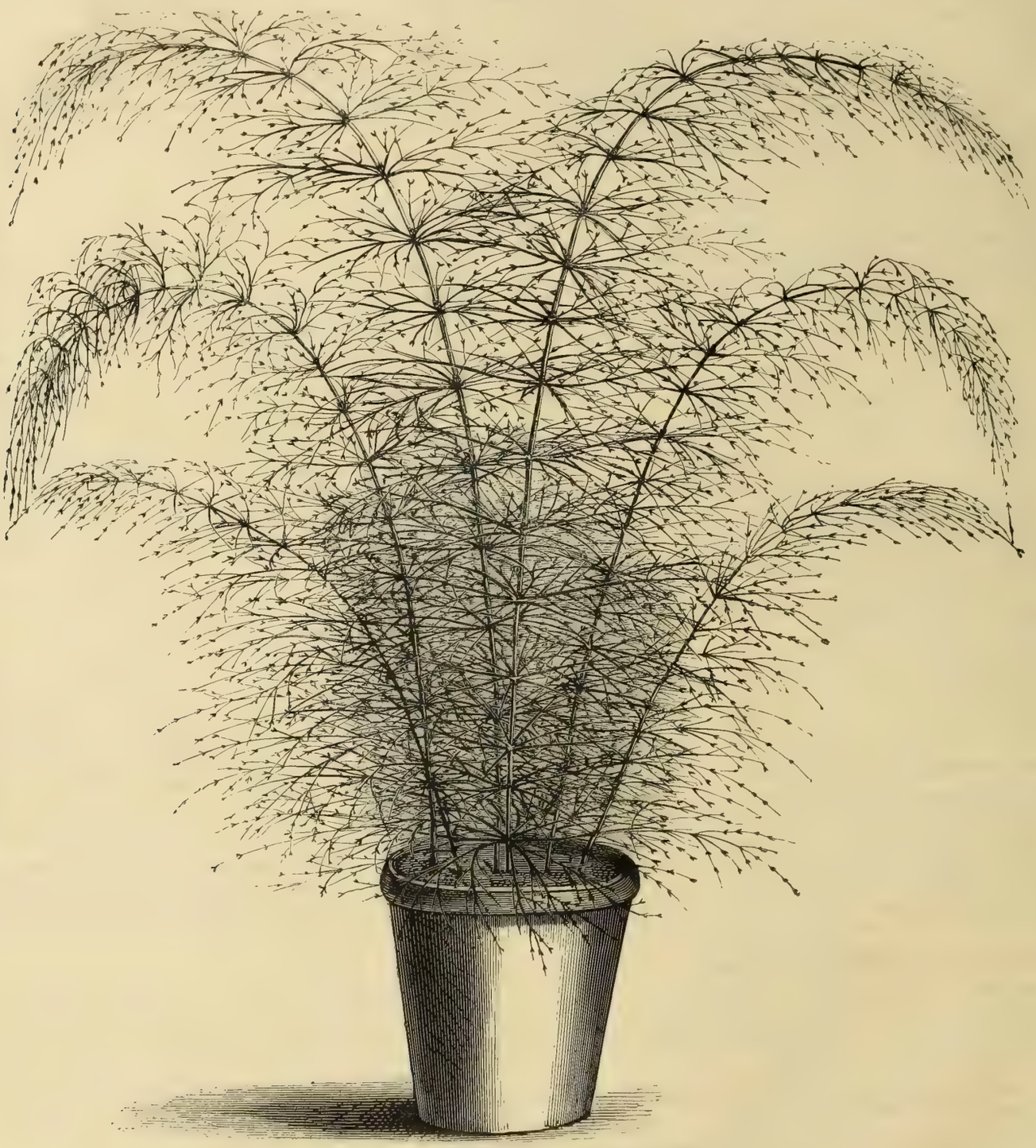
Doubling of the Petunia.—In a paper contributed to the *American Popular Science Monthly*, Professor B. D. Halstead gives the following description of the doubling process in the petunia. He writes: "In the Petunia the doubling of the flower is usually accompanied by a remarkable modification of the pistil—in short, a secondary flower is formed within the ovary. Botanists have long recognized an exceptional development of the floral axis which has been termed prolification. In this there may be a prolongation of the axis beyond the blossom, and the development upon it of ordinary foliage. The European Larch furnishes a good illustration of this. Sometimes an ordinary leafy stem extends upward from the centre of the cone for nearly a foot. In rare cases leafy branches have grown out from the free or blossom end of pears, and buds and long branches have arisen from the centre of a rose. In the Petunia this prolification, if we may call it such, assumes the form of a small and much contorted flower. Repeated examinations of normal flowers fail to show any unusual structure to the pistil. It is, therefore, associated with the doubling process in the Petunia. Instead of the end of the floral axis, which terminates at the base of the single centrally situated pistil, remaining as such, it develops into another flower, and this within the ovary of the primary blossom. Just why we should have this peculiar form of prolification, or any, in fact, is not for us to decide. The ordinary forces which would construct a normal flower have been thrown into confusion, and retrograde metamorphoses and floral prolification have resulted. In fact, it seems evident that out of the substance ordinarily producing a capsule of Petunia-seed has been formed in the same ovary an amalgamation of stamens, petals, and a rudimentary pistil. In short, the tendency to petaline display does not stop with the stamens, but invades the pistil, and transforms it as already described."

HORSETAILS.

It surprises me as a lover of ferns and their allies that at the Fern Conference there was nothing said about the horsetails being proper subjects for the cool fernhouse and for pot culture for general decorative purposes. Why does our watchful friend Mr. Hibberd allow the waters of oblivion to pass over the plants he cultivated so well as exhibition specimens and years ago when working in a good cause brought them forward as examples for amateurs? Lately in the Oxford Botanic Garden after having been well feasted with carnations at Mr. Dodwell's, I went to cool my eyes with greenery, and saw nothing so exceedingly green, so cool, so refreshing as a bank of these plants in the greatest state of luxuriance. Here was the stately *Equisetum palustre*, the beautiful *E. umbrosum*, the common, and not inelegant, *E. arvense*, that becomes a fine plant when well grown, and the queen of the family, the exquisitely beautiful *E. sylvaticum*. Some of these have been eaten in ancient times, for their roots are starchy, and *E. telmateia*, the largest and most dignified of the genus is eaten by the reindeer, and cattle will occasionally browse upon it. To grow them appears easy enough, but they want a little humouring. The one requirement of all is moisture. As to soil I have only grown them in moist peat, which they certainly like, but when met with in their native habitats any kind of mud seems to suit E. telmateia and E. sylvatica, but E. arvense often occurs in clay, and even gravel. But given moisture and a moderate amount of shade and the rest is simple enough.

The inflorescence, or as we say to appear scientific, the "fructification" of these plants is worthy of a special study. Their beauty indeed declines as the fertile cones appear, but that is the very time when to the observant eye the attractions are the highest, for the complexion of the whole plant is changed, and it invites us to witness an occult performance. I shall hope the R.H.S. will remember that all such beautiful objects are worthy of attention in gardens, and when ferns again have a day set apart for them there should be a place made for the equisetums. Now that many of our friends are fern hunting, le me advise them to look in the marshy places and the shady, moist spots that often occur in places where ferns abound, to make acquaintance with horsetails as plants that have beauty to recommend them, and that have played a great part in past ages when the coal fields were in course of formation.

Dotus.



THE WOODLAND HORSETAIL, *Equisetum sylvaticum*.

[We reproduce a figure of Equisetum sylvaticum in illustration of our correspondent's praise of its beauty. As a specimen in an eight-inch pot it is when well grown as beautiful for its delicate tint of golden green as for its exquisite delicacy of form. We fully approve of the recommendation of these plants to lovers of ferns as calculated to afford them much pleasure.—Ed.]



From the Picture by Ivystan Hetherington, in the Grosvenor Gallery.

A GARDEN OF LILIES.

"A garden where the lilies greet
The summer zephyrs soft and sweet."

By permission of the Artist.

BEDDING FUCHSIAS.

Your report on the bedding in Hyde Park should serve as a reminder to the many who adhere to the practice of bedding out tender plants for the summer—a practice that I hope and believe will survive the indiscriminate crusade against it—that fuchsias have some special claims to attention. Thirty years ago, when the elder Mr. Beningfield made famous for its summer bedding the beautiful grounds of the Crown Hotel at Broxbourne fuchsias were extensively used, not in solid masses, but dotted about on the grass lawns, with ample space between for promenaders, and being planted out in rich, moist, mellow soil, made a wonderful growth and flowered sublimely. I have seen many displays of fuchsias in open beds since then, but never the equal of the Broxbourne examples. Recently Kew has taken a turn in this business by putting out a lot of wiry-habited fuchsias of the Virgata section in beds with Galtonias and Hydrangea paniculata, &c., but as Kew must not touch florists' fuchsias, it is not the place to see the thing done artistically. In the south and west, more particularly along the coasts of Hants, Dorset, Devon, Cornwall, and Somerset, out-door fuchsias are grand in every way, and surprise a Londoner, for nowhere in the east of England will the plant prosper as in the moister air and softer temperature of the south and west. But for all that, London and the Eastern counties generally may do well with fuchsias for summer display, not by planting out for permanent occupation of the positions assigned in the garden, but by securing strong plants and bedding these out, or even plunging them in the pots, as many do with singular success. The specific forms that sparkle so brilliantly on walls of houses in the western counties are not the best for the east. There preference should be given to the most robust named varieties, and these should be grown to some size with well-ripened wood, and when bedded, should be in rich light soil, and have liberal supplies of water all through the summer. I have had great success with such in a London garden, the varieties in favour being such as Marquis of Bristol, M. Thibaut, General Roberts, President, Resplendent, Lustre Improved, Mrs. Marshall, Marginata, King of the Fuchsias, Dr. Sankey. In any case, the single varieties with large flowers or plants of robust habit are the most useful for the purpose. A few of the smaller kinds for edgings may be useful, such as the small edition of Riccartoni, and the series of which Alba coccinea is the type, for this is of dwarf habit, unique in its sparkling colours, and makes a model marginal plant in beds. Lately at Swanley I saw an immense collection, and made notes of a few that I wanted for special purposes, Messrs. Cannell having perhaps the most complete collection of these plants to be found anywhere in the country.

R. R.



FUCHSIA GENERAL ROBERTS.

A GARDEN OF LILIES.

The picture of which, by generous permission of the painter, Mr. Ivystan Hetherington, we have obtained a copy, gave a singular charm to the recent exhibition in the Grosvenor Gallery by reason of its freshness of tone, admirable composition, and the slight but sweet touch of sentiment that supplies an episode. The rarity of such pictures testifies to the peculiarity of the talent requisite to the reproduction of flowers and of gardens; indeed, the picture galleries furnish many examples, and it is our misfortune to have to report that not many of them are worthy of the subjects selected. To hit the happy mean between generalizing and particularizing appears to be one of the major difficulties in handling garden scenes, and it is evident a long schooling and much patient observation are required in addition to the mastery of technique for securing such a happy combination of materials as in the picture before us. As regards the vegetation the harmony is complete, a fact emphasized by the beauty of the work as it here appears without the aid of colour; for on a first consideration, colour should be the first quality required; but as in this case we have none, it sinks to the last: the blending of forms and tones sufficing, while the sufficiency of the indications of the characteristics of the vegetation adds to the interest the scene awakens. But we have here the interest of human life. Trivial as the incident may be, it is appropriate; it completes the domesticity and suggestion of content that properly appertain to a garden of lilies, and we congratulate the person—whoever he or she may be—who shall have the good fortune to secure this picture, in the prospect that one may never weary of admiring it.

PEA CHELSEA GEM.

Veitch's Chelsea Gem pea is truly a gem as regards quality. I have tried it in different soils, and in all cases have found it excellent. Being dwarf in growth, it is especially adapted for cultivation in small plots of ground where the more robust growers could not be planted. The quantities of pods gathered from relatively small breadths of this pea have been perfectly astonishing.

Titsey Park, Limpsfield. J. G. Dean.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Greenhouse Plants in bloom include:—Abutilons; Amaryllis reticulata; Erica Marnockiana, E. McNabiana: Erythrina Marie Belanger; Eucomis punctata; Fuchsias; Hydrangeas, Lantanas, Lapageria rosea; Nerine Fothergilli; N. sarniensis; N. undulata; Plumbago capensis; Rochea falcata, Sedum spectabile, Trachelium cœruleum, T. album; Vallota purpurea, V. purpurea eximea; Zonal Pelargoniums.

THE HOUSE.

Plants in window boxes and on balconies will require less water than heretofore, and care must be taken not to water them too plentifully, because the temperature is declining, and plants require less moisture than during the dry summer heat. But they should not lack water, for the atmosphere is now somewhat dry, and the poor plants have to store up pulp on which their growth will be founded next year, and for what we wise people call the "ripening of the wood" a certain amount of moisture is necessary, although dryness and sunshine are as a rule great aids. We see in many places a tendency to a severe trimming up of vines, creepers, &c., and we think it proper to say that the practice is injurious, as checking growth, and on the score of beauty, surely a little exuberance of growth and greenness are better than the hard lines the killing shears and knives will make.

CONSERVATORY AND GREENHOUSE.

Greenhouse and Conservatory must be cleaned thoroughly at once, and be made ready to receive the plants, which are standing out of doors. Boisterous winds, heavy rains, and sudden changes are to be expected soon, and it will be well to stage the choicest and tenderest plants at once. When arranging them, have an eye to a general pleasing effect, and put them so far apart that the air can circulate freely all around them. They must not be shut up too close, especially at first. Examine the surface of the soil, and if any signs of worms are visible turn the ball carefully out of the pot, when they may generally be picked out; supposing, however, that they are still invisible, do not break the ball to look for them, but return it to the pot, and stick a peg in it to serve as a reminder till the intruder is captured. The worms will frequently come to the side after tapping the ball with the hand when turned out of the pot. Remove dead leaves from the plants, and see that the drainage is faultless. Give all the air possible, and only reduce the ventilation when there is an unfavourable change in the weather.

STOVE AND ORCHID HOUSE.

Orchid House to be shaded as little as possible, so that the pseudo-bulbs and strong healthy shoots may be assisted in ripening off by the influence of the sun; the process to be perfected by keeping up a genial atmosphere, ranging from 70 deg. to 80 deg., with a comparative abundance of air in favourable weather. Give plenty of water to such as are growing freely, but very sparingly to those which are now rapidly approaching their season of rest. Cattleyas, Lælias, Odontoglossum grande, and Lycaste Skinneri may be kept rather cool, with an occasional light syringing. Orchids that have quite finished their growth for the season will require plenty of air during warm weather, to assist in ripening their pseudo-bulbs, and at the same time less water must be given. The adventurous cultivator will sometime encourage further growth by using a high temperature and plenty of moisture, reckoning upon having time yet to put the plants to rest safely. Many of the Vandas, Saccolabiums, and Dendrobiums will submit to this sort of treatment very cheerfully, and where there are abundant evidences of an inclination to keep growing it is not at all advisable to check it. Young plants generally are reluctant to cease their growing, and these must have plenty of moisture and continued shading. But those that are unmistakably settling down to rest should no longer be shaded, and there must be a decrease of temperature and of water supply. Established plants of Cattleya, Lycaste, Odontoglossum, and Lælia will, for the most part, require no more stimulus this season, but they must, nevertheless, have a moderate degree of atmospheric humidity. Stanhopeas must be looked to, that they do not become too dry, which is very likely to happen if they have not been put into new baskets this season.

Stove Plants of the hard-wooded class must have full exposure to the light, and be kept rather drier at the roots. Soft-wooded plants for winter flowering to be pushed on vigorously.

FLOWER GARDENS AND PLEASURE GROUNDS.

Auriculas.—If infested with green fly, shake a little dry fine sand amongst them, and then blow it out with force, when the insects will be blown out with it. Caterpillars must be sought for diligently, and picked out by hand, or they will soon make general havoc. Keep the soil clean, free from dead leaves and weeds, and stir the surface gently. Shade from bright sunshine, and protect from heavy rain.

Bedders to have every necessary attention to keep them in proper order. If seeds are allowed to ripen, the plants will begin to decline in bloom; so remove them promptly, and serve a twofold purpose thereby. Take cuttings of zonal and variegated pelargoniums in plenty, and to save further trouble put them in pots or boxes as they are to remain for the winter. Use plenty of drainage and a poor sandy compost now, in order to check growth and harden the wood.

Carnations.—Layers to be potted or transplanted as soon as rooted in sandy soil; avoid rich soil or stimulating manures, as they must not be encouraged to make much growth, or they will acquire a gross habit, which will be very detrimental during winter, for then it is necessary that they should rest. Place the pots in a close frame for a few days till fresh roots are made.

Roses may be propagated now by inserting cuttings in a bed of light soil in a frame or pit. But a more certain way will be to prepare the cuttings and insert them in damp sand in a shady place, and keep them frequently sprinkled till they callus, and then pot them and plunge them in a gentle bottom heat.

FRUIT GARDEN AND ORCHARD.

Apples and Pears to be gathered now as they ripen, always selecting a dry sunny day for the purpose, if possible; be careful to preserve them from bruises. It is important to gather the fruit at the proper moment, because if gathered too soon it will shrivel and be inferior in quality; on the other hand, if it hangs too long on the tree it will not keep well, and also be somewhat flat in flavour when it is ready for the table.

Peach and Nectarine Trees must be looked to as soon as the last fruit is gathered. If any are infested with red-spider dust them liberally with powdered sulphur early in the morning before the dew is off the leaves, or else syringe them well before the operation, so that the powder may adhere. A thorough washing from the garden engine will also be very beneficial to the trees after the crop has been gathered.

KITCHEN GARDEN AND FRAME GROUND.

Cabbage to be planted out for spring supply on ground well manured. Collards planted close will now be getting crowded; so draw for use as soon as possible every other one, and ply the hoe between them.

Cauliflower to be pricked out into frames for the winter, and to be kept as hardy as possible.

Endive to be planted out on warm, well-manured borders, to stand the winter.

Exhausted Crops of peas, beans, &c, should be cleared off as soon as they have done bearing, and the ground manured at once, dug over at the first opportunity, and planted with other crops.

Lettuce to be sown again for the last time. For management of the autumn and winter crop refer back.

Spinach must be thinned till the plants are about six inches apart; vacancies to be filled up by transplanting, and if the ground is heavy or trodden during the operation, carefully loosen it with a fork, so that the roots may have the benefit of the air.

VILLA FARM.

Bee-keepers who still believe in straw skeps, and hold fast to old-fashioned ideas generally, will have something to busy them, for the honey harvest is now at an end, and those who have not yet taken the honey from the hives must proceed to do so at once, because of the risk of a diminution in quantity, and a deterioration in quality. We have already given brief instructions for the removal of supers and the appropriation of honey stored in bar-frame hives, and we now propose to offer a few suggestions for the taking of honey from skeps. With reference to this matter, it must be said that the old practice of destroying the bees with brimstone, previous to the removal of the combs from the hives, ought not to be adopted, for it is barbarous, wasteful, and altogether unnecessary. To many apiarians, especially those of the cottager class, it seems impossible to take the honey without first destroying the bees, and when they can see their way clear to do this they are slow in understanding how the bees can be kept during the winter after they have been deprived of their honey. As a matter of fact, the taking of the honey without destroying a single bee is, to those accustomed to handle bees, a comparatively easy task, and a very few words will suffice to show what can be done with the stocks deprived of their stores of honey. If the hives are of an ordinary degree of strength, the most satisfactory course to pursue will be to taken the honey from one half the number, and to leave the others for stock, and to unite the occupants of the honey hives, which will be thus rendered houseless, with the occupants of the stock hives. As a matter of course, those hives which on examination are found to contain the finest honey should be taken.

ECKFORD'S NEW CULINARY PEAS.

The name of Henry Eckford is well known to most florists, for it is many years since he began contributing to the floral treasures of our day. Always an intelligent and pains-taking worker, skilful at fertilizing, doing it with some definite purpose in view, it is not to be wondered at that he has produced many good things. My first knowledge of him goes back a quarter of a century, when he was a cultivator, exhibitor, and raiser of dahlias; and though he gave up the raising of dahlias some time ago, a reference to the lists of the best exhibition varieties will reveal there are still two show and one fancy variety in cultivation raised by Henry Eckford, namely, Miss Cannell, white, heavily tipped with purplish crimson, a variety that is one of the most constant and foremost exhibition dahlias of the day, rejected by Keynes and Turner, but eventually sent out by Cannell, of Swanley; Royal Queen, also a very useful variety, yellow ground, heavily edged with purple, and the Fancy Lotty Eckford, white, striped with purple. He has now discontinued raising dahlias, although his love for the flower is as strong as ever. It was while gardener to the Earl of Radnor, at Coleshill, Bucks., that he was most active as a raiser; and he may be said to have taken up the verbena at a point when it was dropped by the late Mr. Charles J. Perry; and he was successful in obtaining a large number of fine varieties which received first class certificates of merit, and were distributed by Messrs. Keynes and Co., of Salisbury. He also raised some very good hybrid nosegay pelargoniums, which were also distributed by Messrs. Keynes and Co.

On leaving Coleshill, he was for a time in business at Swindon, but eventually went to Sandywell Park, Cheltenham, as gardener to the late Dr. Sankey, at one time a resident of Hanwell, and a very active florist. On Dr. Sankey changing his residence to Boreatton Park, Baschurch, Salop, Mr. Eckford accompanied him there, and then he commmenced those experiments in the direction of raising new varieties of culinary and sweet peas, with which his name is now so intimately associated. On the death of Mr. Sankey, Mr. Eckford went to Wem, a small town near to Shrewsbury, and started in business as a new pea merchant, making culinary and sweet peas his specialities. It is of the former I propose to treat on this occasion.

A reference to a reliable seed list will show that Mr. Eckford has already put into commerce several very fine sorts; such as Baroness, Duke of Connaught, Dignity, Empress, Essential, Fame, Heroine, Magnificent, Superiority, Shropshire Hero, The Don, Victor, and Vulcan. This list perhaps does not include all that Mr. Eckford has sent out, but it gives some idea of his industry as a raiser; and the Fruit Committee of the Royal Horticultural Society have from time to time awarded him first class certificates of merit for several of the foregoing when grown at Chiswick.

When at Shrewsbury, recently, I went on to Wem to see Mr. Eckford's seed grounds, and look over his culinary and sweet peas. He has about two acres of land in the Soulton Road, and it is almost entirely filled with peas, the varieties of the sweet pea being just in full floral beauty.

Mr. Eckford began fertilizing for the production of new culinary peas at the same time as he did with a view of improving the sweet peas. He sowed seeds of such fine sorts as Pride of the Market, Stratagem, Ne Plus Ultra, British Queen, Telegraph, Telephone, Veitch's Perfection, and a few of the very best of the early varieties, and made crosses always with a view of definite results, and always keeping a correct record of the same. What he mainly aimed at was to secure early and second early peas of bold growth, hardy, heavy croppers, and large pods, containing peas of the highest table quality. Mr. Eckford has little regard for what are known as late peas; he holds that if it is necessary to sow late peas at the same time as early ones, the ground is needlessly occupied, and that it is much better to sow a good

quick bearing variety successionally, so as to have a constant rotation of crops. I have known gardeners who say that they depend mainly upon a favourite variety of pea, sowing at short intervals, and they say they are never without a supply. But the old saying that variety is pleasing applies to peas, for one would not care to be eating the same variety day after day, and therefore it is expedient to grow a selection, even if a small one.

Of the new varieties Mr. Eckford intends to send out next season, I made note of Colossus, a wrinkled marrow, bearing large, long and slightly curved pods, height five feet. A great cropper, and a very fine exhibition variety; and though it may be regarded as a little thin in the straw, it is yet remarkable what a number of pods a stalk will produce. Another is Success, which like the foregoing, grows to a height of five feet, big well-filled pods, containing nine and ten large peas of exquisite flavour. The pods are pure green in colour, very handsome, it comes into use directly after William I, so it is a very fine second early variety; the seeds green wrinkled. A third is Ambassador, also about five feet in height, green-wrinkled, very green pods, slightly curved; a companion variety to Colossus. A fourth is Salopian, also about five feet in height, bearing very fine blunt-tipped pods, with nine and ten large peas in them. A main crop variety, and a great bearer. This will be sent out probably next year.

Two other distinct looking dwarf varieties are as yet unnamed, but they are being thoroughly tested this season. One is a fine dwarf growing pea of the type of Ne Plus Ultra, growing to a height of about two feet, with large and handsome green pods, produced with great freedom, well filled with peas of high flavour. Here we seem to have a very fine type of a market pea, but Mr. Eckford appears unwilling to name anything until he is well assured of its distinctness and excellence. There is another growing about the same height, bearing very large, long green curved pods, a variety Mr. Eckford has bred from Evolution, and which like the preceding, promises to make a fine exhibition variety. R. Dean.

GARDEN FLOWERS.

Galtonia candicans is the plant until lately labelled Hyacinthus candicans. Not many will object to the establishment of a genus for this plant and its near ally G. Princeps. It is so hardy and so useful that it has found its way into every garden that is at all kept up in what may be termed fashionable furniture, but though becoming common it is a plant that will never fail to command respectful admiration. In respect of growth it differs greatly with localities. In the eastern counties it appears never to attain to the massive stateliness it acquires in the west, and it is a kind of plant that can never be too robust or in any degree coarse through vigour of growth in good substantial soil with abundant moisture. Where the rainfall reaches thirty or more inches this plant is a far finer plant than as we know it, with a rainfall of only twenty-four inches, and on a porous soil. But under what may be termed poor conditions it is a most desirable occupant of the summer garden and mixes well in groups with plants that agree with it sufficiently in habit, while affording variety of colour. The question of the hardiness of this plant having been raised it should be said that in the southern counties it is certainly hardy, but it is not good practice to leave it out for the winter except where the conditions are especially favourable. Mr. Wilson finds it hardy in his Oakwood garden at Wisley, but in gardens near London a severe winter tries it beyond the limits of safety. In cold places it is a fine plant for a cool orchid house, making a better growth that way than in the open border.

Eucryphia pinnatifida is a shrub from Chili, quite hardy in kind climates, but not hardy in northern gardens. It is hardy at Kew, and may be found in a small bed on the side path from the main entrance a few yards beyond the stone pine. In habit it is peculiarly stiff and unhandsome, the leaves in some degree resembling those of a mahonia; certainly not resembling the typical hypericums to which it is nearly allied. The flowers are singularly beautiful, being snowy white and nearly as large as a Christmas rose, to which at first view they bear a resemblance. But the protruding stamens betray their relations to the St. John's worts, and give a special charm to them, as applicable to decorative purposes. The flowering season is July and August.

Rudbeckia speciosa is a fine plant not widely known, but especially valued for its gay yellow flowers in the latter days of August. It forms a compact bush of two and a-half feet high, the head of flowers forms a glorious golden crown, each flower over three inches in diameter, with deep yellow rays and marone centre. The plant is variously labelled as above, and also as R. Newmani, and Obeliscaria speciosa. One head is not enough to hold keys to all the synonyms that need to be mastered in the labelling of herbaceous plants.

Rudbeckia purpurea is one of the noblest autumnal-flowering plants in the great order of composites, but not often do we see it in a proper light. We have in view now a grand tuft of it in front of an old brick wall, and it has a rather common appearance. But in three minutes we can find some half dozen thriving clumps in a mixed border with only surroundings of greenery, with occasional enlivenings of tritomas, lilies, and asters, and here the purple Rudbeckia is magnificent. In the way of distinctness and splendour it is quite the equal of Monarda didyma, which has finished its display for this season, but the Rudbeckia is in the full splendour of its rich combination of purple and brown and gold; the ray florets of rosy purple forming a fringe to a kind of cushion studded with gold that forms the disk. This plant makes a growth of three to four feet in a rich deep soil, and should have a place in every garden where first-class hardy plants are appreciated.

Lythrum salicifolium, the purple loosestrife of the village botanist, has done its part to give a joyous tone to boating jaunts and riverside rambles, and now it is fast passing out of flower. A more glorious wilding we do not possess; even the foxglove has its match in this rosy water nymph that loves cool feet and does not object to being occasionally wetted even to the knees. This, in common with many lovers of mud, thrives in a common garden border, but always the better if enjoying abundant moisture. The yellow iris offers a corresponding example of a waterside plant that may be safely taken far from the water, and that may be counted on to flower freely in any good soil that will grow a cabbage. There are several varieties of this lythrum, and the one known as *roseum* is the most splendid of all, the colour of the flowers being an intense rosy carmine. But it is worthy of record that all points considered the typical form, as we see it on the margin of the Thames, for example, is not surpassed by any of them. We have the type plant, and all its varieties side by side, and the varieties, though each presenting characters and beauties of its own, prove in the end less worthy than the species, which is still showing flowers at this late date, while all the others have been out of flower fully three weeks. But they have their uses, and roseum we would not be without, the colour being delicious and the plant compact and well behaved; a model, indeed, for plants of this character.

Actinolepis coronaria is a good composite flowering now. The plant is of dwarf growth, the flowers yellow, with orange disk.

Lathyrus latifolius is but a "common thing" to make note of, but, for all general purposes, it is the best of the everlasting peas, and a magnificent plant when well placed. We have it in clumps in a mixed border, and for weeks past it has made a glow of brilliant rosy carmine a head and shoulders above its miscellaneous neighbours, compelling attention and admiration—a very different thing to the clump in a botanic garden where it stands with its kindred to challenge comparisons, and they spoil one another by contact. Even there the common L. latifolius is one of the best and the most constantly showy. But we must say a good word for *L. grandiflorus* with its great flowers; and for *L. rotundifolius*, which is in our mixed border and is a well behaved plant; while of *L. pyrenaicus* we have a sheet running over the roof of a shed, which it converts into a glorious pavilion for the nymphs and dryads and those other mythical babes that live on floral essences and the other rubbish the poets provide for them. But if all these others were swept away we should still be content with our latifolius, and would hope to keep also its white variety which ennobles our ruin on which the sedums and saxifrages play at monks and hermits secluded from the world in the sacredness of ruins formed by the cunning hand of a modern artificer.

Epilobium angustifolium "everybody" knows. It is the finest of the willow herbs, a fine plant for a water scene, but quite happy in a good border, and of the rustic sort not quite adapted for the parterre. The pure white variety is a genuine naiad, especially when it is surrounded with suitable accompaniments of ferns and feathery shrubs in the vicinity of a cascade or sparkling brook. The rockery above may be advantageously furnished with *E. obcordatum*, a most excellent alpine form of neat habit with cheerful flowers.

Opuntia Rafinesquei has flowered as freely as usual, although a warmer summer would have gratified it. We have a little lot of these on a low rockery near a warm south wall, that reflects warmth upon them (when there is any), and it is convenient to cover the rockery with some old frames during winter. On this low mound we have the handsome plant named above with half a dozen other kinds, none of which are its equal in beauty, for this opuntia is in truth a magnificent plant, in growth as well as in flowering. In many places near London it takes no harm if left exposed all the winter, but wherever danger from damp may be suspected, special care should be taken to protect it through the winter, for the glass that wards off frost also gives shelter against rain, snow, and even the fog, that is often more deadly than any of the winter enemies that assail hardy plants.

Hieracium boreale is one of the hawkweeds least known, but not the least deserving. Our good old friend H. aurantiacum must be allowed to retain its pre-eminence in this genus as a good border flower. But its season is over, and the plant now before us is in its prime. It rises four feet, has entire ovate leaves and a liberal head of brilliant yellow flowers that are as like pompon chrysanthemums as can be desired by such as love that kind of thing. It would be helpful in many a border now to keep up a show of colour and would be of some service in the reserve ground to cut from for decorative business at this season.

Chrysanthemum maximum is well known and universally admired. But *C. latifolium* is not so well known, but is a most excellent plant with oblong leaves and a free head of large white-rayed flowers, the tuft making four feet or thereabouts. They are both catalogued as Pyrethrums in old-fashioned gardens.

Acanthus spinosus presents its stately spikes of interesting flowers amidst its noble foliage, and we see the Corinthian capital in its living prototype, as in the arches of the Gothic aisle we see the interlacing of the branches of the trees over a walk that has been cut through the forest. The beautiful though quiet flowers of this fine plant appear as well adapted for artistic treatment as the leaves, but perhaps in quite another way. Indeed, the artistic use of the leaves arose from the posing of a tile that had been lifted by one of them, and it may be that the world stands in need of some trivial accident to bring out the distinctive beauty of these gaping flowers with their soft and curious colouring.

A USEFUL BOILER.

A few weeks since I had an occasion to be in the neighbourhood of St. Albans, and as I have received at various times several invitations from Mr. Watson to visit his nursery in that town, I gladly took advantage of the opportunity thus afforded for doing so. I was so far satisfied with what I saw that I believe I gained as clear an insight into many matters in the three hours I was there as I should have obtained in as many years in the ordinary routine of my business.

First of all I had a run through the houses in which the various plants were in the most thrifty condition, thus showing that the conditions under which they were placed were favourable to a vigorous growth. There are fourteen houses in all, and they range from forty-five to ninety-six feet in length. In one of the houses we found a good collection of orchids, and in the second, ferns were met with in a luxuriant condition, Adiantum cuneatum and A. Williamsi being evidently very popular with Mr. Watson's customers. From this we passed to several structures devoted to stove plants; in these the beautiful stephanotis floribunda was seen at its best. A finer lot of the fragrant flowers of the stephanotis I had not previously seen, the roofs being literally covered with them. To heat five of the houses, three of which are forty-five feet in length, the other two being sixty-seven and ninety-six feet respectively long, Mr. Watson has a boiler invented by himself. This is only three feet in length, and it evidently does the large amount of work required of it so efficiently that I cannot refrain from asking—What other boiler of its size can equal it in power? This boiler Mr. Watson has named the Clipper, but I think the Wonder would be more appropriate.

Mr. Watson had a still further surprise in store for me, and on my way back to the station he took me to a private garden, in which are three glass houses, one of which is devoted to stove plants. These three were heated by a boiler also made by Mr. Watson, which, in some respects, beats the Clipper. I discussed the matter with the gardener, and he said that the boiler had been in use nine years, and he had a high opinion of it both as regards its efficiency and economy, the latter being a point of much importance to a large proportion of growers. I had no difficulty in agreeing with the opinion thus expressed, as I have four of these boilers in use at my place, and am well satisfied with them.

New Bushey. W. Healey, *Florist.*

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

Annual Fete, August 21, 22, and 23.

The annual fête of this flourishing society was held in the Duthie Public Park, Aberdeen, on the above dates. It was matter for regret that the opening day was so very wet, and that the same should have to be said of the other two days; still, on the evenings of Friday and Saturday it cleared up beautifully, and thousands thronged the enclosure.

The quality of the exhibits was of a high standard of excellence, and as there were exhibitors from considerable distances, north, south, east, and west of the city, nothing else could have been looked for. The fact that over £200 was offered in prize money was a proof of the enterprise of the promoters. It may be asserted without fear of contradiction that the Royal Horticultural Society of Aberdeen is now one of the leading organisations of its kind in Scotland, and, judging from its popularity, it may not unnaturally be expected to hold its own. There was a scarcity of pot plants this year. The exhibits of fruit and vegetables, however, merited special attention, and of these potatos were the most remarkable. Passing to more beautiful objects, much attention was bestowed by the visitors on the cut flowers and to the wreaths and bouquets, which were exceedingly pretty. With reference to the roses, as rosarians so well know, this is just about the worst time of the year for exhibiting roses, as it proved on this occasion, because the summer blooms are past three weeks ago, and the autumn blooms are not yet come on. Consequently, being between the blooms, the specimens shown were not what, under more favourable circumstances, they might have been; yet visitors were highly delighted with the specimens shown. It is one of the objects of the society to promote the scientific study of horticulture, and to this end the management procured the services of Dr. James W. H. Trail, Professor of Botany, Aberdeen University, to give two lectures, one on Thursday and one on Saturday, on "How Plants Feed." Needless to say so able a lecturer had large audiences, and was listened to with wrapt attention. It was matter for regret that the number of entries this year were not more than last. The number this year was 1,616, as compared with 1,627 last year. This result was caused through the stringent observance of the rule that entries must be made six days before the show. Had this rule been relaxed, 120 more entries would have been forward. The exhibits were shown in two large marquees, supplied by Mr. Fusey, Hull. The larger one measured 225 feet by 45 feet, and the smaller one 140 feet by 30 feet. The total area of ground covered by the exhibition was 12,000 square yards. A new feature in regard to the arrangement of some of the exhibits was made this year, and the innovation was, without doubt, more satisfactory than the old method. The raised platforms on which the pot plants were shown were discarded, and, instead, the plants were ranged along the ground in the centre of the marquee, and protected by low rails. Mr. A. M. Byres, secretary, and the committee of management, deserve a meed of praise for the capital arrangements which obtained.

In the class open to professional gardeners, the leading prize for pot plants —it is to be regretted his was the only entry—was carried off by Mr. Proctor, gardener to ex-Lord Provost Henderson, Devanha House, Aberdeen. Barring some slight defects, Mr. Proctor's exhibits were superb in character and style. The three best plants in his collection were a yucca, maranta, and heath. There were also shown in the same lot a curious pitcher plant and a very nice half specimen of the ananassa. There were two entries for side table of plants arranged for effect, and Mr. Bennie, Albyn Place, Aberdeen, who took first honours, well deserved his victory. The second prize exhibit sent by Mr. Strachan, Beechgrove, had not the same appearance as the first lot, being arranged on a lower level. The stoves or greenhouse plants in this section were a poor display, but ferns were a specially fine lot. There was a capital display of zonal geraniums, all the exhibits being very bright and well flowered. Fuchsias compared unfavourably with those of last year, but there were some exceedingly clean grown specimens forward. Cut flowers were very fresh in appearance, but, owing to the wet weather in the beginning of the week, were fewer in number than they otherwise would have been. Roses, all things considered, came well to the front, the honours for them being carried off by Messrs. A. Thomson, Rubislaw Den; A. Reid, Urie; and R. Grigor, Mintlaw. The single cut trusses of zonal geraniums were very fine, the chief honours going to W. Williamson, Turnerhall. The most select lot of cut flowers in the show was the bunches of single blooms. There was a creditable display of pansies, although this class has been better represented. On account of the wet weather prevailing before the show, a great number of entries in this section were not forwarded. Daisies were almost *nil*. Stocks, French marigolds, and bedding plants were all interesting collections, the first prizemen in the respective sections being Dr. McHardy, Crauford; William Murdoch, Cuningharhill; and A. Grigor, Fairfield. The model gardens were greatly admired for the taste shown by the exhibitors. Mr. Rennie, Craibstone Gardens, had first place, and Mr. T. Robertson, Heathcote, second. It was considered by the judge that the walks of the second prize model were a little narrow, otherwise it would have taken first place. Hand and bride bouquets were about the ordinary, but several very neat button-holes were shown, and, along with the wild flower bouquets made up by children, met with general and well-deserved praise.

Fruit was a good show. The prize for the best collection went to Mr. Baird, of Urie, for samples of excellent quality, while for collections of hardy fruits in the same division, chief honours fell to Mr. G. Taylor, Raeden, Stocket, for very fine specimens. There were capital displays of strawberries, cherries, gooseberries, grapes, and apples. The premier positions in these classes were taken by Messrs. J. Davidson, Pitmuxton; A. Reid, Durris; P. Ogg, Finhay House; J. Strachan, Beechgrove; and Middleton, Monymusk. In the sections open to amateurs there was also a number of creditable entries forwarded.

Vegetables had a magnificent appearance, indeed, were the great feature of the show, especially the professional section. There were two classes, one for gentlemen's gardeners, and the other for market gardeners, and Mr. Milne, Cluny, who was first in the former, and Mr. Anderson, Lower Cornhill, who won in the latter, had great credit in their success. In the other divisions the collections were also creditable. Turnips, carrots, leeks, and peas were a fine show, the latter, especially, being of splendid quality. Potatos were the great feature in this class. The entries were large, and the specimens of the different varieties formed a most attractive display, one capable judge remarking that "they are as grand as a table of fruit."

Turning to the exhibits of the nurserymen and florists, it was gratifying to find such a fine display. Amongst cut flowers the collection of hardy herbaceous shown by Messrs. Cocker and Son, Aberdeen, and the hybrid perpetual roses were the finest that have been seen in Aberdeen for a considerable time. Messrs. Cocker and Son maintained their reputation for rearing first class roses, as far as hybrid perpetuals were concerned, securing chief honours with fine blooms, but in the section for tea roses, Messrs. D. and W. Croll, Dundee, lowered their colours with beautiful samples. Mr. McPherson, Deemount, also took first honours for twenty-four pansies, of a sweet and altogether attractive appearance. Messrs. Cocker's first prize twelve gladioli, were splendid, and here Mr. Giles, Union Place, Aberdeen, deservedly took second place. Bouquets were really a splendid show, and could not be too highly praised for their sweetness and chaste beauty. The same remark applies also to wreaths. The first prize bouquets of Messrs. Cocker and Sons, were superb.

In the department of nurserymen's plants for exhibition only, there was a superb show of cactus and pompon dahlias from Mr. John McPherson, Deemount, who also gained the first prize for 24 handsome dahlias. Messrs. Ben Reid and Co., Aberdeen, had forward a large and remarkably fine collection of pot plants and cut flowers. Among their cut flowers were stands of superb gladioli and very fine herbaceous plants, while among their pot plants may be noted beautiful specimens of Ananassa sativa, begonias (including a number of varieties of the firm's own production), Dracæna massangeana, a new double white, finely-fringed petunia, &c. Messrs. Cocker and Son had also an extensive and highly creditable display from their nursery, including beautiful specimens of herbaceous plants, pentstemons, single cactus, and pompon dahlias, carnations, picotees, &c, backed up with a miscellaneous assortment of pot plants.

The Opening Ceremony.

At noon on Thursday the fête was formally opened by Mr. J. Murray Garden, chairman of the society. The duties of chairman were performed by Baillie Crombie, senior magistrate, and there were a large number of ladies and gentlemen present.

How Plants Feed.

Immediately after the opening ceremony an interesting lecture was delivered by Dr. James W. H. Trail, Aberdeen University, on "How Plants Feed." He began by stating that in the two short half-hour lectures he intended to deliver on that day, and one on Saturday, he would speak of how plants fed, (1) by the root, and (2) by the stem. That day he would confine his remarks as to how plants fed themselves by means of these roots. After a brief description of different kinds of roots, Professor Trail showed diagrams of a small seedling plant with its root largely magnified. When pulled up, the root, it would be found, had small bits of earth adhering to it. These were enclosed by the minute hairs growing from a certain part of the root, and which were the real feeders of the plant from the substances found in the soil. The hairs entwined themselves round those small bits of earth, and drew in this manner from the ground all the sustenance the plant required from this direction. The most part of the nourishment came through the leaves and stem, but the root also contributed largely, as he had stated, to the nourishment of the plant. In great part this was composed of water, but in lesser proportions the plant also required solid substances, such as salt, lime, potash, soda, &c. These it could not take in solid form, as animals do; but in the soil they were dissolved by moisture caused by rain, and thus absorbed by the hairs of the root. When these substances were not furnished in sufficient quantity, the plant died from want of nourishment; when a superabundance was given, it became sickly; just as a human being would do when he had taken a superabundance of food. The other portions of Thursday's lecture were illustrated by diagrams, with the parts of the roots treated of magnified largely, in some instances a thousand or fifteen hundred times, such as in the terminations or twistings of the hair roots. On Saturday Professor Trail continued his lecture before a large audience, in the large marquee, dealing in a lucid and clear manner with what the leaves did for a plant.

The Luncheon.

At two o'clock the annual luncheon was held in the Palace Hotel, and was attended by a large number of gentlemen. After the usual loyal and patriotic toasts had been given, Mr. Nutting (London) proposed the toast of the day, "Success to the Royal Horticultural Society of Aberdeen." The Chairman (Mr. J. Murray Garden), in responding to the toast, referred to the subject of vegetable culture, in which connection, he said, there were great opportunities in this country not yet developed. In the neighbourhood of large cities in France—Paris and Rouen for instance—vegetable culture was developed to an extent that here we had no idea of. In passing along the outskirts of Paris not long ago he was struck with the large tracts of land devoted to the growth of watercresses alone, and tons upon tons were sent into Paris to be used as food. In this part of the world the climate was not so suitable, but nevertheless, if they went through the vegetable department of the show, they would be quite surprised at what could be produced here, although we had not the same demand for these products as there was on the Continent. Doctors said we ate too much beef, but he did not think that we in Aberdeen always ate Aberdeenshire beef; we sent it all to London. (Laughter.) If there was a demand for vegetable produce, no doubt there would be a supply. In concluding, he said the promoters of the show were grateful to the public for the support they had given it in the past. The public of Aberdeen were generous enough to appreciate their efforts and to accord to the society the success they were trying to deserve. (Loud cheers.)

Other toasts followed.

Amongst the extra attractions in connection with the show may be noted the performances of the splendid band of the Queen's Own (79th) Cameron Highlanders from Edinburgh Castle, who attended throughout the three days. Another very special attraction was the gorgeous illuminations and fireworks, supplied by Messrs. Shirras and Sons, Aberdeen. Every evening some 3,000 lamps were lit up within the enclosure. The interior of the marquees were beautifully illuminated, and throughout the enclosure an immense number of vari-coloured Badoura and Sappha lamps were dispersed with charming effect. From tree to tree, and between the posts of the enclosure, festoons of lamps were suspended, and, when lighted, produced a veritable fairy scene. Various decorations, in the form of richly emblazoned shields, with trophies of brightly-coloured flags and festoons of streamers, added greatly to the attractive appearance of the grounds. At nine each evening a brilliant display of fireworks, supplied by Messrs. Shirras, were given.

It is needless to add that the show was largely patronised, especially on Saturday evening, when one could barely get standing room in the grounds, far less in the marquees, which were thronged.

The following were the judges, who began work at the early hour of six a.m. on Thursday morning, and whose awards were heartily concurred in: Potatos,

Mr. Donaldson, Duncanstone, Insch, and Mr. D. M. Smith, Aberdeen; vegetables, Mr. Reid, Durris, and Mr. Cruickshank, Glenbervie; pot plants, Mr. Hay, Ardo, and Mr. Broadfoot, Aberdeen; fruit, Mr. W. Smith, Aberdeen, and Mr. Reid, Durris; cut flowers, Mr. Macleod, Aberdeen, and Mr. Ross, Kingcausie.

SHIRLEY HORTICULTURAL SOCIETY, August 20.

For horticultural purposes, this society was established twenty-five years ago, and with it now are associated Millbrook and Freemantle, all suburbs of Southampton. The annual exhibition is looked forward to with much interest by residents in these places, a capital show being always provided, the present one being no exception to the rule. It would be difficult indeed to find another society which has struggled on for so many years under such unfavourable circumstances as regards the weather, it being proverbial to have a wet day, which, of course, makes a serious impression on the financial position. But with the assistance of a few friends, this society is in fairly good circumstances. The neighbourhood of Shirley appears to be favourable to the growth of good vegetables, as a capital lot is got together at the shows held here; it would be difficult indeed to imagine a better lot than those staged on the present occasion. As usual, the staging arrangements were perfect, being carried out under the direction of Mr. H. J. Hobby, the courteous secretary, assisted by a good working committee.

Plants were staged in large numbers. The principal class was that for six specimens, either in or out of flower. Four competed, the best coming from Mr. J. Amys, gardener to Hon. Mrs. Elliott Yorke, Netley Cliff, Southampton. The group comprised Allamanda Hendersoni, fully five feet in diameter, and well flowered; Bougainvillea glabra, freely bloomed and fresh; a healthy Latania borbonica, and Kentia Fosteriana, with other useful plants: Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, was second; and Mr. W. Peel, gardener to Miss Todd, Sidford Lodge, Shirley, Southampton, third. For a miscellaneous group of plants, in a space of one hundred square feet, Mr. W. Peel was placed first, with a good arrangement of suitable plants; Mr. B. Ladhams a close second. For a single specimen plant, either in flower or foliage, there were six competitors, the best coming from Mr. Amys, comprising a Rhyncospermum jasminoides, fully six feet high, and as much across, smothered with blossom; Mr. Wills was second with a fuchsia quite eight feet high, and loaded with flower. Ferns made a great display, so numerously were they staged, and in good condition. For six, Mr. J. Evans, gardener to Lady Louisa Ashburton, Melchet Court, Romsey, was placed first; especially fine were Adiantum cuneatum and A. gracillimum; Mr. Peel was second, both staging very healthy specimens.

Begonias, Fuchsias, and Zonal Pelagoniums were admirably shown by Mr. E. Wills, who took first honours in each case. Celosias were much better than are usually seen, the plants were not too stiffly trained and carried excellent plumes, the first prize going to Mr. W. Peel. Coleus made a special feature, so well were they grown, dwarf and highly coloured. Mr. F. Haddon, gardener to Major-General Lewis, Shirley, and Mr. J. Evans were first and second respectively. Double pelargoniums were freely flowered, the best being staged by Mr. G. Windebank, Bevois Mount, Southampton. For a table of pelargoniums in pots, not exceeding seven inches in diameter, and to cover a space of ten feet by three feet, there was brisk competition which made a bright display. Mr. Betteridge, Old Bassett, was first with a glorious lot, carrying excellent trusses.

Cut Flowers received their full share of encouragement; many classes were provided for them, which were well filled. For twelve distinct varieties of any section, Mr. J. Evans was an easy first with a capital box, containing several good orchids and other stove occupants; Mr. J. West, gardener to F. Wigram, Esq., Northlands, Salisbury, was second. For twelve show or fancy dahlias, six pompon dahlias, shown in bunches of three blooms, and for twelve roses, Mr. Betteridge secured premier awards. Mr. West for twenty-four asters in a strong competition was placed first. For twelve spikes of gladioli, Mr. J. Evans was first with a fresh lot of bloom, Mr. West second.

For both ball and bridal bouquets, Mr. Ladhams secured highest honours, and the same again with six button-hole bouquets in a strong competition. Cactus dahlias were a new feature; here Mr. Ladhams was chief prize-winner for six varieties with fresh blooms. Wild flowers arranged in a basket for effect were especially noteworthy, the best coming from Miss Kate Golding, and for a basket of other flowers Miss A. Hobby secured first honours.

Fruit was good in quality if not seen in large numbers. For a collection of six varieties Mr. J. Evans was easily first, with good Black Hamburgh, and Muscat of Alexandria grapes, Golden Perfection melon, Royal George peaches, and splendid figs. The second prize went to Mr. J. Stratton, gardener to G. T. Harper, Esq., Blighmount, Millbrook, who had Black Hamburgh in good condition. Mr. J. Evans was first for two bunches of black grapes, followed by Mr. H. Andrews, gardener to Mrs. Wilson, Rownhams. For the same number of white bunches Mr. Evans, with Muscat of Alexandria, was first, Mr. Andrews second. Hero of Lockinge took first honours in the class for one melon for Mr. Amys. Mr. J. Soffe, gardener to Major-General Nisbett, Shirley, second.

Peaches (Royal George) were well staged by Mr G. Windebank for the first prize; Mr. J. Stratton second, he depending upon Walburton's Admirable. In the class for twelve dessert apples there was brisk competition. Red Astrachan winning both first and second prizes for Mr. J. Orchard, Shirley, and Mr. Andrews, in the order here named. Warner's King was very conspicuous in the class for kitchen apples, really fine samples of it taking the highest award for Mr. J. Soffe, and for Mr. West as the second prize dish.

Vegetables made a great show, so numerously were they staged, and in such good condition. The single dish classes for nearly all kinds were strongly represented, and in the best of quality. For six distinct varieties seven competed. Mr. J. Amys was a somewhat easy first, his exhibits being of high class throughout. Giant Rocca onion, Satisfaction potato, Trophy tomato, Duke of Albany peas, and Runner beans were the best; Mr. G. Payne, Shirley, was a good second. Prizes were offered for twelve dishes of potatos, half round and the remainder kidney, there being brisk competition. Mr. West with perfect examples of well-known kinds took leading honours; Mr. H. Andrews being second, he also staging well. Tomatos were capitally shown. For twelve Mr. J. Gover, gardener to Colonel Sinkin, Shirley, was awarded first prize.

"Not for competition" Mr. B. Ladhams staged a most excellent group of hardy cut flowers, mainly herbaceous kinds, for which he is becoming noted in this part, and for which he was very highly commended by the judges, Mr. W. Browning, and Mr. E. Molyneux.

ABINGDON HORTICULTURAL SOCIETY, August 21.

This society held its sixth annual summer show on the above date in the pleasure-grounds of Fitzharris House, Abingdon, the residence of John Heber Clarke, Esq. Fitzharris House was, in the sixteenth century, the residence of the Bostock family, and originally a farm; and, although much modernized, it still retains some interesting portions of the early structure, including the basement with its mullioned windows and two panelled rooms with richly-carved mantels, bearing the quartered arms of the Bostocks. The grounds occupy about fifty acres, and are rich in giant elms, chestnuts, and walnuts, one immense walnut-tree being situate in close proximity to the out offices. A narrow stream of spring water from Boar's Hill runs at the lower part of the grounds, which, passing through the town, falls into the Thames. The kitchen and flower-gardens do credit to Mr. William Middleton, who has had them in charge some few years.

Three tents were needed to comfortably stage the products entered in competition, the display being aided by about one hundred rose blooms from Mr. George Prince, Oxford and Longworth, and a collection of thirty dishes of potatos from Mr. T. Faulkener, Stert Street, Abingdon. In the first division there were a few nicely-developed

Plants.—For six, Mr. Blizzard, gardener to E. J. Trendell, Esq., The Abbey, was first with Acalypha musaica, Fuchsia Crinoline, Panicum plicatum, zonal geranium F. P. Raspail, Latania borbonica, and Asparagus plumosus; Mr. Rouse, gardener to J. C. Clarke, Esq., Waste Court, was second, who put up a prime specimen Begonia Weltoniensis, a tuberous begonia, Chamærops humilis, Latania borbonica, Pteris argyrea, and a Stag's Horn fern; Mr. E. Aldworth, gardener to Thomas Townsend Esq, Albert Park, being third with a well-bloomed Vallota purpurea, Begonia Weltoniensis, three choice gloxinias, and Pteris serrulata cretica. The best six greenhouse ferns were presented by Mr. Rouse; Mr. E. Aldworth and Miss Childs, Marcham Road, who took the cards. Fuchsias were free growths of the season (on old stems), generally well-bloomed. A fine group of four double zonals came from Mr. Blizzard, whose dwarf habit and handsome foliage corresponded with grand trusses of bloom, the varieties being F. P. Raspail, Mons. Morny, Louis Buchner, and Guillion Mangelli. Coleus were a limited class, Mr. Blizzard taking the card with convex-trained examples of Jealousy, Favourite, and Admiration.

Cut Flowers.—As before stated, Mr. Prince contributed a large collection of roses, the premier blooms being full-sized examples of La France, Baroness Rothschild, Merveille de Lyon, Prince Arthur, Victor Verdier, Alfred Colomb, Heinrich Schultheis, Mrs. John Laing, Queen of Queens, Ulrich Brunner, Marie Verdier, Xavier Olibo, Princess of Wales, and Marie Finger; those staged in competition being of the average type, full blown and cut with short stalks. The dahlias were full up to show requirements, Mr. A. Reeley, gardener to Rev. Canon Marshall, Milton Rectory, was first with a lot of well-built blooms, including Harry Keith, Harrison Weir, Royal Queen, Mrs. W. Slack, Champion Rollo, John Bennett, Goldfinder, James Vick, George Rawlings, Mrs. F. Foreman, and Mrs. Douglas; Mr. F. J. Payton, Lombard Street, second, with smaller but equally well-formed blooms. For a dozen single forms, Mr. Reeley was again first with Mauve Queen, Coccinea, White Queen, Beacon, Purple Seedling (Reeley), Stephen Walker, Reeley's Favourite, white, with broad crimson edge, stout petals, and a seedling primrose yellow; Mr. Buxton, gardener to G. Saxby, Esq., Northcourt, second with fair blooms; but these forms should be staged in bunches of five or six stalks each with the accompanying buds and leaves to be effective on the show table. Double zinnias were presented in fair form, and incurved asters from Mr. Reeley were really good; Mr. Buxton and Mr. J. Juggins being second and third.

Fruit.—This was a fairly large display; for six dishes, equal firsts went to Mr. Rouse for Foster's Seedling and Black Hamburgh grapes, Grosse Mignonne peaches, Victoria nectarines, Morello cherries, and melon; and to Mr. Blizzard for grandly-ripened Buckland Sweetwater and Black Hamburgh grapes, Stirling Castle peaches, Elruge nectarines, Jargonelle pears, and Moor Park apricots; Mr. Aldworth third with Sweetwater and Black Hamburgh grapes, Moor Park apricots, Victoria plums, Jargonelle pears, and Devonshire Quarrenden apples. In the single dishes for peaches and nectarines Mr. Rouse took the cards with Grosse Mignonne and Victoria. In the white grape class the best were Sweetwater, from C. Woodbridge (gardener Mr. Ballard); Messrs. Aldworth, Juggins, and Ballard taking the cards for well-finished Black Hamburghs. The prizes for plums went to Belgian Purple and Victoria; for pears to Windsor and Jargonelle; for culinary apples to Cat's Head, Mere de Menage, and Blenheim Orange; for dessert to Raspberry Pippin and Devonshire Quarrenden; and for cherries to very heavy deep coloured Morello. For six dishes of outdoor fruit the cards went first to Mr. Buxton for raspberries, Raby Castle currants, Quarrenden apples, Jargonelle pears, Moor Park apricots, and American blackberries (Wilson, jun.); Mr. Blizzard second with Quarrenden apples, Crown Bob gooseberries, Jargonelle pears, Morello cherries, Moor Park apricots, and Stirling Castle peaches.

Vegetables.—All kinds of roots were staged in quantities, very noticeable being the turnips and short carrots, broad and long pod beans, onions; the runner beans being a trifle below the standard of the Oxon shows. Great interest was centred in the special classes, Mr. Blizzard securing the premier cards in both the classes provided by Messrs. Sutton and Sons and Webb and Sons, he staging dishes of Improved Telegraph and Perpetual Bearer cucumbers, Perfection tomatos, Autumn Mammoth cauliflower, Improved Reading onion, Snowball turnips, New Red Intermediate carrot, Dwarf Matchless Marrowfat and Stourbridge Marrowfat peas; Mr. Reeley taking second for Sutton's, and Mr. Buxton second in Webb's. The prizes provided by Mr. A. T. Pritchard (Lady Grove Nurseries, Abingdon) for six dishes were very keenly contested, the cards going to Mrs. E. Harris and Mr. Buxton. The only other features in the first division were some formally arranged hand bouquets and epergnes. The wild flowers were a large and interesting department, eleven baskets, eleven bouquets, and fifteen button-hole bouquets being presented.

Potatos.—About one thousand handsome tubers were in competition, in addition to the collection of nice table-sized examples put up by Mr. T. Faulkener, his varieties being chiefly Abundance, Queen of the Valley, Beauty of Hebron, Satisfaction, Mr. Bresee, Sutton's Seedling, Imperator, Village Blacksmith, Clipper, Early Rose, Wordesley Pride, Reading Russet, Vicar of Laleham, White Elephant, Snowdrop, Reading Giant, International, Manhattan, Magnum Bonum, Myatt's Ashleaf, Schoolmaster, Eight Weeks', Great Eastern, Trophy, and Early Puritan; a very nicely displayed exhibit. In the class for six dishes Mr. Reeley was first with White Elephant, Sutton's Satisfaction, Giant King, Sutton's Seedling, Best of All, and Mr. Bresee; Mr. Buxton second with Vicar of Laleham, Abundance, Sutton's

Seedling, Early Puritan, Edgecote Purple, and Reading Giant; Mr. Woodbridge third with Reading Ruby, Sutton's Seedling, Early Puritan, Walnut-leaf Kidney, and Beauty of Hebron. In the single dishes for kidneys the first card for coloured went to Reading Ruby, and the second to White Elephant; the premier dish of white to Sutton's Seedling. In the amateur classes—which were thinly filled—was a remarkably fine dish of Vicar of Laleham from Mrs. E. Harris. In the cottagers' department—a full complement all through—Mr. Henry Painter took the card for the best six dishes with Schoolmaster, Edgecote Purple, Reading Ruby, Trophy, Reading Russet, and Magnum Bonum.

Amateurs and cottagers were strong in good plants, blooms, and hardy fruits, and the display of honey in comb, supers, sections, and extracted was the best we have seen this season in the provinces. The weather was very showery, and will, no doubt, seriously affect the financial position of this struggling association.

TROWBRIDGE HORTICULTURAL SOCIETY, Aug. 20.

This society, one of the oldest and most prosperous in the West of England, held its forty-first annual exhibition on the above date, and there being a very fine and extensive display, assisted by fine weather, and a very large attendance, a substantial balance to the good resulted. Last year, owing to wet weather, there was a serious deficit, but this was more than made good on this occasion. There is an energetic working committee, and Mr. James Huntley, the hon. secretary, has filled this post for a period of 27 years. The show took place, as usual, in the Town-field, close to the railway station, which is very central, but is destitute of a single tree affording shelter. There were several large tents, and they were filled to overflowing with high class products.

The amateurs' division is always a very interesting one, and here are found the superb fuchsias for which Trowbridge and its district are so famous. The leading class was for six specimens, and Mr. G. Tucker, gardener to W. P. Clark, Esq., Trowbridge, put up a very fine lot—not so good as we have seen at Bath previously, still very fine indeed—the dark varieties Doel's Favourite, Charming, and Bountiful; light, Arabella, Mrs. Marshall, and Marginata. Mr. J. Lye, gardener to the Hon. Mrs. Hay, Cliffe Hall, Market Lavington, was second with varieties of his own raising, viz., Abundance, Final, Rival, Elegance, and James Welch, dark; and Favourite, light. The free growth and remarkable profuseness of flowers which characterized Mr. Lye's seedlings was seen in this collection, Abundance and Rival being especially good in this respect. In the class for four plants Mr. Tucker was again first, Charming, Thomas King, and the Hon. Mrs. Hay, dark; and C. Rickman, light; second, Mr. Thomas Edmonds, gardener to J. D. Knight, Esq., Frome, with Charming, Thomas King, and Elegance, dark; and Mrs. Rundle, light.

The best six stove and greenhouse plants were from Mr. J. Hiscock, gardener to E. B. Rodway, Esq., Trowbridge, who had capital plants of Stephanotis floribunda, Dipladenia amabilis, D. boliviensis, Allamanda Hendersoni, Bougainvillea glabra, and Rondeletia speciosa major; Mr. George Tucker was second, his best plants being Schubertia grandiflora, Oncidium Phillipinense, and Bougainvillea glabra; Mr. H. Pocock, gardener to J. P. Haden, Esq., Trowbridge, was third. Mr. H. Matthews, gardener to W. R. Brown, Esq., Trowbridge, had the best three plants, in Allamanda nobilis, Erica Marnockiana, and Lapageria alba; second, Mr. Hiscock; third, Mr. Pocock. Mr. Pocock had the best six verbenas in pots, and they were very good, being especially well grown in the district; the Rev. C. C. Layard, Furleigh, was second.

Cut flowers shown by amateurs included some very good German asters from Mr. S. Cooper, Chippenham, and French asters from Mr. Thomas Every, Batheaston. Dr. Budd, of Bath, had the best twelve roses in trebles, small, but very bright; the leading varieties, A. K. Williams, La France, Marie Verdier, Duke of Wellington, Marie Cointet, Fisher Holmes, and Innocente Pirola. Mr. W. Ball, Chippenham, had the best twelve bunches, single blooms, very good indeed; Dr. Budd was second. Mr. H. Marchant, gardener to C. H. Gabriel, Esq., Weston, Bath, had the best twenty-four bunches of cut flowers, a very good selection; Mr. S. Bishop, gardener to F. Applegate, Esq., Bradford-on-Avon, was second.

There was another division for amateurs occupying houses not exceeding £10 per year, and they staged good plants of fuchsias, petunias, begonias, and balsams, and good cut blooms of roses, pelargoniums, and asters.

It was in the division open to all that the greatest interest centred. The best nine specimen stove and greenhouse plants came from Mr. G. Tucker, who had capital plants of Allamanda Hendersoni, Bougainvillea glabra, Lapageria rosea, Eucharis Amazonica, Statice profusa, Dipladenia Brearleyana, Clerodendron Balfourianum, Ixora Fraseri, and I. Morsei; second, Mr. H. Matthews with a good lot also, comprising Allamanda nobilis, A. Hendersoni, Lasiandra macrantha, Erica Eweriana, E. Marnockiana, &c.; third, Mr. J. Currey, gardener to Colonel Pepper, Salisbury. The best specimen plant was a fine piece of Stephanotis floribunda from Mr. Hiscock. Achimenes were fairly well shown by Messrs. Pocock and Tucker. Some superb gloxinias were shown by Mr. G. L. Palmer, unusually fine and large for the season of the year; Mr. Tucker was a good second. Begonias were a very fine feature also. Mr. Rickman, gardener to G. L. Palmer, Esq., Trowbridge, was first with six single varieties finely grown and bloomed; Mr. H. Matthews was second. Mr. Rickman also had the best six double varieties; and Mr. W. C. Drummond, nurseryman, Bath, was second.

The best four specimen orchids came from Mr. H. Matthews, who had Cattleya Harrisoni violacea, Phalænopsis Schilleriana, P. amabilis, and Aerides odoratum majus; second, Mr. G. Pymm with some good plants also. The best new plant, Croton Reidi, from Mr. H. Matthews; Mr. J. Currey came second with C. Aigburthiensis.

In the cut flower classes the display of dahlias was not so good as usual, owing to the absence of Messrs. Keynes and Co. The best twenty-four blooms came from Mr. S. Cooper, of Chippenham, he being the only exhibitor. In the class for twelve varieties, Mr. F. Lindsay, Frome, was first; and Mr. Bull, of Box, second. The blooms were clean and good, though not up to the Salisbury quality. Mr. T. Tinkle, gardener to T. Carr, Esq., Tiverton, had the best twelve bunches of single dahlias; Messrs. Cooling and Son second. Hollyhocks, gladioli, well shown by Mr. G. S. Walters, florist, Calne. Pansies, excellent bunches of cut zonal pelargoniums and bunches of clematis were also shown together with carnations and picotees; with twelve blooms of the former Mr. H. Hooper was first, and Mr. F. Hooper second. In the class for picotees, the order of the awards was reversed.

There were some good foliage plants in the open class, Mr. Currey was first, and Mr. H. Matthews second with nine specimens. Mr. Matthews had the best six caladiums, Mr. Pocock taking the second prize. Some capital coleus were shown, finely grown and grandly coloured. Mr. H. Pocock was first with a striking variety named Pompadour; also Butterfly, red and gold, with others; second, Mr. H. Matthews, who had C. Hart, spotted with yellow and black on a crimson ground. Ferns and mosses were a good feature, shown in groups of fifteen plants. Mr. G. Tucker was first with admirable specimens, among others Gleicheina rupestris, Gymnogramma sulphurea, G. peruviana argyrophylla, G. chrysophylla, Cheilanthes elegans, Neotopteris nidus. Some fine adiantums, &c. Equal second prizes were awarded to Mr. J. Coke, gardener to A. P. Stancomb, Esq., of Trowbridge, and Mr. H. Pocock.

Table decorations were a pleasing feature. Some of the centre pieces had fruit and flowers, others with flowers only, and there were some pretty arrangements in wild flowers. There were bouquets for the hand, memorial wreaths, button holes, &c. There were also some interesting collections of wild flowers.

Plants shown by working men were remarkably good, the fuchsias and zonal pelargoniums astonishingly fine; good also were their vegetables and cut flowers.

There was one of the best exhibitions of fruit held at Trowbridge for years, and that despite an unkindly season. The best collection of ten varieties came from Mr. A. Miller, The Gardens, Rood Ashton, Trowbridge, who had well-coloured Alicante, Alnwick Seedling, and Black Hamburgh grapes, Dymond and Bellegarde peaches, Albert Victor and Stanwick Elruge nectarines, Kirke's plum, Countess melon, and Morello cherry; second, Mr. G. Pymm, gardener to Mrs. Gouldsmith, Trowbridge, with Black Hamburgh and Foster's Seedling grapes, Royal George peaches, Lord Napier nectarine, Moor Park apricot, Jefferson's plum, Brown Turkey figs, &c.; third, Mr. Joseph Cray, Frome. Mr. Cray had the best six varieties, staging Black Hamburgh and Foster's Seedling grapes, Grosse Mignonne peaches, Pine Apple nectarine, Hemskirk's apricot, and Hero of Lockinge melon; second, Mr. Haskell, Melksham, his best dishes being Royal George peaches, Pitmaston Orange nectarine, and Moor Park apricots. Mr. C. Bull, Crediton, and Mr. A. Miller were first and second with a pine apple each, showing a Smooth Cayenne.

Mr. J. Gibson, gardener to Earl Cowley, Chippenham, had the best two bunches of Black Hamburgh grapes, finely finished; Mr. W. Strugnell, gardener to A. R. Baily, Esq., Frome, was second; and Mr. J. Cray, third. Mr. J. Attewell, gardener to F. B. Bram, Esq., Bristol, had the best two bunches of white grapes, having good Buckland Sweetwater; Mr. W. Cole, gardener to the executors of the late S. Treadwell, Bath, was second with the same variety. Mr. Attewell had the best two bunches of black Muscats, staging fine Madresfield Court, a little lacking in colour; and Mr. Coles, Trowbridge, was second with Muscat Hamburgh. Mr. Alcock, gardener to Major Heneage, V.C., Calne, was first with two bunches of Muscat of Alexandria; Mr. Coles again second. The best green-fleshed melon was Eastnor Castle, and the best scarlet-fleshed Scarlet Invincible. The best dish of apricots was Breda, from Mr. T. Tucker, gardener to T. Carr, Esq., Tiverton; Mr. W. J. Atkins, Limpley Stoke, coming second with Moor Park. Green Gage plums were finely shown; there were fourteen dishes, all thoroughly good. In the class for any other variety Washington and Kirke's were the best. Cherries were represented by very fine Morello. Mr. G. Pymm had the best dish of peaches, staging fine Grosse Mignonne; Mr. A. Cooke taking the second prize with the same variety. Mr. J. Atkins had the best dish of nectarines, fine Elruge; Mr. G. Pymm was second with Lord Napier. Both dessert and culinary apples were well shown. The best two dishes came from Mr. E. Hall, who had Beauty of Bath and Irish Peach; Mr. W. G. Tylee was second with Irish peach and Red Astrachan. Mr. A. Miller had the best two dishes of culinary apples, staging very fine examples of Lord Suffield and Ecklinville; Mr. C. Rickman was second with Warner's King and Nelson's Glory, the judges passing these as distinct. The best two dishes of dessert pears were Bon Chretien and Windsor, from Mr. E. Fisher, Batheaston; Mr. E. Hall, Bath, was second, with Jargonelle and Windsor. Filberts were fairly good in a season not favourable to their production.

A very interesting collection of apples came from Messrs. G. Cooling and Sons, nurserymen, Bath, who had fine examples of Lord Suffield, Grenadier, Ecklinville, Emperor Alexander, Lord Derby, Pott's Seedling, Cox's Pomona, Frogmore Pippin, Stirling Castle, Quarrenden, Beauty of Kent, Cellini, Hawthornden, Keswick Codlin, Peasgood's Nonsuch, Beauty of Bath, Braddick's Nonpareil, Scarlet's Nonpareil, Golden Reinette, &c., all from young trees on dwarfing stocks.

Vegetables were numerous and very fine. In the open class for nine dishes, Mr. Geo. Garraway, Bath, was placed first, and Mr. A. Miller second, both with very fine lots. Tomatos, cucumbers, cauliflowers, kidney and round potatos, onions, carrots, parsnips, celery, &c., were all very fine. In the cottagers' division was a class for a basket of potatos of various kinds, and here Joseph Grist, Radstock, was first with a remarkably good lot, consisting of International Kidney, Reading Giant, The Dean, Charter Oaks, Vicar of Laleham, Adirondack, Radstock Beauty, Sutton's Seedling, Prizetaker, &c. Mr. W. Lindsay was second.

The awards in the case of the classes open to all, were made by Mr. Richard Dean, Ealing, and Messrs. J. Hooper, Taylor and S. J. Pavitt, of Bath; a large number of local men being mainly employed in the other classes.

WILTS HORTICULTURAL SOCIETY.

The annual summer show of the above society took place in the beautiful grounds of the Bishop's Palace on Wednesday, August 20th. The grounds, which the society have been fortunate enough to secure, by kind permission of the Lord Bishop of Salisbury, are admirably suited for a show of that kind, and the well-kept lawns and gaily-filled flower garden gave an additional attraction to the show. There was a noticeable falling-off in the exhibits in the open plant classes; Messrs. James Cypher were there as usual, but no one seems to fill the place formerly occupied by Mr. G. Lock, who is not exhibiting this year. However, the amateurs showed up well, and many excellent groups of plants and stands of cut flowers were put up by them. The show of fruit was generally good, especially the grapes: some good judges being of opinion that collectively they were the best lot they had seen at Salisbury summer show. The arrangements were admirable in every way and reflect the highest credit on Mr. W. H. Williams and his assistant secretary, Mr. Nicholson.

Plants.—In the principal plant class for twelve stove and greenhouse plants, six in bloom and six foliage, Messrs. James Cypher and Sons, Exotic Nursery, Cheltenham, maintained supremacy with a very clean and healthy lot of plants, showing Kentia Australis, Dasylirion acrotrichum, Latania

borbonica, Croton Sunset, C. Thomsoni, and C. Queen Victoria, Erica Fraseri, E. Austiniana, and E. Turnbulli, Ixora Pilgrimi, Stephanotis floribunda, and Statice profusa; Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, was awarded the second place, there being but two exhibitors. His best plants were Kentia Balmoreana and K. Fosteriana, Clerodendron Balfouriana, and others. In the specimen plant class for nine stove and greenhouse plants, five foliage and four in bloom, Mr. J. Currey, gardener to Colonel Pepper, Milford Hill, Salisbury, was the only exhibitor, and was awarded the first prize for a very fair lot of plants. For six exotic ferns, Mr. E. Wills was first, having a good Davallia Mooreana, Dicksonia antarctica, Microlepia hirta cristata, Davallia polyantha, Nephrolepis davallioides; Mr. Smith, gardener to the Lord Bishop of Salisbury, was a good second, having a fine plant of Gymnogramma chrysophylla, and good adiantums in his lot; Mr. J. Currey third. For six begonias, Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, was an easy first for well-flowered plants; Mr. A. Robey, Harnham, and Mr. Smith followed in the order of their names. For six fuchsias, Mr. E. L. Brown, Portland Place, Wilton Road, was the only exhibitor, and was awarded first prize for well-grown and flowered plants.

Groups.—During the past year or two groups have formed quite a feature of the Society's show, but in this instance there were but two competitors in both the open class and that set aside for gentleman's gardeners. The same two exhibitors took first and second in each instance. Mr. Wills, who secured leading honours for both classes, had a group after the style that has become so popular in this district, consisting of a groundwork of maidenhair fern backed up with some healthy palms, an edging of Panicum variegatum, and interspersed with well coloured crotons, Hyacinthus candicans, Lilium auratum, small pots of tuberous begonias, and a free use of Francoa ramosa. Mr. J. Currey was a very good second in each instance, but the plants used were scarcely so light. The principal group class for amateurs was well contested, and brought out some very good arrangements. The first prize was a silver cup given by G. Nodder, Esq., Mayor of Salisbury. Here Dr. F. W. Coates was the most successful with a good arrangement, and the group contained many choice plants; Mr. E. L. Brown was a close second, indeed; and J. W. Lovibond third. The remaining group class is not open to exhibitors in the preceding class. Here Mr. F. Pearce, High Street, Salisbury, was the most successful; and Mr. H. G. Gregory, and Mrs. Townsand, The Close, Salisbury, took the remaining prizes in the order of their names.

Fruit.—As before stated, fruit was good. Four exhibitors staged collections of eight dishes, and foremost amongst them was Mr. H. W. Ward, who had fine Muscat of Alexandria and Madresfield Court grapes, Queen pine, Hero of Lockinge melon, Sea Eagle peaches, Pine Apple nectarines, Moor Park apricots, and fine Castle Kennedy figs, all good dishes. Mr. W. Iggulden, gardener to the Earl of Cork and Orrery, Marston House, Frome, was second, having a good pine, Muscat of Alexandria and Madresfield Court grapes, Blenheim Orange melon, &c. Mr. J. Evans, gardener to Lady Ashburton, Melchet Court, Romsey, third, having a very fine dish of Barrington peaches in his collection. Mr. Budd, gardener to F. G. Dalgety, Esq., Lockerby Hall, Romsey, had the best pine. The Muscat of Alexandria class at this show has been always a good one, and this year was no exception. Foremost in this class was Mr. P. Davidson, gardener to Lord Wolverton, Iwerne Minster, near Blandford, who had some beautifully-finished bunches of a clear amber colour, such as are seldom seen so early in the season. Mr. G. Inglefield, gardener to Sir J. W. Kelk, Tedworth, was a very good second; and Mr. Budd third. The next class was that for three bunches of Black Hamburgh. Here Mr. C. Warden, gardener at Clarendon Park, took the lead with rather small but compact and well-coloured bunches; Mr. G. Inglefield second; and Mr. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, near Winchester, was third. For three bunches of any other white, not Muscat, Mr. C. Warden, Clarendon Park, again took the lead for three well-coloured bunches of Buckland Sweetwater; Mr. H. W. Ward was second with the same variety; and Mr. Neville third with three very large bunches of Foster's Seedling under ripe. The remaining grape class for gardeners was that for any other black, not Hamburgh, and here Mr. C. Warden was again first with three well-finished bunches of Madresfield Court; Mr. W. Iggulden second with the same variety; and Mr. Davidson third with Black Alicante. Mr. H. W. Ward had the best flavoured melon, Hero of Lockinge; and Mr. G. Inglefield had the best dish of peaches with Walburton Admirable; while Mr. W. Iggulden had the best dish of nectarines, Lord Napier; and Mr. H. W. Ward had first for apricots with a fine dish of Moor Park, and also the best dish of plums with Guthrie's Gage. For three dishes of dessert apples, Mr. Budd was first, showing fine fruits of Red Astrachan, Irish Peach, and Golden Harvey; Mr. F. Smith was a close second; and for three dishes of any culinary apples Mr. F. Smith was an easy first, showing fine fruits of The Queen, Emperor Alexander, and Ecklinville Seedling. Mr. W. Browning was the most successful with pears. There were also classes for collections and single dishes, only open to amateurs, some of whom showed remarkably well, especially Mr. E. L. Brown, who was the most successful with fruit.

Vegetables.—There were three fine collections of vegetables put up for the prizes offered by the society, all of which were above the average in point of merit. Foremost among them was Mr. T. Wilkinson, gardener to Lady Theodora Guest, Inwood House, Blandford, having fine Ailsa Craig onions, Autumn Giant cauliflower, Lyon leek, Giant White kidney beans, Perfection beet, Veitch's Prodigy pea, Satisfaction potatos, Perfection tomatos, New Intermediate carrot, and Green Globe artichokes; Mr. G. Inglefield was a good second; and Mr. Pope, gardener to the Earl of Carnarvon, Highclere Castle, third.

READING HORTICULTURAL SOCIETY, August 27.

The second of the two exhibitions arranged by the Reading Horticultural Society for the current year was held on Wednesday, and in referring to its chief features it is satisfactory to be able to state that it was on the whole somewhat superior to the corresponding gatherings of the past two or three years. Stove and greenhouse plants were well represented, several classes of soft plants grown for their flowers were fairly well shown, there was an abundance of cut flowers, and fruit and vegetables were contributed in large quantities and in a condition that did much credit to the cultural skill of the exhibitors. The show was as usual held in the Abbey Ruins, which are admirably adapted to the purpose to which they were put on this occasion. One of the two enclosures usually set apart for the exhibition is laid out with winding walks and grass slopes, and affords exceptional facilities for the production of a tasteful display. On this occasion the effect was not particularly good, owing chiefly to some of the more important contributions being practically hidden away, and several inferior collections placed in the more prominent positions.

Stove and Greenhouse Plants grown for their flowers included several specimens of great excellence for so late in the summer. In the class for nine Mr. Mould, Pewsey, Wilts, was first with large, finely-flowered specimens of Allamanda Hendersoni, Lapageria alba, Erica Jacksoni, and other well-known kinds. Mr. Currey, gardener to Lieut.-Colonel Pepper, Salisbury, obtained premier honours in the class for four plants, one of the finest specimens being that of Bougainvillea glabra. Mr. Howard was second with good specimens, chief amongst them being that of Rondoletia speciosa, which is seldom seen so well flowered as on this occasion. Mr. Mould occupied the first place in the class for a specimen stove or greenhouse plant in bloom with an immense, densely-flowered example of the richly-coloured Erica Eweriana superba. Mr. Bright, gardener to P. Karslake, Esq., Whiteknights, was second with a large, well-bloomed, pyramidal specimen of Fuchsia Charmer. Mr. Lawrence was first in the class for new or rare plants with a nicely-bloomed example of Catasetum Bungerothi, and Mr. Currey was second with Ficus elasticus variegatus in capital condition.

Ornamental-leaved Plants were admirably shown, and deserved a more prominent position than that assigned them. Mr. Aitkin, gardener to C. Meeking, Esq., Richings Park, Slough, was first for six with an excellent group, the specimens of Croton Johannis and C. Queen Victoria being large in size and richly coloured; Mr. Currey was second with a good collection, in which Croton Prince of Wales was admirably represented; Mr. Howard was a close third, one of his best specimens being that of Alocasia metallica.

Groups of Plants Arranged for Effect included a few tasteful arrangements and contributed their share to the attractiveness of the exhibition. In competition for the prizes for large groups Mr. Aitkin was first with a group evincing much taste; and Mr. Bright and Mr. Butcher, gardener to G. Palmer, Esq., Reading, were second and third respectively. The first prize for small groups was awarded to Mr. Currey for an arrangement that did credit to his taste.

Ferns were not shown in very large numbers, but those staged were remarkably good. Mr. Aitkin occupied the first place in the class for six, with a collection in which were finely-developed specimens of Adiantum cuneatum grandiceps, Gymnogramma chrysophylla, and G. peruviana argyrophylla; Mr. Dockerill, gardener to G. W. Palmer, Esq., Reading, was second; and Mr. Howard third. Mr. Dockerill was awarded the first prize for six selaginellas.

Softwooded Plants grown for their flowers were unequal, but included a few excellent collections. One of the most important contributions to the section was the collection of six double zonal pelargoniums from Mr. Bright. The whole of the plants were of large size, perfect in contour, and superbly flowered. Mr. Woolford, gardener to A. Palmer, Esq., Reading, was second. Mr. Bright was first also in the class for six fuchsias, with a collection consisting of pyramids seven or eight feet in height, and well furnished with flowers from the apex to the base. Mr. Dockerill, and Mr. House, gardener to J. Taylor, Esq., were first and second for achimenes. Mr. Dockerill was again first in the class for six table plants, and Mr. Howard followed closely for second place.

Cut Flowers were plentiful, and on the whole remarkably good. Roses were of great excellence for so late in the summer. There was a brisk contest in the class for eighteen roses, and Messrs. Perkins and Son, Coventry, and Messrs. J. Jefferies and Son, Cirencester, who were first and second, had blooms remarkable alike for their large size and freshness. For six blooms of any one variety, Messrs. Jefferies and Son, Messrs. Perkins and Son, and Messrs. J. Cheal and Sons were first, second, and third respectively, with Mrs. John Laing, the blooms of great excellence and differing but little in relative merit. For twelve blooms Mr. Turton, Maiden Erleigh, was first. Dahlias were exceptionally good, and in the class for twelve singles Messrs. J. Cheal and Sons were first with beautiful bouquets of Duchess of Westminster, Duchess of Fife, Queen of Singles, Alfonsa, Miss Gordon, Miss Henshaw, W. C. Harvey, Mr. Rose, and Northern Star. For eighteen show and fancy varieties Mr. Humphries, Kington Langley, was first with superbly-developed blooms; and Mr. J. Walker, Thame, was a close second. Mr. Mortimer, Farnham, and Messrs. J. Cheal and Sons were awarded extra prizes. Mr. Humphries and Mr. Walker were first and second also for twelve show and fancy varieties; and Messrs. F. Cheal and Sons were awarded an extra. In a second class for twelve dahlias Mr. Maher was first and Mr. Wheeler second. Asters were of great excellence, and the most successful exhibitors were Mr. J. Walker, Mr. Humphries, and Mr. Wheeler. Mr. Walker and Mr. Terton were first and second for zinnias, which are seldom seen in such fine condition as on this occasion. The mixed collections of cut flowers were especially good, and the principal awards in the several classes were made in favour of Mr. Booker, gardener to C. Littledale, Esq., Twyford; Mr. Evans, gardener to Lady Ashburton, Romsey; and Mr. Castle. Messrs. Kelway and Son, Langport, exhibited an immense collection of gladioli, which, by reason of its extent, the high quality of the varieties, and the splendid development of the spikes, formed one of the most attractive of the features. Mr. C. Turner, Slough, exhibited a large and remarkably fine collection of dahlias; and Mr. Such, Maidenhead, contributed an attractive collection of cut flowers.

Fruit was plentiful and good. Mr. Goodman, gardener to C. Hammersley, Esq., Bourne End, was first for a collection of eight kinds, consisting of Muscat of Alexandria and Alicante grapes, Castle Kennedy figs, Washington plums, Pine Apple nectarines, and Barrington peaches in excellent condition; Mr. Ashby, gardener to Mrs. Fanning, Whitchurch, was second, and Mr. Aitkin third. Fox six dishes, Mr. Paxton, Mr. Osman, and Mr. Maher were first, second, and third respectively. Mr. Lockie, Windsor, was first in the class for peaches with good fruit of Bellegarde, and in the corresponding class for nectarines Mr. Pound was first with Pine Apple; Mr. Lawrence and Mr. Goodman also exhibited well in these classes. Apples were strongly represented, both in numbers and quality. For six dishes of culinary varieties, Mr. Dockerill was first with clean fruit, above the average in size, of Emperor Alexander, Warner's King, Keswick Codlin, Stirling Castle, and Lady Henniker; Mr. Turton and Mr. Paxton, gardener to the Hon. C. S. Irby, Taplow, were second and third. In the corresponding class for dessert varieties Mr. R. Webb, Beenham, occupied the first place with good examples of Duchess of Oldenburgh, Cox's Pomona, Cox's Orange Pippin, Quarrenden, and Blenheim Pippin; Mr. Howard and Mr. Paxton were second and third. Plums were few in number, but good in quality. Mr. Goodman was first with Jefferson, Monarch, and Kirke's; and the second and third prizes were awarded to Mr. Howard and Mr. Webb. There was a keen competition in the grape classes, and the fruit was mostly good. Mr. Ashman, Mr. Osman, and Mr. Pound, gardener to A. Sutton, Esq., Reading, were the successful exhibitors in the class for Black Hamburgh. For Muscat of Alexandria Mr. Maher, Yattenden, Mr. Osman, and Mr. Ashby were the prizetakers.

For other white grapes Mr. Pound was first with Foster's Seedling; and in the class for any black grape other than Hamburgh, Mr. Osman was first with Alicante.

Vegetables were staged in immense quantities, and in a condition that has certainly not been surpassed. Messrs. Sutton and Sons offered prizes amounting in the aggregate to twenty-five guineas for a collection, unlimited as to the number of varieties, and occupying a space not exceeding six feet by four feet; there were fifteen collections in competition, all more or less good, and forming a feature of great importance. The competition was so close throughout as to impose a heavy tax upon the judges, and in the result the first prize of £10 10s., was awarded to Mr. R. Lye, Sydmonton Court. The whole of the kinds represented were of the highest possible quality, chief amongst them being Reading Russet, Prizetaker, Satisfaction, and Windsor Castle potatos; Improved Reading, Sutton's Globe, and Crimson Globe onions; Autumn Giant cauliflower, Red Intermediate and Scarlet Horn carrots, Sutton's Mammoth White, Scarlet Runner and Canadian Wonder beans, Perfection tomato, Sulham Prize and Sutton's Solid White celery, and Duchess pea; Mr. Wilkins, Henstridge, Dorset, was a very close second with a collection in which the Improved Reading onion was exceptionally fine; Mr. Waite, Glenhurst, Esher, was third; Mr. Bowerman, Hackwood Park, fourth; Mr. Kneller, Malshanger Park, fifth; and Mr. C. Haines, Coleshill, sixth, all having collections that did them much credit. Prizes were offered by Messrs. Webb and Sons, for collections of six kinds, and in the result Mr. Bowerman, Mr. Waite, and Mr. Lye were awarded the prizes in the order of their names. Messrs. J. Carter and Co. offered prizes for baskets of vegetables to comprise nine kinds, and there were five entries. The prizetakers were Mr. Lye, Mr. Goodman, and Mr. Waite. In competition for Mr. C. Fidler's prizes for six kinds, Mr. Beckett, Amersham, Mr. Lye, and Mr. Bowerman were the prizetakers in the order of their names.

In the miscellaneous class, Mr. Phippen had a large collection of ornamental plants.

Replies to Queries.

Old Laurels.—F. R.: You may put a new face on them by cutting them down to within a foot from the roots, and then spreading over the ground a good coat of fat stable manure. This should be done in March next. In the course of the summer an abundance of new growth will appear, and before the season closes you will have a green field of fresh laurel leaves where now you have a lot of ugly sticks carrying, as you say, "an apology for leaves and a declaration of ugliness."

Zonal Pelargoniums for Winter Flowering.—W. J.: Healthy plants in three inch pots, will, if repotted at once and grown on freely bloom profusely during the greater part of the winter. Six-inch pots are the most suitable, and care must be taken to provide sufficient drainage and a compost that is not over rich. They should be kept in an an airy frame, until nearly the end of September, and be then removed to a greenhouse or similar structure and have the advantage of a position near the glass.

Cucumbers —Subscriber: The cucumber plants have evideatly been kept too moist and cold at the roots. It might be possible to restore them to a vigorous state of health by increasing both the top and bottom heat, but it is extremely doubtful whether the plants would give a sufficient return for any special attention that may be bestowed upon them. The probability is that your best course will be to root them out and prepare the house for the plants with which it is usually occupied during the winter months.

Seedling Auriculas.—Amateur: You will save yourself much trouble and obtain better results by planting the seedling Alpine auriculas in a bed of soil made up in an unheated frame. They will make a more vigorous growth, and require much less attention than would be the case were they to be kept in pots. When in bloom you can select those having flowers sufficiently high in quality to justify their having a place amongst your choice named kinds, and in due course pot them up. The others can be planted in the mixed border, where if the drainage is good, they will bloom satisfactorily.

Names of Plants.—W. Evry: 1, Comocladia dentata; 2, Galactia glabella; 3, Mesua ferrea.—A. E. S.: 1, Metrosideros robusta; 2, Gloriosa superba; 3, Haworthia allilinea; 4, Photinia arbutifolia.—Southern: 1, Funkia ovata; 2, Lavendula vera; 3, Melilotus suaveolens; 4, Lobelia glandulosa; 5, Gypsophila prostrata; 6, Hæmanthus amarylloides.—W. Burrows: The much-cut leaf is the Parsley-leaved vine; the grey leaf is the Miller vine; the smallest leaf in the parcel is the Himalayan vine. Your vines are evidently an interesting lot, and it would be well if you could get an expert to see them *in situ*.

Names of Fruits.—G. T. Staines: Your apple is an unusually smooth sample of Irish Peach, paler than it should be, but large, and of good quality. To succeed this for the table, we know of nothing better than Early Julyan, Duchess of Oldenburgh, and Kerry Pippin.—R. Forrest: 1, Jargonelle; 2, Williams's Bon Chretien; 3, Citron des Carmes; 4, Beurré Précoce.—B. R. Q.: The fruit sent is undoubtedly Chaumontel, and the other labels are right. It need not surprise you to discover that Chaumontel does not prosper with you, for it might almost be said that it does not prosper with anybody. Where it thrives, as in Jersey, for example, it is excellent, but it is peculiar in its requirements, and, therefore, should never be entered in a list for general use.

Early Flowering Bulbs.—R. S. B.: The most useful of the bulbs to grow in quantities for flowering during November and December are the Roman hyacinth, Van Thol tulips, and Paper White narciss. If they are wanted for the decoration of the conservatory and indoor apartments pot them in five-inch pots, three bulbs in each. On the other hand, if they are required simply for the production of flowers to be used for bouquets and decorative purposes generally in a cut state, they can be more advantageously grown in pans or boxes. You will not obtain finer flowers by the use of pans or boxes, but you will be able to produce much larger quantities in proportion to the space occupied than when pot culture is resorted to. The bulbs should be obtained at once, and put in the pots, pans, or boxes immediately they come to hand, as one of the principal points in the flowering of hyacinths, tulips, and narcissi in the months mentioned is to commence early enough for the bulbs to have sufficient time to become well rooted before they are taken to the forcing pit. Obtain the first quality bulbs, employ a rather light and moderately rich compost, and place them in a suitable position out of doors with a covering of some light material, such as cocoanut-fibre refuse.

MR. W. G. CLARKE'S NURSERIES, WELLINGTON, SOMERSET.

These nurseries do not cover so large an area of ground as we are accustomed to see in country districts, when the business, as in this case, has been established many years. The extent of ground is however considerable; so that the owner is able to provide everything of a useful character for the requirements of a local as well as of a distant trade. Fruit tree culture receives a good deal of attention, especially in the case of apples, pears, and plums. Of the former, the selection leaves nothing to be desired, and the stock of trees is numerous as well as in a thoroughly satisfactory condition as regards growth and productiveness. The bush and pyramid trees struck me as being marvels of fruitfulness. Such sorts as Lord Grosvenor, King of the Pippins, Beauty of Kent, Rymer, Cellini, Lord Suffield, Cox's Orange and several others being loaded with large and handsome fruit. In this year of scarcity of apples the condition of these model trees, which occupy but little space, was an unexpected treat. The number of pear trees in fruit was not so large, but such sorts as Louis Bonne of Jersey, Durondeau, Brown Beurre, and Williams's Bon Chretien, bore evidence of the character of the different sorts as reliable bearers. The demand for plums is not so great as for the before mentioned fruit; at the same time a fine stock of trees is provided, the leading kinds being Victoria, Rivers Early Prolific, Orleans, and the two forms (yellow and red) of Magnum Bonum.

Roses are a strong feature here, budding being in full swing, the growth of the stock in all stages being quite satisfactory. I noticed that the majority of the manetti stocks which are now being worked have had the stems earthed up several inches above the level of the ground, each line of plants showing a long ridge of earth, like newly moulded-up rows of potatos. I was told by Mr. Clarke that when the stems of the stocks are earthed in this way the buds take better, as the bark runs more freely. Of course, the earth is levelled down when the buds are inserted. Tea-scented roses are receiving additional attention here, as they are in nearly every nursery I visit. The directing mind here is evidently bent on keeping pace with the times, as I saw a prime lot of teas in six-inch pots the very picture of health. Amongst them I noticed Etoile de Lyon, the Hon. E. Gifford, Grace Darling, The Bride, and several others of equal merit, while in the open ground such useful climbing roses as W. A. Richardson, Reve d'Or, Solfaterre, Climbing Devoniensis are grown in quantities.

The glass structures contain useful assortments of flowering plants, tuberous begonias perhaps being the leading feature. Some thousands of plants of a yellow variety of this now popular bedding plant are being prepared, as it is considered to be an advance on all other yellow kinds for bedding.

J. C. C.

TRADE CATALOGUES.

Webb and Sons, Wordsley, Stourbridge.—*Bulb Catalogue*, 1890.
Harrison and Sons, Leicester.—*Flowering bulbs and roots.*
R. Neal, Wandsworth Common.—*Cape, Dutch, and other bulbs.*
F. Sander and Co., St. Albans.—*Orchid Catalogue.*
Fisher, Son, and Sibray, Handsworth Nurseries, near Sheffield.—*Bulbs and flower roots.*

Obituary.

Recently at 7, St. James' Road, Brixton, Mr. Samuel Ponsford, founder of the firm of Messrs. Ponsford and Son, in his 89th year.

The death is announced of Mr. Charles West Cope, the eminent painter of historical and domestic scenes. He was born at Leeds in 1811, and was trained in art by his father, who was a painter of reputation. He began to exhibit at the Royal Academy in 1833. Many of his works are well known on account of their having had place in the "Old Masters" annual exhibitions at Burlington House.

The sudden death is reported of Professor Carnelly, of Aberdeen University, aged 38 years.

Markets.

COVENT GARDEN.

Fruit.			
Apples.....per ½-sieve	2s. 6d.	to	5s. 0d.
Cherries.....per lb.	0s. 6d.	,,	1s. 0d.
Filberts, Kent.....per lb.	0s. 8d.	,,	0s. 9d.
Grapes.....per lb.	1s. 0d.	,,	3s. 0d.
Lemons.....per case	12s. 0d.	,,	21s. 0d.
Melons.....each	1s. 0d.	,,	3s. 0d.
Peaches.....per doz.	1s. 6d.	,,	7s. 6d.
Pears.....per ½-sieve	3s. 0d.	,,	5s. 0d.
Pine Apples, English, per lb.	1s. 6d.	,,	3s. 0d.
Pine-apples, St. Michael's each	2s. 6d.	,,	6s. 0d.
Plums.....per ½-sieve	6s. 0d.	,,	8s. 0d.
Vegetables.			
Artichokes, Globe, per doz.	2s. 0d.	to	4s. 0d.
Beans, Kidney.....per lb.	0s. 2d.	,,	0s. 3d.
Beet.....per doz.	1s. 0d.	,,	2s. 0d.
Cabbages.....per doz.	1s. 0d.	,,	2s. 0d.
Carrots.....per bun.	0s. 4d.	,,	0s. 6d.
Cauliflowers.....per doz.	2s. 0d.	,,	3s. 0d.
Cucumbers.....each	0s. 3d.	,,	0s. 8d.
Endive.....per doz.	1s. 0d.	,,	2s. 0d.
Herbs.....per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish.....per bun.	2s. 0d.	,,	3s. 0d.
Lettuces.....per doz.	1s. 0d.	,,	1s. 6d.
Mushrooms...per basket	0s. 6d.	,,	1s. 0d.
Onions.....per bushel	3s. 0d.	,,	4s. 0d.
Parsley.....per bun.	0s. 3d.	,,	0s. 4d.
Peas.....per quart	1s. 0d.	,,	2s. 0d.
Radishes...per doz. bun.	1s. 0d.	,,	1s. 3d.
Scarlet Runners...per lb.	0s. 1d.	,,	0s. 2d.
Shallots.....per bun.	0s. 4d.	,,	0s. 6d.
Small Salading...per pun.	0s. 3d.	,,	0s. 4d.
Spinach.....per bushel	2s. 0d.	,,	3s. 0d.
Tomatos.....per lb.	0s. 5d.	,,	0s. 9d.
Turnips, New, per bunch	0s. 4d.	,,	0s. 6d.
Vegetable Marrows, per doz.	2s. 0d.	,,	3s. 0d.
Cut Flowers.			
Abutilons...per doz. bun.	2s. 6d.	to	3s. 6d.
Asters.....per doz. bun.	2s. 0d.	,,	4s. 0d.

Cut Flowers.—*Continued.*

Bouvardias.....per bunch	0s. 6d.	to	0s. 9d.
Callas.....per doz.	2s. 0d.	,,	4s. 0d.
Carnations, per doz. blms.	1s. 0d.	,,	2s. 0d.
Chrysanthemums, per doz. blooms.....per doz.	0s. 6d.	,,	2s. 6d.
Chrysanthemums, per doz. bun....	2s. 6d.	,,	5s. 0d.
Coreopsis...per doz. bun.	1s. 0d.	,,	3s. 0d.
Dahlias.....per doz. bun.	2s. 0d.	,,	4s. 0d.
Eucharis...per doz. blms.	2s. 0d.	,,	4s. 0d.
Gaillardias, per doz. bun.	2s. 0d.	,,	4s. 0d.
Gardenias, per doz. blms.	2s. 0d.	,,	4s. 0d.
Gladioli.....per doz. bun	5s. 0d.	,,	10s. 0d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Lapageria, per doz. blms.	1s. 0d.	,,	3s. 0d.
Lavender...per doz. bun.	6s. 0d.	,,	8s. 0d.
Liliums, various, per doz. blooms.....	1s. 0d.	,,	4s. 0d.
Maidenhair Fern, per doz. bun.....	4s. 0d.	,,	8s. 0d.
Marguerites, per doz. bun.	2s. 6d.	,,	5s. 0d.
Mignonette, per doz. bun.	1s. 0d.	,,	3s. 0d.
Pelargoniums, per doz. trusses.....	0s. 6d.	,,	1s. 0d.
Pelargoniums, Zonal, per doz. trusses.....	0s. 3d.	,,	0s. 4d.
Roses, Coloured, per doz.	1s. 0d.	,,	1s. 6d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	1s. 6d.
Stephanotis, pr.dz.sprays	1s. 6d.	,,	2s. 6d.
Sunflowers, per doz. bun.	3s. 0d.	,,	6s. 0d.
Sweet Peas, per doz. bun.	2s. 0d.	,,	4s. 0d.
Tuberoses, per doz. blms.	0s. 3d.	,,	0s. 6d.

BOROUGH AND SPITALFIELDS.

Potatos.			
Regents.....per ton	50s.	to	60s.
Magnum Bonum.....per ton	90s.	,,	95s.
Beauty of Hebron.....per ton	40s.	,,	90s.
Myatt's Ashleaf.....per ton	50s.	,,	90s.
Early Rose.....per ton	40s.	,,	60s.
Imperator.....per ton	60s.	,,	70s.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
7	S	**14th Sunday after Trinity.**	5 23	2 7	6 31	10 59	3 17	7 29	7 58	4 27	4 54	59·1
8	M	*Nativity of Virgin Mary.*	5 25	2 27	6 29	11 49	4 11	8 35	9 18	5 23	6 0	59·0
9	Tu	Second Battle of Kassassin, 1882.	5 26	2 48	6 27	Morn.	4 52	10 4	10 48	6 43	7 29	58·9
10	W	Mungo Park born, 1771.	5 27	3 9	6 25	0 49	5 25	11 26	—	8 13	8 51	58·7
11	Th	Battle of Delhi, 1803.	5 29	3 29	6 22	1 54	5 52	0 2	0 31	9 27	9 56	58·5
12	F	O. P. Riots, 1809.	5 31	3 50	6 20	3 1	6 14	0 54	1 14	10 19	10 39	58·3
13	S	Battle of Tel-el-Kebir, 1882.	5 32	4 11	6 18	4 9	6 32	1 34	1 51	10 59	11 16	58·1

Orchids in Flower.		Day of Yr.
		1890
Barkeria Lindleyana	Costa Rica.	250
Brassavola acaulis	Central America.	251
Cattleya bicolor	Brazil.	252
Dendrobium Heyneanum	Bombay.	253
Epidendrum vitellinum majus	Mexico.	254
Huntleya marginata	South America.	255
Scuticaria Steeli	Guayana.	256

ROYAL BOTANICAL SOCIETY OF MANCHESTER.
A GRAND EXHIBITION of FRUITS, FLOWERS, and PLANTS, will be held in THE GARDENS, OLD TRAFFORD, on FRIDAY and SATURDAY, SEPTEMBER 12 and 13. For Schedules apply to the undersigned,
BRUCE FINDLAY, Botanic Gardens, Manchester.

NATIONAL CHRYSANTHEMUM SOCIETY.
EARLY AUTUMN SHOW.
ROYAL AQUARIUM, WESTMINSTER.
WEDNESDAY AND THURSDAY, SEPTEMBER 10TH AND 11TH.
Chrysanthemums, Dahlias, Gladioli, Hollyhocks, &c., &c.
Schedules, &c., may be had free from
Frampton Park Nurseries, Hackney, London. WILLIAM HOLMES, Hon. Sec.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, SEP. 9.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral and Fruit Committees.
TUESDAY, SEP. 9.—WOODSTOCK HORTICULTURAL SOCIETY.—Annual Exhibition.
WEDNESDAY, SEP. 10, AND THURSDAY, SEP. 11.—NATIONAL CHRYSANTHEMUM SOCIETY.—Exhibition of Early Chrysanthemums, &c. Meeting of Floral Committee on first day.
WEDNESDAY, SEP. 10, AND THURSDAY, SEP. 11.—ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—Autumn Exhibition.
WEDNESDAY, SEP. 10, AND THURSDAY, SEP. 11.—BRIGHTON HORTICULTURAL SOCIETY.—Autumn Exhibition.
THURSDAY, SEP. 11.—BRITISH FRUIT GROWERS' ASSOCIATION.—Meeting at Brighton.
FRIDAY, SEP. 12, AND SATURDAY, SEP. 13.—MANCHESTER ROYAL BOTANICAL SOCIETY.—Fruit Show.
SATURDAY, SEP. 13.—GALASHIELS HORTICULTURAL SOCIETY.—Annual Exhibition.

Auction Sales for the Ensuing Week.

MONDAY, WEDNESDAY, THURSDAY, AND SATURDAY, SEPT. 8, 10, 11, AND 13.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.
TUESDAY, SEPT. 9.—Messrs. Protheroe and Morris, at Leigham Court, Streatham Hill; Stove and Greenhouse Plants, Furniture, Farm Implements, &c.
WEDNESDAY, SEPT. 10.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Plants of Azalea Indica from Ghent and Bulbs from Holland.
THURSDAY, SEPT. 11.—Mr. J. C. Stevens, 38, King Street Covent Garden; Orchids, Tuberoses, &c.
THURSDAY, SEPT. 11.—Messrs. Protheroe and Morris, at the Longlands Nursery, Sidcup; Greenhouse Plants.
FRIDAY, SEPT. 12.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, SEPTEMBER 6, 1890.

AN EXHIBITION OF HARDY FRUIT WILL BE HELD IN THE GUILDHALL OF THE CITY OF LONDON, under the auspices of the Worshipful Company of Fruiterers, on the 6th, 7th, and 8th of October, "to promote the extended and improved culture of useful fruit in the homesteads and cottage gardens of the United Kingdom." It is, so far, unusual for any branch of horticulture to obtain organized exposition in the hall of the Corporation of London that nothing of the kind has taken place there since the year 1865, when, on November 14 and 15, a great flower and fruit show was held in aid of the then newly-formed United Horticultural Society, the primary movers in which were Messrs. William Marshall, James Crute, and Shirley Hibberd. In the G.M. of that year full reports of the event will be found, and these will disclose the fact that until the happy thought occurred to the promoters a horticultural exhibition in the Guildhall was an event altogether unheard of. There were other exhibitions about the same time for the same objects and by the same promoters, but it is enough here to fix a date as an historical precedent for the announcement now before us. It is within possibility—but the probability we will say nothing about—that horticulture may find freer expression of its aims and accomplishments in the City of London than heretofore. The yearning of the R.H.S. for a location on the Thames Embankment suggests a consciousness of support to be derived from the commercial classes of a far more liberal kind than has been experienced as the result of appeals to what is termed the fashionable world; but perhaps we ought only to regard it as a somewhat new phase of the old sympathy between town and country, for the interests of these two "worlds" are so closely bound up that, given light and air and space in sufficiency, the very heart of the City may, after all, prove to be the proper place for practical operations in behalf of the advancement of horticulture. The announcement of a fruit show to be held in the Guildhall may, perhaps, excuse a small flight in the regions of speculation, but we will return to matters of fact and scan the schedule that the Fruiterers' Company has issued.

The classes in which fruit and fruit-products are to be shown are nine in number, and they are severally apportioned to Cottagers, Tenant Farmers, Amateurs, and Gardeners, Nurserymen, and Trade Growers of trees and fruits, Traders and Manufacturers of jams and preserves; and finally, for "home made jams and preserves," Ladies, Cottagers, and Amateurs generally. For all these are provided suitable encouragements and rewards in the shape of money prizes, medals, and certificates. It is of importance to note that traders of all classes whether nurserymen, fruit-growers for market, or manufacturers of jams and other preserves, have no invitation to share in the prize fund, but for them "Certificates of the Worshipful Company of Fruiterers" are provided in recognition of special merit, the Company being of opinion that to secure distinction by meritorious exhibitions will be sufficient inducement to traders to ensure their presence, and will remove the undertaking to the farthest possible distance from the 'shoppiness" that is often so much complained of in connection with exhibitions. We hear that the Company has apportioned a sum of £800 as the maximum outlay for this exhibition, and expects absolutely no return in money whatever. There will be no charge on any one of the three days for admission to the exhibition. Tickets will be issued in plenty, and will be systematically distributed to ensure the attendance of the classes of persons to whom the exhibition will appeal as an educational agency.

A new feature appears in the schedule that may be taken note of with advantage. When cottagers and gardeners are invited in special classes, it is above all things important to ensure, as nearly as possible, equality of conditions as the basis of the competitions. For the grower in Hampshire to compete in the same class with the grower from Northumberland would be to handicap the second unfairly with no advantage to the first beyond the amount of prize money secured in an unequal race. A geographical schedule has therefore been provided, England and Wales being divided into three groups of counties, the first including the northern counties, the second the south-western, the third the south-eastern. Every exhibitor will enter in the group in which he is included, and may discover this in a moment by reference to the schedule. In describing the geographical divisions as constituting a new feature, we do not forget the example of the vegetable classes in the National Co-operative Exhibition.

The cottagers are generously dealt with in the scheme, the company offering to pay the carriage of parcels of fruit for such as desire it, in which case the fruit will, on the close of the exhibition, become the property of the company, a proper rule, for the company could not reasonably incur the trouble and cost of returning it. Those who send the fruit at their own expense will, of course, be free to remove it when the hour arrives for clearing the hall. "Tenant farmers" are a new class so far as regards the present endeavour, for not often have they been recognized as a class for exhibition purposes. They are defined as "farmers whose chief dependence is on ordinary agricultural produce, and whose orchards or fruit gardens do not exceed one acre in extent." Obviously the rule has been framed to institute a distinc-

tion between the fruit farmer who makes a special business of fruit production and the man who grows an acre or less of fruit for his own use and the supply of a local market, and who makes no pretensions to the status of a fruit grower in the general acceptation of the term.

The fruits more especially invited are apples and pears. But in all the classes "other hardy fruit" are provided for; and in a special section for Amateurs and Gardeners of the United Kingdom there are classes for grapes, tomatos, and apples and pears, the prizes offered being gold and silver medals of the Fruiterers' Company. The Nurserymen's class is for collections of hardy fruit to cover not more than fifteen feet run of tables three feet wide, and in place of money, certificates are offered. The manufacturers of fruit preserves are invited to cover not more than six feet run on tables three feet wide, and for these, as in nurserymen's class, certificates are provided. But for the ladies and amateurs of the United Kingdom there are four classes for jams, preserved whole fruit, and fruit jellies, with money prizes. The regulations present no points for special remark beyond the important stipulation that all fruits shown shall be the growth of the exhibitor, the object being to exclude purchased and imported fruit. It is in the interest of British fruit culture that the exhibition is projected, and the company have taken the best precautions to confine the affair to its ostensible objects.

THE BOARD OF TRADE AND RAILWAY RATES have occupied much of the public attention, and after a brief interval, in which they disappeared from the arena of discussion, they come forth again under new aspects. The two officers appointed to the inquiry—Lord Balfour of Burleigh and Mr. Courtenay Boyle—have made a report, which the Board has adopted, and Parliament has obtained official notification. The general tendency of the report may be inferred from the fact that the railway companies are seriously dissatisfied, and consequently intend to insist on considerable modifications. Both the classification and maximum charges are objected to; and the higher classes, such as glass, optical and other delicate instruments, hothouse fruit, live poultry, and articles of apparel that may not be put under pressure, are cited as insufficiently charged to cover trouble and risk in conveyance. As the inquiry proceeded, we gave particulars on matters of special interest to horticulturists, and there is nothing in the report that we could add to those particulars with advantage. But the objections of the companies revives interest in the subject, for there is a prospect of further inquiries, and, indeed, the Board has expressed its willingness to receive any further evidence the companies may desire to present, and, as a matter of course, will give to such the same attention as they have given to the whole case already. But the end of the contention cannot be far off. The business will be taken in hand by a Parliamentary Committee, and the Board of Trade will appear with the advantage of its accumulated evidences, so that the result, however decided and however the final decision may be postponed, can hardly be other than favourable to the public in a general lowering of railway rates. And it does not by any means follow that the companies will suffer any diminution of profits in the working of the reduced rates, for it is no new thing for a reduction of price to prove signally advantageous to all parties, and the penny post is one of the most striking examples of the advantage of a low rate to the very interest that fears it as a threat of extinction. But the companies that refuse to take lessons from the penny post may not object to be reminded that the parliamentary penny a mile has done as much for the companies as for the travellers, and they now court the third-class passengers with even greater zeal than in the early days they repelled and insulted them.

A STATUE OF LINNÆUS is about to be placed in Lincoln Park, Chicago, the statue being the gift of the Swedes resident in that city.

IMPORTATIONS OF ONIONS last month amounted to 191,606 bushels as compared with 200,161 bushels in July, 1889.

BRIXTON HILL CHRYSANTHEMUM SOCIETY will hold its annual exhibition November 4 and 5.

BATH FLORAL FETE on Wednesday was one of the largest of its kind hitherto held in the West of England.

AT R. H. S. GRAPE SHOW on the 23rd and 24th, a silver gilt cup will be offered in class X for the best examples of Packing Grapes, four lbs. to six lbs. for private use, to be sent by post or rail.

MESSRS. PERINET AND FILS, in their trade circular offering certain of their champagnes, say the Phylloxera has made its appearance near to Vincelles, on the very confines of the Marne, and they "regard the situation as in the highest degree serious."

SAMPLE PACKETS FOR PORTUGAL.—Information having been received from the Portuguese postal authorities that no sample packets whatever for Portugal, sent via Spain, will be allowed for the present to cross the Portuguese frontier, it has been decided to send all such packets by sea, by means of the direct mail steamers leaving this country for Lisbon, and, when practicable, via Bordeaux, for conveyance thence by British or French packet.

GARDENERS' ROYAL BENEVOLENT INSTITUTION has had its funds augmented to the extent of £15 as the result of the opening to the public of the gardens of Bower Ashton, the residence of Sir Greville Smythe, a few days since.

THE POPE is reported to be an enthusiastic amateur gardener and greatly interested in the Vatican garden of 35 acres which he has greatly improved. The Pope's health is known to be uncertain and often unsatisfactory, and he finds gardening eminently beneficial as a source of both health and amusement.

BRITISH ASSOCIATION commenced business on Wednesday with a brilliant meeting, and after the usual preliminaries Sir Frederick Abel delivered the presidential address. The subjects more especially obtaining his attention were electric lighting and transmission of power; production of steel; explosives, and safety lamps.

VALENCIENNES INTERNATIONAL FRUIT AND FLOWER SHOW will be held from the 28th to the 30th inst., and the international exhibition of chrysanthemums in Valenciennes will be held from November 23 to 25. M. Lemaille, à Beuvrages, near Valenciennes, is secretary of both exhibitions.

CHESTNUT TREES ON THE PARIS BOULEVARDS are flowering for the second time this season. We have seen lately many odd bits of bloom on apple and pear-trees, an event not uncommon at this season, but scarcely to be expected considering the abnormally low temperature that has prevailed through the greater part of the summer.

HOLLYHOCKS FROM KELSO prove that the noble flower holds a place in the north as of olden time. Quite up to a good average are the flowers sent by Messrs. Stuart and Mein, who say they have been thriving with them, and the disease does not trouble them so much perhaps as it troubles the southerners.

FORESTRY AND THE RE-AFFORESTING OF MOUNTAINS that have been denuded of their forests are the subjects that have thus far occupied the International Agricultural Congress at Vienna. Amongst the subjects down for special discussion are fruit and vegetable culture, bees, silkworms, the cultivation of the grape vine, and the suppression of phylloxera.

THE NEW FRUIT AND VEGETABLE MARKET in the City of London that is now being formed on the site of the old Farringdon Market will include extensive accommodation below the street level for the unloading of railway trucks and storage of goods, the basement being placed in connection with the Great Northern Railway. Fully two years will elapse ere the market will be ready for the public service it is intended for.

FUCHSIA GENERAL ROBERTS figured in our issue for August 30, was raised by Mr. Thomas Bunby, when gardener to W. P. Gatton, Esq., of Tooting, and was awarded First-class Certificate by the Tooting Horticultural Society, 1882. It has been classed by us as one of the best six fuchsias; and having lately inspected a large collection of the best varieties known, we should still place it in the very front rank.

FRUITERERS' COMPANY EXHIBITION will have the Queen for patroness. The vice-patrons include the Lord Mayor, the Duke of Bedford, the Duke of Westminster, the Duke of Newcastle, the Duchess of Grafton, the Earl of Dartmouth, the Baroness Burdett-Coutts, Lord Crewe, Lord Savile, Lord Hothfield, and the Masters of the Mercers, Drapers, and Haberdashers' Companies. Mr. W. H. Smith, M.P., Lord Wolverton, and others have also shown a practical interest in the scheme.

THE WEATHER has greatly improved, for we have had a run of ten days with little rain and much sunshine, and a decided advance in temperature. Although frost has several times occurred, we have not seen or heard any evidence of injury, except of that general kind that consists in retarding growth and postponing the harvest. The anti-cyclone that has given us this neat spell of good weather appears likely to break up, but probably only for mild changes; certainly there is no present prospect of any violent change.

THE HANDSOME NEW CUCUMBER that attracted so much attention at the Reading Horticultural Society's Show on August 27th was awarded a first-class certificate of merit, in addition to the first prize for the best brace of cucumbers. Its superiority had been already recognised by the award of first-class certificates at the Royal Horticultural and Royal Aquarium Shows this season; and it is certain to prove a valuable acquisition. Messrs. Sutton and Sons, Reading, have purchased the entire stock of seed of the raiser, Mr. Mortimer, and will distribute it during the coming spring.

DAHLIA CONFERENCE, CHISWICK, Tuesday, September 23rd. Fellows will be admitted free to the gardens at 1 p.m. on showing their tickets, and the general public at 2 p.m., on payment of one shilling. The Conference will begin at 2.30 p.m. punctually. Mr. Harry Turner, F.R.H.S., President of the Conference, in the chair. Papers will be read as follows:—Mr. Shirley Hibberd, F.R.H.S., "The Origin of the Florists' Dahlia"; Mr. T. W. Girdlestone, M.A., F.L.S., "Single and Decorative Dahlias;" Mr. W. H. Williams, F.R.H.S., "Show Dahlias;" Mr. C. Harman Payne, F.R.H.S., has kindly promised to exhibit a very large collection of coloured drawings.

GRAPE CONFERENCE, CHISWICK, Wednesday September 24th. The public will be admitted to the gardens from 10 a.m. on payment of one shilling, Fellows free. The Conference will open at 2 p.m. Dr. Hogg, F.L.S., F.R.H.S., President of the Conference, in the chair. Papers will be read as follows:—Mr. T. F. Rivers, F.R.H.S., "Frontignan Grapes;" Mr. R. D. Blackmore, F.R.H.S., "The Enemies of the Vine;" Mr. W. Thomson, "Suitable Soils;" Mr. W. Coleman, F.R.H.S., "Packing Grapes." Intending exhibitors will be guided by the schedule, which is obtainable in the usual way on application to Mr. A. F. Barron, R. H. S. Gardens, Chiswick.

The Garden of the Princess Wilhelmina of Holland is described as a quite common-sense affair, sufficiently ornate for so distinguished a possessor, but designed for genuine horticultural work, such as the practical Dutch people can understand and appreciate. We shall hope to see the Princess expand into a patron of horticulture, and we wish all success to her garden, which is not unlikely to prove the best school hitherto provided for her.

The Potato Crop in Ireland is reported on officially by the Land Commissioners, who distributed copies of four questions on the subject. The failure of the crop appears to be general, but is less severe in Down, Tyrone, Tipperary, Dublin, Queen's County, Westmeath, and a part of Donegal. The weather has been so continuously wet that the plant has had no opportunity of recovery, and on the forest lands the failure is complete.

Oakshott and Millard. This Reading firm a short time since offered a composition of ten shillings in the pound, but the arrangement was not carried out, and subsequent proceedings in bankruptcy having taken place, a receiver has been appointed, and an examination of the estate will shortly take place. It is generally understood that printers and proprietors of newspapers will make a large proportion of the creditors, the firm having indulged largely in advertising.

Sharpe's Queen Pea in a fresh green state for the market or the table on the third of September is an interesting subject. Samples sent, and that proved to be of excellent quality, were from a sowing made in the second week of May. If sown at the ordinary time this variety succeeds the Prince of Wales. The pod is long and straight, rather narrow, and decidedly neat, packing close and carrying well. The peas are of full average size, seven to eight in a pod and of a full green colour. Such a pea should meet with universal favour.

A Catalogue of Florist's Tulips comes upon one like an archæological curiosity. Messrs. Stuart and Mein publish a good list in connection with their usual list of early tulips, hyacinths, and other bulbs that are now "inquired for." But although trade growers do not often offer florists tulips there must be considerable exchanges of bulbs, and some amount of actual commerce in them not visible to the general public, but sufficient to keep the tulip in the list of floral favourites.

Scottish Horticultural Association's Chrysanthemum Show, in the Waverley Market, Edinburgh, November 20 and two following days, will be on a scale similar to that of the great gathering of last year. The value of the prizes in cash and plate is nearly £400, and the sum of £40 is offered in prizes for forty-eight blooms of Japanese varieties. The first prize of £20 is presented by the Lord Provost, magistrates, and councillors of the city, and is known as the City of Edinburgh Prize. Liberal prizes are offered for grapes and other fruits.

Travellers, Label your Luggage.—The Tablet Label Company of Bristol offers a capital label that probably will often prove useful for garden purposes, but travellers alone have been thought of. It consists of a handy label of tough material made up in a tablet of a dozen or so, and held together by clasps. You write a label and pull it off for use, and the tablet remains with eleven unused labels, each ready for use in its turn. Whoever is likely, in the course of a lifetime, to require a label for luggage should procure a sample, and put it in a convenient place until wanted; inside an empty portmanteau being often a proper place for such a thing. In marking plants in a garden, more especially by a purchaser, this label would be useful, because of the firm surface a parcel presents for writing on where there is no desk or other convenience at hand.

Canada Opens its Arms freely to the industrious and enterprising ones who feel themselves "crowded out" in the old country, and the day is not far distant when the Dominion will develope decided tastes in horticulture, the ground already broadening rapidly for the strictly useful part of the gardener's art. But few, even amongst Canadians themselves, know of the immensity and variety of the land available for operations, about one third of the entire territory having so far remained utterly unexplored. Dr. G. M. Dawson, of the Canadian Survey, has recently shown to the Ottawa Field Naturalists' Club that there are rivers, lakes, forests, mountains, alluvial plains; in all, perhaps, not less than a million square miles, of which little or nothing is known. Much of this is unfit for agricultural purposes, but makes amends by its minerals, while other vast tracts only need to be "tickled" with the plough to cause them to "smile" with a harvest. Dr. Dawson's paper is accompanied with a map, in which the particulars are defined instructively.

Heating Plant Houses by Steam has of late years received much attention in America, but there has been a considerable difference of opinion amongst cultivators as to its advantages. With a view to test the relative value of steam and hot water for heating horticultural structures, experiments were conducted at the Agricultural College during the past winter and spring. As the results of the experiments it was proved that for small plant houses hot water is more economical and more satisfactory than steam. In the month of December the house heated by steam had an average temperature one and a half degrees lower than that of the house heated by hot water, although five tons of coal were consumed in the former as often as four tons of coal were consumed in the latter. Maximum and minimum thermometers also indicated a greater variation of temperature in the steam-heated house than in the other. The records for other months were similar. During the month of April the two systems were compared in a different manner. The same amounts of coal were supplied to each house, and the result was that the hot-water house was kept at a temperature seven degrees higher than that of the steam-heated house.

The Migration of Swifts is expected to take place not later than August 20, but they appear this season to be later than usual, the Rev. J. L. Hoskyns, of Wallingford, having seen five swifts as late as September 1. White considered August 24 a late date, but records that one was seen at Lyndon, Rutland, on September 3, 1782.

Next week should be full of business. The Committees of R.H.S. meet on Tuesday as usual. On Wednesday and Thursday National Chrysanthemum Society will have a show of early chrysanthemums, dahlias, gladioli, &c. On Thursday Brighton Horticultural Show will be held, and with it, on the second day, a conference of the British Fruit Growers' Association. On Friday and Saturday will be held combined fruit and flower show of Manchester Botanical Society.

National Chrysanthemum Society will have a busy time next week. On Monday there will be a meeting of the General Committee at Anderton's Hotel at 7 p.m. On Wednesday and Thursday the exhibition of early flowering chrysanthemums, with dahlias, roses, and gladioli, will be held at the Royal Aquarium, Westminster. The Floral Committee will meet on the first day of the exhibition, when the recommendation of the General Committee as to the course of procedure in dealing with new varieties bearing the same names as others already in cultivation will probably be discussed. A meeting of the Centenary Committee was held at Anderton's Hotel, on Wednesday afternoon. Lord Brooke, M.P., was present, and the final arrangements for the exhibition and festival to be held in November next were made, and these, with other business, will be submitted to the General Committee on Monday evening.

Royal Horticultural Society's new Building Scheme.—The following is the text of a circular that has been forwarded to the Fellows, and that should, by reason of its importance, obtain general circulation :—

117, Victoria Street, Westminster, S.W.

When, at the end of the year 1887, the Royal Horticultural Society was compelled to vacate the premises at South Kensington, and, failing better accommodation, the Council made an arrangement with the Officers of the London Scottish Volunteers for the use of their Drill Hall for the Society's fortnightly meetings, this step was regarded as being of a distinctly temporary nature, and desirable only as affording the Society time to recover itself before making provision for a permanent home.

During 1888 and 1889, the Society has devoted itself energetically to its true and legitimate work, viz. : the improvement, both in quantity and quality of the food and floral productions of our country, and the circulation of such information and knowledge, gained by experience and trial, as may tend to the practical advancement of Gardening, Orcharding, and such like. The policy pursued by the Society has met with such general and widespread approval that a very large number of new Fellows have joined it, and we feel that the time has now come to take the first step towards bringing the temporary arrangements mentioned above to a conclusion, and for providing the Society with suitable premises of its own.

There has at the same time arisen amongst the general public a desire, which has found expression in the gardening press, for a central Hall for Horticulture—a desire, in fact, for the centralization of all Horticultural Associations, Benevolent Institutions, &c., round the Royal Horticultural Society as a centre. The Fellows of the Society have therefore requested us to proceed at once in this matter, for which, if only the command of a sufficient sum of money can be obtained, all things seem ripe.

In looking out for a site for the proposed buildings three things are essential: (i.) It must be in a central position in London. (ii.) It must be easy of access by road and by rail. (iii.) It must possess abundance of light. Unfortunately, these three essentials are exactly those which give to any site which possesses them the greatest monetary value, but being of such absolute necessity for the purposes of the Society, we feel that we must grapple with the fact of a very high ground rent if the result is to be in any real sense satisfactory or worthy of our ancient Society and its thoroughly national objects. One or two such sites have been suggested, but as was anticipated the ground rent is in each case very large, and constitutes the only grave difficulty to be surmounted. We do not, however, despair of success if all the Fellows of the Society will join with us in making a united effort to overcome it. For this purpose the following scheme has been proposed by Baron Henry Schröder, one of the undersigned, and was explained by him at the General Meeting of the Society held on February 11th, 1890.

It is proposed to invite all friends of Horticulture to join together in placing in the hands of the Trustees a sum of £40,000 to be held by them free of interest for the benefit of the Society, and to be gradually returned to the lenders by drawings of the bonds which they will receive, such drawings to commence as soon as possible.

Of this sum of £40,000, the greater part would be invested by us in first class securities yielding interest, and the remainder would be invested in the buildings to be erected, the Society paying rent for them, and the total of interest and rent thus received would suffice for the payment of the ground rent. It is hoped that a considerable sum would be annually obtained for the purpose of redemption of bonds by letting the basement and the great hall itself for various purposes at times when it was not required by the Society; and so soon as the whole of the bonds shall have been drawn or paid off, the buildings, &c., would become the absolute property of the Society, and the office of the trustees will have ceased.

Thus the lenders will see that the sum invested by the Trustees, together with the value of the buildings erected, would form ample security for their money, and the only loss to themselves would be that of the interest during the period between their placing the money in our hands and the date of the drawing of the bonds they will hold in its stead. That the matter can be carried to a successful conclusion the Society is amply assured if all lovers of Horticulture will join together to lend the money required.

Hoping that we may receive your hearty sympathy and active support,

Trevor Lawrence,
Henry Schröder,
Everard A. Hambro. } Trustees.

[The list of promises accompanying the circular contains eight of one thousand pounds each, and the total of money promised to this time is about £20,000.]

BEDDING ARRANGEMENTS IN REGENT'S PARK.

THE bedding arrangements in this admirably kept park are singularly effective this season, and may well be regarded as one of Mr. Jordan's happiest efforts in flower garden embellishment. In their general features the arrangements have been carried out on similar lines to those of past years, but there are several new features, and as they are all more or less good they add in no inconsiderable degree to the general effect. The flower garden as so well known to visitors is in the southern part of the park, and on entering the enclosure by the gate at south-east corner one is at once struck by the group of Caladium esculentum. The edible caladium is well known, and its usefulness for the formation of bold groups in the flower garden fully appreciated, but mention must be made of it because of the manner in which it is now employed. Instead of being grouped in the beds and borders in accordance with the practice which so generally obtains, they are planted in the turf and arranged at suitable distances apart for the full development of the leaves, and the effect produced is highly satisfactory.

Proceeding northward, along the same walk, a mass of dark heliotropes arrest attention, and beyond this are several extremely beautiful beds of tuberous begonias. Especially good are the two oblongs of begonias. One of these has a carpet of Mesembryanthemum cordifolium variegatum, and the other a carpet of the Golden Lamium, and as the plants are just far enough apart to stand clear of each other, and are blooming with great freedom, the effect is at once rich and tasteful. Very different is the appearance of the circular bed between the two oblongs. This is filled with pink and salmon-coloured begonias, interspersed with white lobelia, and the combination is weak and ineffective. A bed of blue violas and mignonette in mixture is equally unsatisfactory, but the mixture of blue violas and picotees is extremely pleasing. Farther on we have to the right a group of zonal pelargoniums, consisting of large bushes planted in the grass, and as the flowers are being produced in great plenty a bright display of colour is the result. The large beds of cockscombs to the right and left of the walk are interesting as representing high-class cultural skill, and they evidently find much favour with a large proportion of the visitors. Cockscombs, however, are too formal in character and too sombre in colour to be employed to advantage in the flower garden, and the appearance presented by them in this instance is not satisfactory. On the other hand, the pyramidal celosias, which are here planted rather largely, make excellent bedders, and form some of the most effective beds in the park. The first of the several beds devoted to Celosia pyramidalis has a carpet of the golden moneywort, the rich hue of which presents a striking contrast to the shades of orange, red, and crimson afforded by the feathery inflorescens, and materially enhances their effectiveness. Celosias have several beds devoted to them in the flower garden, and are not less satisfactory there than are those occupying the isolated beds. The large triangular bed on the right, and near the end of the walk, is filled with pyramidal and standard fuchsias, all in the most luxuriant condition, and flowering in great profusion. Seldom are fuchsias seen to such advantage when planted out as in this instance, and it may be mentioned as a matter of some importance that the fuchsias are planted just far enough apart to prevent overcrowding, and the intervening space filled with golden celosias, ageratums, and other flowering plants of dwarf growth. In addition the bed has a broad band of a golden-leaved pelargonium. In the border beyond this are blocks of zonal pelargoniums, celosias, and tuberous begonias, the latter being in some respects the most attractive.

Proceeding to the central flower garden the first arrangement to arrest attention is a large bed filled with cannas, gladioli, and Lilium auratum, and edged with Golden Fleece fuchsia, one of the best golden bedders, being neat in habit and extremely rich in colour. To the right and left of the walk which skirts the eastern side of the flower garden are highly attractive borders filled with calceolarias, zonal pelargoniums, fuchsias, and marguerites, and edged with the variegated form of Veronica Andersoni and blue lobelia arranged alternately. Arranged in this way the silvery variegation of the veronica forms a beautiful contrast to the blue flowers of the lobelia, and the only attention required by a marginal band so formed is to keep the veronica from rising above its more lowly companion. In the recesses alongside the same walk are several circular beds remarkable for the taste with which they are arranged. Especially noteworthy are those in which tuberous begonias are set on a carpet of Antennaria tomentosa, and celosias and Cineraria maritima are planted in mixture, the latter combination being particularly pleasing. In the shrubbery border, on the eastern side of the walk, musas, dracænas, and palms have been interspersed with the shrubs, and give a tropical aspect to the scene.

On the western side of the flower garden the planting is on somewhat similar lines to that on the east, but the circular beds are chiefly filled with plants remarkable for the beauty of their aspect. At either end of the stretch of turf on the west side of the avenue is a large pyramid of the well-known ivy-leaf pelargonium, Madame Crousse, both of which are liberally furnished with flowers, and present an attractive appearance. There are several large and excellent beds of zonal pelargoniums, but as the varieties employed are well known it is not necessary to refer to them in detail. The large beds filled with scarlet zonals and white marguerites in equal proportions must be mentioned, for the purpose of saying that they show in a marked manner what beautiful effects may be produced by the most simple materials. Especially deserving of attention are the trophy-like groups of palms and other plants, remarkable for nobility of aspect, and the vases, both of which evince much taste, and afford object lessons of the most valuable character.

A NEW COTTON PLANT.—According to the last British Consular report from Alexandria, the chief feature of the cotton trade of Egypt during the past year was the increased cultivation of a new variety of cotton plant known as Mitafifé. This plant was discovered a few seasons ago at Benha, and this is the first occasion on which it has been planted on a large scale. Although its produce is not quite so good in quality as that of the Ashmouni plant and is of shorter staple, it produces a much larger proportion of cotton to seed than any other variety. At the same time it has the advantage of being earlier and less susceptible to atmospheric influences. The result of last year's experiment was so encouraging that this year a still greater area has been planted with the Mitafifé cotton. In the provinces of Sharkieh, Galioubieh and Menoufieh it has been almost exclusively sown, and throughout Lower Egypt, except in the province of Dakhalieh, where, probably owing to the climatic conditions, it did not succeed last year, it has to a great extent taken the place of the Ashmouni and Bamia varieties, and has almost entirely supplanted the Galini plant.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

A MEETING of the Executive Committee of the above association was held in the Horticultural Club Room, Hotel Windsor, Victoria Street, S.W., at five p.m. on Thursday, August 28, Mr. T. F. Rivers in the chair. After the minutes of the previous meeting had been read and confirmed, the Hon. Secretary presented the following report with regard to the business transacted since the July meeting.

THE STRAWBERRY REPORT.—In accordance with the resolution of the committee the report of the Strawberry Exhibition and Conference in St. Stephen's Hall, Westminster, on June 27 last has been printed in book form and distributed free to all members. It is also on sale to the general public, and can be had post free for 1s. from Mr. Lewis Castle, Hotham House, Merton, Surrey. In addition to the complete historical and cultural information embodied in the papers read at the conference, a chapter has been incorporated on strawberry forcing by an experienced cultivator. Many letters have been received expressing much satisfaction with the association's first publication.

THE LEICESTER CONFERENCE.—At the Leicester Conference on August 5, the programme as arranged was carried out to the letter. James Ellis, Esq., M.P., occupied the chair, and Messrs. Rivers, Ingram, Pearson, and Bunyard read the papers announced. Several members of the association journeyed a considerable distance to be present, and the conference was attended by over 200 persons, the chairman being supported by the Mayor of Leicester (Dr. Lankester). A committee of the Town Council had made the necessary arrangements for the conference, having placed a large tent at the disposal of the association. The readers of papers and officials were also entertained at lunch by the Mayor and committee. Special thanks are due to the Abbey Park superintendent (Mr. J. Burn) for the assistance rendered in the arrangement of what proved to be a very satisfactory gathering.

THE IRISH TOUR.—In regard to the inspection of fruit culture in Ireland the delegates, Messrs. Castle and Gordon, left Leicester in the evening of August 5th, proceeding direct to Ireland *viâ* Stranraer and Larne. Investigations were commenced in the counties of Londonderry and Antrim and continued thence south to Cork and Kerry, taking all the principal districts in the way. They also proceeded to Limerick, and returned to Dublin, where they were received by the Council of the Royal Horticultural Society of Ireland, who have promised every assistance in collecting any further information required to complete the report. The outline report presented to the Crystal Palace yesterday, September 5th, comprised the chief subjects that will be dealt with more fully in the official report to be published later on. It is only necessary to say here that thousands of acres of fine land suitable for fruit culture were inspected, and that fruits, especially apples, were good, succeeding even under the worst treatment, from the extreme north to the south; that good culture was seen in a few instances, and the results there were as satisfactory as anywhere in England, and that imported fruit had a large place in the shops and markets of the principal towns, proving the existence of a demand for fruit. The delegates experienced much courteous attention during the journey, and the object received the hearty approval of all with whom it was discussed.

Sir Charles B. Barrington, Glenstal Castle, Limerick, having kindly consented to become a Vice-President of the Association, was unanimously elected to that office. Votes of thanks were also unanimously accorded to Mr. James Ellis, Dr. Lankester, Mr. Burn, and other officials at Leicester, who have assisted so greatly in the arrangements for the conference.

The Brighton Conference will be held in the King's Room, Royal Pavilion, on September 11, at 4 p.m., the Mayor of Brighton in the chair. This will be the second day of the annual Autumn Show under the management of Mr. Edward Carpenter, and a good display of fruit is expected.

SUBJECTS.

GENERAL FRUIT CULTURE by Mr. T. F. Rivers.
GRAPES FOR MARKET, by Mr. J. Roberts.
TOMATOS FOR PROFIT, by Mr. W. Iggulden.
WALL FRUIT, by Mr. R. Smith.
Members' tickets admit to the Brighton Show and Conference.

NOTES FROM WEYBRIDGE.

MY Gardener at Heatherbank made a bed of Tuberoses on the lawn. They have better blooms than any he grew under glass. This may be not new, but I think it worth a note. Montbretias are beautiful at Wisley, some of Lemoine's newer introductions, especially a yellow one with bronzy leaves, "Solfaterre." They look well in a clump, but show their graceful growth much better when planted only (say half a dozen), four or five inches apart. This season has suited Lilium superbum; it has been especially fine, we have some large clumps of it, but I think it, too, shows best only a few together with trees as a background. There are many between eight and nine feet, the tallest measures ten feet six inches. Mr. Huftel, of New York, has sent me a paper in which he recommends L. Canadense as the national flower of the United States, in preference to the Golden Rod, which has been suggested. I think L. superbum would be better, as it is not only a more striking lily but has a better name.

GEORGE F. WILSON.

Heatherbank, Weybridge-Heath, August 29.

HYDRANGEA PANICULATA GRANDIFLORA.

THIS is a great improvement upon the ordinary form of H. paniculata, and now ranks as one of the finest hardy shrubs for the borders, and especially in those of the herbaceous class, where it gives variety. On this account such subjects as the one in question are not entirely out of place. Although this hydrangea flourishes so well in some gardens, where the soil is inclined to be sandy, and consequently warmer during the winter, it refuses to grow at all in gardens where the soil is cold and heavy, or very poor and thin. For example, here where the soil is stiff and retentive of moisture during the winter, and highly impregnated with chalk, it refuses to grow at all. In such a case the addition of sandy peat and leaf soil would obviate difficulties, and place this charming plant within the reach of all. E. M.

Calls at Nurseries.

MESSRS. JOHN LAING AND SONS, FOREST HILL.

THESE interesting nurseries have annually presented for many years past a spectacle that is at once unique as a feature of commercial horticulture and of the highest interest as illustrative of the capabilities of our climate and of the adaptation of taste thereto. When the tuberous begonias first became known as subjects for cultivation no one could have dreamed of the future that was in store for them. Indeed, when the plants we cultivate cease to be associated with our desires and tastes they may be said to pass out of existence. But the reverse is not so exactly true. Our tastes and desires may take directions the plants cannot follow by reason of their unfitness to endure the conditions. It happened in the case of the tuberous begonias that for decorative purposes they brought with them a special adaptiveness to at least some of the conditions incidental to an occupation of the summer garden, and the case is directly illustrated by the report we published last week on the present bedding in Hyde Park. The stronghold of the bedding system has been the zonal pelargonium, a truly wonderful plant under certain circumstances by reason of the abundance of flowers it produces. But in a cold and rainy summer the zonals shed their flowers as fast as they expand, and a bedding display in which they happen to be of primary importance as colour agents makes but a poor apology for colour. They are, indeed, fine weather plants, and we shall never be sure of them until we can regulate the weather, even to the minutest particular. In this summer of 1890 the zonals are but as the ghosts of themselves. On the other hand, the bedding begonias are so fresh and beautiful that their appearance is a declaration to the effect that such weather suits them, and for rainy Britain they are all we can require for large masses and brilliant effects. Probably no one conversant with the practices that prevail in the embellishment of gardens has any doubt about the serviceableness of the begonia. But anyone in a doubting frame of mind may be advised to visit Messrs. Laing and Sons' nurseries, and see a great square of open land laid out in a series of beds of convenient width, at this time occupied with the astonishing number of 200,000 plants, all in flower, and comprising all floral colours, some true blue, the scarcest of colours and the one that is least wanted. The first view of this vast field of flowers to the unaccustomed visitor is like a first peep into a new world. Probably no other flower would give an equally agreeable effect on so large a scale: certainly pelargoniums would not when in their best condition, because their solidity of colour would be oppressive. Now begonias, however rich in bloom, and however extensive the space they cover, never become oppressive, because they show a sufficiency of a very cheerful tone of green, and their colours are usually softer and in better tone for the European vision. These bedding begonias of Messrs. Laing's will all be lifted and stored in pits like potatos; less roughly of course, but in some such fashion, for when the chill of autumn has brought them to a stop for the season, they give no more trouble until they are again started in spring for planting out. Just compare mentally the potting and housing under glass of 200,000 plants and putting the same number of tubers of the size of walnuts into dry earth to remain dormant "until called for." The begonias have the best of it every way, and we do not wonder that the demand for them has reached such a pitch as to justify the extensive operations that may be witnessed here.

Those referred to thus far are single varieties solely. There is another plantation of doubles. The double flowers are adapted only for special and peculiar purposes, but of the singles it may be said they are adapted for all purposes, and while singularly effective in large masses, they are singularly interesting in small masses, especially when mixed, for their leaves are as beautiful as their flowers, and the mixed seedlings afford an endless variety of characters.

In the houses we see what has been done to raise this beautiful flower to a distinguished position as a product of cultivation. Systematic crossing has brought into existence a series of magnificent varieties that should entitle the flower to a place at the very head of the many triumphs of the florist, for we have still the parents of the race; the flowers have been expanded to enormous proportions, and enriched with properties and colours of which the originals gave but the faintest hints, and the men who have wrought the work live to enjoy the results, whether of gain or fame. Not a few of our most valued garden flowers represent centuries of work, but here we see astounding results that have been obtained, we might almost say, while we were looking on. Nor is the size the only point of importance, for, in truth, size is only size after all. But we now see splendour of form and all the weak points of the early kinds that required supports and presented flowers that looked downwards, have been cured, and now the best kinds present their flowers to us frankly looking us in the face, and they are on stems that are sufficiently stout and stiff to carry them—in a word, we are nearing the ideal begonia, and anyone can grow it who can grow a pumpkin, and there is no mystery in the matter at all. For pot and basket culture the single varieties are, generally speaking, the most useful, but there is considerable scope for using the doubles advantageously under glass, because we can enjoy their closely packed and pleasing rosettes in a near inspection far better under glass than in the open ground. The doubles of dubious colouring, such as salmon-tinted whites, buff-tinted yellows, rosy blush, and pale carmine, are amongst the more delicate beauties of the family; flowers to loiter over and to talk about and to visit at odd times to feed the sense of beauty when attention can be taken from more prosy subjects. Generally speaking, however, the more positive colours are the more satisfying, and their high quality gives a zest by contrast to the peculiar tones that appear occasionally. As the collections comprise hundreds of varieties, we have named a few of each class that are super-excellent, and best adapted, therefore, for cultivators whose accommodation is limited and whose taste is exacting.

A FEW CHOICE SINGLE BEGONIAS.

Charmer.—Carmine crimson, white centre.
Distinction.—Glowing crimson, white centre.
Duchess of Edinburgh.—Rich yellow-shaded orange; a magnificent variety.
Duke of Edinburgh.—Dark bronzy crimson, rich and impressive.
Guardsman.—Dazzling scarlet, full of fire.
Lady Lewisham.—Rosy carmine passing into white, delicate and delightful.
Lord Lewisham.—Intense scarlet, fine form.
Lord Salisbury.—Full red-shaded crimson, grand form.
Mrs. Weekes.—A picotee flower, white with rosy edge.
Prince Albert Victor.—Orange scarlet, grand flower, fine habit.
Prince of Wales.—Glowing crimson scarlet, grand form, immense flower, carrying well.
Princess Louise.—Superb petal, forming a perfectly circular flower of the purest white.
Princess of Wales.—Fine form and good habit, deep rose pink.
Queen Victoria.—One of the largest flowers borne by one of the noblest plants, the foliage beautiful. The colour is deep rose. It justifies its name.
Stanstead Surprise.—Extra large, fine form, rich deep crimson.
Torey Laing.—A good plant, valuable for its colour, which is full yellow, suffused with reddish buff.

A FEW CHOICE DOUBLE BEGONIAS.

Grandeur.—Scarlet crimson, free and good.
H. Barnet.—A good plant, the flowers elegantly fringed; rich deep crimson.
Louis de Goussaincourt.—A good plant, with flowers that are often likened to roses or camellias; the colour soft rose.
Lucy Closon.—A good plant, carrying its flowers well; they are large, imbricated, pure white.
Maggie Rust.—A fine large, thoroughly double flower of the finest quality; rosy pink.
Mrs. Brissenden.—A moderate grower, flowering freely; the colour pinky salmon, shading to creamy centre.
Mrs. French.—A fine large imbricated flower, sulphur white shaded primrose.
Mrs. Hull.—Large, fine form, creamy white.
Robin Adair.—Valuable for its splendid carmine-crimson colour.
Triomphe de Nancy.—A good double, creamy white.

When the visitor has had his fill of begonias, there are any number of good things of very different texture that he may be entertained with if so inclined. Of crotons the stock is prodigious. The Nash Court Lapageria is here in its original form; indeed, it went forth to the world from this nursery. The white variety is, of course, in pleasant association with it, and the plants are doing well with their roots in a free bed of peaty soil that is always moist, while their heads are in a cool temperature. Roses and fruit trees occupy extensive quarters, and Bismarck apple is one of the favourites in its own department of usefulness. At the present moment, however, the bulbs appear to engross attention, for they are pouring in and pouring out, and it looks as if the world had gone crazy about crocuses and hyacinths and tulips. But time will bring sobriety; and the bulbs will have finished their journeyings in great part ere lifting time, when there will be a complete change in the operations of the nursery.

GARDEN FLOWERS.

Potentilla formosa pallida is a beautiful autumnal plant, distinct and peculiar. In growth it agrees with the type, but in colour it is at once unique and delightful, a kind of shaded flesh, with rich brown centre, surrounded with crimson blotches at the base of each petal. For a sunny rockery this is much to be desired. It was well shown by Messrs. G. Paul and Son, of Cheshunt, at a recent meeting of R.H.S.

Coreopsis lanceolata is at this time one of the best things in the garden, and perhaps a trifle better than usual, for it prefers a damp to a dry soil, and the season has favoured it. This and *C. auriculata* are the best of the perennial coreopsis. A less robust and less accommodating beauty is *C. tenuifolia* with elegant foliage and brilliant golden flowers. It is, however, out of flower now, having finished business for the season.

LILIES look distressed with the cold. Yet they give us of their flowers, and the growth of the season is satisfactory. The group of *Lilium speciosum* is now in full beauty, and our show of the pure white variety, known as *Vestal*, is one of the best we have seen. But all the members of this group are good, and the new *Krætzeri*, also pure white, is quite stately and impressive. All the speciosums are hardy, and make a free growth and flower in the most satisfactory manner in sandy loam in the western and southern suburbs of London, but in the northern and eastern suburbs often prove delicate, and on heavy soil everywhere, even in kind climates, they do not prosper. Where they thrive in the open they are invaluable, making a glorious display at this season, and not only lasting for years, but increasing at a reasonable rate. For growing under glass they are certainly as valuable as any, as the market men discovered ages ago.

Lysimachia Dahurica is a good plant to associate with lady ferns and Kæmpfer's iris and other choice plants that love moisture. It is not a water plant, but a damp soil suits it better than a dry one, and it is so modest in mien that it loses by contrast with plants of bold habit and high colour. The height is about two feet, the foliage is of a pale green, and the pretty flowers are of a pale yellow colour, making a pleasing appearance when associated with ferns and other quiet subjects.

Tritoma glaucescens, otherwise known as *Kniphofia uvaria nobilis*, is the very best of this important group of plants, but those who have it not, or experience any difficulty in obtaining it, may do very well with *K.* or *T. uvaria* which is the commonest, because the hardiest a nd the one that multiplies most freely. These have been glorious, and in many places continue so, and, indeed their glory will not cease until frost touches them, for rain they rather enjoy, which, perhaps, accounts for their splendour in the present season. It is generally understood that these plants will not thrive on heavy soils. But in truth they appear to be indifferent to the texture of the soil, though in common with nine-tenths of all known hardy plants a deep fertile sandy loam suits them best of any. We see them in parks and gardens glowing like burning torches on soils of all kinds, and it is most unusual for severe winter weather to harm them in any great degree. Where the soil and situation are suitable for the enterprise, a grand bed may be made with tritomas and *Agapanthus umbellatus*, but on heavy soils near London the blue lily would not endure. But even in that case the thing could be done by plunging the lilies, or by having two sets of plants, and turning them out alternately so as to give each lot a full year's growth in pots. For special positions this bit of planting is quite worthy of consideration. Having practised it we can say that the combination is a happy one. It was our custom usually to fill in with balsams which were planted out in June. In such a season as the present balsams in beds would be poor things.

Eulalia Japonica is a noble grass that the uninitiated may on a first view mistake for the pampas grass, but it is very different in its broader leaves, greener colour, and general character, though in a great mass and at a distance somewhat like the other. It is a robust hardy perennial, rising six or seven feet, the flowers are in panicles, which acquire an elegant character as they mature, and are as striking in colour as in contour, the mass forming a confused but magnificent feather. There are two variegated varieties, one longitudinally, the other laterally striped; these are much prized. We

have seen them displaying their characters admirably in Mr. Ware's nursery at Tottenham. Although these singular varieties are much to be desired, there is a simple grandeur in the green-leaved form that better fits it for large scenes and architectural gardens than either of the oddities which, indeed, are better adapted for small places where their curious characters can be appreciated.

Hydrangea paniculata varies much in different gardens, but is everywhere a fine thing when obtaining sufficient moisture. We have seen it perish in dry borders where a great variety of plants were in perfect health. But a swampy spot will not suit it. Generally speaking a deep loam is sufficient, but in dry weather the waterpot must help it, and if liberally sustained its production of grand panicles is prodigious.

Agapanthus Mooreanus is a quite hardy species of small neat growth, the leaves narrow and abundant, the flowers in umbels on stems twelve inches high, the colour full azure blue or pure white. This is a deciduous plant, and to keep it safe a little cone of coal ashes suffices. It may be multiplied from seed easily, and may be pronounced a first-rate border plant.

Statice limonium is a fine plant now, and one that will thrive in any border, a well-drained, sandy soil being best for it. The typical plant produces an immense head of rosy-tinted blue flowers. The variety *alba* makes a hemispherical cloud of rosy grey, for white it is not.

Statice tomentella is another fine species, with a liberal mat of leafage, above which is a broad, bold head of flowers of a light lavender colour. It is a quite proper subject for a choice collection.

Venidium calendulaceum should be made note of more by those unfamiliar with it as one of the showiest of marigolds for the present season. It comes near to gazania in general characters, and is full of good character, the colour a clear orange-yellow. It may be grown from seed or from cuttings, and being but half-hardy must be renewed annually.

Senecio elegans is known to all, and once upon a time was famous as a bedder. It was the double variety that was prized, and the single, generally speaking, was unknown, for when singles appeared in a batch they were rooted out and thrown away. But the single is a little beauty, while the double is but a mere little lump, without form, and as compared with the single may be said to be without colour. The flower is a pretty counterpart of the single cineraria, the ray rosy pink, the disk golden yellow.

Tradescantia virginiana may be too common to justify a rhapsody, but since flowers have been scarce we have thought some great tufts of it that now adorn the rockery are in their way invaluable, and we almost wish the plant were scarce that it might be deservedly admired. In an ordinary border it has a common look, but in large tufts mixed in a sort of respectable confusion with other things it has a really fine appearance, and all the varieties are good. The first frost will make a difference to these notes, and we must now seize upon every good thing we can find.

Lobelia rosea is a neat plant in the style of growth of L. fulgens and L. syphilitic, such as we term for catalogue purposes "herbaceous." It rises to a height of fifteen inches, the flowers are in a close spike, the colour carmine rose. It is not showy but decidedly pretty, and in many places will prove useful.

Parnassia palustris displays its delicious cluster of pearly flowers precious to eyes that have had the training of the mountain and moorland flora. Thousands of plants are sold to tourists at a shilling each or less, but few are ever seen a second season. They do as tourists' plants are ever accustomed—they die. Yet this plant is easily kept in any garden by planting in a pot with a soil of loose peat and moss, and keeping the pot all the summer in a pan in which there is an inch depth of water. We have had fine specimens in eight-inch pots and in large shallow pans that have thriven for years by this simple treatment, and we wintered them in a frame to be sure of keeping them. Where there is a bog bed or artistic water scene, the plant will be found quite accommodating, perfectly hardy, and a gem of the first water that also loves the water and cannot live without it.

ASTERS in flower include the brilliant *A. acris*, with lively lavender flowers in profusion; *A. patulus*, four feet, deep green, flowers pale lavender, yellow disk; *A. puniceus*, five to six feet, flowers pale blue; *A. Novi-Belgii*, one of the best generally, but not looking well this year; *A. longifolium*, four to five feet, flowers white, with yellow or brown disk. All these are good garden plants.

MARGUERITE CARNATIONS.

AT the meeting of the Royal Horticultural Society, August 26, Mr. H. Herbst, of Richmond, placed before the Floral Committee a beautiful bouquet of carnations, described as "Marguerites." The flowers are all of a medium size or smallish, but unless this remark should appear depreciative, it should be added that they were large enough for all the purposes to which cut flowers are applied, save and except the decoration of the show table. They are not show carnations, but border carnations, and having seen them growing, I can add that the plants are but moderate growers, and present a great head of bloom. They are, in fact, as border flowers, perfect, for they vary in colour, are well made, and sweet scented. They will never astonish, but will always delight whoever will grow them.

A quicker growing lot one could not hope for. Mr. Herbst sowed the seed in March, and cut his bright bouquet on the 26th of August, after the plants had been in flower fully three weeks. It is a new idea—carnations by express, with no trouble and no risk, and considering there is only a pinch of seed wanted to begin with, it may also be said with no cost.

These Marguerite carnations appear to be a dwarf free-flowering offshoot from the race of perpetual flowering carnations that have long been popular. The fortunate raiser of the strain was M. Boucharlat, of Lyons, who saw the necessity for it, the florists' varieties being generally but ill adapted for border culture, a fact emphasized by the recent trial of carnations in the R.H.S. Garden at Chiswick. These Marguerite carnations have performed all that was promised of them; they are invaluable; they place at the command of the amateur who has no special facilities for raising choice flowers a race of gay, various, fragrant, beautiful carnations that attain to maturity as the commonest of annuals do, from seed sown the same season. Perhaps it will be proper to say that the grand technical name of these flowers is *Dianthus semperflorens Marguerite*.

A VISITOR.

ZONAL AND IVY-LEAVED PELARGONIUMS.

IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, CHISWICK.

THE house occupied by these plants has been extremely gay throughout the season, and when visited by the Floral Committee on the 31st of July the plants were mostly at their best, and the marks assigned to the selected varieties may be taken as justly marking their distinctive merit. To see things in condition is a matter of the first importance, but it is not always possible in committee work, for committees cannot watch for special and peculiar opportunities, but must consider convenient times for meeting and many matters better understood by implication than explanation. There are but few variegated-leaved pelargoniums in the house this year; the varieties consist almost exclusively of large-flowering zonals and ivy-leaved varieties; even the once favourite "nosegay" group being "conspicuous by their absence." The following notes were made a few days previous to the visit of the committee, and the stars added represent the number of marks awarded, three marks being the equivalent of a First-class Certificate.

ZONALS.

Fourmaise (Lemoine).—Leaves broad and bold, bright green with large dark zone; flowers in large trusses, petals broad and smooth, colour intense orange-scarlet. Immensely showy and free.

Edith Strachan (Pearson).—The growth dwarf, leaves dark dull green with large obscure zone; flowers large, circular, fine petal, colour clear deep salmon with shades of carmine.

International (P.)—This also is one of Pearson's; the growth compact; leaves dull green with large dull zone; flowers circular, with broad, smooth overlapping petals; flowers of the finest form in smallish trusses, white with slight shade of pink. A beauty.

Maud Russell (P.)—Habit of growth compact, leaves of a peculiar dark dull green colour; flowers double, rough, curiously coloured in shades of red.

Eclair (P.)—Growth dwarf, neat; flowers single, in loose trusses, the form extra good, colour intense deep scarlet with violet shade.

Guinevere (P.)—Dwarf growth, the leaves bold; flowers extra large, the the colour white with tint of pink.

Brutus (P.)—Growth very dwarf, leaves dark; flowers single, colour intense fiery crimson with suffusions of orange and violet. Peculiar and dazzling.

Rosy Morn (P.)—Habit dwarf, leaves light green; flowers of the finest form, large and beautiful, the colour delicate pleasing purplish-tinted pink.

Gloire de France (L.)—A good compact habit; the leaves neat with dark zone; flowers double, the outer parts of the petals rosy blush, the centre lively orange shading into rosy-pink, distinct and beautiful.

Opal (P.)—Leaves large, with dull zone; flowers very large, of the finest form; colour purplish pink; a grand variety.

W. Bealby (L.)—Growth dwarf, light green without zone; flowers circular with broad smooth petals; colour, full deep scarlet, one of the finest of its class.

Amy Amphlett (P.)—Growth robust, the leaves bold with broad zone; flowers large, circular, white with delicate suffusions of rose.

Catulle Mendes (L.)—Growth robust, leaves dark green; flowers semi-double, colour rich rosy-mauve; brilliant and satisfactory.

Gloire de France (L.)—Growth dwarf, leaves very dark with broad zone; flowers double, whitish with brilliant carmine-shaded salmon centre—an oculate double, distinct and attractive.

Flamboyant (P.)—Growth moderate, leaves smallish; flowers single, large, fine petals, colour intense scarlet.

Sissie (P.)—Growth robust, leaves bold, moderate zone; flowers deep crimson-scarlet.

Stella Massey (P.)—Leaves large, moderate zone; flowers of fine form, in good trusses; colour clear light warm flesh.

Captain Colville (P.)—Leaves dull green; flowers borne on stiff stems in medium trusses; they are semi-double, the colour fiery scarlet.

Angra Pequena (L.)—Growth dwarf, leaves large with dull zone; flowers semi-double, in huge trusses, the colour reddish scarlet.

J. L. Baldwin (P.)—Leaves smallish; trusses borne obliquely; flowers very large with broad petal; full clear scarlet.

Mrs. David Saunders (P.)—Dwarf, compact, leaves dull green; flowers of the finest form; colour pure pink with whitish eye; a grand variety for pot culture.

Eccentric (P.)—Growth dwarf, leaves small; trusses on short stems; flowers of good form, salmon tinted red.

Trophée (L.)—Leaves large, trusses globular: flowers of medium quality, light pink, with rays of deeper pink radiating from the centre.

M. Berger (L.)—Leaves full green with dark zone; flowers double in close round trusses; colour deep glowing pure crimson.

Charbon ardent (L.)—Growth dwarf, leaves dull green; flowers double, rough; colour intense orange scarlet. When placed amongst rosy and purple-flowered kinds, the colour appears intense orange. It is well named, and is probably the brightest coloured of its class.

Charles Mason (P.)—Dwarf, light green, with dull zone; trusses large on stiff footstalks; flowers very large with fine petal, the colour a beautiful clear scarlet. Three stars × × ×.

Copernic (L.)—Leaf round, deep green, with black zone; trusses borne obliquely; flowers of fine form, but not large; colour warm pink, with tinge of orange on top petals.

La Lorraine (L.)—Compact, full green, moderate zone; trusses borne obliquely; flowers medium, light clear pink.

Mons. Poirer (L.)—Large dull leaf, with dark zone; trusses on oblique stems; flowers deep purple crimson; very distinct, rich, and impressive. Three stars × × ×.

IVY-LEAVED.

Galilee.—Leaves green, trusses medium, globular; flowers large, colour full rosy lilac, with silvery turnover, pleasing and good. There are two varieties of this name, nearly alike, and both good. Three marks × × ×.

Souvenir de Charles Turner.—Habit somewhat loose; leaves light green, trusses smallish; flowers semi-double, large, flat; rosy red, with small bar on the top petals. Three marks × × ×.

Berthelot.—The habit is excellent; leaves full green; trusses smallish, compact; colour full glowing rose. A fine variety.

Innocence.—Leaves small, dark green, with small black zone; trusses loose and light, in great abundance; flowers single, whitish, with dark lines. Free, showy, useful.

Sarah Bernhardt.—Leaves bright green; trusses smallish; flowers semi-double, blush, with rosy-purple lines. Useful.

Lucie Lemoine.—Habit neat, leaves smallish, dark green with small black zone; trusses smallish, flowers semi-double, pale lilac with rosy lines. A beautiful variety.

De Quatrefages (Lemoine).—A fine plant; leaves smallish, full green, with small faint zone; trusses medium, flowers semi-double, a little rough; colour rich full rosy purple. A grand variety. Three marks × × ×.

Emile Lemoine.—Leaves smallish, dark green with small black zone; flowers semi-double, clear rosy lilac; pleasing.

Madame Jeanne Woute.—Leaves light green, growth compact; flowers semi-double, lively rose pink. Good.

Gem.—Approximates to the zonal character; leaves light green with small zone, habit free and branching; flowers single, the petals narrow; colour clear pale pink with rosy spots on the top petals. A pleasing variety. Three marks × × ×.

Abel Carriere.—Habit free, leaves light green with small obscure zone; flowers semi-double; full purplish rose, rich and lively; a beauty.

Jeanne d'Arc.—Habit spare, leaves light green; flowers double, pale pinky blush.

La Vesuve.—Dwarf, leaves light green; flowers single, clear full red; good.

Hofgartner Escheler.—Habit spare, leaves small with dark zone; flowers semi-double; full deep scarlet; fine.

Ernest Berguard.—Habit spare, full green; flowers double, deep full scarlet; good.

Madame Thibaut.—Habit compact, leaves large, light green; flowers quite double; colour full carmine rose, rich and lively. Three marks × × ×.

Madame Crousse.—Good habit, free, leaves light green with obscure zone; flowers single or semi-double in well placed trusses, colour clear deep pinky flesh, with lines of deep carmine on top petals.

Masterpiece.—Habit free and bold, leaves green; flowers single in fine trusses, clear bright carmine crimson; a fine variety.

Le Printemps.—Habit very free, leaves light green, flowers quite double in compact trusses, light rosy pink with silvery turnover. A beautiful and useful variety. Three marks × × ×.

Comtesse Horace de Choiseul.—Habit free, leaves light green, flowers double, bright cerise rose with silvery shades. Extra good. Three marks × × ×.

Gloire d'Orleans.—Habit free and good; leaves medium, bright green, flowers double, bright pink; pleasing and useful. Three marks × × ×.

Mrs. Moore.—Leaves light green, flowers double, warm rosy blush, good.

NOTES FROM KEW.

A GARDENER can always find much to interest him in the gardens at Kew, especially if he be a lover of hardy plants, shrubs, and trees. There one is supposed to find something of all sorts, but to see a little of everything in season one ought to pay a monthly visit to the place. My opportunity for going there has only been once during the last two years, and I must be content with things as I find them.

In taking a hurried run through the houses I was much struck with the improvement there manifest, the plants, one and all, certify by their healthy look that they enjoy the treatment accorded them. I think I must say the plants are taken better care of than they were in times of my visits in years gone by. Of course, it was pleasing to see the plants looking so healthy and well, and it may not be a source of annoyance to those in charge of the different departments.

The first house I went into was that devoted mainly to water lilies, all of which were looking in the best of health, the lovely blue and pink flowers of Zanzibarensis and Devoniensis, forming a delightful contrast with each other, and the green foliage on the surface of the water. Numerous interesting gourds and cucumbers were growing on wires trained under the roof, which were amusing to many of the visitors at the time of my visit, Sooley qua cucumber creating much surprise at its length. I thought at the time, if they had seen those immense fruits growing in the vineyard at Garston, Liverpool, some few years since, they would have provoked exclamatory comment, as they were between six and seven feet long. In the corridor or passage leading into the lily-house a large bush of Lagerstromia indica interested me much with its peculiarly formed flowers, which are produced on axillary peduncles, six peculiarly formed and curled blossoms coming from one central bud or base. The colour, a bright rose-pink, is exceedingly showy; the whole making a great display. In the large tropical house the numerous occupants, such as palms, crotons, and such like, were luxuriating in happy conditions, the rich colour and amplitude of the leaves indicating this much.

In the greenhouse the climbing plants were very showy, especially Fuchsia gracilis variegata, which is a delightful plant, with its silver and green foliage and minute pendant blossoms. A group of chimney bell flowers, Campanula pyramidalis, both blue and white, were arranged just inside the entrance to this house, and well they looked, being majestic in mien and clothed with blossoms. In private gardens these campanulas are not nearly enough cultivated as their merits deserve, for no other reason, I suppose, than that of their being looked upon as "common" herbaceous plants.

On my way from the Palm house to the other houses, I could not but say that I thought the "bedding" between the former house and the lake was quite unworthy of such a garden as Kew. The beds were but sparsely filled, the growth of those also was but poor. Strolling a little further in the same direction, I came across the Lilium auratum, growing among the rhododendrons, which almost took my breath away at their size and floriferousness. I thought I had seen some tolerably good spikes of this lovely lily before, but after those I must sing small. Amongst rhododendrons which are in a thriving state, here is just the place to grow auratum lilies anyhow it seems. Many flower stems were from seven to eight feet high, one fasciated spike six feet six inches high had over 120 bloom buds upon it; all the plants being in rude health. I thought what must the sight be in a few weeks hence? The few blooms that were expanded I noticed were very small*, heavily spotted, and having a rich yellow bar or stripe down the middle of each, showing what a wonderful variety of forms and colours this genus possesses.

Olearia Haastii was growing in a mass in a bed by itself, and charming it looked, the plants being one mass of blossoms, pure white, the growth not more than two feet high, showing what a grand shrub this is, not nearly often enough seen.

Continuing my walk a little farther, I stopped to admire the British ferns in the hardy fernery, and thought what faithful engravings you gave us of that part of the garden a short time since in the GARDENERS' MAGAZINE. British ferns provide a splendid study for lovers of this branch of horticulture. The plants here appear to be "doing" so well that all seem perfection, which is the best general term I can apply to them.

In a large bed was growing a mass of Heuchera sanguinea, which must be a charming sight when in flower. At present Ceanothus Gloire de Versailles is in fine flower in the same bed underneath which the Heuchera is growing, a form of culture which evidently agrees with both subjects.

Hardy climbing plants on the wall facing the herbaceous garden were both interesting and showy.

Ceanothus latifolius was a mass of deep blue; the flower spikes are compact in form, the leaves deep green in colour and nearly round. Quite a gem for a wall to flower in August.

Olearia Haasti, previously referred to as a bush, was here literally smothered with its snowy white blossoms, covering a piece of wall seven feet high and as much broad. Indigofera Gerardiana, rosy-lilac, with acacia-like foliage, covered a portion of the wall about twelve feet high.

Abelia rupestris was growing with much freedom, stout sucker-like shoots were springing up from the base of the plant quite four feet long, of this year's growth, the whole plant covering about six feet by five feet of the wall, and flowering freely. How seldom do we see this plant decorating our garden walls; not nearly so often as we might do.

From the specimens we ourselves possess of Exochorda grandiflora (Pearl Bush), I can easily imagine what the plant of it at Kew is when in flower, covering fully twelve feet of the wall. Judging by its luxuriance of growth now being made, it is doing well. Many other subjects I noticed which it would weary your readers by mentioning at the present time.

I was much struck with the excellent manner of cultivating other lilies besides the auratums previously noted. Two beds about twenty-five feet long, filled with Rhododendron hirsutum, amongst which were thickly growing Lilium longiflorum, with strong spikes of bloom from eighteen inches to three feet in height, which made a grand show, the pure white of the lily blooms contrasting so well with the deep green of the foliage below.

Orange lilies were growing among Andromedas, and Lancifoliums among heaths. Especially pleasing was a mass in another bed of Lilium Thumbergianum venustum; the flowers are borne on stout stems two feet high, ranging from four to twelve blooms upon each, the colour a bright coral red, the petals being quite upright in form; this is a very showy plant.

Another mixture which I thought worthy of noting was a good-sized bed of Fuchsia Riccartoni, through which were growing stout spikes of Hyacinthus candicans, forming a delightful contrast of colours.

The rockery at any season contains something of interest, although at the time of my visit novelties were rather rare. Two months earlier would have afforded a rich treat, I guess. Telekia cordifolia was conspicuous there, with its noble-looking foliage and orange-yellow flowers. Hypericum caprifolium in masses on the rocks was pleasing, both in flower and fruit. Gentiana asclepiadea showed the difference in height to which it grows in various positions. For instance, in the herbaceous borders it was not more than nine inches high, but in a damp situation and sheltered nook in the rockery it reached fully three feet. In either place it is an interesting variety of a popular genus; the blooms, eight on a spike, are dark blue.

The herbaceous garden provided more subjects in flower. I was much concerned to arrive at the correct names of two or three varieties of herbaceous chrysanthemums, or, as some chose to call them, pyrethrums. One, a sort growing fully five feet high, with narrow leaves, deep green in colour, with large marguerite-like flowers, I had previously known by the name of Pyrethrum maximum, but which is named at Kew Chrysanthemum latifolium. Another, the dwarfest variety of all, was named Chrysanthemum leucanthemum, a small oxeye daisy flower, growing not more than one foot high. Some name this C. lacustre, the common Spanish oxeye daisy; the tips of the florets recurve somewhat. The true Chrysanthemum maximum, which grows not more than one foot high, was not then in flower, but, in my opinion, is the best of the lot. The flowers are large, pure in colour, borne on stout erect stalks, which need no support; the plant is a charming object for the front of the herbaceous borders or in a mass by itself. It is a pity that there should be so much confusion in the naming of varieties of a certain genus, and not an extensive one either, as there is by different nurserymen. However, I was able to satisfy myself that we possess the true Chrysanthemum maximum, as well as the others here named:—

Rudbeckia occidentalis, of Nuttall, belongs to the tall-growing kinds of this family, pale yellow in colour.

Cryptostemma calendulaceum (marigold flowered), belonging to the annual section, which I thought worthy of notice in one of the herbaceous beds. The height is two feet, marguerite-like flowers, yellow in the centre, the outer parts of the petals lemon colour.

Lysimachia clethroides (clethra-like), the stems grow erect, two feet high, which terminate with a pure white spike of flowers, the peculiarity of which consists in its point drooping on one side, which gives an odd appearance to it.

Apocynum androsæmifolium is the old garden favourite, tutsan leaved dog's bane, growing about three feet high, pale red or deep pink colour.

Anagallis Phillipsii, with its gentian-like blue in a mass of colour, looked quite charming. It is variety of A. linifolia.

Another showy annual was Nemesia versicolor, rose and white, compact growth. Pentstemon puniceus, with its glaucous foliage and brilliant red flowers, was very conspicuous in the borders, growing about two feet six inches high. Many more interesting as well as showy subjects the numerous beds and borders contained, but I fear to weary you with my jottings.

I noticed large masses of Hypericum calycinum growing at the corners of paths and under trees, showing what an accommodating plant this is, and a very showy one too. Many an otherwise bare spot might be made to look bright and green by using the St. John's Wort more freely in private gardens.

A mass of Brodlæa Leitchlini, growing at the base of the long wall which divides the herbaceous garden from the other part, I stopped to admire. This is a crocus-like flower, but more pointed in the petals; purple, with a darker stripe down the centre of each.

A mass of Eucomis punctata was throwing up strong spikes of flower at the foot of one of the walls of the houses, showing how well it luxuriates in such a position, which is warm, receiving so much benefit from the wall. In the ordinary border it fails to stand our winters, especially if the soil be rather heavy. It is a grand plant when seen in good condition.

A YORKSHIREMAN.

* Kew possesses a large stock of the best forms of auratum, the flowers of which are large, with extra broad divisions.—ED.

BULBOPHYLLUM GODSEFFIANUM.

THE genus Sarcopodium, established by Lindley, is now generally accepted by most authorities as forming part of the large genus Bulbophyllum, and for this reason perhaps it is not advisable to revive the name lest "confusion should be made worse confounded" in the matter of orchid nomenclature, hence the adoption here of the name Bulbophyllum.

The subject of this note was exhibited at a meeting of the R.H.S. in the Drill Hall on the 24th of June last by Messrs. Sander and Co.,



BULBOPHYLLUM GODSEFFIANUM. From drawing by Mr. JOHN WEATHERS.

of St. Albans, who provisionally named it in compliment to their manager, Mr. Godseff. The scapes bear a single flower, the large upper sepal of which is ovate oblong, pale yellow, with deep purple brown stripes joined by transverse bars of the same colour, thus giving it a netlike appearance. The two lower sepals are falcate and curiously recurved, being pale yellow, stained with dark purple. The petals taper towards the tips and are of a semi-translucent yellow, nicely veined with brown. The heart-shaped recurved labellum, which is joined to the base of the column by a short-jointed foot, is moveable at the slightest touch like that of B. Lobbii and one or two other species; it is creamy white, spotted with dark purple at the base. The pseudo-bulbs are small, ovoid, and somewhat bluntly angular, but no leaves were borne at the time of exhibition. A first-class certificate was awarded, and it is to be hoped that this plant with a few others will be more generally cultivated and bring the genus Bulbophyllum a little more into prominence. J. W.

TREATMENT OF EXHAUSTED VINES.

To make myself quite understood at starting, I had better say that I do not think it will pay anyone to make an attempt to restore vines to a fruitful condition that are worn out by age. In such cases it is better to remove them and make a new border and plant young canes. At the same time, I want to say that vines sometimes become exhausted through being over cropped when young, or because sufficient provision was not made for the roots in the first instance. When vines have become feeble through either of these causes it would be very unwise to root them out without making an attempt to restore them to health.

According to my experience, a good deal may be done to benefit weak vines by applying suitable surface dressings to the border. Indeed, I look upon this plan with much favour, as there is no loss of time, as is the case where the roots have to be all taken up and replanted. I must, however, say that an attempt to renovate them in this way will not answer if the roots have pushed down into a cold, ungenial soil. In such cases it is better to take them up and replant in a fresh made border.

Renovating by surface dressings is in many cases a speedy and effectual way of restoring weak vines. The best time to set about the work is to begin as soon as the present crop of fruit is ripe. The material to be used as a dressing must be first prepared. I do not agree with a too free use of farmyard or hotbed manure, as in the course of time it becomes sodden with moisture and sour, especially in cases where the border is not well drained. If I had my choice I would select three parts turfy loam and one part good rotten manure, with one peck of crushed bones to every square yard of surface. If these ingredients are well mixed no one can wish for a better compost as a surface dressing for vine borders. The roots will soon lay hold of the lumps of turfy matter, and extract a good deal of nutriment out of them. If the mixture is laid on three inches thick it will last for two years. In all probability the vines will not show much improvement until towards the end of the first summer. But if they do not make it apparent that they are deriving benefit, they will be quietly storing up strength that will make itself seen in the succeeding year. The roots will be stronger and more numerous, and the result will be that fresh vigour will be given them and an improvement will be apparent in the size of the bunches and berries.

When weak vines are to be restored to health with the least amount of trouble and a saving in time, the cultivator must aim at doing so by reaching the roots nearest the surface. The principal part of these are generally found within three or four feet of the stem. It is these the grower should endeavour to stimulate in the way I have suggested, and if the work is carefully and periodically repeated vines that have been once weakened may be made both healthy and productive.

In carrying out this system of renewal it is of no use to try and reach those roots that have struck deep down into the border, and are rambling, as vine roots do, no one knows where. These are better left to take care of themselves, and an effort should be made to increase and strengthen those nearer the stem. If there does not appear to be a sufficient number near the surface at the point I have indicated, it is an easy matter to increase them by placing a layer of the soil up the stem to the depth of four or five inches and some stones or bricks laid on the surface to prevent its being washed away. The effect of moulding up the stem in this way will be that before the end of a year the new placed soil will be well filled with roots that have been sent out of the stem. After this there will be no difficulty in increasing the roots to any extent if an annual layer of soil is placed farther away from the stem to induce them to extend. It is a point of some importance that the whole surface of the border may be furnished with new roots in a few years, which will give quite a new lease of life to the vines.

Those who have inside borders that cannot be conveniently dealt with in the way I have suggested, cannot do better than give the border a dressing of Thomson's vine manure. This is best laid on in the spring, just as the vines commence to make new growth. Directions how to use it are sent out by the manufacturers. A more reliable stimulant for vines cannot be obtained.

J. C. CLARKE.

MANDEVILLEA SUAVEOLENS.

SELDOM is this greenhouse climber in a thriving condition, although when once established in suitable quarters it succeeds admirably. By some it is said to flourish in the open air, but I have not seen it in that manner as yet beyond a few straggling shoots which have grown through a crevice in the ridge of the house where it has been located. Here are some at the present time in the same manner as that described, and healthy they look. From the end of April until the end of the summer are we enabled to cut flowers from one plant which is planted out at the base of the greenhouse back wall, up which it is trained, without any leaves or additional stems until the roof is reached twelve feet, when it branches freely, making abundance of growth every year. It is trained in a downward direction under the roof, close to the glass, and as fast as growth proceeds so does it flower. The pure white, deliciously scented blossoms are borne in clusters on somewhat long and stout stalks, which are useful in a cut state to show off their beauty, which unfortunately does not stand long after being cut. Early in autumn the current year's growth is pruned in to two or three eyes to the old cuts. Abundance of water is given to the roots while in active growth, and occasional doses of liquid manure also, and vigorous syringings with clean water daily in the evening. This treatment is the means of keeping down the attacks of red spider, and to it I attribute the success of our plant, mainly. No shade is given to the foliage at any time. Where red spider is allowed to obtain a hold on the leaves and no measures are taken to check its progress, success is impossible. It is no wonder many fail to grow this charming climber in a creditable manner. Seed is freely produced, and this if grown the following spring, quickly germinates. The seedlings soon grow into a good size; indeed this is the more ready method of increasing the stock; it is much quicker than by cuttings or grafting.

E. M.

"JOURNAL DES ORCHIDÉES," published monthly at 100, Rue Belliard, Brussels, advances in interest and usefulness, The August number contains a good summary of orchid news and a kindly mention of the B. S. Williams Memorial. Some useful papers on the management of orchids as decorative plants, the culture of masdevallias, and orchids as florists' flowers, merit the attention of lovers of these plants.

GLANDULAR INULA.

Inula Glandulosa.

It is said that at a certain place there is a magic mill wherein old people are ground young, so that by paying a trifle and passing through the process they are enabled to begin life again. There appears to be a parallel of some kind to this in the world of plants, for from time to time we see to our surprise old friends that we had forgotten, and that perhaps we never knew as we ought to have known them, appear with new faces, new vigour, and new beauty as though just created for our astonishment and delight. Something of the kind has just happened to *Inula glandulosa*. We remember it as a member of a large collection that made a feature in a garden more than half a century ago, and we then thought it a "common" thing; and making all allowance for the treachery of memory we feel certain it was not then so good as it is now. The explanation, of course, is easy enough. It was allowed to live (or die) then, but *now it is cultivated*. If you will compare the figure now presented, which is faithful to the life



GLANDULAR INULA, *Inula Glandulosa* (Flower bright orange).

and a most admirable portrait, with that in B. M., 1907, published in the year 1817, you will see that the B. M. specimen was a poor one, so we may reckon that Dr. John Sims was unfamiliar with the bold beauty of this noble plant. In a group of a dozen or a score it has great power in its season; the glandular leaves of a full deep green, and the great orange-coloured flower like the figure of the sun in the ancient sculptures of Central America, give it a lot of character and compel respectful admiration. It is a first-rate hardy perennial, good enough for any garden in the world.

The plant is a native of the Caucasus, and was introduced by the Loddiges in the year 1812. It requires a good soil and full exposure to the sun. It may be propagated to any extent by division or seed, and to ensure a fine growth the stock should be renewed every third year at least; if annually renewed the better, as regards the quality of the flowers.

Notes of Observation.

POTATO HIBERNIA.

REFERRING to potatos I would like to mention as specially deserving of attention a blue variety introduced by Messrs. Hogg and Robertson a few years since under the name of Hibernia. I cannot praise it too much, for it is an excellent cropper and in quality is A1.

Powerscourt, Enniskerry. D. CROMBIE.

BENARY'S MIGNON ASTER.

This is well known to the market growers, but by the general public is unknown, although deserving of universal fame. The growth is moderate and bush-like; the flowers appear in a profuse head, comprising not half a dozen or so as in some varieties, but literally in dozens, and they are large enough and of the most excellent form, like globular pompons. Mr. R. Dean put a plant on the table at a recent meeting of R.H.S., and I made a note of it as a strain to be remembered.

A VISITOR.

DAMPIER'S GLORY PEA.

It may interest some of the readers of the GARDENERS' MAGAZINE to know that even in a season such as the present has been the Clianthus Dampieri may be grown in the open air with a fair amount of success, as I have one at the present time with a dozen trusses of flowers fully out upon it and many more to follow. It was planted out against a wall with fully south aspect about the first week in May of this year. It was then a little plant not more than six inches high. It is at the present time three feet six inches in height and three feet across, and looks likely to do well for the remainder of the season. It has had no protection whatever. It is a striking flower to be seen in the open air, and the flowers last good upon the plant for nearly a fortnight. Although it has been battered with heavy rain it has not suffered. It may be proper to add that it is grafted upon the Clianthus puniceus, and the soil here is light; therefore no preparation was made as to planting. It was simply planted out into its present quarters, where it has been greatly admired by many.

Lewes. J. EDWARDS.

STEWED GRAPES.

If I did not know that the quick eye of the Editor would prevent this note from being placed in the household department of the paper I should find another heading for what I have to say; but as it suits exactly the cases I have to refer to, I hope it may be allowed to remain, although I admit that it may be a queer announcement for what I will endeavour to turn to a practical use. I suppose that not many practical readers will be able to define what I mean by stewed grapes. I will therefore tell them. Stewed grapes, then, are those growing in the vinery that receive too much heat, too much atmospheric moisture, and not enough air. This is what I call stewing grapes. I do not mean to say that we often find grapes treated in this way, but it does occur sometimes. When such is the case the bunches shank, the berries crack, and rot away from the footstalk, and the cultivator all the time wonders what is wrong. In nine cases out of ten the mischief is caused in the way I have explained. It must, however, be understood that my remarks apply only to crops that are ripening. When a high temperature is maintained and the atmosphere is constantly heavily charged with moisture, with no circulation of air passing through the house, the moisture settles on the berries and causes them to crack, because the tender skin gets parboiled, as it were, by the heated moisture. I have said that too much heat is one cause of the berries cracking. This must be understood as meaning that the heat was too great because the house was insufficiently ventilated. If plenty of air is given to grapes when ripening they can hardly have too much heat; but a high temperature and confined air causes a sort of a slow stewing process which acts on the berries in the way I have described. Heat and air are two prime factors in ripening grapes; heat will bring up the flavour, and air increase the depth of colour. With regard to atmospheric moisture, it should be less during the ripening, but care must be taken not to go to the other extreme and keep the air too arid, or red spider will in all probability attack the foliage. Muscat and other late-keeping grapes will require more fire heat to ripen them this season than usual owing to the want of sun heat. This note may therefore be useful to inexperienced hands. At any rate, I counsel them to give plenty of air. There will then be no danger of their accomplishing the stewing process. For grapes now ripening a night temperature of 60 deg., and 70 deg. by day, by fire-heat should be the minimum figures. I may also mention that black grapes like a good shade from their own foliage, but white ones require more light. For all this the fruit must not come in actual contact with the direct rays of the sun.

J. C. CLARKE.

PEA AMERICAN WONDER.

The dwarf pea known as American Wonder, raised in pots and planted on a south border, is a wonder indeed, being of high quality, remarkably productive, and very early.

Eridge Castle. J. RUST.

A NEAT BEDDING ARRANGEMENT.

I lately saw an agreeable arrangement of colour and plants in a slightly curving oblong-shaped bed. Near to the centre were two rows of Ricinus Gibsonii, the plants three feet high, about the same distance apart, and planted in triangular order. Near the edge of the bed and between each castor oil, was growing a single-stemmed plant of Melianthus major, eighteen inches high. The body of the bed was filled in with well-grown dwarf plants of Fuchsia Charming, a variety having red sepals and purple corolla; and Heliotrope Swanley Giant. None of them were crowded together; all were less in height, of course, than the Ricinus, which overtopped all else. The leaves of this noble plant made a capital contrast with the things beneath it. The bed had a broad, sloping edging of Antennaria tomentosa, which made the contrast still more striking.

E. M.

PHILESIA BUXIFOLIA.

This beautiful evergreen plant, producing flowers like a lapageria, is but rarely seen in cultivation, although it is so nearly hardy that in parts of Cornwall and Devon it may be planted out with safety. In London it must have the aid of glass, but I believe it will be found amongst the number of interesting plants that Messrs. Veitch and Son grow in the open in their nursery at Coombe Wood, Kingston-on-Thames. A number of not-quite-hardy plants prosper there with the shelter of the walls of the plant houses, and they render the walks between the houses as interesting as their interiors; perhaps more so, considering how many fine subjects are in this way treated as hardy. Philesia buxifolia is allied to lapageria, and both are allied to smilax. To propagate the philesia the surest way is to remove suckers in spring and pot them in sandy peat, and grow on in the greenhouse or a warm pit, and to treat them as nearly hardy after they are established. The flowers appear in summer, and give delight to all beholders.

R. R.

PEA CHARMER.

By far the best pea, all things considered, that I have grown (and I have subjected most of the varieties to a practical test) is Charmer. It bears a heavy crop in all seasons. The pods are invariably well filled, containing from eight to twelve peas, which are of a deep green colour, and delicious in flavour.

The Gardens, Eydon Hall, Byfield. J. HUGHES.

MONTBRETIAS.

These are becoming a most interesting and showy family of quick growth, coming into flower at a time when many of the summer flowering subjects are on the wane. They are of easy culture, succeeding in almost any soil provided it is not too wet during the winter. The plants thrive best when left alone for several years, do not like disturbing at the roots, but are easily divided and increased by division. If the soil is at all inclined to be heavy, it is well to remove the worst of it where the roots are to be planted, filling in with some of a lighter kind; leaf soil and sand are favourable to a good growth. The flowers last a long time on the plant in good condition, and in a cut state they are appreciated, especially when used with their own foliage.

M. Pottsii is the best known kind; it grows very freely, but is shy of flowering as compared with some of the newer kinds. The colour is brick red on the outside, the perianth bright yellow. The spikes are stout, growing from three to four feet high.

M. Crocosmiflora is a decided improvement on Pottsii, from which and Tritonia aurea it is a seedling, combining the colours of both these varieties, which is best described as a brilliant orange or orange scarlet. The growth is about two feet high, very free in producing flowers, and of compact habit.

Gerb d'Or is a new variety, growing about two feet six inches high, free flowering, the colour of which is bronze yellow. Very showy and compact spikes.

Etoile de Feu, another new kind, is orange red with a yellow throat, and very desirable as a border plant to flower in August.

There are several other kinds which are said to be improvements but which I have not yet seen. I therefore say nothing about them.

E. M.

GLADIATOR AND SELECTED EARLY PEAS.

The crop of peas has been in every way satisfactory with us this season, and I should like to again testify to the good qualities of Gladiator as a second early variety. With us it has again this year been simply perfection. Selected Extra Early is unquestionably one of the very best early peas we have. The first sowing was made in pots February 3, the plants were put out on a south border March 15, and we commenced gathering May 31. I sowed the same variety on south border January 13, and from this sowing a gathering was made June 4.

Nuneham Park Gardens, Oxford. A. G. NICHOLS.

BLUE LOBELIAS AND CANNAS.

To form a carpet under dark-leaved cannas, blue lobelias of rather tall and not too neat a habit of growth are capital. The contrast between the blue of the lobelia and the rich plum-colour shade of the canna is good and worthy of consideration where variety is sought for. Lobelias such as can be easily obtained from seed are often somewhat rather straggling in habit, and can easily be obtained. Such are excellent for the purpose. A broad band of Golden Pyrethrum makes a finish to such a bed.

E. M.

BUSH FRUITS.

In the course of my experience here I have found that young bushes of currants and gooseberries, planted in ground that has been well prepared, produce heavier crops and fruit of finer quality than do the bushes of considerable age. There are still gooseberry bushes here at least thirty years old, but they are steadily being reduced in number, and as soon as possible they will all be destroyed, their places being taken by young bushes. GEORGE HARRIS.

Castle Gardens, Alnwick.

THE VARIEGATED HEMEROCALLIS KWANSO.

This is one of the finest of the day lilies, and particularly attractive in the herbaceous border on account of the clear silver markings of its leaves, which are very distinct in character, and by the bold semi-double flowers which it freely produces during the month of August. Almost exceptionally so, I might say, for a variegated subject, for these as a rule are not remarkable for the freedom with which they produce flowers. The colour, a bronzy orange, is not so taking in appearance as is the beautiful foliage of the plant with its variegation so clearly defined. Where this day lily does not thrive in the open it may be grown in pots advantageously, for it is a first-rate plant for a cool house. E. M.

SUMMER PRUNING FRUIT TREES.

If ever the work of the garden should be conducted according to the climatic conditions prevailing, it surely should be so this season, especially with regard to the summer pruning of fruit trees. The weather all through the summer has been what may be described as a growing time; and as many trees are not burdened with a full crop of fruit, they have had little else to do but to make growth. In many cases they have done this to an abnormal extent; so much so, in fact, that those trees that were pruned according to the orthodox rule in July, have made a second growth nearly equal to the first. Even those pruned later than the time I have stated are now bristling with newly-made shoots. The influence of the weather has had something to do with this; and the reader should remember that early pruning has also exercised its share of influence in causing the trees to be making such an unseasonable effort. Had the pruning been deferred several weeks longer, the buds that have now started into growth would in all probability have been converted into fruit buds. The early pruner has therefore in a great measure spoilt his chance of a full crop next year. It is perfectly unreasonable to expect any fruit from some of the trees that we see as we go about. The manner in which the new-made growth is sheared off in the summer, causes the trees to look as trim as if turned out of a mould. At the same time, the man who does the trimming business expects to get plenty of fruit as well as a perfectly-shaped tree. In the end he is woefully disappointed. The marvel, however, is that he does not learn better by repeated failures, and by the words of experienced teachers, but he does not. In this not very creditable position I will leave him to refer to what I call a system of common-sense pruning in summer.

I have already said that the character of the weather has caused fruit trees to make more growth than usual. They have grown very fast and they are growing very late; any one who observed the condition they were in during the month of July could plainly see that it would be wrong to prune them at that time, Such however, was my opinion in regard to my own trees, I therefore left them unpruned, and in that condition they remain as I write to-day, August 22nd. Even now, I shall be in no hurry to prune for a few days longer, as I do not want to see the buds start into growth instead of forming fruiting buds. I have a goodly number of pyramid as well as cordon and bush trees to deal with. They look somewhat unruly with their long unpruned branches still upon them I admit, but I would rather see them in that condition than to sacrifice my chance of a crop next season through pruning them too early. The cordons will of course have to be spurred back, but the bushes and pyramids will have the leaders and side shoots left from six inches to one foot long, as unless one secures a reasonably sized tree, the quantity of fruit is limited. It is to be regretted that the system of early summer pruning should be so persistently pursued, as so much nipping away of the young shoots causes the formation of a lot of useless growths. They are useless because they consist of soft and unripe wood. Every young shoot cut back on a vigorous growing tree in the month of July, causes two or three more weakly growths to appear the same season from the part left. These have to be cut back again in the winter, but the growth being made so late, the spurs so formed are a useless encumbrance to the tree. J. C. C.

THE VARIEGATED VINE.

This variety of ivy-leaved vine is cultivated purely on account of its silver and green foliage, and exceedingly handsome it is when seen in good condition. Sometimes it is used for bedding purposes or for draping over the sides of vases, but under none of these circumstances have I seen it in a satisfactory condition. The best method of growing this plant is in small pots, four inches in diameter, in rather poor soil, which brings out the silver markings of the leaves so much better than does a rich compost. The latter has a tendency to make the growth soft, and upon the first burst of sun upon the leaves they prove to be not sufficiently matured to withstand the heat, and suffer injury. The best place to grow the plants is beneath and on the outside edge of the greenhouse stages, say, to form an edging on the margin of the paths, but so that the stage and plants above screen the plants from bright sun. Here the leaves grow quite perfect, both in colour and form, producing neat little bushes, which cannot fail to be much admired. E. M.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

HARDY PLANTS in bloom comprise :—Anemone japonica ; Aster dumosus and A. horizontalis ; Campanula Celsii ; Crucianella stylosa ; Delphinium amœnum, D. magnificum ; Dianthus hybridus multiflorus ; Funkia grandiflora ; Gladioli ; Helianthus multiflorus fl. pl. ; Lilium speciosum, L. tigrinum, L. tigrinum fortunei, L. tigrinum fl. pl. ; Herbaceous Phloxes.

THE HOUSE.

IT is necessary as the days shorten and damp increases to be more sparing in the use of the watering pot in the management of all plants employed in the decoration of indoor apartments. Flowering plants will not require nearly so much water as was necessary a few weeks since, and fern cases must be kept rather dry. The cases ought also to be more freely ventilated, and dead fronds should be removed to prevent an attack of mildew, which at this season of the year would do much mischief, especially to the adiantums and others with fronds of delicate texture. Indiarubber plants, which are simply invaluable for the decoration of indoor apartments, must from the present time until the beginning of next spring be kept rather dry or many of the roots will perish.

STOVE AND ORCHID HOUSE.

ORCHIDS ripening off must have as much air as possible, but with caution, as a chill at such a time is likely to cause more or less injury. In the same way, the withholding of water must be by degrees, and not suddenly, and the cultivator must bear in mind that many orchids when in their native sites are never dry, except perhaps for an hour or two at midday ; hence the reduction of atmospheric moisture must be carried only to a certain point.

WINTER FLOWERS.—Many subjects in the stove may be turned to account to supply winter flowers, if attention be paid to them in time. Indeed, we look to the stove for the decoration of the dinner table, and for occasional embellishment of the conservatory, until the bulbs, cinerarias, primulas, and cyclamens come in once more.

FORCING AND FRUIT HOUSES.

PINES.—Plants swelling their fruit will need a little clear liquid manure ; nothing better than soot-water. Guard against any of the young plants fruiting prematurely ; to prevent it, keep them liberally watered and in a warm moist atmosphere.

STRAWBERRIES to be forced should now have well-formed plump crowns. If the crowns are thin and weak put them under glass, and assist with weak liquid manure.

VINES that have ripened their fruit to be kept well aired, cool, and dry.

FLOWER GARDEN AND PLEASURE GROUNDS.

BEDDING PLANTS struck now should be shut up close in frames. It is too late now to put cuttings in the open border ; as the ground is cooling and the plants are sappy. All the bedding stock that is now well rooted and potted off for winter should be placed out of doors on a hard bottom of stone, slates, or ashes, to harden for three or four weeks.

BULBS to be planted. Those most important now are Snowdrops, Crocuses, and Narcissus, and hardy border Lilies, as these do no good if kept long out of the ground. Pot Roman Hyacinths, early Tulips, Narcissus bulbocodium, Tritonea aurea, Freesias, Ixias, and Sparaxis.

CROCUSES suffer much by being kept out of the ground till late in the season, and by being lifted before the leaves have died down. Plant them three inches deep in clumps or lines, and leave them untouched for three years ; then divide, manure the ground, and plant again. Nothing to surpass common white, yellow and blue for the open ground ; but the named varieties should be used for pots. Put five bulbs in a five or six-inch pot, using rich, sandy soil.

CALCEOLARIAS may be propagated now in quantity ; they need no bottom heat. Take short stubby side shoots, dibble them in a mixture of leaf, very rotten dung, and about a fourth part sand. They will readily root now, and make first-rate plants for next season. Put in plenty of short stubby side shoots and shut up in a frame.

HARDY ANNUALS may still be sown to keep over winter. If sown in the open ground, it must be on poor hard soil, in a dry position. All the really hardy annuals are better from autumn than spring sowings.

KITCHEN GARDEN AND FRAME GROUND.

CAULIFLOWERS.—Recently-sown stock should now be in rough leaf, and should be pricked out in frames or small clumps, to be covered with hand-glasses. A few of each of the kinds of cauliflower should be potted to keep in frames all winter.

LETTUCES to be sown to stand the winter, if not done already. Choose a sheltered piece of well-drained ground. Those sown three weeks since to be planted out under walls or in patches, to be protected with hand-lights.

MUSHROOMS.—Prepare the bed for winter supply. The first thing to be done is to collect plenty of short unfermented dung, or, if only long dung can be had, pick out the long straw and lay it in small heaps to ferment gently, and turn it every three or four days till it produces only a gentle heat ; then make up the bed. A dry dark shed is as good a place as any, but a better crop and a larger supply may be ensured where the beds can be made over a warm chamber.

POTATOS left in the ground after this time will spoil faster than they grow ; get them up and stored.

VILLA FARM.

WITHOUT discussing the respective values of pasture and arable land in the production of food for livestock, we will at once pass on to say that the present moment is in every way suitable to the laying down land to grass, and to make a few suggestions likely to prove useful to those about to engage in the work. It is an open question with agriculturists as to whether spring or autumn is the best season in which to sow grass seeds ; and although there is a preponderance of opinion in favour of spring sowings, there can be no doubt that autumn sowings may be made with the full assurance of successful results. Much of course depends upon the character of the soil, and for those of a heavy and tenacious character, upon which it is no easy task to secure a good tilth by the end of March, it is much better to arrange the cropping so that the land will be available for sowing down in August or the early part of September than to attempt to have it in readiness in the early months of the year, because in many instances the weather will interfere with the work to such an extent that it will be impossible to sow the seed early enough to be safe from all risk. Having determined to lay down a certain area, the first step will be to break the land up to a moderate depth and then proceed to

work it about with the harrows and rollers until the surface is nicely pulverised and well suited for the reception of the seeds. Land that has borne a crop of early potatos will be in capital condition for sowing down, as a thorough harrowing and the removal of the rubbish will be all the preparation it will need, and it will moreover be in such good heart as to require no manure. Lands from which root crops were fed off in the spring and which have lain fallow since will also require but little preparation and no manure, artificial or otherwise; but those which have borne an exhausting crop will be in better condition for promoting and sustaining a vigorous growth if they receive a top dressing at the rate of two cwt. per acre of a mixture consisting of equal proportions of guano and nitrate of soda.

ORCHIDS IN FLOWER.

ALTHOUGH the orchids now flowering are comparatively few in number, they include many species and varieties of exceptional beauty, and the orchidist can hardly fail to find plenty to interest him in a walk through the several houses at the present time.

ANGRÆCUMS are now mostly at rest, and contribute but little to the attractions of the East Indian house; but we are reminded of the distinctive character and the beauty of their flowers by *Angræcum Scottianum*, of which we have now several examples in bloom. Almost the least attractive of the several angræcums this species is exceedingly beautiful, and has much value for growing in small suspended baskets. It has terete leaves and comparatively large, pure white flowers, and thrives in small baskets filled with sphagnum, crocks, and lumps of charcoal.

CATASETUMS in bloom include a few good things, notably the interesting and beautiful *Catasetum Bungerothi*, which has comparatively large, greenish white flowers, and *C. Russelliana*, of which the flowers are white, veined with green. Less desirable, perhaps, for general culture than the cattleyas and a few other genera, the catasetums are sufficiently beautiful to justify their being more generally grown than is at present the case. We find them do well in both pots and baskets with fibrous peat when placed in a rather light position in the cattleya house. An excess of moisture is a hindrance to success, and the supplies of water should be moderate during the season of growth, and when at rest they should be just sufficient to prevent shrivelling of the pseudo-bulbs.

CATTLEYAS now flowering are few in number, but unsurpassed in beauty. They include the magnificent *Cattleya Dowiana* and its beautiful golden form, with the highly coloured *C. Hardyana*. Introduced rather more than a quarter of a century ago, Dow's cattleya is now becoming rather plentiful, and when well grown, contributes liberally to the attractions of the cattleya house during the latter part of the summer. It has a bold habit, and the flowers are very large, the sepals and petals Nankin shaded crimson, and the labellum marone crimson, mottled and streaked with golden yellow. The golden variety, known as *C. Dowiana aurea*, differs from the species in two important particulars; it is more free in blooming, and the sepals and petals are bright yellow. The variety of Hardy's cattleya, *C. Hardyana, Wilson's var.*, recently flowered by Mr. Wilson, Westbrook, Sheffield, is extremely beautiful, the colouring not so deep as in the species, but very effective. *C. Massiana*, which has recently flowered in Mr. Wrigley's collection at Howick House, Preston, is in the way of C. Dowiana aurea, but the sepals and petals are of a beautiful shade of rose-salmon. Remarkably good also has been *C. crispa*, a well-known and very beautiful species, its value being enhanced by its flowering at a time when there are comparatively few cattleyas in bloom. It has for some time past been very fine at Trentham, and also in the nurseries of Messrs. B. S. Williams and Son, at Upper Holloway. *C. Loddigesi*, an elegant species, with rose-coloured flowers, and *C. velutina*, a distinct species, with medium-sized fragrant flowers coloured yellow, brown, and rose, must also be mentioned as contributing to the attractions of the cattleya house.

CYPRIPEDIUMS are flowering freely, and in a walk through the structures devoted to them we made note of the following as being in bloom: *Cypripedium calurum, C. conchiferum, C. Ashburtoniæ, C. Harrisianum, C. Hookeræ, C. Roezli, C. porphyreum, C. cardinale, C. Io, C. selligerum, C. Sedeni, C. œnanthum superbum*, and *C. grande*. The surpassingly beautiful *C. Morganiæ*, the finest hybrid lady's slipper that has yet been raised, has been flowering remarkably well in Baron Schroder's collection, and visitors to The Dell will not readily forget the magnificent spikes recently produced. The hybrid lady's slippers now flowering in the collection of Drewett O'Drewett, Esq., at Mill-on-Tyne, include several of great promise, and are interesting as showing the attention that is being bestowed upon the raising of seedling orchids in various parts of the country.

Lælia elegans is the principal representative of the genus at the present time, and the varieties now flowering in various collections show a wide range of colour. One of the most distinct of the forms is *Lælia elegans prasiata*, which has been flowering freely in Messrs. B. S. Williams and Sons' nurseries. This is somewhat in the way of Turner's variety but quite distinct from it, the colouring being much more bright and effective, and it may be well regarded as a valuable acquisition. Several good forms are also in bloom in Mr. Malcolm Cooke's collection at Kingston Hill.

MILTONIAS are not popular with the general body of orchidists, many regarding them as difficult of cultivation. They are rather peculiar in their requirements, but they readily respond to the care bestowed upon them by the cultivator. They are singularly effective when grown into huge specimens such as that of *Miltonia spectabilis* met with the other day in Mr. Marriott's collection at Coventry. Other kinds that may be mentioned as being now in perfection are *M. candida, M. Clowesi*, and *M. spectabilis Moreliana*, the last-named having very large flowers of a rich purple colour.

Oncidium incurvum, a distinct species with medium-sized purple and white flowers, is now at its best, and its tall and elegant spikes of flowers present a very attractive appearance.

Phaius bicolor, although but little known, is one of the most beautiful of the several species, and is remarkable for the length of time over which its season of flowering extends. The growth is moderately robust, and the flowers are of medium size, the sepals and petals deep brownish-orange, and the labellum yellow and rose.

VANDAS now flowering include the distinctly-coloured *Vanda cærulea*, of the beauty of which it is not now necessary to speak, and the charming *V. Kimballiana*, which has been flowering with remarkable freedom in the nurseries of Messrs. H. Low and Co., at Upper Clapton. The last-named is comparatively small in growth, and produces erect spikes of medium-sized flowers; the sepals and petals blush, and the labellum bright rose. It is a great gain, more especially as it blooms at a season of the year when flowers are not over abundant in the orchid house.

Correspondence.

THE LATER HISTORY OF THE ROYAL HORTICULTURAL SOCIETY.

IN the short historical sketch of the Royal Horticultural Society, by the Rev. W. Wilks, which has been circulated among the Fellows, some events which have had important bearing on the fortunes of the Society have not been touched upon; would you allow me to say a few words on these?

The Society's archives are rather scanty (I tried in vain to get the names of all the Council of 1873), and Mr. Wilks is not an old stager, so could have no personal cognisance of what took place.

The Society was bound to pay rent, £2,400, once in four years; this was in order that it should not continue to hold the very valuable land, unless it showed sufficient vigorous life to enable it to make this payment; the rent day drew near and money was short, when General Scott, who took the greatest friendly interest in the Society, influenced H.M. Commissioners of 1851, of which he was secretary, to pay in advance the share of the exhibition admittance money, which would have later become due to the Society; this enabled the Society to enter on another term of five years.

The crisis of the South Kensington Garden came in 1873. The Council of that time was the strongest I have ever known, men of good position, some of the best horticultural amateurs, and some first-class men of business, who took the deepest interest in the Society's welfare. Mr. John Clutton and Sir John Kelk, men with enormous concerns of their own, were a sub-committee, and attended at many meetings; as a third was wanted I was added to the sub-committee, and thought it rather hard to have to attend two meetings, of several hours each, in the Christmas fortnight, usually a holiday time; about this time H.M. Commissioners were holding exhibitions; the weary long round of the arcades was a great drawback to success, so General Scott was empowered to offer more liberal terms to the Council if they would admit visitors through the gardens to the different parts of the exhibition buildings.

The offer made was that H.M. Commissioners would free the Society from rent, £2,400, once in five years, would take over the debenture debt, £2,000 a-year, and would give a share of admission money estimated to amount to £1,000. To the horticultural part of the R.H.S. these were of course splendid terms, and would practically have relieved the Society from its difficulties, but to the South Kensington part of the Society it involved destroying the privacy of the gardens (which they had long enjoyed as a square for the use of their children, on very low terms) during the time the exhibitions were held, they therefore allied themselves to the so-called "Horticultural Party" which consisted mainly of a small section of professional horticulturists (principally journalists and nurserymen). These two classes of discontents were on the spot, the amateur horticulturists were scattered about the country, and the whole attendance at meetings was small, so that when the Council brought forward the proposition, a small majority voted against it. The chairman then saying it was of such vital importance to the Society that the proposal should be carried that he would allow time for consideration by adjourning the meeting for a fortnight, and that if the motion was not then adopted the whole Council would resign. The adjourned meeting still refused to support Council, so it resigned. The new Council soon began to have difficulties among themselves, and a bad time ensued.

The debenture holders, some of them Fellows, who might have secured their position by supporting the Council, did not appear to be represented. The Society lost a grand chance. The exhibitors could not succeed; the debenture holders lost their money, and the neighbourhood will have buildings instead of open space.

Nothing is said about country shows, which were so successful in old days, the first at not a large centre, Bury St. Edmunds, besides doing good to the Society, and to the neighbourhood, gave £400 profit. "The Expenses Committee" of H.M. Commissioners could not run the risk of a show unconnected with their land, so the Council took the personal responsibility on themselves and the Society was thus entitled to the full amount, and laid it out in the orchard house at Chiswick.

I believe H.M. Commissioners were sore about the lawsuit which cost the Society much money. It was probably necessary for the security of the Society to get a decision of the Court as to the debenture question, but it is to be regretted that this could not have been obtained in a more friendly manner.

GEORGE F. WILSON.

Heatherbank, Weybridge Heath, Aug. 15, 1890.

STAMPING EXHIBITION PLANTS AND FLOWERS.

Can any of your readers inform me, or suggest a simple and quick method of stamping show plants, than the present one now in use, of inserting a figure or word on a piece of paper, enclosing the same in a length of tape, and then fastening it round a stem of the plant with sealing wax and putting on the face of it a private stamp. I may state that we have also used a die and a stamp on the leaves, but as the plant grew it became illegible.

Our society has had the question in hand for some time, and the idea that finds the most favour is the following.

A kind of nippers, something similar to those used by ticket collectors (only that would stamp each exhibitor's plants the same), and it is suggested, if it could be arranged at each end of the nippers could be taken to pieces, and a combination of four or five letters to fit in the groove thus:—A.B.C.D.E. At the next stamping place take the letters out of the frame and rearrange them thus:—B.C.D.E.A., each exhibitor's plants through this combination would not be stamped the same, and the stamper would be able to keep a list of how each persons plants were marked for reference.

I think that there are persons in the trade could make such a useful and needy article, the only requirements would be the letters should when nipped out of the foliage, be clear and distinct, the article neat and handy to use, the stamp not above one inch long, half inch broad, price reasonable.

If any friends could recommend such an article or something similar, it would confer a great favour on exhibitors, and prevent disputes.

JOSEPH ALCOCK,

Secretary: Stockport Chrysanthemum Society, Grey Horse Inn, New Zealand, Stockport.

Exhibitions and Meetings.

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY, August 28.

This society held its third show for this season in the quadrangles and colonnade of Queen's College, Oxford, thus completing sixty-one years of useful work in encouraging horticultural pursuits in a district, the soil of which is well adapted for all the more useful forms of vegetation. Nearly 600 prizes were offered, and nearly one thousand entries were received; the bulk being staged in competition.

Plants.—These were generally good, but not equal to the large examples staged at midsummer. For six, Mr. G. Jacob, Witney, occupied head place with a densely-flowered Begonia Weltoniensis, Plumbago capensis alba, Clerodendron Balfourianum, Crotons Warreni and Weismanni, and Cycas revoluta; Mr. C. Jacob, Barton, Headington, second with Plumbago capensis, Statice profusa, Solanum jasminoides, Dracænas Youngi and Lindeni, and Croton variegatum; Mr. J. Mattock, New Headington, third with a scarlet passion flower, a Vallota purpurea, Lilium lancifolium rubrum, two neat palms, and a coleus. The best single specimens in flower were Vinca alba, Hæmanthus grandiflorus, and Hoya carnosa; while for foliage, Croton majesticum and palms took the cards; the premier card for a hardy specimen going to a charming Statice incana.

Fuchsias were presented in fine condition, the dull showery weather having suited them. For six, the Warden of Wadham College was placed first with immense free-flowered examples of Star of Wilts, Lye's Seedling, Beacon, Hon. Mrs. Hay, Mrs. Marshall, and Mrs. Rundle; Mrs. Dallin, Norham Gardens, Oxford, second with Astrea, Avalanche (Smith), Beacon, Monarch, Alba coccinea, and Avalanche (Henderson). Equally meritorious were the plants in the amateur class, Mr. E. Thorne, Kingston Road, first with gigantic rounded pyramids of Charming, Mrs. Marshall, and Rose of Castille; Miss Greswell, St. Giles' Street, second with Avalanche, Lady Haytesbury, and Mrs. Marshall; Mr. T. Anstiss, Brill, third for Lucy Finnis, Beacon, and Sir Colin Campbell.

Coleus were of a size suitable for effective staging, convex form and very bright. For six, Mr. Mattock was first with Pompadour, Harry Veitch, Beauty of St. John's Wood, Purple King, and Lady Dudley. For four, Miss Greswell led with Sunbeam, Duchesse de Montemore, Pompadour, and Her Majesty.

Zonal Pelargoniums.—These were fresh and well furnished with stout trusses of bloom. For six varieties (single), Mr. J. Walker, Thame, led with Cerise, Era, Magenta, Madame Hoste, Colonel Fraser, Niphetos, and another; the Warden of Wadham College, second, for Helen Clark, Mrs. Bariff, Henri Jacoby, Sir H. Stanhope, Mrs. Barrett, and Lady Chesterfield; Mr. J. Calcutt, Witney, third, with Mrs. Welford, Constance, Stella, Dr. Orton, Eurydice, and Snowball. Double forms were even, and dwarfer grown, Mr. Walker again first with Hollyhock, Edward Barker, Gloire de Trave, F. P. Raspail, and Pallas; Mr. J. Johnson, Garsington, a good second, for Mrs. Langtry, Aglaia, Agnes, Wonderful, F. P. Raspail, and Goldfinder; the ivy-leaf section were not strongly represented, the best six came from Mr. C. Jacob, who put up plants of Souvenir de Charles Turner, Madame Thibaut, Emilie Lemoine, Jeanne d'Arc, Comtesse Horace de Choiseul, and Madame Crousse. Mr. Thorne was the leader in the amateur class for double zonals with Madame S. Dolby, Madame Thibaut, Madame Lemoine, and F. P. Raspail.

Ferns.—These were staged in plenty, twelves and sixes in the hardy class, and sixes in the greenhouse forms, Mr. G. Jacob, first for Alsophila australis, Adiantum Williamsi, A. cuneatum, A. Farleyense, Davallia Mooreana, and Asplenium bulbiferum; Mr. C. Jacob, second with Blechnum braziliense, Asplenium nidus avis, Pteris umbrosa, Adiantum Farleyense, and Lomaria gibba; G. H. Morrell, Esq, third, with Davallia Mooreana, Adiantums formosum, cuneatum, Farleyense, scutum, and concinnum latum.

There were excellent cockscombs from P. Southby, Esq., Bampton, and Mr. G. Jacob, the plants fully up to the exhibition standard. The balsams and petunias, though fair, were not sufficient to attract much attention.

Cut Flowers.—Very showy were the collections of bouquets consisting of one species only in a bunch. For twenty-four Mr. J. Johnson was awarded the prize. Mr. J. Walker, who put up by far the best bunches, lost his chance by not strictly adhering to the conditions. Mr. T. Anstiss premier for twelve bouquets. The herbaceous perennials were nicely set up by Mr. R. Price, who had sprightly bunches of Montbretia crocosmæflora, Anemone Japonica, Veronica longifolia gracilis, Helianthus Soleil d'Or, Aster macrophylla, Pentstemon Torreyii, Phlox White Queen, Tritoma Saundersii, Scabiosa caucasica, and Gaillardia biflora; Mr. J. Walker, second, with Phlox coccinea, Achillea ptarmica, Hyacinthus candicans, Harpalium rigidum, Viola Wordesley Blue, double Tiger lily, Chrysanthemum maximum, Helenium multiflorus, Everlasting Pea, and Anemone Japonica Honorine Jobert; T. Arnall, Esq, Brookside, Headington Hill, third, with choice varieties indifferently staged.

Roses.—Medium sized, very fresh and clean were the bulk on view. For eighteen, James Parker (labourer), Headington, was first, his choicest forms being: Madame E. Verdier, Her Majesty (very beautiful outline), Marie Baumann, Duchess of Bedford, Marie Finger, Francois Michelon, and Lady Mary Fitzwilliam; Mr. J. Walker, second, his best being A. K. Williams, Paul Neron, Marie Verdier, Merveille de Lyon, Mrs. J. Laing, and Baroness Rothschild. For nine, Mr. John Saunders, Headington, was first for full-sized forms of Ulrich Brunner, Marie Verdier, Merveille de Lyon, Madame Bravy, Alfred Colomb, Mrs. J. Laing, Niphetos, Marie Baumann, and Catherine Mermet; Mr. A. Evans, Marston, second, for Merveille de Lyon, Charles Lefebvre, Beauty of Waltham, Alfred Colomb, Marie Van Houtte, Dupuy Jamain, Innocente Pirola, and Prince Camille de Rohan; the third card going to Mr. Charles Taylor, Headington, for Baroness Rothschiid, Horace Vernet, Alfred Colomb, Sultan of Zanzibar, Edward Morren, and Merveille de Lyon.

Dahlias.—This section was larger than usual, Mr. Walker heading the poll for twenty-four and eighteen, also nine fancy dahlias and six cactus varieties. In the show classes he set up grand forms of Mrs. Alexander Campbell, Harry Keith, Hon. Mrs. P. Wyndham, Harrison Weir, James Vick, Prince Bismarck, Mrs. Foreman, John Standish, Senator, Crimson King, Mrs. W. Slack, Colonist, Imperial, Flora Wyatt, Prince of Denmark, R. T. Rawlings, Henry Walton, George Dickson, Miss Cannell, Bendigo, Ethel Britton, H. W. Ward, Mrs. Gladstone, Joseph Ashby, T. J. Saltmarsh, Mrs. Kendal, Lord Chelmsford, John Bennett, and Willie Garrett, his best forms in the fancy class being Chorister, Rev. J. B. M. Camm, Duchess of Albany, Peacock, Jessie McIntosh, Mandarin, John Cooper, Miss Browning, and Mrs. Carter; Mr. T. Anstiss, second, his varieties being John Wyatt, Harrison Weir, Thomas Hobbs, Earl of Ravensworth, Mrs. Langtry, Mrs. Gladstone, Vice-President, Hope, Ethel Britton, Geo. Dixon, H. W. Ward, Miss Cannell, Colonist, Geo. Rawlings, J. T. West, Burgundy, Artist, James Cocker, Mrs. W. Slack, Miss Henshaw, Lord Chelmsford, Purple Prince, and John Foreman, the varieties in the class for fancies being George Barnes, Mrs. Saunders, Rev. J. B. M. Camm, Grand Sultan, Professor Fawcett, Hercules, Peacock, Flora Wyatt, and C. N. Hall; Mr. John Tranter, Henley-on-Thames, was third, staging much as above, those differing being Crimson King, Flag of Truce, W. H. Williams, Clara, Shirley Hibberd, Mrs. Dodds, Henry Eckford, Pelican, Summertide, John Forbes, Hercules, and Pelican. The amateurs and cottagers made a good show. Mr. Mattock had the best bunches of pompon and single forms.

Asters were very choice, the best box of quilled being staged by Rev. R. F. Dale, Bletchingdon, Mr. Walker presenting the most finished incurved forms. Gladioli were not a large show, Mr. J. Johnson having the best dozen spikes. The finest arrangement of double zinnias came from Mr. J. Walker. Quite a run of boxes of helichrysums were staged, Dr. Bywater Ward, Warneford Asylum, taking the card; Mr. G. Chandry, Marston Road, being the only exhibitor of a dozen picotees and a dozen carnations, to whom also a first-class certificate was granted for seedling pink clove *Edith*.

Fruit.—An unusually large display was staged. In the class for white grapes Colonel Miller, Shotover Park; G. H. Morrell, Esq., Headington Hill Hall; and Sir W. Throckmorton, Bart., Buckland Park, presented Muscat of Alexandria, the fourth card going to Dr. Batt, Witney, for Sweetwater. For black, T. Arnall, Esq., put up Hamburgh, Dr. Batt and Colonel Lee, Hartwell Park, Alicante, and Sir W. Throckmorton, Hamburgh for fourth place. The best melon was Benham Beauty, from Colonel Miller; Lord North, Wroxton Abbey, second, with a green flesh; and W. Maclaren, Summertown, third, with Hero of Lockinge. Peaches were A 1. W. A. Wykeham-Musgrave, Esq., Thame Park, first, with Late Admirable; C. T. Hawkins, Esq., Summertown, with Alexander Noblesse; Mr. R. Tranter, third and fourth, and G. H. Morrell, Esq., with Royal George. Nectarines were a good show, the first and second cards going to Elruge; third and fourth to Violette Hative and Cricket. Moorpark apricot and Morello cherries good throughout. For dessert plums the first, second, and fourth cards went to Jefferson's; the third to Orleans; and by weight, Pond's Seedling, first; Victoria, second and fourth; Goliath taking the third card. Jargonelle and Bon Chretien pears were good. The best gooseberries were Industry; and currants, White Dutch and Red Grape, the latter extra large berries. Dessert apples were generally of fine development, the winning dishes being Quarrenden, Irish Peach, Worcester Pearmain; the winning kitchen varieties were Ecklinville Seedling, Lane's Prince Albert, Lord Suffield, and Ribston; the heaviest and handsomest forms being the first prize dish in the amateurs' class shown by Mr. W. F. Cross, Chilswell, Iffley Road, Oxford, who put up Frogmore Prolific. A special class for six dishes of unprotected fruits was well contested, Sir W. Throckmorton, taking the "two guineas" for apricots, figs, peaches, nectarines, apples, and pears; T. Arnall, Esq., second, with Red Astrachan apples, Goshawk peaches, Czar plums, Moorpark apricots, Violette Hative nectarines, and Bon Chretien pears. The cottagers single dishes and collections of fruit were but little inferior. Roots of all kinds were in force, fine developments of beet, peas, marrows, &c. The runner beans have not been exceeded anywhere for length and texture, the dishes of Piper's Oxonian and Ne Plus Ultra being from 9½ inches to 10¾ inches long, one inch wide, and very brittle. Onions were Reading, Banbury, Rousham Park, and Anglo-Spanish, sixteen inches being the average of the best lots on view, and fairly well ripened.

Potatos.—Nearly 2,000 tubers were presented, the bulk a trifle oversized but of high character. The following are the varieties selected for honours: Professionals.—*White Kidney:* First, Masterpiece; second and third, Chancellor; fourth, Reading Giant. *White Round:* First and second, Sutton's Satisfaction; third, Sutton's Seedling; fourth, Universal. *Coloured Kidney:* First, second, third, Mr. Bresee; and fourth, Edgecote Purple. *Coloured Round:* First and second, Reading Russet; third and fourth, Vicar of Laleham. Amateurs.—*Coloured Round:* First, third, and fourth, Hughes' Purple Perfection; second, Reading Russet. *Coloured Kidney:* First, second, and third, Mr Bresee; fourth, Edgecote Purple. *White Round:* First and second, Sutton's Satisfaction; third and fourth, Sutton's Seedling. *White Kidney:* First and second, Sutton's Satisfaction; third, Sutton's Seedling; fourth, Reading Giant. Cottagers.—*White Round:* First, third, and fourth, Satisfaction; second, Sutton's Seedling. *White Kidney:* First and second, Early Puritan; third, Satisfaction; fourth, International. *Coloured Round:* First, The Dean; second and third, Reading Russet; fourth, Hughes' Purple Perfection; and *Coloured Kidney:* First and second, Edgecote Purple; third and fourth, Reading Ruby.

The weather was bright the first three hours, but rain set in and marred the pleasures of the day considerably.

The judge of plants, blooms, and classes for fruit and vegetables in the principal division was Mr. R. Dean. The remainder was in the hands of members of the committee.

LEAMINGTON HORTICULTURAL EXHIBITION, September 2 and 3.

In conjunction with the Warwickshire Agricultural Show, held on the above days at the fashionable midland spa, a most extensive and high-class exhibition of horticultural products was held in the Jephson's Gardens, Leamington. The more bucolic display was arranged in a spacious water meadow on the banks of the Leam, south of the gardens, the chief entrance to the show being through the gardens. Judging by the bare appearance of the twelve acres of lawn, fairly good use had been made of this fashionable summer resort, the beds of zonal geraniums and other soft stuff looking a trifle weedy owing to the liberal rainfall of the past few weeks. Formerly, a large number of carpet beds were kept as a feature of the gardens; many have been done away with and but two remain; these, however, suffice to display the skill and patience of the gardener, Mr. T. W. Dell. One an oval, twenty-four feet by sixteen feet, near the Jephson Tower, had its raised edges formed of triple lines of Echeveria glauca, the lines of the geometric pattern worked out with the same, the centre plant being a graceful Dracæna australis, the eight dot plants, set in circles, being Dracæna variegata and Grevillea robusta. The interior designs are heart-shaped north and south of centre, the transverse pattern being triple trident scrolls; the subjects used for filling in being Alternantheras aurea, versicolor, and amœna, Golden Feather, and dwarf-growing Herniaria. The other bed opposite the lake is hexagonal in form, six elliptical curves concentrating in the centre, the plants used much as before. In the former over 10,000 plants were used, and in the latter 5,000.

Eight tents were needed to stage the vast array of products entered in

competition. The following rough notes may be regarded as merely representing the best things in the chief classes. As the money prizes were large a keen competition ensued.

STOVE AND GREENHOUSE PLANTS.—For ten in flower, J. Marriott, Esq., Coventry, was assigned the £10 for large, fresh, well-flowered examples of Ixora Duffi (20 large heads of blooms); I. Fraseri (120 trusses); Lapagerias rosea and alba; Stephanotis floribunda, Erica Thompsonii, E. Turnbulli, E. Marnockiana, Dipladenia amabilis, and Phœnocoma prolifera; J. D. Barbour, Esq., Leamington, second, with smaller examples of Ixora Williamsi, I. Pilgrimi, Erica Austinianum, Allamanda nobilis, Stephanotis floribunda, Dipladenia amabilis, Lapageria alba, Bougainvillea glabra, Statice imbricata, and Vallota purpurea. For six, J. Marriott, Esq., again first, with varieties already named and Erica jasminiflora alba, and E. jubata; the plants gaining second prize having fine examples of Clerodendron fallax, and Ixora coccinea superba, with lapagerias, stephanotis, &c. For six mixed forms, J. Marriott, Esq., still headed the list, having Crotons Queen Victoria and Angustifolius in grand bushes; Ericas Eweriana and Marnockiana and Ixora amabilis being the flowering subjects presented; J. D. Barbour, Esq., second, Statice Butcheri, Allamanda grandiflora, and Ixora Pilgrimi being backed by palms and cycads.

For Ten FINE FOLIAGE PLANTS J. Marriott, Esq., took the premier card, £5, for towering examples of Latania borbonica, Kentia australis, K. Fosteriana, Dasylirion longifolium, Cycas circinalis, C. revoluta, C. Neo-Caledonica, and giant Crotons Johannis, Warreni, and Mortefontainencis; J. D. Barbour, Esq., second, with Crotons Princess of Wales, Countess, and Weismanni; Dracæna australis, Pritchardia pacifica, Phœnix dactylifera, Seaforthia elegans, and the variegated pine-apple.

EXOTIC FERNS.—A stiff competition in this class, all good. For six J. Marriott, Esq., adjudged first with fair sized healthy plants of Davallia Mooreana, D. Fijiensis plumosus, Adiantum curvatum, A. Farleyense, Todea superba, and Trichomanes radicans; the second card going to Mr. F. Perkins, Regent Street, Leamington, for Onychium auratum, and Adiantums Veitchi, Lathomi, cuneatum, concinnum latum, Farleyense, and Hendersoni. The best lot of hardy ferns came from Miss Percy, Guy's Cliff, the forms being Polystichum angulare proliferum, P. truncatum P. A. crispum, Scolopendrium crispum, Osmunda regalis, and Athyrium f. f. multifidum.

COLEUS were generally tall pyramids, well coloured, the premier six from Sir R. Moon, Stoke, Coventry, being George Barnshaw, Beauty of St. John's Wood, Ada Sentance, F. Stewart, Demon, and Mrs. Sudley; R. Mann, Esq., Leamington, second.

ZONAL PELARGONIUMS scarcely came up to exhibition form for size, but a nice group of dwarf-grown single forms from Miss Percy were awarded the premier card, the varieties being Mrs. Halford, Madame Leon Dolloy, Rev. D. Harris, Heroine, Niphetos, and T. B. Vanoine; Thomas West, Esq., Warwick, taking the card for splendidly-flowered double forms, viz., La Cygne, Lotos, Constance, Madame L. Dolloy, Grand Chan Faidherbe, and Ompail.

FUCHSIAS, though not bulky, were clean-grown pyramids, the first card falling to Sir R. Moon for Charming, Fair Rosamond, Clipper, Rose of Castile, Jeanne d'Arc, and Mrs. Marshall; J. D. Barbour, second with Avalanche, Enchantress, Sensation, Rose of Castile, Crystal Fountain, and Jeanne d'Arc.

GROUPS ARRANGED FOR EFFECT.—In this section (on 12 feet by 12 feet), Thomson and Son, Spark Hill Nurseries, Birmingham, took the £5 with an elongated semi-circular arrangement, the quality of the subjects employed and the unique style being most attractive; F. Perkins, Regent Street, Leamington, second for a square design; the prizes in the smaller spaces going to Mrs. Clara Hopkins, Great Comberton, and Mr. George Rogers, Leamington.

BEGONIAS were a limited competition, Mr. Axtell, Portland Row, Leamington, taking the card for six compact plants, he also staging as an extra a fine bank of small well-bloomed specimens, backed by a line of young healthy fuchsias.

CUT FLOWERS formed a large feature; first to note being those used in the dinner table decorations, Mr. F. Perkins and Miss Perkins taking the £5 and £3 for the best dressed dinner table for 12 persons. For first prize Miss Perkins (in addition to the usual glass, cutlery, and silver) had very tastily disposed plums, peaches, grapes, nuts, &c., with fine tall single trumpets and four smaller single trumpets, lightly filled with fern fronds and cuttings of stove and greenhouse flowers; Mr. Perkins's design being eight baskets of ferns and pansy blossoms, with choice fruit, the design very lively, but wanting a central figure to relieve the uniformity of the baskets. The pairs of bride and bridemaids' bouquets were magnificent; they were composed of orchids, pancratiums, stephanotis, white roses, &c.; the first prize going to Pope and Sons, Birmingham; Perkins and Son, Coventry, second. The best hand bouquet and epergne in the second class were from Miss Rogers and Mrs. Clara Hopkins.

DAHLIAS.—A very large number of boxes were staged, all fairly well developed and fresh; for twenty-four (not less than eighteen varieties) the card went to Kimberley and Son, Coventry, who had grand forms of Seraph, Emily Edwards, Janette, James Cocker, Royalty, Lady Gladys Herbert, Mrs. Saunders, Wizard, Mrs. Gladstone, Mrs. F. Forman, Rev. J. B. M. Camm, W. H. Williams, John Henshaw, Henry Walton, Goldfinder, E. J. Cooper, and Rifleman; Mr. Josiah Wood, Derby, second, with excellent blooms of Mrs. Saunders, Harry Keith, Colonist, W. Rawlings, Mrs. Kendall, James Stephens, Queen of the Belgians, George Rawlings, Mrs. Sankey, Defiance, Ethel Britton, James Cocker, Scrape, Rosy Morn, General Gordon, Goldfinder, Mrs. Douglas, Mrs. W. Slack, Willie Garrett, R. J. Rawlings, Clara, Harrison Weir, Rev. J. B. M. Camm, and Miss Henshaw. For twelve, Mr. F. J. Burberry, Kenilworth, was placed first, his selection being Muriel, Colonist, W. Garrett, A. F. Barron, Emily Edwards, George Rawlings, Mrs. Langtry, Harrison Weir, Mrs. Saunders, Bendigo, Miss Cannell, and John Standish; Mr. C. Carrington, Derby, second.

ASTERS filled a large amount of staging, the premier cards going to Victoria, or reflexed forms, Mr. C. Carrington and Miss Percy sharing the honours.

ROSES.—For late season flowers the display was excellent. For thirty-six, Perkins and Sons, Coventry, took the "three guinea" card for nice fresh forms of Emilie Hausberg, Mrs. H. Turner, Perle des Jardins, Charles Lefebvre, Madame E. Verdier, Alfred Colomb, Mrs. J. Laing, Madame Annie Wood, The Bride, Dr. Andry, Charles Darwin, F. Michelon, Ulrich Brunner, Countess of Oxford, Comtesse de Serenye, Sir Rowland Hill, Madame Clemence Joigneaux, Camille Bernardin, Abel Grand, Harrison Weir, Marie Van Houtte, Prince Arthur, Niphetos, Duke of Teck, Madame Marie Verdier, Senateur Vaisse, Lady Marie Fitzwilliam, F. de Lesseps, Star of Waltham, Louis Van Houtte, Vicomtesse Folkestone, Rosieriste Jacobs, Beauty of Waltham, Etienne Levet, A. K. Williams, and Merveille de Lyon; the Coventry firm being again placed first for twenty-four single trusses; Pope and Son being second; who, however, were stronger in

HERBACEOUS PERENNIALS, taking the principal award for fairly well set up bunches of Statice latifolia, Lilium tigrinum, L. Harrisi, L. chalcedonicum, Matricaria inodora plena, Scabiosa caucasica, Sedum aureum, Lathyrus latifolius, Phlox Bridal Gem, Centaurea rosea, Veronica spicata, Pyrethrum (seedling), Anemone Japonica (white and pink), Chrysanthemum maximum, Phlox Comtesse de Turrane, Helianthus multiflorus plena, Delphinium formosum, Harpalium rigidum, Stenactis speciosa, and Gladiolus Brenchleyensis.

FRUIT abounded in each section, and appeared to falsify the general report of short crops. For three dishes of apples, J. Kitley, Esq., Warwick, took the card for massive specimens of Alexander, Lord Suffield, and Warner's King; R. Mann, Esq., second. For plums, Miss Percy was first with extra fine developments of Black Diamond, Washington, and Victoria; J. D. Barbour, Esq., second, with Victoria, Cox's Emperor, and Kirke's, while for pears Mr. Barbour took the first card with Souvenir du Congres, Jargonelle, and Bon Chretien; Kimberley and Son, Coventry, second, with Louise Bonne of Jersey, Bon Chretien, and Jargonelle. For a collection of ten dishes, J. D. Barbour, Esq., stood at the head of a keen competition; his premier set embracing White Muscats and Black Hamburgh grapes, Royal George peaches, Pitmaston Orange nectarines, Moor Park apricots, Morello cherries, well-ripened figs, Emperor plums, Bon Chretien pears, and Imperial Gem melon; R. Mann, Esq., second with much the same kinds of grapes, figs, apricots, Sutton's Masterpiece melon, Mr. Gladstone peaches, Warrington gooseberries, and Jargonelle pears. For white grapes the cards went to Muscat of Alexandria, and Hamburghs in the class for black, Sir R. Moon, E. Flower, Esq., Stratford, C. J. Lefroy, Esq., Wellesbourne, R. Mann, Esq., sharing the honours; J. D. Barbour, Esq., being the winner of first prize for a basket of outdoor fruits.

VEGETABLES of the very best kinds were presented in great bulk, short and long carrots, and parsnips being extra good; large and compact heads of Autumn Giant cauliflower, well ripened onions; the collections being quite a display on every hand. Runner beans of the Ne Plus Ultra type, and of peas, Duke of Albany and Perpetual Bearer predominated.

POTATOS.—Large, handsome, and clean; those forms which combined shape with size being selected by the judges for the cards. For six dishes, C. J. Lefroy, Esq, was first with Early Puritan, The Dean, Snowdrop, Schoolmaster, Woodstock Kidney, and Reading Russet; F. J. Burbury, Esq., second with Future Fame, Sharpe's Victor, Come to Stay, The Daniels, Sutton's Satisfaction, and Cosmopolitan. For three dishes (amateurs'), the premier set came from Mr. Robinson, Tachbrook, who put up Schoolmaster, Vicar of Laleham, and Prime Minister; Mr. Masters, Warwick, second for Reading Russet, Schoolmaster, and Hughes' Purple Perfection. Single dishes —*kidney*: Sutton's Abundance and Prime Minister; *rounds*: Purple Perfection and King of the Russets took the cards. Other varieties not placed were Chancellor, Imperator, Magnum Bonum, Edgecote Purple, Mr. Bresee, Prizetaker, Ashleaf, Early Rose, Beauty of Hebron, Table King, Best of All, Sutton's Seedling, Delight, Wormleighton Seedling, Le Grande, Constance, York Regent, and Matchless.

The awards in the principal classes were made by Messrs. R. Dean, Ealing, and A. F. Barron, Chiswick.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY,

SEPTEMBER 3 AND 4.

The autumn exhibition of the Glasgow and West of Scotland Horticultural Society was held on Wednesday and Thursday, in the City Hall, Glasgow, and was very properly regarded as one of the best shows the society has held in September since the international gathering in 1872. The competition was remarkably good in the majority of the classes, and plants, fruits, flowers, and vegetables were alike remarkable for their high quality. The arrangements were admirably carried out under the direction of Mr. F. G. McDougall, the able secretary, and the hall presented a bright and attractive appearance.

The plant classes were well filled, more especially those for tables arranged for effect. Mr. H. McGinlay, gardener to J. T. Gondie, Esq., Oakleigh Park, Pollokshields, was a capital first in the class for tables of plants, in which the competition was limited to private cultivators. Mr. Hugh Miller, gardener to A. Russell, Esq., Bothwell, obtained premier honours in the class for plants for house decoration. Mr. Miller was first also for three ericas, staging finely-flowered specimens of well-known kinds. Mr. Landsborough, gardener to Mrs. Muir, Beechwood, Bearsden, occupied the first place in the class for three plants remarkable for the beauty of their leafage, and for six plants specially adapted for the decoration of the dinner table. The finest collection of table plants contributed by trade growers was that of Mr. Sutherland, Victoria Nursery, Lenzie, who had excellent crotons, dracænas, and palms, with other suitable kinds. Mr. D. Wilson was first for three dracænas; and for a palm, Mr. T. Cullen had the premier award made in his favour. The last-named exhibitor was specially successful in the classes for soft-wooded plants grown for their flowers, taking first for three tuberous begonias and three fuchsias. Mr. G. Meston, gardener to Morris Carswell, Esq., Murcia House, Glasgow, had the best tree fern, and was first for four exotic ferns. Mr. J. Lyon occupied the first place for four British ferns, and had also the best collection of zonal pelargoniums, the latter consisting of medium-sized, well-bloomed specimens. Mr. J. Bell was first for variegated pelargoniums; and Mr. W. Dickson was first for cockscombs, which were presented in capital condition.

The contributions to the cut flowers were so numerous and good as to form a large and highly attractive feature. In the classes in which the competition was limited to trade growers Mr. M. Campbell, Auchenraith Nursery, High Blantyre, was particularly successful. He was first for twenty-four dahlias, with superbly developed blooms; for twenty-four carnations and picotees, exceptionally good for so late in the season; and for twenty-four pansies, with blooms bearing the impress of cultural skill of the highest class. Mr. George Muir, Prestwick, Ayr, occupied the first place in the class for twenty-four gladioli, with finely-developed spikes; and Mr. Hugh Dickson was awarded the first prize for a collection of dahlias, to be shown in bunches. Especially good were the roses from Messrs. Cocker and Son, Aberdeen, the blooms for which they obtained the first prize for twenty-four, being large and remarkably fresh. In the division set apart for gardeners and amateurs gladioli were especially well shown by Mr. M. Smith, Prestwick, and Mr. W. Dipple; asters by Mr. A. Blackley and Mr. W. Buchanan; dahlias by Mr. J. Bell and Mr. J. Wilson; pansies and violas by Mr. Wallace, Campbeltown,

Mr. A. Ollar, and Mr. J. Miller; hollyhocks by Mr. A. Tannock; and marigolds by Mr. Duncan McTavish; and miscellaneous collections by Mr. R. Stewart, Mr. D. McTavish, Mr. D. Russell, Cawdor, and Mr. J. Millar, Bonhill.

Three classes were provided for collections of fruit, and in that for twelve dishes Mr. A. Crombie, gardener to the Duke of Montrose, Buchanan Gardens, was first with fruit of excellent quality, the grapes being particularly good. Mr. T. Boyd, gardener to W. Forbes, Esq., Callender Park, Falkirk, was first for six dishes; and for six dishes of fruit grown in the open, Mr. A. Wilson, gardener to R. A. Oswald, Esq., Ayr, was first. The best Black Hamburgh grapes were shown by Mr. J. Cadzow, Lanark, and the finest dish of Muscat of Alexandria was that from Mr. David Halliday, Ayr. In other classes for grapes Mr. J. Leslie, Pitcullen, Perth, and Mr. D. Waddell specially distinguished themselves. Mr. A. Wilson was first for six varieties of apples, and also for twelve pears, twelve culinary apples, for twelve dessert apples, and for a dish of plums. Mr. D. Waddell was successful in occupying the first place in the class for a dish of peaches, and the premier award in the class for nectarines was occupied by Mr. J. Wilson, Cardross.

Liberal provisions were made for vegetables, and the first prize for a collection was awarded to Mr. J. Miller. Mr. W. Low, gardener to J. Paton, Esq., Viewforth, Stirling, had the best basket; Mr. J. Gemmell, Flakefield, Chapelton, was successful in taking the premier award in each of the two classes for collections of potatos, staging in both cases tubers of medium-size and of excellent quality.

The contributions to the miscellaneous class were numerous and added much to the success of the show. Especially deserving of mention were the collections from Mr. Forbes, Hawick; Messrs. Dobbie and Co., Rothesay; Messrs. Smith and Simons, and Messrs. Austin and McAuslan, who staged the brightly-coloured Vallota purpurea in fine condition.

YORK FLORAL FETE.

A meeting of life members and guarantors of the York Gala Society was held a few days since at the North-Eastern Hotel, under the presidency of Sir Joseph Terry, amongst those present being Ald. Rooke, Ald. McKay, Councillors Browne and Milward, Messrs. Balmford, Blenkin, Dunkley, Anderson, Craven, and Border.

Sir Joseph Terry said it was a pleasure to learn that this year the society had been very fortunate. They had given freely of their profits, and they anticipated another year giving as they had done on the present occasion. The total profit on the fete had been £258 13s. 2d., and the committee had agreed to make the following donations: County Hospital £40, Dispensary £40, Bootham Asylum £20, Charity Schools £20, Boys' Industrial School £10, Girls' Industrial School £10, the Penitentiary £10, and the Yorkshire Society's School in London £10. A few days after their last meeting the committee received information of the death of Mr. B. S. Williams, of Upper Holloway, and a request that they would contribute to the proposed "Williams Memorial Fund." They had had the advice of Mr. Williams since the inauguration of the gala. It was therefore with much satisfaction that the committee had resolved to give a donation of £10 to the memorial fund.

Votes of thanks were accorded to the following officers: The Sheriff of York (Mr. Councillor T. Clayton), president; Sir Joseph Terry, chairman; Mr. Joseph Wilkinson, treasurer; and Mr. C. W. Simmons, secretary. Similar acknowledgments were paid to the donors of special prizes, and to Mr. J. Welburn (N.E.R.) for providing a satisfactory service of trains.

The fixing of the date of the next gala was left to the Floral Committee.

ORCHID NOTES.—ORCHID ALBUM.

THE one hundred and second part of the "Orchid Album," recently published, still bears the name of one of our oldest orchid fanciers, Mr. Robert Warner, of Broomfield, near Chelmsford. But there is an alteration in the conductorship, owing to the lamented death of Mr. B. S. Williams, of whom there is an obituary notice, with the excellent portrait of our old friend which appeared in the GARDENERS' MAGAZINE. Mr. Henry Williams and Mr. W. H. Gower are now conductors of this excellent periodical, and as the coloured plates are still the production of Mr. John Nugent Fitch, there will be no falling off in any direction.

The four hundred and fifth coloured plate is an excellent one of ONCIDIUM LARKINIANUM, a Brazilian species, or more likely a natural hybrid between O. Marshallianum and O. Gardnerianum. It was exhibited in March of the present year before the committee of the Royal Horticultural Society, and was generally believed to be a natural hybrid, but the editors say "no indication is to be found in the pollen masses of its being a hybrid, and indeed we are not such believers in natural hybrids as some of our fellow orchid growers appear to be." Surely it is not difficult to arrive at the conclusion that natural hybrids may be expected wherever two allied species of orchids grow in juxtaposition to each other in their native habitats. What more reasonable, if the two oncidiums named above are growing together, but that some insect would carry the pollen masses on its forehead from one to the other? Indeed, the evidence is conclusive that it has been done frequently, and we are constantly being reminded of it. Cattleya gigas and C. aurea grow near each other, and an undoubted natural hybrid between them has been frequently imported, viz., C. Hardyana; and excellent examples of this natural hybrid were exhibited before the Orchid Committee so recently as August 26. Oncidium Larkinianum is a handsome species, but it is likely to be scarce, as the plant in question is the only one known to exist, and it cannot be increased in cultivation.

ODONTOGLOSSUM YOUNGI, also figured, is a distinct and very pretty species in the way of O. Rossi, but quite distinct from that well-known species. The flower stems are much longer, the sepals and petals pale yellow, thickly marked with large chocolate spots and blotches; the column is reddish violet, and the white lip is marked with lines of the same colour, with a pair of chocolate spots in the centre of it. It seems to have been introduced by Messrs. Shuttleworth and Co., with an importation of O. Rossi from Orizaba in Mexico. It is a cool-house species of course and requires the same culture as the smaller growing species of the O. Rossi type.

DENDROBIUM ALBUM is well figured, and shows how much our knowledge of the cultivation of orchids has increased since Dr. John Lindley named this species "the Watery Dendrobe" in the "Botanical Register" 1843, plate 54. He says "with the manner of growth of D. Pierardi, its pale watery green flowers are quite destitute of the attractive colours of that gay species." The specimen figured by Lindley was grown at Hackney by Messrs. Loddiges, at that time the great orchid emporium. A much better specimen was figured in "Botanical Magazine," table 4,640, under Lindley's name of *D. aqueum*. Messrs. Veitch, in their new manual of orchidaceous plants publish the name of D. aqueum, following Lindley and Hooker. This is more satisfactory than adopting the later name of D. album. It has been introduced quite recently by Major-General E. S. Berkeley, who found it "growing on the tops of coffee bushes in deserted plantations." The vigorous branch figured in the album shows it to be a good dendrobe with the flowers produced in pairs on the opposite side of the stem to the leaves.

LYCASTE GIGANTEA, a vigorous growing evergreen species is also well figured. It is not a popular species with orchid cultivators, as it takes up too much space with its large-spreading leaves, but it should find a place in all large collections. The flowers are of large size, the sepals and petals olive green with a slight tinge of yellow in them; the lip is rich marone and orange with a suffusion of mauve. It should be grown in a substantial mixture of fibrous peat and sphagnum, and the editor recommends the temperature of the warmest end of the cool house, or the cool end of the cattleya house. That would be a temperature of about 50 degrees as a minimum; whereas Lindley who figured it in the "Botanical Register" for 1845, table 34, says; "grow it in turfy heath-mould mixed with potsherds, with a temperature of 66 degrees as a minimum in winter from fire-heat." No wonder orchids died in the good old days when orchid growers were very few and far between.

J. DOUGLAS.

Literature.

Water Works for Country Houses, for daily household use, and in case of fire, are treated at length, and with scientific precision, by Messrs. MERRYWEATHER AND SONS, of 63, Long Acre, London, in a pamphlet on "Water Supply to Mansions," a Catalogue of garden and fire engines, pumps, rams, and water-carts, and a series of illustrations of the "Squier's Engine," which is equally adapted to supply the house with water for everyday use and to assist in case of fire, to put an effectual extinguisher on the enemy, the effectiveness of which will in most cases be in proportion to the promptitude and energy of the operators. Our proper course, with these papers before us, is to recommend all who may by any possibility be interested in the subject, to obtain copies by applying to head-quarters, and to give them prompt attention. Many a country house that is supposed to be fairly well supplied with water may prove to be wanting, even to the risk of fatality, when an emergency arises, whether of pestilence or fire, and to be forewarned is, in the case of water supply, to be forearmed in more than a casual sense, because a water supply on a scientific basis continues its serviceableness when all the excitement of an emergency is over.

Book of Choice Ferns for the Garden, Conservatory, and Stove. (Upcott Gill). It is important to note that "this work will be supplied to subscribers from this office, and not through ordinary booksellers." "This office" is at 30, New Bridge Street, London, E.C. With the reader the question may arise is "this work" worth having? Well, we say at once *it is*. But we are to suppose the inquiring reader to be interested in ferns and equal to the expenditure of a couple of pounds in the purchase of a book on the subject, for this "Book of Choice Ferns" is to extend to 21 parts at 2s. each. Now we say at once that it is cheap and good: exceedingly good. It is in quarto form with an abundance of illustrations. It begins, as it should, with an "introduction," in which generalities are admirably dealt with, and then proceeds to treat the genera in alphabetical order, generic characters being declared and species described with admirable exactness. The name or names that should declare authorship we know not of, which is a disadvantage certainly, but the knowledge of the subject that is made evident and the general style convey to us an idea of the sources of information, and we have to say that whoever is the author is fully equally to the onerous task he has undertaken. So far good: those who want a comprehensive work on ferns will have no difficulty in finding one that is in every way admirably adapted for the cultivator, whatever in the end may be its value to the scientific pteridologist.

As regards the mechanical part of the business we have to say that the "la-di-da Grosvenor" fashion of issuing a catalogue with rough edges is far to be preferred to the severe cutting down practised with this book. Why should the plough be applied to its unoffending edges? When bound the binders will probably cut off another with another?—well, we dare not operate on "them;" but an impulse beyond our control compels us to say that a very considerable number of bookbinders deserve to be hanged for their ruthless application of the plough.

Ladies' Gazette of Fashion discloses a new possibility in printing, many of the illustrations being produced in ink of a different colour to the type, the latter being black as usual, but the pictures a lively reddish bronze, of most agreeable tone. The fashions are necessarily prominent in this handsome monthly, but it contains also much useful information on domestic, artistic, and rural subjects, which are illustrated freely and with singular taste.

The Ladies' Treasury, edited by MRS. WARREN, continues its acceptable service in providing for the family circle an abundant supply of excellent literature in addition to those all absorbing subjects that "the fashions" present for the agitation of the female mind. Amongst the literary matter in the number latest issued, occur papers on Homing Pigeons; The Remarkable Rocks at Saarin, Prussia; Physical Education; and the Management of the Household.

Bees and Bee Keeping, by F. R. CHESHIRE, F.L.S., F.R.M.S., (Upcott Gill).—Part 4, is the only one we have seen of this work, and judging the whole by that, as we measure Hercules by the size of his foot, Mr. Cheshire is a benefactor of his race in presenting such a book for universal use. He belongs to the advanced school, as indeed a man must who is to lead as a teacher, for bee-keeping has become a great art and mystery, and wonderful things unthought of in the days of our hopeful youth, are now accomplished in the interests of the honey bee, and the bee master. This book on Bees and Bee-keeping should prove a first-class text book alike for the beginner and the expert.

TRADE CATALOGUES.

DOBBIE AND MASON, 66, DEANSGATE, MANCHESTER.—*Tulips, hyacinths, crocus, &c.*

CHARLES TURNER, ROYAL NURSERIES, SLOUGH.—*Hyacinths, narcissus, tulips, &c.*

STUART AND MEIN, KELSO.—*Florist's Tulips, Hyacinths, and other spring-flowering bulbs.*

Replies to Queries.

White Lion.—The Dutch and Belgian Nurserymen who advertise in the GARDENERS' MAGAZINE will give you prompt attention if you write to them.

W. J.—Cheap dry materials are better adapted to your case than any washes. In future try quick-lime applied through a duster or a muslin bag. Tobacco powder is an effectual killer, and if used with care, is not expensive.

Ecklinville.—An apple of Irish origin. The tree is a fair grower, attaining medium size; fruit large, handsome, and good culinary quality; an immense bearer.

Shading Orchid House.—S. S.: To expose cattleyas and other of the orchids during the summer season to the extent advocated by some cultivators has not given uniformly satisfactory results. To employ shading until late in September, as is sometimes done, is on the other hand, undesirable. As a rule, the use of shading materials for orchids should be discontinued at the end of August, as a gleam of sunshine will not only fail to injure the foliage but will be highly beneficial to the plants, more especially in the case of the dendrobiums.

Tuberous Begonias.—R. M.: The seedling begonias can be assorted according to their colours without lifting them, as you suggest, whilst in bloom. As a matter of fact, they can remain in the border until they are cut down by the frost, as indeed they should do to enable the corms to become properly developed. To assort them according to the colours of their flowers take a number of tallies equal to that of the plants, and to each plant put a tally bearing the colour of the flower. When the corms are being lifted have as many boxes or baskets as the colours you have selected; as they are lifted put them into the boxes according to their respective colours.

Greenhouse Plants.—Amateur: The camellias may remain outside until nearly the end of the month, but the azaleas and other delicately-rooted, hard-wooded plants should be taken indoors with as little delay as possible. There is not so much risk of their being injured by frosts as by the heavy rains and dews to which outdoor vegetation is usually subjected at this season of the year. The camellias may be housed at the same time as the other plants if more convenient, which will probably be the case. The greenhouse must be freely ventilated for some time after it is filled with its winter occupants, that the plants may not be subjected to any great change in the atmospheric conditions.

Transplanting Large Trees.—J. G.: Trees of the height you mention can be readily moved short distances by means of planks and rollers, two sets of planks being required, one for the support of the ball of soil and one for the rollers to run upon. At least four planks will be required in the second of the two sets. To avoid any risk of the balls being broken in the course of the removal to the new stations, it is a good practice to put six or seven upright pieces of stout board about six inches in width round each ball and bind them lightly with ropes or chains. The boards should be equal in length to the depth of the ball and be placed at equal distances apart. Unless the heads are large, two men, one on either side, will be able to keep the trees erect during the transit, but if the heads are large and heavy it will be necessary to have three men with guy ropes fixed four or five feet from the top.

Propagating Zonal Pelargoniums.—F. B. W.: In consequence of the cool moist weather that has prevailed during the summer, the zonal pelargoniums have made a comparatively soft growth, and additional care will be necessary in striking the cuttings to avoid heavy losses from damping off. It is now too late in the season to strike the cuttings in the open border, and we would advise their being put in pots and receiving the protection of glass when necessary. The best results will be obtained by putting them in large sixties, three in each, and then placing them in a frame where they can have a free circulation of air or be fully exposed, as may appear desirable. It is important to keep the frame well ventilated from the first, and to remove the sashes in dry weather only, for if exposed to heavy rains, a considerable proportion will probably damp off. The cuttings would strike equally well in shallow boxes, but there is a risk of those in the centre becoming drawn in the course of the winter, and there is practically no great saving of space as compared with the use of pots.

Names of Plants.—W. O., Stoke Newington: 1, Platyloma geraniifolia; 4, Asplenium bulbiferum; 5, Asplenium flaccidum; 6, Nephrodium molle corymbiferum. The other specimens are not sufficient for identification. The plant from which the frond numbered two was taken is evidently in an unsatisfactory condition at the roots and should have special attention. The best course will perhaps be to take the plant out of the pot, remove from about the roots the greater portion of the old soil, and return it to a clean pot with fresh soil. This should be done at once to allow sufficient time for the production of new roots by the end of the autumn.—Plants in Tin Box: 1, Lasiandra macrantha; 2, probably Croton Weismanni, but as there are several nearly alike we cannot speak with certainty with only one leaf before us; 3, Selaginella Willdenovii; 4, Jacaranda mimosæfolia; 5, Dracæna australis; 6, a small cutting of Crassula coccinea.—W. H. Harvey: 1, Herniaria glabra; 2, Gesnera pardina; 3, Lagerstroemia indica; 4, Dryas Drummondi.

Newton Wonder.—An apple of recent introduction, sent out from Chilwell, received first-class certificate R. H. S., 1887. The tree is a vigorous grower, makes a handsome standard, and equally suitable for pyramid culture; fruit large, very regular in outline, handsome, highly coloured, and weighs very heavily. Modesty compels me to place this apple last on the list, although I think it will prove to be worthy of a higher position. I am fully prepared for the quotation that everyone's geese are swans, and I shall not be surprised if someone asks how it is that such comparatively new apples should be selected. My answer will be that the selection has not been made without carefully testing and weighing the merits of each, and surely it will be conceded that our old orchards need improvement in the varieties grown and the method of culture employed. The days of "Bess Pool," bearing once in seven years; Blenheim and Alexander once in five; "Bartons," bearing every year, but too small for sale when grown, are numbered, as are many others I could name; so I trust is the system of "sticking in a tree" and leaving it without further attention until death comes to its release. To those intelligent cultivators who are improving their orchards by regrafting with improved kinds I may say that any and all of those named (except Ecklinville, of which I have had no experience in this matter) will succeed well and bear heavy crops. It is unnecessary to tell you that weak growing kinds only kill the stocks upon which they are grafted.

Town Square.—F. F.: The dependence should be on deciduous trees and shrubs chiefly; coniferous trees are not likely to thrive for any length of time; as your plan shows building lots in close proximity, and when those lots are covered there will be too much smoke for conifers. The maple-leaved or "London" plane is invaluable; probably the common elm would thrive, but you must form a judgment by the trees in the same locality. Elms are not particular about smoke; usually it is excessive drainage of the soil in towns that kills them. A few evergreens may be used in quantities such as common holly, and Hodgins's holly, Japanese euonymus, privets, ivies, aucubas, box, and evergreen oak. You must consider further about rhododendrons, berberries, and cotoneasters, as they are less accommodating than the foregoing.

Earwigs and Peaches.—J. H.: The peaches you have sent have been injured by earwigs, and unless you take steps to lessen the numbers of this pest a considerable portion of the crop will be rendered worthless. Trapping is the only effectual means of dealing with earwigs when they have an abundant supply of food at command, and the most efficient traps are those made from the stalks of the broad and long pod beans. The stalks should be quite ripe, and be cut into lengths ranging from six to eight inches each. When prepared, place eight or nine of these pieces in each tree, and to fix them in position thrust them between the branches and the wall, the ends being so placed to enable the earwigs to readily enter the hollow stems. The earwigs will take refuge in the stalks during the day, when they can be destroyed by the simple process of shaking them into a vessel containing hot water. In addition you might place a few pots containing dry hay along the foot of the tree. The results will depend chiefly upon your perseverance in destroying the earwigs as fast as they are trapped.

Varieties for Pyramid Culture.—1, Potts' Seedling; 2, Lord Suffield (or when that cankers Lord Grosvenor); 3, Ecklinville; 4, Frogmore Prolific; 5, Lane's Prince Albert; 6, New Northern Greening. To these half-dozen cooking apples may be added Duchess of Oldenburgh, Domino, Cox's Pomona, Cellini, Small's Admirable, New Hawthornden, Stirling Castle; and for dessert, 1, King of Pippins; 2, Margil; 3, Court Pendu Plat (already mentioned); 4, Fearn's Pippin; 5, Cox's Orange Pippin; 6, Scarlet Nonpareil; 7, Worcester Pearmain. These are all kinds easily adapted by their natural habit to pyramid culture, also early and abundant bearers. They are all so meritorious that to single any out for especial praise seems almost invidious, yet I cannot help saying that those who have not grown Potts' Seedling as a pyramid will be pleased with it. Its habit is most charming, foliage bold and distinct, and whether with fruit or without an object of beauty. When I say without fruit I mean when fruit is not in season, for it is rare that you fail to find it carrying fruit at the proper season. It would be gilding the rose for me to make any remarks upon Cox's Orange Pippin to-day, since it has just attained its sixtieth birthday, and is now pretty well known to the public; I will only in passing remark that it should be grown in a dwarf form, either bush, pyramid, or espalier, and not as a standard. In conclusion, one word in favour of a very old friend, "Margil." In some parts of the country it goes by the familiar name of "Never-fail," and if you will plant it in a situation where it is not too much exposed to spring frost, you will find it well deserves the title. Perhaps to those of weak digestion it has not so strong an attraction as the more tender Cox's Orange, yet to many its flavour is unequalled, and, unlike its supposed parent the Ribston, it does not canker.

Obituary.

ON the 1st September, at Baden Baden, suddenly, JAMES MATTHEWS DUNCAN, Esq., M.D., LL.D., F.R.S., of 71, Brook Street, Grosvenor Square, aged 64.

AT the moment of going to press we are pained to hear of the death of Miss NORTH, whose museum of paintings in the Royal Gardens, Kew, has carried her name and fame into regions far wider than those of the botanists, by whom alone previously to the formation of the museum, her genius was appreciated. With industry beyond all ordinary average and a genius for perception of natural beauties, with which but few are so gifted, this lady made her amusements beneficial to mankind, and has earned the lasting gratitude of all students of outward nature.

Markets.

COVENT GARDEN.

FRUIT.

Apples	per ½-sieve	3s. 0d.	to 7s. 6d.
Filberts, Kent, per 100 lb.		50s. 0d.	,, 60s. 0d.
Grapes	per lb.	1s. 0d.	,, 3s. 0d.
Lemons	per case	12s. 0d.	,, 21s. 0d.
Peaches	per doz.	1s. 6d.	,, 7s. 6d.
Pears	per ½-sieve	2s. 6d.	,, 4s. 6d.
Pine Apples, English, per lb.		1s. 6d.	,, 3s. 0d.
Pine-apples, St. Michael's	each	2s. 6d.	,, 6s. 0d.
Plums	per ½-sieve	7s. 0d.	,, 9s. 0d.

VEGETABLES.

Artichokes, Globe, per doz.		2s. 0d.	to 4s. 0d.
Beans, Kidney	per lb.	0s. 2d.	,, 0s. 3d.
Beet	per doz.	1s. 0d.	,, 2s. 0d.
Brussels Sprouts	per ½ sieve	1s. 6d.	,, 2s. 6d.
Cabbages	per doz.	1s. 0d.	,, 2s. 0d.
Carrots	per bun.	0s. 4d.	,, 0s. 6d.
Cauliflowers	per doz.	2s. 0d.	,, 3s. 0d.
Celery	per bun.	1s. 6d.	,, 2s. 0d.
Cucumbers	each	0s. 3d.	,, 0s. 8d.
Endive	per doz.	1s. 0d.	,, 2s. 0d.
Herbs	per bunch	0s. 3d.	,, 0s. 4d.
Horse-radish	per bun.	2s. 0d.	,, 3s. 0d.
Lettuces	per doz.	1s. 0d.	,, 1s. 6d.
Mushrooms	per basket	0s. 6d.	,, 1s. 0d.
Onions	per bushel	2s. 6d.	,, 4s. 0d.
Parsley	per bun.	0s. 3d.	,, 0s. 4d.
Peas	per quart	1s. 0d.	,, 2s. 0d.
Scarlet Runners	per lb.	0s. 1d.	,, 0s. 2d.
Shallots	per bun.	0s. 4d.	,, 0s. 6d.
Small Salading	per pun.	0s. 3d.	,, 0s. 4d.
Spinach	per bushel	2s. 6d.	,, 3s. 6d.
Tomatos	per lb.	0s. 6d.	,, 0s. 9d.
Turnips, New, per bunch		0s. 4d.	,, 0s. 6d.
Vegetable Marrows, per doz.		2s. 0d.	,, 3s. 0d.

CUT FLOWERS.

Abutilons	per doz. bun.	2s. 0d.	to 4s. 0d.
Asters	per doz. bun.	2s. 0d.	,, 4s. 0d.
Bouvardias	per bunch	0s. 6d.	to 0s. 9d.
Callas	per doz.	2s. 0d.	,, 4s. 0d.
Carnations, per doz. blms.		1s. 0d.	,, 2s. 0d.
Chrysanthemums, per doz. blooms		0s. 6d.	,, 2s. 6d.
Chrysanthemums, per doz. bun.		2s. 6d.	,, 5s. 0d.
Coreopsis	per doz. bun.	1s. 0d.	,, 3s. 0d.
Dahlias	per doz. bun.	2s. 0d.	,, 4s. 0d.
Eucharis	per doz. blms.	2s. 0d.	,, 4s. 0d.
Gaillardias, per doz. bun.		2s. 0d.	,, 4s. 0d.
Gardenias, per doz. blms.		2s. 0d.	,, 4s. 0d.
Gladioli	per doz. bun	5s. 0d.	,, 10s. 0d.
Heliotropes, pr doz. sprys		0s. 6d.	,, 1s. 0d.
Lapageria, per doz. blms.		1s. 0d.	,, 3s. 0d.
Lavender	per doz. bun.	3s. 0d.	,, 5s. 0d.
Liliums, various, per doz. blooms		1s. 0d.	,, 4s. 0d.
Maidenhair Fern, per doz. bun.		4s. 0d.	,, 8s. 0d.
Marguerites, per doz. bun.		2s. 6d.	,, 5s. 0d.
Mignonette, per doz. bun.		1s. 0d.	,, 3s. 0d.
Pelargoniums, per doz. trusses		0s. 6d.	,, 1s. 0d.
Pelargoniums, Zonal, per doz. trusses		0s. 3d.	,, 0s. 4d.
Roses, Coloured, per doz.		1s. 0d.	,, 1s. 6d.
Roses, Tea, per doz. blms.		0s. 6d.	,, 1s. 6d.
Stephanotis, pr. dz. sprays		1s. 6d.	,, 2s. 6d.
Sunflowers, per doz. bun.		3s. 0d.	,, 6s. 0d.
Tuberoses, per doz. blms.		0s. 4d.	,, 0s. 6d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents	per ton	60s.	to 70s.
Magnum Bonum	per ton	60s.	,, 70s.
Beauty of Hebron	per ton	70s.	,, 80s.
Myatt's Ashleaf	per ton	60s.	,, 70s.
Early Rose	per ton	50s.	,, 60s.
Imperator	per ton	60s.	,, 65s.
White Elephant	per ton	70s.	,, 80s.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
14	S	**15th Sunday after Trinity.** [● New Moon.	5 33	4 32	6 16	5 19	6 48	2 7	2 22	11 32	11 47	58·0	Cattleya marginata ..... Brazil.	257
15	M		5 35	4 53	6 14	6 27	7 4	2 38	2 51	—	0 3	57·8	Cattleya pumila ..... Brazil.	258
16	Tu	Moscow burnt, 1812.	5 36	5 14	6 12	7 38	7 20	3 6	3 22	0 16	0 31	57·6	Eriopsis biloba ..... South America.	259
17	W	*Lambert, Bishop.*	5 38	5 36	6 10	8 50	7 36	3 36	3 51	0 47	1 1	57·8	Ionopsis paniculatus ..... Trinidad.	260
18	Th	Battle of Alma, 1854.	5 40	5 57	6 7	10 4	7 54	4 8	4 23	1 17	1 33	57·2	Lælia elegans Dayi..... Brazil.	261
19	F	President Garfield died, 1881.	5 42	6 18	6 5	11 20	8 17	4 40	4 55	1 48	2 5	57·1	Lælia furfuracea ..... Mexico.	262
20	S	Siege of Paris began, 1870.	5 43	6 39	6 2	After.	8 48	5 12	5 29	2 20	2 37	56·9	Lælia Lindleyana ..... Brazil.	263

ROYAL HORTICULTURAL SOCIETY, CHISWICK GARDENS.

DAHLIA and GRAPE CONFERENCE and EXHIBITION, SEPTEMBER 23RD and 24TH, 1890.

The Conference will be opened each day at Half-past Two p.m. Interesting papers will be read on the History and Culture of Dahlias and Grapes.

Admission—Tuesday from Two o'clock; Wednesday from Ten o'clock, One Shilling.

Schedules and further information may be obtained on application to the Secretary, Royal Horticultural Society, 117, Victoria-street, S.W. Entries to be returned to Mr. A. F. Barron, R.H.S. Gardens, Chiswick, not later than Friday, September 19th.

CRYSTAL PALACE.—GREAT AUTUMN FRUIT SHOW, OCTOBER 9TH to 11TH.

Schedules and Entry Forms on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace. Entries close Thursday, October 2nd.

Auction Sales for the Ensuing Week.

MONDAY, WEDNESDAY, THURSDAY, AND SATURDAY, SEPT. 15, 17, 18, AND 20.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

MONDAY, WEDNESDAY, AND SATURDAY, SEPT. 15, 17, AND 20.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.

MONDAY, SEPT. 15.—Messrs. Protheroe and Morris, at the Dysons' Lane Nursery, Upper Edmonton; Greenhouse Plants.

TUESDAY, SEPT. 16.—Messrs. Protheroe and Morris, at the Burnt Ash Lane Nurseries, Lee; Greenhouse Plants.

WEDNESDAY, SEPT. 17.—Messrs. Protheroe and Morris, at the Lea Bridge Road Nurseries, E.; Greenhouse Plants.

THURSDAY, SEPT. 18.—Messrs. Protheroe and Morris, at the Brimsdown Nurseries, Enfield Highway; Greenhouse Plants.

FRIDAY, SEPT. 19.—Messrs. Protheroe and Morris, at the American Nurseries, Leytonstone; Greenhouse Plants, Palms, Greenhouses, &c.

FRIDAY, SEPT. 19.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, SEPTEMBER 13, 1890.

FRUIT GROWING IN IRELAND may be declared an unknown industry. A certain amount of fruit is grown, and well grown in the Emerald Isle, but the "emerald" of the isle is averse to fruit, and the people may be said to know nothing about it. The fanciful epithet now commonly used was first made popular by the arch-agitator, Daniel O'Connell, in reference to the perpetual greenness of the country, a characteristic due to the prevailing high degree of atmospheric humidity. It is customary to speak of the climate of England as quite unsuited for fruit production, and in a poor fruit year like the present the declaration acquires a degree of spurious importance. But that it is spurious is proved by the fact that fruit culture has acquired the status of a national industry, and is actually extending geographically, and at the same time advancing in profitableness. The deputation of the British Fruit Growers' Association, in the course of a wide range of observations, found many orchards in the eastern parts of Ireland, and especially near the more thriving towns; but the majority of the trees were aged, decrepit, and profoundly bearded with lichens, the presence of which proclaims a damp climate, and is inimical to fruit production. But granting this *a priori* difficulty of a climate that is, to say the least, less than perfect for fruit culture, it must be noted, *a posteriori*, that good fruit is grown in Ireland, and the cost is no greater there than here; perhaps considerably less; while as to demand for it on the spot, there can be no reasonable doubt, because the more prosperous towns and cities consume considerable quantities of imported fruit. As regards the growth of lichens, it should be remembered that in all parts of England, and especially in the western counties, this is common enough where the trees are aged, and is still more common in Wales and Scotland, but is unknown in every place, even the most humid where aged trees are literally eaten up by it, on plantations of trees that are not unreasonably aged, and that have reasonable attention to keep them healthy and clean, It is precisely the same in the Emerald Isle. The very competent observers who have made a practical survey of certain important districts, and whose report we are enabled to place before our readers, bring out, with new illustrations, the old story of ruin attending upon neglect, while prosperity is the reward of industry and care wisely applied. It would seem that in Ireland fruit culture may be profitably pursued, but will need a certain aid from capital and an uncertain, or say continuous and intelligent aid from industry, for good fruit is nowhere to be obtained from trees that are simply "stuck" in the ground and left to the mercy of the elements. In a country where the failure of the potato results in famine, and where politics is preferred to plenty, while ignorance and whiskey contend for supremacy, there is much to be done ere fruit culture can become a general and a profitable industry.

In a notice that recently appeared in these columns of the presentation of a testimonial to Dr. David Doudney, we referred to his noble endeavour to plant an industry at Waterford, where a number of lads under his teaching turned out some remarkable examples of printing. It is the lack of employment that is the blight of Ireland, and the proposal to establish fruit growing there is, in any case, reasonable, and should obtain attention, because there is a home demand for the article, and the possibility of producing it is demonstrated. Ireland is an agricultural country, and only in a few chosen spots where the people are intelligent and thrifty beyond the prevailing average of the country, have manufactures prospered. But that fact should not deter the promoters of orcharding, because where work within walls proves to be unsuited to the temper of the people, work in the open air may be perfectly acceptable; and fruit trees might often with singular advantage supersede potatos. The lichen growths that appal the visitor who is accustomed to the clean and orderly appearance of a well-kept English fruit garden, are by no means formidable impediments to progress, because in Ireland, equally with England, a certain amount of cultivation is requisite to success, and one of the objects of cultivation is to keep the trees free from all parasites, whether vegetable or animal; lichen, mistletoe, aphis, caterpillar, being all enemies alike, and to be suppressed by wisely applied skill and industry. We have here in this more prosperous isle ancient orchards that are not less wasteful than disgraceful to their owners, and we are not to be hasty in denouncing Irish neglect, while it is possible to keep in mind that examples of the same thing are plentiful even within a brief distance of the great metropolis, which is supposed to be the centre of light and leading. A brief visit and a report on the state of fruit culture in Ireland may not go far in themselves towards establishing a better state of things, but the beginning thus made may be fraught with great consequences, and should the sister isle ever become the home of a happy and contented people, one cannot but suppose that horticulture will have a great part to play both in the desired change and the prosperity that should follow. It will be seen from the report to the Association that ten miles south of Cork, where the rainfall averages forty-five inches, fine growths of dessert and culinary apples were seen as home productions, a fact of the highest interest as touching the question of fruit culture, *both there and here.*

A NEW WONDER reaches us from Africa. It is a flower consisting of ice only! The wonder, indeed, does not reach us, in fact, but the sentiment of wonder is awakened in us by the intelligence of such a flower, which could not very well be forwarded, because it might happen to melt on the way. A gentleman long known to us, and who, we feel assured, would not knowingly commit himself to any extravagant or unreasonable statement, furnishes particulars of a flower he

has seen, and which he describes as an "ice flower"; and it must be a nice flower if our friend is correct.

He dates from the region of Barberton, saying, "I have seen a curious flower. It is an ice flower, and only to be seen in the early morning, whilst the frost is on the ground. It appears upon a stunted shrub devoid of foliage, and generally about nine inches high, having but little sap in its shoots. The flower, somewhat like a rose-bud, and about the size of a walnut, is composed entirely of ice, and contains about twenty petals, each of which can be easily pulled off like the opening of a rose-bud. Each petal is distinct, and wonderfully pretty, showing every vein. I have seen as many as three hundred blossoms upon one small bush. Of course it disappears with the sun, leaving nothing to show that this lovely flower ever existed. I have never seen anything so beautiful."

The interpretation that most readily occurs to us is that the writer reports on a fact he has seen, but has not fully understood, and that we have here an example of a quite common accident, that of an error in observation. We make no pretence beyond this, to explain our friend's letter, but we are bound to repeat that our knowledge of him compels us to give serious attention to his statement, although, as the case is put, it appears to rest on a misapprehension.

DEVIZES CHRYSANTHEMUM SHOW, November 4.

TIVERTON CHRYSANTHEMUM SHOW, November 20.

BRIXTON, STREATHAM, AND CLAPHAM Chrysanthemum Show, November 4 and 5.

CHISWICK CHRYSANTHEMUM SHOW will be held in the Vestry Hall, November 6.

YORK GALA COMMITTEE at a recent meeting for financial business voted £160 to York Charities, and £10 to the B. S. Williams Memorial Fund.

EARLY CHRYSANTHEMUMS NOW IN FLOWER in Mr. Owen's nursery, Maidenhead, include Blushing Bride, Blanche Colomb, Flora, L'Ami Condercet, Mrs. Cullingford, Nanum, Precocite, Pierre Verfiel. St. Crouts, Toreador.

BRITISH ASSOCIATION MEETING AT LEEDS was concluded on Wednesday. The next meeting in 1891 will be at Cardiff, where proceedings will commence on the 19th of August. In 1892 the association will meet in Edinburgh.

THE RAILWAY RATES INQUIRY is the subject of a report by Mr. Marshall Stevens, of the Manchester Ship Canal, and Mr. Thomas Waghorn, of the Inner Temple. It is published by F. Nodal, Manchester.

KEW BULLETIN for September contains reports on Insects injurious to barrel staves; Prickly-pear in South Africa; Jarrah timber; Treatment of Mildew on Vines; Cultural industries in West Africa; Economic plants in Madagascar; a particularly interesting and valuable number.

MR. HENRY CANNELL, OF SWANLEY, is one of the original members of the B. S. Williams Memorial Committee, but his name was unfortunately omitted from the published list through an error in copying. It will be seen on reference to our report at page 486, that Mr. Cannell was the mover of the resolution that forms the basis of the proceedings, and in the list of subscribers we find opposite his name an entry of five guineas.

CATTLEYA AUREA SPLENDENS was the most distinct and strikingly beautiful of the more showy orchids brought forward on Tuesday. The example sent up from Thomas Statter, Esq., Whitefield, Manchester, is nearly self-coloured in the rich buff yellow or nankin colour peculiar to C. Dowiana, of which it is a variety. The colouring of the labellum consists of light veins and blotches of the same kind as in the type, but reduced in amount, while the nankin ground brightens up with a suffusion of a golden tinge.

HABENARIA MILITARIS, of which a pan was shown on Tuesday at a meeting of R. H. S., from the garden of Sir Trevor Lawrence, Bart., M.P., is one of the prettiest of its class of terrestrial orchids, and one of the least known. It differs greatly from *H. ciliaris*, which has a fringed labellum and is of a reddish orange colour; *H. militaris* having a handsome lyrate labellum of a clear soft vermilion colour. The plant requires stove cultivation. Warm greenhouse temperature is sufficient for H. ciliaris.

BLACK PRINCE CACTUS DAHLIA, shown by Mr. Glascock at the National Dahlia Show at the Crystal Palace, and again by another exhibitor at R. H. S. meeting on Tuesday, is singularly massive and has a grand appearance when associated with other first class varieties. The colour is intensely deep marone shaded with black. On each occasion it obtained a high award as a meritorious novelty. At the Palace a First-class Certificate; at R. H. S. an Award of Merit. The cactus group has been greatly enriched in the present season as our reports will have shown.

CHRYSANTHEMUMS IN FINSBURY PARK present a very promising appearance at the present time, and an exhibition surpassing in many respects the magnificent displays of previous years may be anticipated. Already there are many finely developed blooms of Comte de Germiny, one of the best of the incurved Japs, some being fully eight inches in diameter, and of a proportionate depth. This variety is not largely shown at the November exhibitions because of its relative earliness, and it would be well for cultivators to more fully recognize its usefulness for the embellishment of the conservatory during October.

ACER VAN VOLXEMI is a large-leaved sycamore of rapid growth adapted for the shrubbery borders on the cutting down plan many years ago initiated by the *Garden Oracle*, and now much practised to produce dwarf examples of trees notable for magnificent foliage. Dr. Masters presented some branches of this tree to the Floral Committee on Tuesday, when it was greatly admired.

A REPORT ON THE HARVEST, by Mr. H. Kains-Jackson, gives quite a cheerful view of the general case, chequered of course by some exceptional circumstances peculiar to the season. He estimates the produce of England at eight million quarters of wheat, and that of Ireland at nearly a million and a-half quarters. The greatest yield per acre is expected from the Midlands and Eastern England.

THE GUILDHALL FRUIT SHOW to be held October 6, 7, and 8, under the direction and authority of the Worshipful the Fruiterers' Company, is provided for by a schedule of prizes and a series of regulations that appear to meet with general approval. The advising committee of horticulturists, by whom the scheme has been framed, have no executive power. That is in the hands of the Company alone, which provides the sinews of war and will admit the public to view the show without any charge whatever. Inquiries are made as to the official sources of information, and we refer all inquirers to Mr. O. C. T. Eagleton, secretary, 40, Chancery Lane, London, W.C., from whom schedules may be obtained free of charge.

THE OSAGE ORANGE, *Maclura aurantiaca*, is well known to collectors of interesting trees, and in a few instances in this country it has been used as in the United States as a hedge plant, for which its formidable spines well adapt it. But in this country the tree never produces fruit, which consequently is an occasional subject of inquiry and curiosity. On Tuesday last some samples of the fruit contributed by Mr. William Soper appeared on the table of the Floral Committee, and were acknowledged by a vote of thanks. They are of the size and form of a large orange, the exterior curiously and roughly reticulated in a distinct geometrical pattern, the colour (as shown) being yellowish-green, but when fully ripe bright orange. Although allied to the mulberry, it is not only inedible, but when cut through exudes a milky juice that has a fœtid odour. The wood of this tree supplies the yellow dye called fustic, which is also obtained from Rhus cotinus.

PEASGOOD'S NONSUCH APPLE is known for its great size and beauty, but is not often seen in the style of the sample shown by Messrs. G. Bunyard and Son, of Maidstone, at the recent Crystal Palace Exhibition. The sample weighed 26 ounces, and was a model of form, with most delicate colouring. We do not profess to desire vast supplies of such fruits, believing good average growth preferable to abnormal samples. But those who say that such huge fruits are worthless make a grave mistake. They are not often eaten because they are exhibited until they have lost character, but if eaten now while the flesh is tender and flavour perfect they are as good as smaller samples, and usually more tender. It may be observed that at the present time the commonest apples in commerce are most delicately flavoured when cooked, while the table varieties are at their best, provided they are fully ripe. Every apple has its season, and some keep well, but they all run out of condition sooner than the average reckoning, and any apple is better when it is coming into use than when it is going out. While in the first condition of ripeness the cells are large, and are stored with juice and saccharine, but as time passes the cells contract, the saccharine is reduced, and the flavour declines. The largest apples are excellent while fresh, and this rule applies to Peasgood's Nonsuch.

NATIONAL CHRYSANTHEMUM SOCIETY,

SEPTEMBER 10 AND 11.

THE exhibition held by the National Chrysanthemum Society at the Royal Aquarium on Wednesday and Thursday was unquestionably the most successful September gathering that has yet taken place under the auspices of the society. Chrysanthemums showed a marked advance both in numbers and quality, the groups being particularly good. Of dahlias there was an immense display; roses were so well shown as to constitute an important and highly-attractive feature; and gladioli were especially well represented. The arrangements were, as usual, admirably carried out under Mr. Holmes's direction, and the general effect was remarkably good.

GROUPS OF CHRYSANTHEMUMS were more numerous than in any previous year, and on the whole were far superior to those contributed to the corresponding shows in previous years. Messrs. J. Laing and Sons, Forest Hill, were first with a tastefully-arranged group of well-grown plants. Messrs. Reid and Bornemann, Shrewsbury Road, Sydenham, were a good second, and Mr. N. Davis, Camberwell, was third. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, exhibited not for competition an excellent group, and was awarded the silver medal.

CUT CHRYSANTHEMUMS were exceptionally good. The first prize for a collection was awarded to Mr. R. Owen, Maidenhead, who staged about sixty varieties, chief amongst them being Madame C. Desgrange and its several yellow forms, Golden Shah, Golden Fleece, Precocite, Miss Lily Stevens, a beautiful white pompon which had a first-class certificate conferred upon it, Nanum, Roi d'Eté, Mrs. Cullingford, Piercy's Seedling, Anastasio, Flora, Mignon, and Phyllis Broughton. Mr. Davis was second with excellent blooms, and Mr. E. F. Such, Maidenhead, was third. There was a keen contest for the prizes for twelve blooms of Madame C. Desgrange, and Mr. J. Blackburne, gardener to Elmstead Grange, Chislehurst, was first with splendidly-developed examples, and Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, and Mr. W. Howe, gardener to H. Tate, Esq., Streatham Common, were second and third. The competition was equally satisfactory for six bunches of Madame Desgrange, three blooms in each, and, as in the preceding class, Mr. J. Blackburne was first with large well-finished blooms. Mr. W. Beech, Hereford House, West Brompton, was a good second, and Mr. J. Pratt, 42, Gloucester Terrace, third with blooms of great excellence. In the corresponding class for the yellow sports from Madame C. Desgrange, Mr. J. Blackburne was again first with George Wermig, and Mr. W. Beech and Mr. J. Stevens, St. John's

Nursery, Putney, were second and third with good blooms. For twelve blooms of any variety other than Madame Desgrange Mr. J. Blackburne was first with superb bloom of George Wermig; and Mr. E. Vince, Highgate, was second with good blooms of Sam Henshaw; Mr. G. Stevens was third. For twelve pompons Mr. D. B. Crane, Archway Road, Highgate, and Mr. J. P. Kendall, Roehampton, were first and second with excellent stands. The principal varieties in the first prize collection were Mrs. Cullingford, Blushing Bride, Maud Pitcher, Flora and Piercy's Seedling. Mr. Crane was first also for twelve bunches without restriction as to class. The blooms were good throughout, and the varieties represented were Mdlle. Lacroix, Sam Henshaw, Pynaert Van Geert, Rosamundi, Mrs. Burrell, Madame C. Desgrange, Isidor Feral, Miss Pitcher, and Mrs. Hawkins. For six bunches of varieties, other than Madame Desgrange, Mr. G. Stevens was first with well developed blooms of Mrs. Hawkins, George Wermig, Mdlle. Lacroix, and Pynaert Van Geert. Mr. Kendall and Mr. Crane, who were second and third respectively, also had good blooms. Mr. Cox, Brickenden Bury, Herts, staged, not for competition, six magnificent blooms of Edwin Molyneux, for which he was awarded a high commendation.

GLADIOLI were so well shown as to form a highly effective feature. Messrs. J. Burrell and Co., Howe House Nurseries, Cambridge, were first in the open class for collections, staging several hundred splendidly developed spikes. The varieties most conspicuous in this important class were Doris, Pyramide, Cervantes, Mrs. Lindsell, Horace Vernet, Grande Rouge, Ovid, Hesperide, Matador, Sultana, and Iolanthe. Two collections only were presented in the class for twelve spikes, and both were good. Mr. E. B. Lindsell, Bearton, Hitchin, was first with large well-finished spikes of Titania, Horace Vernet, Grande Rouge, Hesperide, Rayon d'Or, Baroness Burdett Coutts, Atlas, and Pyramide; Rev. H. H. D'Ombrain, Westwell Vicarage, Ashford, who was second, had highly developed spikes.

ROSES were especially well represented, and proved immensely attractive. There were thirteen competitors in the class for twenty-four blooms, in not less than twelve varieties, and the premier award was made in favour of Messrs. G. and W. H. Burch, Peterborough, who had large and fresh blooms of Senateur Vaisse, Mrs. J. Laing, Ulrich Brunner, Alfred Colomb, Francois Michelon, Duc de Rohan, D'Andry, A. K. Williams, Captain Christy, and Madame Charles Wood; Rev. J. H. Pemberton, Havering-atte Bower, Romford, was a close second, and Mr. Frank Cant, Brayswick, Colchester, was third. Messrs. Paul and Son, Cheshunt, exhibited so well in the class that a high commendation was awarded. In the class for twelve blooms there were ten entries, and the prizes were awarded to Mr. A. H. Gray, Newbridge, Bath; Messrs. G. and W. Burch, and Messrs. Paul and Son, all of whom had stands of great excellence. The competition was very keen for the prizes for twelve teas, and in the result Mr. Gray had the premier award made in his favour. The blooms were of average size and very fresh, and the varieties were Madame Cusin, Catherine Mermet, Souvenir d'Elise Vardon, Anna Olivier, Etoile de Lyon, The Bride, Maréchal Niel, Hon. E. Gifford, Jean Ducher, Marie Van Houtte; Messrs. G. and W. H. Burch and Mr. C. Turner were second and third with good boxes of blooms; Mr. Gray was first also for six teas, closely followed by Messrs. G. and W. H. Burch, and Messrs. Paul and Son followed closely for second and third places.

DAHLIAS had sixteen classes set apart for them, and as they were all well filled the blooms staged produced a rich and eminently attractive display. Mr. C. Turner was successful in occupying the first place in the great class for sixty blooms of show and fancy varieties, and Messrs. Keynes, Williams, and Co., Salisbury, and Mr. Seale, Seven Oaks, were second and third. The prizetakers in the class for thirty-six blooms, distinct varieties, were Messrs. Keynes, Williams, and Co., Mr. C. Turner, and Mr. A. Rawlings, Old Church, Romford. There was five competitors in the class for twenty-four blooms, distinct, and the awards were made in favour of Mr. G. Humphries, Messrs. Saltmarsh and Son, Chelmsford, and Mr. S. Mortimer, Farnham. For eighteen distinct, Messrs. Saltmarsh and Son were first, and Mr. G. Humphries and Mr. S. Mortimer were second and third. The most important of the classes for amateurs was that for twenty-four blooms, distinct, and here Mr. J. T. West, gardener to W. Keith, Esq., Cornwalls, Brentwood, was first, and Mr. Glasscock, Bishops Stortford, and Mr. C. Hockney, Grenfield House, Stokesley, Yorkshire, were second and third. Mr. West and Mr. Glasscock were first and second also for twelve blooms, and Mr. Hereman Langley, Burrell, Chippenham, was third. With reference to the blooms staged in the foregoing classes, it must be said that they were all more or less good. The varieties were chiefly the same as those shown in the corresponding classes at the Crystal Palace in the week previous, and it is not therefore necessary to enumerate them.

The pompon, single, and decorative varieties contributed liberally to the attractions of the exhibition. Mr. C. Turner was a capital first for twenty-four pompons, the blooms of high quality, and tastefully staged; Messrs. Keynes, Williams, and Co., were a good second; and Messrs. Paul and Son a close third. Messrs. Burrell and Co. occupied the first place in the class for twelve bunches of pompons, and Mr. G. Humphries was second, and Mr. Seale third. In the amateurs' class for pompons Mr. Glasscock, Mr. West, and Mr. G. M. Crabb, Sawbridgeworth, were the successful competitors. The first place in the class for twenty-four bunches of single varieties was occupied by Mr. Seale, and in that for twelve bunches Messrs. J. Burrell and Co. were first, and Messrs. Paul and Son second. The most successful of the amateur exhibitors of single varieties were Mr. Glasscock, Mr. A. Carter, Ewell; and Mr. Kendall; Mr. C. Turner obtained premier honours for twelve bunches of decorative varieties, and Mr. Seale and Messrs. Keynes, Williams, and Co. were second and third. Mr. Glasscock was first for six bunches of decorative varieties, and Mr. West and Mr. J. Gurney Fowler, Woodford, were second and third respectively. Large collections of dahlias were shown, not for competition, by Messrs. H. Cannell and Sons and Mr. T. S. Ware, Tottenham, and the award of the silver medal was made in each case; Mr. Phippen also had a collection of dahlias, and was awarded a bronze medal.

MISCELLANEOUS CONTRIBUTIONS included, in addition to those already referred to, a large collection of hardy flowers from Messrs. Paul and Son, who had also a collection of cut specimens of ornamental trees and shrubs, for which they were awarded a silver medal. Mr. Such staged a collection of annual and other flowers, and Messrs. Peed and Son and other exhibitors contributed collections of fruit, all of which were suitably recognized.

A meeting of the Floral Committee was held on Wednesday, when a large number of novelties were submitted for consideration. The following certificates were granted: To Mr. West, for *Mrs. Stanley* dahlia, a decorative variety, with medium-sized purple-mauve flowers. To Mr. T. S. Ware, for dahlias *Daisy*, a beautiful pompon, the flowers of medium size, bright yellow with amber centre; *Henry Freeman*, a useful decorative variety, the blooms pure white, full, and of large size; *Robert Maher*, a valuable cactus variety the flowers large with broad, twisted florets, the colour golden yellow; *Delicata*, a beautiful cactus variety, the blooms of medium size, and a bright salmon-pink hue; and *Maud* and *Crimson Beauty*, previously described. To Mr. R. Owen, for ivy-bound pelargoniums *Edith Owen*, a beautiful double variety, the flowers large and borne in good trusses, the colour magenta-crimson; *Castle Hill Beauty*, a valuable variety, the flowers and trusses large and of good form, the colour sort orange-red; for chrysanthemums *Madame Leon Collin*, a distinct early-flowering Japanese variety, the blooms of medium size with long narrow florets, the colour rich golden-yellow, shaded orange in the centre; *Miss Lily Stevens*, an exquisitely beautiful pompon, the flowers pure white, and of medium size. To Mr. R. Dean, for his excellent strains of *African Marigolds*, which are remarkable for the large size and fine form of the flowers. To Messrs. H. Cannell and Sons, for dahlias *Cannell's Favourite*, *Maid of Kent*, and *Pride of Kent*, three extremely beautiful decorative varieties, all of which have been previously described. To Mr. C. Turner, for dahlias *Midget*, a beautiful pompon recently described; *Othello*, a good pompon, the blooms of fine form, the colour marone-crimson; and *Lorina*, a fine show variety already described. To Mr. Glasscock, for dahlia *Black Prince*, a handsome dark decorative variety. To Messrs. Keynes, Williams, and Co., for dahlias *Phœbe* and *Comedian*, both of which have been described. To Mr. G. Humphries, for dahlias *Catherine Procter*, a showy cactus variety, the flowers brilliant scarlet, and produced well above the foliage; and *Mrs. G. Humphries*, a fine show variety, the blooms large with good outline and high centre, the colour blush shaded rose. To Messrs. J. Burrell and Co., for *Gladiolus Vicar of Westwell*, a beautiful variety of high quality; the flowers are large, and of superb form; the spike is of great length and well arranged; the colour soft orange-red, with light blotch on the lower segment.

On Monday evening a meeting of the General Committee was held at Anderton's Hotel, R. Ballantine, Esq., in the chair. The principal business was the consideration of the report of the Centenary Committee dealing with the final arrangements for the exhibition and festival in November next.

As now arranged the exhibition will be opened on November 11, at 1 p.m., with becoming ceremony. On the first and third days the conference will be held in the library of the Royal Aquarium. The banquet will be held in Stephen's Hall on the third day, at 6 p.m., Lord Brooke, M.P., has promised to preside, and ladies will be invited. On the closing day there will be a conversational meeting in Stephen's Hall, at the close of which the prizes will be distributed.

Four societies were affiliated, making a total of seventy-two societies now in affiliation, and twenty-six fellows and members were elected making a total of seven hundred and twelve on the books.

FLOWERS, FRUIT, AND JAM AT SWANLEY.

IT has been necessary to have a rather comprehensive title for this article, as I propose placing on record the impressions of a visit to the establishments of three firms who carry on their business in the "Garden of England," of which, not inaptly, Swanley may be regarded as the centre. These notes may well be commenced with some reference to the

HOME OF FLOWERS,

as the nursery of Messrs. H. Cannell and Sons' at Swanley is popularly designated. Your readers have had the characteristic features of this establishment brought before them on more than one occasion, and many of them have, I have no doubt, accepted the invitation to "come and see." Therefore I shall not do more by way of introduction than say that no better time could be selected for a visit to the nursery than the middle of August, when so many flowering plants are in perfection and afford a series of surprises to the visitor. Imagine, if you can, ten houses, each one hundred feet in length, devoted to the culture of begonias, and then endeavour to realize the effect produced by some hundred thousand plants arranged in the quarters out of doors. Words quite fail to convey the concentrated beauty, and almost endless variety, of such a collection of these highly decorative plants. An article on these alone might well be written, but as this is impossible, I proceed to note the names of a few only of the most striking varieties met with. Amongst the new doubles may be mentioned Beauty of Belgrove, beautiful silvery pink, edges of petals shaded lighter, flowers large and very fine. In colour and form of flower it may not inaptly be compared to the well-known La France rose; Mrs. Cornwallis West, yellow-shaped apricot, creamy centre, edged pink, a medium-sized charming flower; Enchantress, soft pink, very free and showy; Sir John Pender, fine reddish salmon, medium-sized, well-formed flowers; Octavie, a great acquisition, very beautiful with its charming rose bud-like white flowers. There were some especially good things also among the singles, particularly Mrs. Bellew and Mr. Murphy. Several houses of zonal and other classes of pelargoniums attracted attention by the brilliancy and almost endless variety of their flowers, and the high state of cultivation observable throughout the collections. Indeed, at whatever period of the year a visit be paid to Swanley the pelargoniums are always an attractive feature. I was much struck with a hundred-feet house filled with splendidly grown verbenas, a class of plants not cultivated to the extent it deserves. How the older school of florists would have revelled amongst these flowers! It is not generally known how well adapted are many varieties of verbena for the summer and autumn decoration of the greenhouse and conservatory. Many of the varieties, too, possess a peculiarly agreeable fragrance. In fine form we saw the beautiful Uranie noted recently in these columns when describing the plants certificated by R. H. S. at a meeting on August 12th. Amongst other good flowers may be mentioned Iliade, velvety plum, round, pure white eye; Turquoise, splendid, fine large trusses of a light violet shade, large white eye, the best in this colour; Paragon, claret, shaded marone; King of Verbenas, deep rosy pink, shaded lilac, round cream eye, fine trusses. A great batch of Cyclamen persicum just coming into flower attracted deserved attention by reason of the fine strain and the earliness of its flowering.

Graceful fuchsias—those early floral loves of the senior partner of the firm—have a house devoted to their culture, and some fine varieties were observed. The highly fragrant bouvardias are grown in quantity, and comprise the best varieties of these charming flowers. Another sweet-scented class, the heliotropes, are worth mentioning; a fine thing is Swanley Giant. Gloxinias, which are largely grown here, were just getting over, but those still in bloom told of flowers remarkable for their superb form and effective colouring. Primulas by their present appearance promise good results later on. Amongst fine foliage plants a good selection of all the best ferns and smaller palms is grown. Foliaged begonias, too, were admirably represented. What noble, beautifully marked foliage some of the varieties possess! In the outdoor department a fine collection of all the best dahlias of the various sections is

grown, many being in bloom, and in course of preparation for the coming campaigns. An attractive feature was produced by that popular section formed by the cactus and decorative varieties. It may be useful to mention a few of the best new kinds:—Miss Jekyll, of a peculiar warm terra-cotta colour, very distinct; Honoria, pale amber, distinct; Panthea, reddish-salmon, long, graceful petals, of the type of Juarezii, much admired; Beauty of Brentwood, of a distinct purple shade of colour, good; Lilian Abery, pure white, with a yellow border to each petal, dwarf habit, a decided and pleasing novelty. Those adaptable town flowers, the herbaceous phloxes, were noted in beautiful variety and condition. Montbretia crocosmæflora deserves a passing recognition as an exceedingly free and hardy subject, bearing warm orange-red flowers; a plant decidedly deserving of much wider cultivation. We have already alluded to the outdoor begonias in flower, a great and striking feature, showing the adaptability of the plants to this system of culture. What is not often seen in nurseries now I noted here, this being a very good representative collection of bedding pelargoniums, comprising all the sections grown for the beauty of their foliage, the various blocks constituting an imposing feature. Chrysanthemums are grown in surprising numbers and excellent condition, as also are carnations, auriculas, &c.

So far I have alluded—in a most inadequate manner it must be confessed—to Messrs. Cannell's nursery at Swanley. Turn we now for a brief survey of the firm's doings at Eynsford, a delightful spot to which we were driven through some thoroughly characteristically beautiful English country lanes. What large tracts of land we passed on our way laid down to strawberry culture, constituting a most important feature in this eminently fruit-growing district! Mr. Cannell, finding his Swanley establishment far too small for his business purposes, took a few years ago a farm at Eynsford of 300 acres in extent. The land lies on the slopes of a circular basin shut in by hills on all sides, presenting a very picturesque effect. At the time of our visit hardy flowering annuals were seen in all their beauty and splendour. To fully describe the details of this beautiful picture would be an impossible task within the limits of space at our disposal. Suffice it to say that all the best things amongst these deservedly popular plants were admirably represented. Vegetables, too, are by no means neglected. Some excellent "stocks" of everything worth growing were noted. It was interesting and instructive to observe the extreme care taken in the saving of the seeds, so that all should be true to name—a great desideratum in the prosecution of any large and successful business.

MR. PHILIP LADD'S NURSERY, SWANLEY.

Some very brief notes of a run through this famous market nursery deserve record. A house 684 feet in length, occupied by Gros Colmar grape, and bearing a crop estimated at five tons, was a veritable surprise. It was like looking down an almost endless avenue—canopied with glorious clusters of fruit—and such fruit! Equally deserving of mention are the houses filled with Black Hamburgh and Muscat of Alexandria, each two hundred feet in length and containing a ton of fruit each. Six houses devoted to roses three and five hunded feet in length respectively, arrested attention. Tomato Trophy is the favourite sort grown—fruit being cut continuously for the past three months. Then we saw two hundred feet houses devoted to Adiantums, Dracænas, Palms, Stephanotis, &c. A grand lot of Erica hyemalis out-doors was noted, sufficient one would think to stock the country. Forty thousand strawberries in pots are grown, Noble being a great favourite, Of course geraniums and other market plants are grown largely. We went away profoundly impressed with this striking exhibition of horticultural enterprise.

MESSRS. WOOD'S JAM FACTORY, SWANLEY.

It seems quite appropriate in this place to refer to the question of jam, constituting, as it does, an important feature and industry with regard to the disposal of certain of our fruit crops. Here are a few statistics in connection with the doings of this particular firm:—About forty-five tons of jam are made daily; in stock at the time of our visit were two thousand barrels of jam, each barrel representing a money value of £10. One firm alone in London takes three hundred 10lb. tins of fruit twice a week; thirty tons of sugar are used daily for jams and sweets, the latter is also an extensive business here; one ton, fourteen cwts. of coal are consumed daily; one hundred and thirty hands are employed. I am indebted to Mr. W. Rogers—Messrs. Wood's courteous manager—for this interesting information. J. B.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

STOVE PLANTS in bloom comprise Achimenes; Æchmea fulgens, Anthurium Scherzerianum, Allamanda Hendersonii, begonias, Clerodendron fallax, Gloriosa Plantii, G. superba, Hibiscus sinensis, Ipomea Leari, Passiflora Decaisneana, Torenia Fourneri, Vinca rosea, V. alba oculata.

THE HOUSE.

WHERE necessary the thorough cleaning out of closets and store rooms should be no longer delayed, for mildew will now spread at a rapid rate wherever the conditions are favourable to its development. Old stores of preserves should be separated from the new ones, to be used up first. Wooden shelves should be brushed over and washed over if needful; but washing causes damp, and is not always desirable. But cleanliness and dryness are so needful that where these are wanting the stores of all kinds must run to waste. Stores devoted to the various descriptions of roots may have with advantage a wash of hot lime. As the supplies of apples and pears are very scarce this season, these fruits must be taken care of, and where they are stored in earthenware pans, these receptacles must be ready for them as they are gathered from the trees.

CONSERVATORY AND GREENHOUSE.

CINERARIAS, PRIMULAS, CALCEOLARIAS of the herbaceous class, and other soft-wooded plants now growing freely, should be carefully looked over to see that they are in a fit state for housing as required.

FUCHSIAS may be kept in bloom late by the aid of weak liquid manure and a close warm house. The shading may be removed and the pots have a sprinkling of some good fertilizer as a top-dressing.

HARD-WOODED PLANTS must be kept well aired and in full sunshine, to ripen the wood and give them full strength to pass the winter in an ordinary greenhouse temperature. Heaths, Epacrises, and Pimeleas to have free ventilation.

STOVE AND ORCHID HOUSE.

ORCHIDS generally should have less moisture as the days shorten. The majority of growers keep them too damp and too warm all winter, but they should now be prepared to pass the winter at as low a temperature as will be safe, and in as dormant a state as possible. Fires will be useful now on dull days to dry the house, and allow of the admission of air. Young plants of Aerides, Dendrobium, Vanda, Cattleya, and Saccolabium to be kept growing steadily in the warmest compartment.

STOVE PLANTS that have flowered should, as far as the general arrangements will permit, be placed in the most light and airy position the structure affords to promote the maturation of the wood.

FORCING AND FRUIT HOUSES.

FRUIT TREES in pots to have small supplies of water and full exposure to the sun, near a wall or fence facing south, where the heat will be reflected on them, and they will ripen their wood well. Any trees that are in a green and sappy state may be laid on their sides, and be sprinkled over their tops every morning. This will check growth without distressing them, and help to coax them into rest. All fruit trees that were forced, especially cherries, peaches, and nectarines, should now be quite at rest and leafless. To make an end of their season, shake the remaining leaves off, and give them their winter pruning, and repot any that require it. Those not repotted to have the top soil removed, and its place supplied with fresh turfy soil and rotten dung heaped all round the stem of the tree.

PINES.—Repot the young stock struck during the summer, and plunge in a brisk heat; suckers on old stools to be taken off and potted singly, and plunged at once; they will root immediately. Give as much air as possible during fine weather.

FLOWER GARDEN AND PLEASURE GROUNDS.

BEDDING PLANTS struck in the open ground must be potted forthwith; in all cases a poor sandy soil and plenty of drainage must be used, especially if the plants are to be kept in pits or other places where they will be exposed to a low temperature during hard weather.

BULBS of all kinds which it is inconvenient to plant early, because of the ground being occupied, may be started in a mixture of leaf-mould and old dung, or in cocoa-nut waste, so as to be lifted in clumps with good roots to the positions in which they are to flower as soon as those positions are ready for them. When an early bloom of snowdrops and crocuses is required, and the ground cannot be made ready for the bulbs, this plan answers the purpose to perfection.

FLOWERING SHRUBS to be forced for the conservatory should now be potted up and plunged ready to be taken in to force. Plants that have made good growth in the open ground are best for this work. Put them into as small pots as possible without doing any serious harm to their roots, and plunge in a bed of cocoa-nut waste, in a sheltered position, till required to go to the forcing house.

PLANTING may be proceeded with from this time to the end of November, beginning with evergreens. Whenever it is possible to prepare the ground some time before planting it should be done; and where orchards and shrubberries are to be planted in November the soil should now be trenched up and made ready, even to manuring, if required. It is much against the prosperity of the trees to be planted in soil only recently turned over, and before there has been time for the atmosphere and sunshine to act upon it.

FRUIT GARDEN AND ORCHARD.

APPLES to be gathered during dry fine weather. Those already in store must now be looked over, to remove all that show the first symptoms of decay.

PEARS require same attention as apples.

STRAWBERRY BEDS made this season are looking well. But, as there are plenty of weeds the hoe must be used and the weeds must be raked off, and the ground between the plants must then be well trodden.

KITCHEN GARDEN AND FRAME GROUND.

CAPSICUMS and TOMATOS may be gathered before they are ripe if needful, and ripened by laying them on a shelf in a warm greenhouse.

LETTUCES required for use in winter to be planted out, a portion in frames, and another portion on a warm sloping border. The cabbage kinds will bear frost with the least injury. Some forward plants of Cos put out now on a rich warm border will come into use late in the autumn.

ONIONS to be taken up when the weather is dry, and well ripened for storing. Those from autumn sowing will now want thinning, and the thinnings may be planted on a rich warm border to make large bulbs next season, or for use during winter.

PARSLEY sown in July to be thinned, and the thinnings planted if needful. Remove all the plants that show single leaves, and in transplanting save only those that show handsomely-curled leaves.

VILLA FARM.

OWING to the rambling disposition of Guinea fowls, they are not adapted for keeping in places where it is not possible to afford the poultry a wide range, but in many instances in country districts the rearing of a few birds would be attended with considerable interest, and they would come in very useful during the winter season, more especially as a substitute for pheasants, to which they bear some resemblance in flavour. When they have an extensive feeding ground they will pick up for themselves nearly all the food they require for their maintenance; but they ought to be fed regularly in the evening, or they will seldom roost at home, and they may stray away so far that they will not return. They are very tender when young, and as the winds of March and the sudden changes of weather incidental to April are most hurtful to the chickens, the usual practice is to commence the work of rearing them towards the end of April or early in May. As a matter of course, the freshest eggs are selected, and as the Guinea hens seldom show any disposition to assume maternal duties when under confinement they are usually placed under a common hen, Game or Bantams being the best. The hens lay a large number of eggs in the course of the season, and as they usually select a rather out-of-the-way corner for their nests, a close watch must be kept upon them until the nests are discovered. The eggs ought to be removed with some degree of caution, and as far as practicable when the birds are not too close at hand, because of the risk of their deserting them, and forming new nests elsewhere. It is also needful to leave two or three eggs in the nests. Guinea fowls do not require, strictly speaking, any fattening whatever, but when a beginning is made to kill them off they should receive rather more liberal supplies of corn to ensure their being plump. As the young birds only are really suitable for the table, all that are not required for breeding purposes should be killed off before the end of the spring, and as they mate in pairs an equal number of both sexes must be kept to ensure the fertility of the eggs.

LONG-TAILED ANGRÆCUM.

Angræcum caudatum.

Two singular orchids are now flowering in the India house, and obtain less attention than they deserve by reason of their appearance at a season when orchids are not usually exhibited. They are *Angræcum caudatum*, and its geographical companion *A. Kotschyi*, both from tropical Africa, both pale coloured, not greatly differing in form, and both flowering in the autumn, when orchids are in some degree "out of fashion." *A. Ellisi*, from Madagascar, is also one of the long-tailed kinds, of singular beauty, delicately fragrant, and equally worthy of attention. Though far removed from the magnificence of A. eburneum and A. sesquipedale, these are less removed biologically, and they exhibit the distinguishing peculiarity of a pro longed spur, which is the posterior termination of the labellum, a feature suggestive of many curious considerations touching the history of these orchids. That the lower end of the spur or nectary contains free nectar is well established, and the pretty problem arises, how is it obtained, and by whom? Mr. Darwin's speculations on the subject are well known, and his remark on the existence of a sphynx-moth in South Brazil with a proboscis ten or eleven inches long, that when not in use is coiled up in a spiral of twenty windings, probably affords a clue to the solution of the problem, which will not be finally solved until we know much more than at present of the insects of Madagascar. The minor orchids now before us, with nectaries of nine inches or less, do not present such a formidable question as the nectary of the giant of the family, which actually attains in some instances a length of eighteen inches, the average length being eleven or twelve.



LONG-TAILED ANGRÆCUM, *Angræcum caudatum* (Sepals and petals greenish, lip pure white, spur pale brown or olive).

The cultivation of angræcums is in all essential matters the same as aerides, the warmth of the India house being requisite for all except the little A. falcatum, which being a native of Japan requires a lower temperature. They are all of easy culture, and properly associate with vandas and aerides. The only angræcums that are generally known are A. eburneum and A. sesquipedale; to these may be added the less showy but pleasing and manageable species to which this notice refers.

A Second Flowering of Hardy Trees and Shrubs is not an uncommon event, and is one wholly dependent on the season. Should the weather prove favourable in the next few weeks, many spring flowering subjects will present a crop of flowers. We have at this time a lively display of colour on Kalmia angustifolia, and a few racemes are opening on Wistaria sinensis.

NOTES ON ROSES.

The hybrid perpetual roses are, I am afraid, making too much growth. As I write in the closing days of August, there is but a poor prospect of a good autumn bloom. The incessant rainfall and sunless weather encourage a more rapid growth than is desirable at this time of year. We do not, however, know what may be in store for us, should the months of September and October be dry and warm. In that case the condition of our roses may be altogether changed. We may hope to see the soft, sappy growth they are now making bristling with flowers at the points of every strong shoot. A word of warning seems necessary just now, as inquiries daily reach us, asking if the long, thick shoots the plants are making should not be shortened back? To all such inquiries my answer has been generally NO, but in the case of standard some shortening may be desirable. If these have several long shoots there is danger of the head getting top heavy, and liable to be blown off by the wind. It is, therefore, desirable to shorten back to half their length some of the longest growth, but no more should be taken off than is necessary to save the life of the tree. *None of the growth on dwarf plants should be cut away for the next three weeks.* At the end of that time it will be seen which of the shoots intend to flower, and which not. The flowerless branches may then be reduced in length, but anything like pruning must be avoided, for, as I have already said, there is time enough. In some sense everything is doubtful under the present climatic conditions, for the growth lately made is far from favourable to the production of flower buds.

Except that the rain somewhat spoils their flowers, the tea-scented roses are behaving splendidly. They have made good growth, and are flowering grandly. It is surprising what a number of flowers an established plant will produce in one season; they are hardly without flowers from June to October. But for plants in the open air June and August are the two principal months, when they produce the most blooms.

I have lately been watching the opening flowers of such sorts as Grace Darling, Viscountess Folkestone, Madame Charles, and Francisca Kruger. I cannot imagine anything more beautiful in the way of roses than the delicate and chaste colouring of these remarkable flowers; they are a feast in themselves. Passing on from these to such varieties as Madame Charles, one becomes fascinated with its bronzy foliage and long pointed buds, that expand into large globular flowers of a bright apricot colour. Then, as if to show the variety of form and colour inherent in this class of roses, the lovely Narcisse arrests attention through its delicately-tinted, creamy white flowers, which in their early stage are of the purest white. To say that the

tea-scented roses are rich both in colour and form, is to say something; they have more than that, they have a charm about them that affects humanity, for we do not want the trained taste for their appreciation: they command the admiration of all. It is very unfortunate that they are not as hardy as the H. P.'s, but what if they do happen to be killed sometimes! It does not take a large amount of money or of labour to replace them. I am sure that an admirer of roses will get the value out of them in one year by the pleasure they afford. It should be remembered that the roses of to-day are not like those we grew thirty years ago, for, besides those I have named, there are other splendid varieties that will be found, in such as Luciole, The Bride, Madame Eugenie Verdier, Madame de Watteville, Madame Cusin, Perle de Lyon, and Innocente Pirola. These far surpass the favourites of thirty years ago; they represent a new creation, and they prove beyond all further question that the progress of floriculture is a fact as well as an idea.

J. C. CLARKE.

FRUIT PRODUCTION IN IRELAND.

[By GEORGE GORDON. Address at the Conference of British Fruit Growers' Association, Crystal Palace, September 5.]

EARLY in the year it was decided by the committee of the British Fruit Growers' Association to prepare a report on the present condition, and the possibilities of fruit culture in the United Kingdom, it being believed that a report, at once comprehensive and trustworthy, would have great practical value In considering the form the report should take, it was felt that as the climatic and economic conditions in Ireland differ widely from those which obtain in other parts of the United Kingdom, it would be necessary to devote special attention to that country. It was thought that whilst our local secretaries in Ireland would be able to render valuable assistance, it would be an immense advantage were some members of the executive to visit Ireland for inquiring into various matters of special importance, that the view presented of the condition and the possibilities of the fruit growing industry in that country might be as clear and exact as it is possible to make it. Eventually Mr. Castle, the honorary secretary, and myself, although well knowing the severe tax it would impose upon our time and strength, undertook the task, and I have now to inform you that it has been accomplished. I have also to give you a summary of our tour and an indication of the impressions produced upon us in the course of the journey. This I shall do as briefly as possible, leaving details until the publication of the full report.

As many of you are aware, we devoted the greater part of the month of August to the work in hand, and I would mention, as a matter of some importance, that our inquiries extended from the counties of Antrim and Derry in the north to Cork, Kerry, and Waterford, which form the southern seaboard. In this tour, which involved travelling nearly nine hundred miles by rail and car, we saw much to deplore in the present condition of fruit culture, and not a little that filled us with hopefulness as to the possibilities of the industry. We met also with much kindness and great interest in the object we had in view, and an evident desire on the part of those with whom we came in contact to render all the assistance possible. Commencing our inquiries in Ulster, we soon found ourselves on farms that would bear a favourable comparison with the best holdings in England. We found also in this province that orchard planting had not been altogether neglected in the past, and that on many of the farms there were considerable breadths of apple trees. On examining the orchards in Antrim and Armagh, we found that whilst the utmost care and skill had been brought to bear upon the wheat, oats, flax, and other staple crops, it had been thought sufficient to simply plant the trees and leave the rest to nature. When I tell you that the greater part of these orchards were planted from seventy to eighty years ago, and have since been practically left to themselves, you will readily understand that they give a very poor return. As a matter of fact, the majority consist of old worn-out trees, bearing plentiful crops of lichen and moss, with but little fruit, and that of the most inferior description. Not only are thousands of trees utterly exhausted, but a considerable proportion represent local varieties of the most inferior description, and therefore quite unfit for sending to markets in which the finer kinds make their appearance. We were repeatedly told by those who were old enough to remember the orchards when the trees were in a vigorous condition, that they had now ceased to bear satisfactorily because of a change in the climatic conditions, whereas the cause, as you so well know, is the exhaustion of the trees in consequence of old age and an impoverished condition of the soil. We saw but few signs of these old orchards being replaced by new ones. Here and there a few trees had been planted during the past few years; but instead of their having fresh ground, they had almost invariably been planted in the positions occupied by trees that had died out. As might have been expected, they had become a prey to mildew, lichens, and mosses, and presented a miserable, starved appearance. Had we taken a superficial view of the case as presented to us in Antrim and Armagh, where apple orchards occupy much space in proportion to their area, we should perhaps have regarded the production of first-class fruit in these counties as an impossibility. Knowing from practical experience and wide observation that the condition of the greater proportion of the orchards was due to old age and want of attention, we sought those which had a reputation in the several districts for the excellence of their fruit. We turned our attention also to gardens near at hand that were under the charge of men who had received a training in fruit culture. In the orchards that were in a fruitful condition we found the trees to be much below the average in age, and to have received some attention in the way of pruning and manuring. The gardens, however, afforded the best indications of the possibilities of fruit culture, not only in Ulster, but in the whole of Ireland.

Proceeding southwards we passed through a district on the boundaries of the counties of Meath and Dublin in which fruit growing is carried out on much the same lines as in the market gardens in the neighbourhood of London. In Ulster the whole of the orchards were in grass, but here the apple and other standard fruit trees were planted at wide distances apart, and the intervening spaces filled with gooseberries, currants, and raspberries. The whole of the standard trees were in a healthy state, showing that they received proper attention, but the crop was comparatively light, and as we were assured by those who were well acquainted with them much below the average. The various bush fruits presented the most satisfactory appearance, and had as usual borne heavy crops. It may here be stated that throughout the whole of Ireland, excepting of course in the mountainous districts, the whole of the bush fruits grow vigorously and bear heavily, the fruit being of the finest possible quality. No better crops of currants and gooseberries could possibly be desired than those we met with both in the north and south. For many years gooseberries were rather largely imported, but they are now being planted somewhat extensively in one or two districts in Ulster, and they appear to be yielding satisfactory returns. The district between Drogheda and Gormanstown is not only remarkable as representing the most advanced stage of commercial fruit culture in Ireland, but it is distinguished by the general prosperity that prevails on all sides. In no other part of Ireland did we see the labouring classes so well dressed or having such comfortable well-kept houses as in the neighbourhood of Gormanstown, and it is fair to assume that the air of prosperity is chiefly due to the profitable character of fruit culture as there carried out.

South of Dublin the orchards on farms are comparatively few in number, and, as in the case of those in the north, they are chiefly furnished with old trees, more remarkable for the picturesque appearance of their lichen-laden branches than for their fruitfulness. But from the appearance of the orchards attached to the homesteads of some of the landed proprietors, and the condition of the trees in large gardens, it is evident that apples of the finest quality might be profitably grown in many districts in the several counties between Dublin and Cork. In the Golden Vale there is ample evidence of the practicability of growing apples of the finest quality, and here we met with an instance of the way in which suitable land might be increased by the judicious planting of fruit trees. On a large estate on which the rent of much of the land does not exceed ten shillings per acre, there are several orchards that are let at a rent of about £3 per acre, which was not regarded by the tenants as in any way excessive. Here we found in full force the barbarous practice which obtains throughout Ireland of shaking the apples from the tree, with the result that the greater proportion are bruised and rendered worthless for keeping beyond a few days. To gather the fruit by hand is considered a waste of time. We inquired of a young lady who was busily engaged in shaking down the fruit, how she secured the apples that could not be shaken off, and she at once replied, "We knock them down with a long pole." In the valley of the Suir between Limerick Junction and Waterford, much of the soil and many of the situations are suitable for apples. At one time cider of excellent quality was manufactured from apples produced in this district, and the trees appear to have been allowed to die out. Whether the manufacture of cider was profitable or not we could not ascertain, but the fact that there were large breadths of free-bearing apple trees, is a proof that the district is on the whole well suited to their cultivation.

In speaking of the possibilities of fruit culture in Ireland, we are anxious to be as guarded as possible in any expression of opinion. We should, however, fail in our duty were we not to state in the most emphatic manner that there is room, not only for improvement, but for an enormous development of the industry. There is no reason, apart from the apathy of the people, why Ireland should not only be independent of America and other countries for its supplies of apples, but be in a position to export large quantities of that important fruit. We know that it receives immense quantities of American apples during the winter and spring months, and in August we saw considerable quantities of Tasmanian apples in the shops. There is evidently a good demand for apples, and it is assuredly not a satisfactory state of things for the Irish people to import from countries some thousands of miles distant fruit that can be produced at home. The climate is admirably adapted to the growth of apples, the heavy rainfall and the atmospheric humidity being favourable to the production of fruit large in size and clear in the skin. Cultivators not well acquainted with the conditions that obtain regard the atmospheric humidity as fatal to success. They, in fact, consider the ripening of the wood and the formation of the flower buds an impossibility with an annual rainfall of forty inches. As the result of our observations and inquiries, I have to tell you that there is but little difficulty as to the maturation of the wood. On the shores of Lough Neagh, with an annual rainfall of about thirty-five inches, we saw in gardens and orchards under the charge of experienced cultivators heavy crops of all our best kinds of apples. The fruit was not only plentiful, but of the largest size and finest quality. I was particularly struck with the crop of Stirling Castle which was then being gathered for market, the price realized in Belfast being 16s. per cwt. The finest of our dessert and kitchen apples were also met with in the most productive condition some ten miles south of Cork, where the annual rainfall averages 45 inches. In a fruit garden in the last named county pears were bearing not less satisfactorily in the open quarters than were the apples, the fruit of many of the varieties being equal to the finest samples received from the Channel Islands. Pears, plums, and cherries have so small a space in orchards, and are so generally grown against walls in gardens, that the extent to which they can be successfully cultivated in the open cannot at present be satisfactorily determined. It is a question well worthy of the attention of those who have opportunities for experimental culture. The probability is that they might in many districts be grown with considerable success. Inquiring of one cultivator whether he had many damson trees, he said no; he had only two, and these usually produced about three hundredweight of fruit each. The excessive moisture of the atmosphere is highly favourable to the growth of both mosses and lichens, more particularly the latter. They quickly attach themselves to the fruit trees, and when allowed to remain undisturbed they soon cover the whole of the branches and impose a check upon the growth, but evidently not so severe as might be imagined. To keep the trees free from both lichens and mosses is by no means difficult. We had a striking proof of this in a garden near one of the great cities belonging to a merchant, who devotes much attention to fruit culture. The garden contains comparatively large collections of apples and pears. The trees were all bearing heavy crops, and the fruit was so finely developed, that it was not surprising to find the proprietor regarding fruit of Warner's King, weighing 1 lb. each, as by no means exceptional. The point, however, that I wish to bring out is the fact that there were no traces of either moss or lichen on the trees, and the immunity from these plagues was due to the trees being annually painted with a mixture of which clay, lime, and paraffin form parts. The cost is practically nothing, and the trees were equal to any that could be found in Kent.

To effect a general improvement in the condition of fruit culture in Ireland will be slow work, but with well directed efforts I have no doubt as to the ultimate success. We must first endeavour to create an interest amongst the owners of land whether they be private individuals or corporate bodies such as the great City companies. Probably one of the best means for doing this will be to show, as in our report we shall be able to do, that many of the districts are well adapted to fruit culture, and that by judicious planting and management the value of the land may be greatly enhanced. What is especially wanted is the planting of experimental orchards on large estates in various parts of the kingdom. These are required for the purpose of testing the relative merits of varieties for the respective districts, and training young men in the management of orchards and the marketing of the fruit.

The cost of planting from ten to twenty acres with fruit trees would not be great, and whilst giving a good return annually the plantation would form a practical school of immense value. The conditions under which farms are now held are favourable to the planting of fruit trees, but in the present state of their knowledge it is hopeless to expect tenant farmers to plant largely. Nor perhaps is it desirable they should do so until they have had opportunities for acquiring sufficient knowledge to engage in the work with the full assurance of success. Knowing how fruit culture may be made to increase the wealth of many districts, we are naturally anxious that there should be as few mistakes as possible. It would also be an enormous advantage if, in conjunction with these experimental plantations, the bottling and preserving of the soft fruits were carried on exactly as in the case of Lord Sudeley's fruit farm at Toddington, as it is essential that the utilization as well as the production of fruit should receive a full share of attention. In the meantime much might be done to show that existing orchards may be greatly increased in value by judicious thinning of the trees, by regrafting worthless kinds still vigorous with the finest sorts, by manuring trees that are in an exhausted condition, and by keeping the wood free from lichen and moss by application of limewash or other suitable dressing.

It is not only desirable that there should be an extension and improvement in the culture of fruit for market, but that fruit trees should be planted more extensively on small farms and in cottage gardens for home supply. At the present time this phase of fruit culture receives but scant attention. Mr. Bullock Hall, one of our vice-presidents, has for several years past been doing much to promote the planting of fruit trees in Ireland, and has generously distributed large numbers amongst various classes of the community in the south. He is still engaged in the good work with such modification as experience has suggested, and it was gratifying to hear how greatly the majority of those who had received trees appreciated them. In a recent letter he complained that but little interest had been taken in the matter either by the parish priests or the Protestant clergy, and I refer to that point for the purpose of saying that with their influence they might do much to promote the profitable culture of fruit in gardens and small holdings, and thus render valuable service in the cause of the health and welfare of a large body of the community.

DAFFODILS FOR FORCING.

By W. Bradbury.

During the past few years my employers have shown so great a partiality for daffodils that I have had both to plant them extensively in the flower-garden and to grow them largely under glass for the decoration of the conservatory and the supply of cut flowers early in the year. The polyanthus narcissi so long regarded with much favour, now receive but scant attention, and their flowers, when cut, are hardly tolerated in the drawing-room. This change in the taste, so far as it affects the narcissi, of the several members of the family, has necessitated some alteration in my practice, and this alteration, whilst it was being made, occasioned me considerable anxiety. The whole of the polyanthus varieties, although differing materially in the colour and the quality of the flowers, are all equally adapted for pot culture. Consequently, in making a selection from the varieties available, the colours and the size and form of the flowers have alone to be taken into consideration. The daffodils, on the other hand, show a marked difference in the facility with which they can be flowered under the influence of artificial heat. Therefore, with but little information at command on this phase of their culture, it is not surprising that at first the results in some instances were not satisfactory. They are also somewhat peculiar in their requirements when grown in pots, but now these are understood, and the relative merits of the varieties determined by actual experiment, we have no more difficulty in having them in the finest possible condition than was experienced in the case of the polyanthus varieties.

Before we were able to make a selection that was in every way suitable for forcing we had to submit a considerable number of varieties to a careful trial, many of great promise being of but little value. A careful record has been kept of the trials, but I do not purpose troubling the readers of the Magazine with the details. Suffice for our present purpose to state that the trials were limited to the comparatively cheap kinds, as to force the expensive varieties in quantities is out of the question; moreover, some of the cheapest sorts are unsurpassed for pots. The most costly of those grown for the production of flowers under glass is the well-known Horsfieldi, of which we happened to have a large stock as the result of careful culture in the open borders. This is perhaps the best of the bicolors for forcing, and its comparatively high price should not be a barrier to its being generally grown. The flowers are not larger or of finer forms than those of Empress and Bicolor grandis, but it is a few days earlier, a point of considerable importance when it is desired to have flowers as early in the year as possible. Princeps has the merit of extreme cheapness, and produces large, handsome flowers, the segments pale yellow and the trumpet deep golden yellow. In the open it is hardly so vigorous as some of the other two-coloured trumpets, but in pots it grows freely and blooms satisfactorily. In the same section is the Scotch Garland Lily, or Pseudo-narcissus Scoticus, a fine form of the Common Lent Lily, the distinctive characteristics being its comparative earliness and the relatively large size of its flowers. This we force rather largely for the supply of cut flowers, the bulbs being planted in boxes of moderate depth to economise space. It is important to have cultivated roots, which are, it may be added, obtainable at a very cheap rate.

The yellow trumpets include several of great excellence. Spurius has much to recommend it, the flowers being large and bright in colour, but it is not equal to its two fine forms, known respectively as Golden Spur and Henry Irving, both of which have large, rich golden yellow flowers. Yellow King, which also has bright golden flowers, can also be strongly recommended. Obvallaris, although having flowers of smaller size than either of the foregoing, is extremely useful; the flowers are remarkable for their elegance, and they are produced so early when growing in the open that but little forcing is required to ensure their development before the year is far advanced. The white trumpets do not afford a wide range for selection, and for the present purpose Pallidus præcox can alone be recommended. Comparatively dwarf in growth, it produces medium-sized flowers of a pale straw colour, and in mild seasons commences to bloom in the open in February. Its remarkable earliness adds considerably to its value, for in mild seasons but little beyond the protection of a glass covering is necessary to ensure a supply of flowers at the end of January or the beginning of the month following.

The incomparabilis group includes a few varieties that can be readily forced and are extremely beautiful. Amongst them are Cynosure, an attractive variety, the flowers pale straw-colour, with large cup suffused with bright orange; Glow, the flowers light yellow, with medium-sized cup margined with bright scarlet; and Stella, a large and elegant flower, with sulphur perianth and yellow cup. The best of the forms of the Poet's narciss is Ornatus, which, as now so well known, is remarkable for its earliness and the large size and fine form of its flowers. The flowers of the last-named, and of the three forms of incomparabilis are found especially useful for bouquets and other arrangements for personal adornment, and are largely in request. I have on several occasions experimented with the double Poet's narciss in the forcing pit, but without success, my experience being similar to that of the market growers who have endeavoured to produce supplies of its flowers early in the year. I have obtained the best bulbs procurable, and have started them slowly, but they have invariably been blind. This is much to be regretted, for we have no flowers that would form such excellent substitutes for gardenias early in the year as would those of this narciss.

In potting up the bulbs of daffodils it is advisable to proceed on much the same lines as in starting those of the varieties belonging to the polyanthus group. Two or three of the commoner kinds intended for the supply of cut flowers in quantities are grown in boxes large enough to hold about two dozen bulbs each. The others, whether required for the decoration of the conservatory or to cut from, are grown in six or eight inch pots. From three to five bulbs are put in each pot according to its diameter and the size of the bulbs. The rule is to put as many bulbs in the pot as it will hold without their touching its sides or each other. Very few crocks are required to ensure sufficient drainage for these bulbs, and for covering the crocks either partly decayed manure or flaky leaf-mould is used, as they serve the double purpose of preventing the soil mixing with the crocks and affording substantial assistance to the plants when making their growth. The compost used is one consisting of fibrous loam six parts, and well rotted manure, leaf-mould, and coarse sand one part each, and its suitability is proved by the vigour of the growth and the high development of the flowers. In potting process the bulbs are placed low enough for the necks to be just visible above the surface, and the soil is pressed firmly about them. As in the case of other spring-flowering bulbs grown in pots, they are placed in a sheltered position out of doors, and covered to a depth of seven or eight inches with partly decayed leaves. Where leaves cannot be had, cocoanut-fibre refuse or some other light material of a suitable description may be used. The bulbs remain in the plunge bed until they are commencing to grow freely, when they are removed to a pit, where they can remain until draughted to the forcing pit.

At this stage there must be a decided departure from the practice which obtains in forcing other classes of bulbs, or the results will be more or less unsatisfactory. The artificial heat must be employed chiefly at the roots, for if a comparatively high top heat is employed they will become so drawn as to be of but little use in the conservatory. Knowing from experience the importance of bottom heat, we make up a bed of leaves in one of the pits occupied with melons during the summer. The bed is made rather firm, and sufficient leaves are put in the frame to raise the surface of the bed to within about twelve inches of the glass. The pots are plunged rather close together in the bed, and the heat turned on in frosty weather only, when the lights are covered with mats. The frame is ventilated with comparative freedom when the weather is favourable to the admission of air, care being taken to avoid undue exposure. By this simple course of procedure the plants produce short, stout foliage and flower stems sufficiently rigid to bear the flowers well above the leaves. I would add that a tan bed would answer equally as well as one of leaves provided the depth to which the pots are plunged is carefully adjusted to the heat of the bed to avoid their being forced into growth too rapidly. Whilst all the details should have due attention, the directions for storing them in the forcing pit should be closely followed, as it is only by a careful observance of the practice here described that really first-class examples can be obtained.

HERO OF LOCKINGE MELON.

I have seen and tasted during the present season melons of all shapes and colours under this name. They have varied in these two particulars so much that I begin to think the true form has quite died out. Any way, they are nothing like the fruit, either in shape or colour, that I grew from seed received from a reliable source the first year it was sent out. I have long known of the difficulty there is in keeping a true stock of any melon, and from what I have seen during the present year I am satisfied that other people have the same experience. Any way, it is very clear that judges at fruit shows should not allow their judgment to be influenced by the name attached to the melons on which they have to adjudicate. J. C. C.

Vanda Sanderiana made a grand appearance in a plant contributed by T. A. Gledstanes, Esq., of Gunnersbury, to the meeting of Tuesday. What a power it possesses to rivet attention as a princely orchid. Larger specimens are often seen, but not often with such richness and purity of colour as in the present instance.

LILIES IN 1890.

ALTHOUGH the lily garden has throughout the season been many times on the verge of a calamity, the end of the story is satisfactory, the plants have made good growth and flowered well. But in many respects the bloom has differed considerably from that of 1889. Then the early flowering kinds were aided with the sunshine that they love, but this year they were troubled with cloudy skies, cold winds, and uncomfortable rains, that were always sufficient to chill, but not often sufficient to wet the ground, for often the ground has been quite dry at a depth of two or three inches after many days of almost continuous rain. The lily disease that has brought so much mischief appears not to have had any special prevalence this year; perhaps it has been less prevalent than in the past half-dozen years, and this may be attributable, not to any favour of the elements in the present season, but to the perfect ripening of the bulbs last year. Generally speaking, the several kinds flowered a little late, but in this respect the difference has been much less than might have been predicated from a consideration of temperature alone.

Lilium candidum has not attained to the perfection that it had in 1889. It was surprisingly good last year, the purity of the flowers and the persistency of the leaves being conspicuous features of a favourable season. This year the leaves lost colour before the flowers were out, and were quite bronzy long ere the flowering was over. This species pushes its bulbs up to the surface, where they acquire a purple colour, and it is best to allow them to enjoy the light and air they take pains to seek. The practice prevails of planting deep to prevent this, and when at last the bulbs appear, it is customary to cover them. All this is a mistake. Nature does not bring bulbs to the surface without a reason, and it will be found that neither the summer sun or the winter frost is injurious to them. In the cottage garden we often see this lily in far better condition than in the gardens that obtain abundant attention, and beyond all doubt it is the attention that makes the difference. In the cottage garden it is left alone for years, and it flowers sublimely. In the grand garden it is cultivated (!) and often resents the attention bestowed upon it by refusing to show its exquisitely beautiful flowers.

L. Dahuricum is the best of the group of which *L. elegans* may be considered the type. The several varieties are strikingly distinct, *Armeniacum*, *Atrosanguineum*, and *Prince of Orange*, are extra good. For a brilliant show amongst shrubs and in peat beds, these are invaluable from their strong colours, constancy in flowering, and excellent behaviour, for they are thoroughly hardy, thrive in any good soil, and increase at a reasonable rate. *Batemanniæ* is a curiosity of the family, the flowers clear apricot colour without spots; this and *Armeniacum* or *Venustum* flower later than the others.

L. pomponium is so offensive that I have swept it out of the choice list, wherein it should never have had a place. It is vigorous, accommodating, flowers freely and early, and so far is useful. But its odour spreads far and wide, and should it unfortunately be cut for the house it may give much annoyance ere the cause is detected, for people unaccustomed to lilies are not prepared to inhale an unpleasant odour from any of them. The free growing, neat habited *Pyrenaicum* does not offend in this way, and its yellow flowers and vivid green leaves render it a pleasing border lily, though not one of the grandees of the family.



BELL-FLOWERED LILY, *Lilium Canadense* (Flowers orange, spotted with brown).

L. CANADENSE made a good show, the more conspicuous forms being *Flavum*, *Rubrum*, and *Columbianum*. All these should be in large clumps to make a good effect; if strewn about in twos and threes they make weak dots of colour, but stout colonies tell well and compel us to sympathise with our Transatlantic friends who purpose to adopt it as a national flower. It is usually planted in moist peat which answers admirably; with us it is in a deep sand and it thrives satisfactorily, having an annual top dressing of stable dung for the winter rains to operate on for the advantage of the roots.

L. croceum is a splendid cheap lily, quite at home in good garden soil, and needing to be left alone for several years. It will take any amount of manure with advantage, and, when well fed, is stately and splendid, a perfect model of growth and good behaviour. It is one of the best for the borders wherein candidum is allowed to manage its own affairs.

L. colchicum, known also as *Szovitzianum* and *Monadelphum*, is a magnificent lily, rising to five feet in a deep, rich, well-manured loam, but in our sandy soil not making a growth of more than three and a-half to four feet, but flowering in quite a satisfactory manner. The great umbel of noble flowers, with reflected divisions of a rich yellow

colour, will always compel admiration, and as it flowers early it has not many competitors. It produces seed in plenty, and this should be sown in shallow pans as soon as ripe.

L. Krameri, probably a variety of *L. Japonicum*, is at once rare and grand, giving us, with a dignified character, a colour rare amongst lilies, a shade of soft purplish rose. It is exquisitely fragrant, and in every sense a "delicious" lily. In 1890 it flowered finely, with perfectly healthy leaf growth. It has had no special help, but takes its chance with the rest in the sandy soil that suits so many of the lilies.

L. Parryi has become established in a damp, half-shaded spot selected for it, the plant being a native of bogs in Southern California. It has not given satisfaction, for although it flowers and ripens seed, it is often single-flowered, and does not rise above fifteen inches.

L. Martagon would be scarcely worth a note here save that it presents us in its variety *Dalmaticum* with a magnificent head of flowers of a rich satiny blackish purple colour, and again in *Album*, one of the gems of the lily garden, the white "turk's cap" flowers of which demand a daily visit in their season. As for the type, which is the commonest of all lilies and a quite respectable thing in a mass, it will grow anywhere, and the two fine varieties named above are not at all particular. The typical purple Martagon produces a prodigious quantity of seed annually, and if sown in an open border it presents a lot of young plants in the spring following. The white Martagon seeds freely, but the seedlings do not reproduce the parent; they "revert" to the common form.

L. chalcedonicum, the true "*Scarlet Martagon*," is a gorgeous lily and probably the true "lily of the field." It thrives in our sandy soil, flowering freely of a brilliant sealing wax colour, and it enjoys neglect, for to remain untouched for several years is one of the conditions of success with this beauty. The variety *Heldreichi* is earlier, but not better than the type. *L. callosum* is a little gem that makes a good companion for *L. tenuifolium*. At Trentham there was a border on which stood a number of magnificent clumps of L. chalcedonicum, and all that could be said of them was that they were "perfect." In an evil hour some of them were lifted and replanted, and were seen no more. Mr. Blair was in time to prevent any further mischief by prohibiting removal. The fine lot that remain untouched made a magnificent show as usual in the following season, affording reasonable evidence that it was the mere disturbance that destroyed the others. They must be disturbed sometimes no doubt, and it should be soon after flowering.

L. Brownii is in the way of *Japonicum* and one of the finest lilies in the garden; early, massive, exquisitely beautiful in its colouring, though in no sense showy, and a most accommodating plant that requires no cultivation and seems incapable of failure. The rich brown purple lines on the exterior of the ivory trumpet are a conspicuous and beautiful feature. Our sandy soil suits it perfectly.

L. testaceum, also known as *L. excelsum*, did not flower satisfactorily in 1890. All the clumps were poor, but in 1889 they were finer than usual. It is a most accommodating plant; any soil or situation will suit it; neither the smoke of London nor the shade of trees affect it seriously, and we attribute the poor bloom of 1890 to some trivial accident of weather or root moisture that we can afford to dismiss as of small consequence. The clear nankin colour of this beauty is peculiarly acceptable; like the colour of Krameri it is unique.



RED BELL-FLOWERED LILY, *Lilium Canadense rubrum* (Flowers orange-red, with dark spots).

L. pardalinum flowered finely, and while it lasted—which was long enough—we began to think it the finest of its family; but as it declined, and other beauties demanded attention, we put the thought aside and resolved to regard it as of the highest merit for richness of colour. It is a brilliant and majestic thing, making stems of six to eight feet, and thrives perfectly in sandy soil with liberal aid from manure. All the varieties are good, but the style is so sumptuous that we seem not to need them except for mere variety.

L. superbum follows closely on pardalinum, and is at once stately, liberal, and brilliant. In the panel garden next the palm house at Kew in the past season these two moisture loving lilies made a gorgeous display, and they had no more attention than such as is implied by liberal feeding, and there was not a diseased plant amongst them.

L. tigrinum is so common that to mention it may seem superfluous, but as we cannot do without it there shall not lack to it the honour due to serviceable worth. It is now in full colour, and the variety *splendens* deserves its name and has the advantage of being later than the type, thus prolonging the display. Any soil will suit this

brave lily, but sandy loam is no doubt the staple that it loves. There can be no objection to the varieties *Fortunei*, *Flore-pleno*, and *Erectum*, but with the common kind and *Splendens* one may do very well.

L. auratum continues troublesome, and in many places refuses to remain beyond one season. But in the one season it is the queen of the family, unequalled for splendour. When fairly established in a deep, rich, loamy soil it is free in growth and blooms sublimely, and brings the lily season to an end with a glory grander than any fireworks. We have tried various growths, and for a long time had faith in English-raised bulbs, but the conclusion we arrive at is that imported bulbs if purchased early and handled with skill are as likely to become established as those of home growth, but a deep, rich soil and a sheltered situation are two conditions of the highest importance. On our deep, sandy soil that suits nine-tenths of all the lilies auratum does not prosper without special help, and this includes admixture with the sand of good yellow loam and cow dung; peat we have not found advantageous, although in a soil naturally peaty this lily generally does well. There is no place more suitable than the rhododendron garden for this gorgeous lily, for where the peat-loving shrubs prosper the lilies will be happy, having sufficient shelter from spring frosts, and a soil just to their liking. The imported bulbs vary in quality, and the flowers with broad segments are unquestionably to be preferred, but we never know in advance what flowers the imported bulbs will present to us, save that whether the divisions be broad or narrow, the flowers will be beautiful. The finest of the named varieties is *Rubro-vittatum*, with magnificent crimson band. But *Virginale*, very white, with golden band, is pleasing, and *Platyphyllum* is distinguished by the great breadth of its leaves and the large size of its flowers. The fasciated forms are altogether objectionable; they are hideous, and ought to be destroyed; in any case we advise that as garden flowers, that cost money to secure them and care to keep them, they should be repudiated as ugly monsters that can only disgrace the lily garden.

L. longiflorum flowered better in 1890 than for several years past, the plants attaining to a reasonable height. They are often too short, as was especially noticeable last year. The rhododendron beds or similar situations are admirable for this species as affording much needed shelter, and a rich dark groundwork to show off the flowers. The varieties are many, and they are scarcely important. *Wilsoni* is robust in growth, and produces noble flowers. Our sandy soil suits this beauty perfectly, but the best soil for it is peat.

L. speciosum is often described as tender, but it is as hardy as any lily grown. Ours remain out in beds of sandy loam, and take care of themselves admirably. The varieties are distinct and fine. *Vestale*, and *Kratzeri* are superb white flowers; *Rubrum*, deep red; *Roseum* carmine rose; *Punctatum*, white spotted with rich pink; and *Purpureum*, with very deep rich colour on large divisions. This last sometimes reminds us of *Parkmanni*, but as we do not often see the last named the differences between them may be greater than memory suggests.

Lilies should be planted early in the autumn, for to be out of the ground for any length of time is more injurious to them than to any other bulbs. As regards transplanting in the same garden it may be done while they are still green and growing, and, in fact, while they are in flower, if care be taken to lift them with good balls of earth and deposit them in their new sites without injury. The very best time to plant lilies is immediately they go out of flower, but they may be moved at any time provided they are not for any length of time exposed to the atmosphere. H.

Notes of Observation.

SELAGINELLA KRAUSSIANA AND WILDENOVII.

It may not be generally known that these two lycopods will stand the winter without any special protection. The former I lately saw growing among the hardy ferns in the fernery at Orton Hall, near Peterborough. Mr. Harding informed me it had stood out the last two winters without more protection than that given it by the rocks or ferns in the hardy fernery there. The plants I saw of it were quite healthy-looking, and gave promise of spreading considerably during the present year. The last-named kind has stood the last two winters among some stones in a low rockery in the front of a greenhouse at Shedfield Lodge, near here, and has this year made nice growth, but the colour is rather pale for the variety. E. M.

TRITOMA GLAUCESCENS.

This early-flowering variety of T. uvaria is one of the finest kinds of the common Flame flower. At the present time it is in grand condition, growing on the grass, a position which suits this class of plant far better than when planted among other subjects in the herbaceous borders or in the front of shrubbery borders, for the reason that its drooping habit of foliage can be seen all round. The colour of its bright blossoms contrasts well with the grass, and it grows into a handsome and stately clump. This variety flowers much more freely in a young state than does the ordinary type, T. uvaria; therefore, for a succession of blooms it is valuable. There is but little difference in the colour of the flowers of the two sorts; glaucescens is perhaps more of an orange red than uvaria. The greatest distinction is in the time of their flowering. Those who have not tried the variety in question or these plants on grass at all, I should advise to lose no time, but plant directly flowering is past for this season, well trenching up the soil to a depth of two feet, adding some manure, which will promote a vigorous growth, and consequently ensure finer spikes of flowers next year. Abundance of water at the roots while growing is what they delight in also. Any extra attention paid to the plants in this way will be repaid by a fuller crop of flowers later on. E. M.

A NECTARINE ON A PEACH TREE.

In the garden at Mansaul Grange, near Bridgwater, there is to be seen at the present time a peach tree bearing a single nectarine fruit on a branch some distance from the stem, while the other branches are bearing a good crop of peaches. The nectarine fruit is fully developed, and in appearance very like the Elruge variety. This is not the first time that I have heard or read of a peach tree bearing fruit of a nectarine. It is, however, uncommon enough to be worthy of this note to place this instance on record. J. C. C.

[The late Mr. Thomas Rivers and his son and successor, Mr. T. F. Rivers, have raised peaches from stones of nectarines and *vice versa*. For both kinds to appear simultaneously on the same tree is certainly not a common event, but a sufficient number of instances are on record to establish the fact as not uncommon.—ED.]

LINARIA RETICULATA AUREA PURPUREA.

There is no annual in cultivation that is more accommodating, useful, and showy than the one here named. There appears to be some confusion regarding its name though; by some it is known by the name of Aparonoides splendens, under which name it is difficult to obtain, although it is one and the same plant. But in ignorance of this I had some difficulty in procuring the right kind for this season. In future I shall know what to ask for; the name above appears to me to be the most appropriate, and that I intend to use in future. From "Nicholson's Dictionary of Gardening" I learn there are about 150 species. The one referred to here is a snapdragon-like flower, only of course very much smaller, growing to a height of fifteen inches, bushy in habit when the plants are grown strong, and smothered with its yellow, purple, and mauve coloured flowers. So variable are they that many shades of colour are obtained from one packet of seed. It commences to flower early in June, and continues on into September. During July it is a regular glow of colour when grown in a mass, as it should be, to give the greatest effect, one colour blending so well with another. We have it growing in rows across the ends of a broad herbaceous border, and by the side of a gravel path as an edging among stones; and in patches in the herbaceous border. But the two former plans of growing it are the best, giving by far the finest effect. There are also two methods of cultivating it; one of sowing it in the open ground early in April, the other sowing in boxes of sandy soil about the middle of March in a gentle heat, afterwards pricking off the delicate-looking seedlings into a cold frame or temporary pit, using leaf-soil freely. From here the plants can be transferred to where required for flowering. This is much the best plan, as the transplanting induces numerous sucker-like shoots to grow from the base of the plant, which form a dense bush, not so when sown in the open; the growth appears to be so much more slender there, and consequently less flower is produced. Those who have not tried this annual would do well to procure a sixpenny packet of seed next year. Grow it as advised, and I am certain they will not regret doing so. About ten inches apart the plants should be put out where to flower. E. M.

EXHIBITING VEGETABLES.

A change is much wanted in the quality of vegetables staged at exhibitions, especially in the case of those shown by cottagers. Potatos, cabbages, turnips, and vegetable marrows are frequently so large as to be only fit for feeding cattle. The judges are, I am aware, in a great measure responsible for this state of things, but as criticising their actions has not had the desired effect, the only way to make an alteration is to insert an instruction in the rules that judges are not to favour these monster exhibits, and to award the prizes to what is seasonable and in a condition for consuming at the time it is shown. The present season has been fruitful in producing large samples of potatos, but when cut open they often reveal a hollow or dark centre. This, in itself, is sufficient testimony that big samples of any vegetable are misleading, and their production ought not to be encouraged. J. C. CLARKE.

HYDRANGEA HORTENSIS IN THE SHRUBBERY.

At the present time this hydrangea is making quite a glow of pink where it can have a fair amount of light and sun. We have several plants growing at the front of a shrubbery facing south-east, a position which does not afford them so very much sunshine, as the large trees growing near somewhat prevent this. The soil, too, is exceptionally heavy. However, this does not appear to affect them much, as they annually give us a crop of flowers, which brightens up that part of the garden, and at a season when there is not much of interest in bloom in the shrubberies. Plants which have become too large for growing in pots are suitable for planting in places such as here named, and this is a much better plan of utilising them than consigning them to the rubbish heap. E. M.

CLIMATE OF ZANZIBAR.—In view of the establishment of the British protectorate over Zanzibar, the *Kew Bulletin* just issued contains a meteorological table which may "be useful to persons who may have business relations with the island. It brings out in a striking way the singular uniformity of the climate and small annual range." It refers to the year 1878, and was communicated to Kew by Sir John Kirk, then Political Agent and Consul-General at Zanzibar. The *maximum* temperature throughout the year was 88·3 deg. in February, the *minimum* was 72 deg. in July, showing an extreme range of 16·3 deg. The *maxima* during the twelve months range from 82·2 deg. in June, to 88·3 deg. in February, and the *minima* from 79·4 deg. in January, to 72 deg. in July.

Exhibitions and Meetings.

BATH FLORAL FETE, SEPTEMBER 3 AND 4.

THE Floral Fête and Band and Committee held its Autumn Show in the Sydney Gardens on the above days, and, as a compensation for the many reverses experienced in the matter of weather, the climatic influences proved more favourable, a warm but cloudy day succeeding a morning opening with rain.

The show was one of the largest held in the West of England, the increase in the number of entries giving promise of a welcome revival in the interests of horticulture.

The staging accommodation in the several tents was not equal to the demand, and numbers of exhibits had to be displayed in odd corners, nevertheless everything was generally well displayed.

The fuchsias, which may be regarded as *the* feature in the plant classes, were in stronger force than ever, and, on no previous occasion have they been staged in fresher condition or better bloomed, the cool weather of the past months suiting them to a T.

In the monster tent known as the "Queen of the West" was an innovation in the form of

GROUPS FOR EFFECT on 100 square feet; the first card going to Mr. Cypher, Cheltenham; Mrs. Pearce, Bassett, Southampton, second; and Colonel Pepper, third; R. B. Cater, Esq., securing a certificate of merit. The groups were arranged on the turf in long half-circles, the plants generally of table size, with a few taller examples for a background. Each group was fairly well furnished with neat pieces of orchids.

ORCHIDS.—Though few, they were fresh and varied, Mr. Cypher leading with six, the forms being Dendrobium formosum, Odontoglossum Harryanum (five heads); O. Grande (thirty spikes); Vanda Sanderiana (nine flowers); Aerides Sanderiana (twenty four flowers); and Cattleya Gaskelliana (ten flowers); Mrs. Gouldsmith, second, with Odontoglossum Grande (four flowers); Cattleya Loddegesii (eight spikes); Cypripedium longiflorum (eight slippers); Oncidium incurvum (two racemes); Cattleya Gaskelliana (five flowers); and C. Leopoldi (fifty flowers). In an unplaced group were very fair examples of Cattleya Leopoldi, Dendrobium formosum, Cattleya velutina, Lælia elegans, Dendrobium Dearei, and Oncidium incurvum.

NEW OR RARE PLANTS.—But a limited number staged, Mr. Cypher taking the card for a piece of Catasetum Bungerothii (nine blooms); the next best being a small example of Cypripedium œnanthum superbum.

STOVE AND GREENHOUSE PLANTS.—For eighteen (six in flower) there were several groups, the bulk very uneven for quality; but Mr. Cypher stood head and shoulders above his compeers, his foliage plants being quite on a par with his blooming subjects, he securing the £12 for gigantic specimens of Ixora Pilgrimi, Erica Eweriana, Allamanda nobilis, Stephanotis floribunda, Bougainvillea glabra, Statice profusa, and crotons Queen Victoria, Countess, Sunset (grand), and angustifolius, the remainder being towering palms. The judges had much difficulty to determine the next award, as although in one case the flowering subjects were large and well-bloomed, yet his foliaged subjects were wanting in freshness, and *vice versa* in the other case, foliaged plants being good, but flowering subjects thinly furnished with bloom; hence equal thirds were awarded. Mr. J. F. Mould, Pewsey, staging Erica McNabiana, Statice profusa, Bougainvillea glabra, Erica Jacksoni, E. urbana purpurea, and Lapageria rosea; his best crotons being Queen Victoria, Interruptum, and Majesticum; besides palms he had a fine piece of Alocasia Lowiana. Mrs. Pearce, equal, had Erica Aitonia Turnbulli, Ixora Williamsi, I. Fraseri, Allamanda Hendersoni, and crotons Warreni, Variegatum, and Princeps (rich colour and singularly developed foliage). For six, Mr. Cypher, led with smaller but very showy examples of Ixora Duffi, I. Pilgrimi, Franciscea calycina major, Allamanda nobilis, and an immense example of Erica Eweriana; Major Clarke, second, with Lapagerias alba and L. rosea; Ixora Fraseri, Allamanda Hendersoni, Bougainvillea glabra, and Stephanotis floribunda; the premier for three plants going to E. B. Rodway, Esq., who had excellently flowered examples of Dipladenia amabilis, D. boliviensis, and Allamanda Hendersoni; Mrs. Pearce, second. For a specimen stove plant, the first card went to Mrs. Pearce, for a noble example of Clerodendron fallax; Mr. Cypher, second for Allamanda nobilis. For ornamental foliage, Mr. W. C. Drummond led with a gigantic Latania borbonica, Mrs. Pearce second with a graceful Kentia Balmoreana.

There was a fine show of gloxinias and of tuberous begonias, one of the latter named Golden Queen being very attractive, its distinct golden orange being in striking contrast to the rose, crimson, scarlet, white, and primrose shades prevailing. Cockscombs were prime, those securing the card for Messrs. Cooling and Son were superb combs measuring nearly two feet from tip to tip, and of grand colour, raised from a selected strain of their own. Zonal pelargoniums were all dwarf grown and profusely flowered, and the gold and silver tricolors formed a very prominent section. Single primulas in sixes were presented in several groups, the premier set from Hon. Mrs. Hay being characterised by large flowers of great substance and deep colours. There was a fairly nice show of Lilium lancifolium roseum, L. alba and L. auratum being the varieties chiefly exhibited. Greenhouse and hardy ferns were staged in numbers and demonstrated high quality.

FUCHSIAS.—These beautiful plants, fully ten feet high, as has been remarked, make the feature of the Bath September exhibitions. For one light-flowered specimen Mrs. Counsell, Bath, was first, with Beauty of the West; Hon. Mrs. Hay, Market Lavington, second, with Mrs. Bright; the cards for one dark example going first to Major Clarke, Trowbridge, for Charming; Mrs. Counsell, second, with the same variety. For nine, the £6 prize went to Major Clarke, who had densely-bloomed pyramids of Marginata, Mrs. Rundle, Bountiful, C. Richman, Harriet Lye, Doel's Favourite, Thomas King, and Arabella; Mrs. Counsell, second, with Beauty of Wilts, Elegance, Doel's Favourite, Mrs. Bright, Pink Perfection, Arabella, Bountiful, Final, and Load Me Well; Hon. Mrs. Hay, third, with Benjamin Pearson, Lye's Rival, Lye's Favourite, Harriet Lye, Doel's Pink Perfection, Ada Bright, Final, and James Welch. For six varieties, Mrs. Jolly had very sturdy specimens of Final, Arabella, Doel's Favourite, Charming, Mrs. Rundle; Rev. C. C. Layard, Bradford, second, his best being Final, Mrs. Bright, Acme, and Mrs. Marshall; Mr. F. Pocock, third, with Load Me Well, Charming, Arabella, Hon. Mrs. Hay, Mrs. Bright, and Beauty of Wilts; while for four Jerome Murch, Esq., presented immense pyramids of Arabella, Rose of Castile, Charming, and Bountiful; Mrs. Woodbridge, second, with Beauty of Wilts, James Welch, Elysee, and Pink Perfection; the last two columnar-shaped, but finely flowered.

DAHLIAS.—A showy class well filled. For twenty-four Mr. G. Humphries, Chippenham, led with compact blooms of splendid outline and exceedingly clean, his selection being Vice-President, Harry Keith, R. G. Rawlings, W. Rawlings, Geo. Harris, G. J. Saltmarsh, Henry Walton, Miss Cannell, Countess of Ravensworth, Herbert Turner, Colonist (fine), Crimson King, Mrs. Gladstone, Willie Cramond, Agnes, Thos. Hobbs, J. T. West, Major Clarke, Maude Fellowes, Gen. Gordon, Mrs. Dodds, and James Stephens. Heath and Sons, Cheltenham, second, with Mrs. W. Slack, Flora Wyatt, Mrs. Gladstone, Harry Keith, Colonist, Wm. Jackson, Mrs. Langtry, John Standish, Clara, W. Rawlings, Gloire de Lyon, Thos. Hobbs, J. T. West, Miss Cannell, Herbert Turner, Eclipse, Henry Bond, John Henshaw, Geo. Harris, Willie Garrett, J. Neville Keynes, Countess of Ravensworth, and Vice-President. Mr. J. Nation, Taunton, third, his premier blooms being H. Keith, Colonist, Harrison Weir, Victor, General Roberts, J. T. Saltmarsh, Mrs. D. Saunders, W. Smith, Artist, W. Rawlings, and James Cocker. For twelve, Mr. Thos. Hobbs, Bristol, was first with a prime level lot of flowers; his election being John Henshaw, Mrs. D. Saunders, Dr. Reilly, W. Garrett, Goldfinder, John Standish, Alice Emily, Clara Wyatt, J. T. Saltmarsh, Henry Walton, and William Jackson. Mr. S. Cooper, Chippenham, second, and Captain Crotheus, Chew Magna, third. For nine fancies, Mr. Humphries was again to the front, with John Cooper, Prince Henry, Mrs. Hall, Rebecca, Hercules, Matthew Campbell, Henry Eckford, and Mrs. Saunders; Mr. S. Cooper, second, with Dorothy, John Cooper, Rev. J. B. M. Camm, Plutarch, Mrs. R. Hall, Rebecca, and Mrs. Saunders; Heath and Sons, third, their premiers being James O'Brien, Mrs. Saunders, and Henry Eckford. Single forms were beautifully set up in ten blooms each by Thomas Carr, Esq., Tiverton, who had Crown Prince, Mrs. Bowman, Crown Prince Improved, Distinction, Defiance, Cetawayo, Anne Perry, Harlequin, White Queen, Dr. Moffat, and Lutea grandiflora; Cooling and Sons, second.

ROSES.—For the advanced season the bulk staged were truly fine developments. For twenty-four, Jefferies and Son, Cirencester, occupied the post of honour with clean flowers of Mrs. J. Laing, Alfred Colomb, Merveille de Lyon, Madame I. Pereire, Lady Mary Fitzwilliam, Ulrich Brunner, Madame Sophie Fropot, Madame E. Verdier, Mrs. Baker, Captain Christy, A. K. Williams, Marechal Niel, Camille Bernardin, Catherine Mermet, Mdlle. S. Rodoconachi, Madame Joseph Dubois, Comte Raimbaud, Belle Lyonnaise, Mrs. Jowitt, La France, Ella Gordon, Comtesse de Serenye, and Beauty of Waltham. A. H. Gray, Esq., Newbridge Hill, Bath, second, his box being strong in teas, very large and fresh being Francisca Kruger, La France, Lady Mary Fitzwilliam, Horace Vernet, Marechal Niel, Innocente Pirola, Princess of Wales, Etoile de Lyon, The Bride, and Marie Verdier. Cooling and Sons, third, their best forms being La France, Catherine Mermet, Alfred Colomb, Marie Verdier, Pride of Waltham, Marie Baumann, Lucy Corby, Earl Dufferin, Mdlle. H. Coombs, and Merveille de Lyon. For twelve, the honours went to A. H. Gray, Esq., Perkins and Son, Coventry, and S. P. Budd, Esq. The boxes of twelve tea-scented were equal to many of the July exhibits. A. H. Gray, Esq., first, with plump blooms of Anna Olivier, Madame Lambard, Marechal Niel, Princess of Wales, Catherine Mermet, The Bride, Hon. E. Gifford, Comtesse de Nadaillac, Marie Van Houtte, Francisca Kruger, Madame Hippolyte Jamain; S. P. Budd, Esq., second, with fine forms of Catherine Mermet, Innocente Pirola, Madame Lambard, Madame Hoste, Anna Olivier, and The Bride. Jefferies and Son, third, their best three being Madame Lambard, Madame Berard, and Catherine Mermet; A. H. Gray, Esq., staging, as an extra, three dozen teas of high merit; Mr. Mattock, New Headington, Oxford, fifty bunches of tea-scented rosebuds.

CUT ZONALS in twenty-four varieties were set up as triplets, and proved effective, Mr. Mattock taking the first card. Hollyhocks were in plenty, but scarcely a really fine stand could be picked out, Mr. T. Hobbs taking the first award. Gladioli were plentiful, the spikes stout and the flowers large and fresh; for thirty-six spikes Mr. G. Walters, Messrs. Jefferies and Son, and Mr. R. H. Poynter sharing the honours. Mr. Fred Hooper presented the best box of phloxes; and amid a wealth of asters, Mr. W. J. Jones carried off the card for quilled; Mr. G. Garraway having the best reflexed forms. Herbaceous perennials filled a long line of staging, generally well displayed. Epergnes were tastily dressed; Mr. J. Cypher being far ahead for an arrangement in which small forms of orchid blossoms were freely introduced; Miss Cole, Bristol, second; with Mr. Mattock third. For choice bouquets Messrs. Perkins and Son, carried off the palm with one of their matchless arrangements; Miss Cole again second. In wild flower designs there were thirteen single epergnes and forty well-formed hand bouquets.

FRUIT.—This was a great feature, the centre tables in two tents being well occupied with very choice forms. Of grapes alone there were 160 clusters, and other kinds were equally represented. For a collection of eighty dishes of varieties of apples and a dozen small pyramids in pots, Messrs. Cooling and Son received a cultural certificate; a like honour being conferred on Mr. Pavitt, for about thirty trees in pots all carrying grand crops. In the competing class for a collection, his Grace the Duke of Beaufort took the card for a dozen dishes, with immense clusters of Alicante and Muscat of Alexandria grapes, Brown Turkey figs, Bon Chretien pears, Moor Park apricots, Jefferson's plums, Bellegarde and Violette Hative peaches, Blenheim Orange and Countess melons, and Pine Apple and Lord Napier nectarines; W. H. Long, Esq., M.P., second, with Alicante and Muscat of Alexandria grapes, Rood Ashton and Countess melons, Elruge nectarines, Morello cherries, Bellegarde peaches, Jefferson and Diamond plums, Bon Chretien pears, and Brunswick figs. Mr. J. Cray, Frome, third with Alicante and Foster's Seedling grapes, Longleat and Hero of Lockinge melons, Golden Drop plums, Hemskirk apricots, Brunswick figs, Bellegarde and Royal George peaches, Elruge and Pineapple nectarines. For melons the card went to—first, Hero of Lockinge; second, Sutton's Green Flesh; and third, to an unnamed Green Flesh. For nine peaches Walburton Admirable, Dymond, and Vanguard took the cards; and in the class for six fruits to Royal Charlotte and Barrington. Nectarines (nine), Pine Apple, Pitmaston Orange, and Rivers Orange were selected for honours; and for six fruits the cards fell to Victoria, Violette Hative, and Pine Apple. The plum classes were scarcely as full as we have seen at Bath, but the character of the form submitted was excellent for so indifferent a season. For dessert Jefferson, Guthrie's Late Green, and Washington shared the honours; while in the culinary class Goliath and Fonthill were selected. For culinary apples the three best dishes were staged by Mr. Thomas Arnall, Brookside, Headington Hill, Oxford, who put up very weighty fruits of Ecklinville Seedling, Warner's King, and Lane's Prince Albert, the single dishes selected for honours being Alexander, Warner's King, and Ecklinville Seedling. In the dessert class Early Margaret, Worcester Pearmain, and Irish Peach were first; Kerry Pippin, Irish Peach, and Quarrenden second; Beauty of Bath, Irish Peach, and Quarrenden third; while for one dish Beauty of Bath and Irish Peach were selected as the fittest. Pears were generally large spe-

cimens, the best three dishes being Jargonelle, Souvenir du Congres, and Pitmaston Duchess; while for one dish (dessert) Bon Chretien secured each award.

GRAPES.—Competition was very keen in this department. For eight bunches (four varieties) Alderman Chaffin was placed first for grandly-finished clusters of Black Alicante, Alnwick Seedling, Muscat of Alexandria, and Madresfield Court; Earl Cowley second with Madresfield Court (three bunches), Black Hamburgh (three), Muscat of Alexandria (one), and Alnwick Seedling (one). W. H. Long, Esq., M.P., third with Muscat of Alexandria (two), Muscat Hamburghs (three), Black Hamburgh (one), and Lady Downes (two). For two bunches of Black Hamburghs, the cards went to Duke of Beaufort, Earl Cowley, and Mr. J. Lysight; for Muscat of Alexandria to Alderman Chaffin, Earl Cowley, and Mr. W. K. Wait; while in the class for any other variety Alderman Chaffin was first for black with Alnwick Seedling, and Mr. J. B. Brain for white.

VEGETABLES.—These were arranged along the railway terraced walk, a large proportion being in the form of collections. In the big class, Lady Theodore Guest filled the chief place with a grand lot of stuff, comprising Ailsa Craig onions of great weight, but handsome, Autumn Giant cauliflower, Perfection tomato, Lockie's Perfection cucumber, Ne Plus Ultra runner beans, Student parsnip, Lyon leek, Giant white celery, Sutton's New Intermediate carrot, Satisfaction potato, and Prodigy pea; W. E. S. Erle-Drax, Esq., second, the staple being Perfection tomato, Tender and True cucumber, Veitch's Main Crop onion, Duke of Albany pea, Ne Plus Ultra runner bean, Lyon leek, Wright's Giant celery, Sutton's New Intermediate carrot, Autumn Giant cauliflower, Ellcombe's Improved parsnips (a very fine form truly), Dobbie's beet, and Sutton's Seedling potato; W. H. Long, Esq., third. Equally choice were the many sets in competition for Sutton and Son's prizes, the cards going to W. E. S. Erle-Drax, Esq., first; Lady Theodore Guest, second; and Hon. Mrs. Hay, third; while Webb and Son's prizes went to Mr. W. Evry, first; Lady Theodore Guest, second; and to W. E. S. Erle-Drax, Esq., third. A very choice lot of tomatos were staged, Sutton's Perfection heading the list.

POTATOS.—For new forms, the first prize was given to Mr. R. Lye for a very handsome white kidney (early as the Woodstock Kidney), it being the result of a cross with that variety and Early Purple. It has every appearance of a good cooker and producer. Mr. T. Kibley, Fishponds, secured the second card for a good white round (a second Schoolmaster in appearance), a second early; crops well; a cross with Abundance and Myatt's Ashleaf; free from disease. The third prize to Mr. John Pollard, for a flattish white kidney, a cross between Ashleaf and the old Fluke. It has a good skin, but much too lapstone-shape to cope with varieties already in the market. In the single dish classes, the cards for rounds went first to Remarkable, a fine shape (white, round) and good size; second and third, to Reading Russet; while for kidney, Pride of the West, Satisfaction, and Snowdrop, found most favour.

Time would fail to describe the cottagers' classes, which, like the other sections, were filled to repletion, and afforded a proof that the season of 1890 is likely to prove a prolific one.

MISCELLANEOUS CONTRIBUTIONS included, in addition to those referred to above, very large collections of roses, seedling zonals, boxes of gaillardias, tritomas, helianthus, cactus dahlias, pentstemons, &c., from Messrs. Cooling and Son; collection of sweet peas from Mr. H. Eckford; stands of show, cactus, and pompon dahlias from Messrs. Garraway and Co., Durdham Down, Bristol; dahlias of sorts, gladioli, stands of carnations, fine stand of Carnation Germania, and other herbaceous plants, from Messrs. R. Veitch and Son, Exeter; to each of whom cultural certificates were awarded.

The judges were: For plants, Messrs. T. Challis, Iggulden, G. Bethel, and P. M. Veitch; cut flowers, Messrs. R. Dean, R. H. Taylor, — Pymm, and W. H. Bannister; fruit, Messrs. A. F. Barron, T. King, W. C. Keel, and S. J. Pavitt; and vegetables, Messrs. J. Lye, W. Taylor, A. Miller, and — Nash.

The band of the Scots Guards, and another military band, supplied the music, a grand display of fireworks concluding each day's programme.

CRYSTAL PALACE FRUIT SHOW, SEPTEMBER 5 AND 6.

The exhibition of fruit held at the Crystal Palace on the above dates was so thoroughly successful in the whole of its features that it must, in justice to those concerned, be described as one of the best of the September shows that has yet been held at Sydenham. There was a keen competition in the whole of the classes, and finer produce has not been presented to public notice than was staged on this occasion. The attractions of the gathering were materially augmented by the magnificent display of dahlias staged in competition for the liberal prizes offered by the National Dahlia Society, and the interest was increased by the conference on fruit culture held in the afternoon of the first day. The fruit was arranged in the north nave, the miscellaneous flowers, in the central transept, and the dahlias in the concert-room. The arrangements were, as usual, remarkable for their completeness, and reflected much credit upon Mr. W. G. Head, the able superintendent of the horticultural department.

COLLECTIONS OF FRUIT had four classes provided for them, and as the whole of the classes were well filled both as regards the number of entries and the high quality of the fruit, the contributions to the several classes produced a fine display. The first class was that for a collection not exceeding twenty dishes, and here Mr. J. McIndoe, gardener to Sir J. W. Pease, Bart., M.P., Hutton Hall, Guisboro', distinguished himself by occupying the first place. The kinds represented in this collection were Queen and Smooth Cayenne pines, Trebbiano, Gros Maroc, Alnwick Seedling, and Buckland Sweetwater grapes, Blenheim Orange and unnamed melons, Darwin and Humboldt nectarines, Princess of Wales and Exquisite peaches, Brown Turkey fig, Bryanston Green Gage and Kirks plums, Souvenir du Congres pear, Moorpark apricot, Bigarreau Napoleon cherry, Ribston Pippin apple, Exquisite orange and Imperial lemon. With reference to their quality it must be said that all the kinds were seen at their best, or as nearly so as we can hope to see them. Mr. H. W. Ward, Longford Castle, Salisbury, was a capital second, in which the Muscat of Alexandria, Foster's Seedling, and Alicante grapes, Guthrie's Late Green plums, Prince of Wales and Sea Eagle peaches, Pine Apple nectarines, and Worcester Pearmain apple, were especially good. Mr. J. H. Goodacre was a close third, with a collection in which the grapes and pines were especially meritorious. Mr. R. Dawes, gardener to Hon. Mrs. Ingram, Temple Newsham, Leeds, staged an excellent collection in which were large finely finished clusters of Barbarossa grape. The most severe competition in the classes for collection occurred in that for twelve kinds. Here Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, Staffordshire, was first with Alicante and Muscat of Alexandria grapes, Lord Napier nectarines, Violette Hative peach, Williams' Bon Chretien pear, Bryanston Green Gage plum, Trentham Seedling, and Best of All melons, Morello cherry, Queen pine, Brown Turkey fig, Moorpark apricots, in exceptionally fine condition. Mr. A. Miller, Rood Ashton, Ashton Park, Trowbridge, Wiltshire, was a very close second; specially deserving of mention in his collection being the dishes of Muscat of Alexandria grape, Dymond peach, and Jefferson plum; Mr. H. W. Ward was third with an excellent collection in which Sea Eagle peach was represented by exceptionally fine fruit. The dish of Brunswick fig must also be mentioned for its high quality. Mr. R. Parker, Impney Hall, Droitwich, exhibited a collection of great excellence and remarkable for the taste with which it was staged. Mr. A. Ocock, gardener to Mrs. McIntosh, Havering Park, Romford, was successful in occupying the first place in the class for eight dishes. The fruit was good throughout, and the kinds represented were Black Hamburgh, and Muscat of Alexandria grapes, Pine Apple nectarines, Noblesse peach, Brown Turkey fig, Worcester Pearmain apple, Golden Perfection melon, and Williams' Bon-Chretien pear. Mr. C. Warden, Clarendon Park, Salisbury, was a good second, with a collection in which Sea Eagle peach, Pitmaston Orange nectarine, and Doyenne Boussoch pear were particularly good. Mr. L. Budworth, gardener to C. Hill, Esq., Rockville, East Grinstead, was third with fruit that reflected much credit upon his cultural skill.

GRAPES formed a strong feature, the entries being as numerous as in any previous year, whilst the quality was somewhat above the average. There were five or six entries in the great class for ten kinds, two bunches of each, and the post of honour was occupied by Mr. J. H. Goodacre, Elvaston Castle, Derby, who had large well-finished clusters of GrosMaroc, Madresfield Court, Foster's Seedling, Black Hamburgh, Muscat Hamburgh, the bunches exceptionally large, and if not quite black, well coloured for the variety, Lady Downe's Seedling, Alicante, Alnwick Seedling, and Black Prince; Mr. J. McIndoe was a capital second, his finest clusters being those of Barbarossa, Gros Maroc, Gros Colmar, Lady Downes, Alnwick Seedling, and Madresfield Court; Mr. C. Warden was third with a good collection, in which Muscat of Alexandria was highly meritorious. The competition was equally keen in the class for five kinds, two bunches, and Mr. W. Taylor, gardener to J. Chaffin, Esq., Bath, was first with immense highly finished clusters of Madresfield Court, Alicante, Black Hamburgh, Alnwick Seedling, and Muscat of Alexandria; Mr. T. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, Chertsey, was second with a collection evincing cultural skill of a high class, the most noteworthy examples being those of Alicante, Mrs. Pearson, and Lady Downes. Mr. G. Reynolds, Gunnersbury Park, Acton, was a close third, especially meritorious being the clusters of Black Hamburgh.

The classes for single dishes of grapes were all more or less good. There were eight competitors in the class for Black Hamburgh, and the average quality was higher than for some few years past. Mr. J. Gibson, Chippenham, Wilts, was first with large well shouldered clusters, remarkable for their fine colour. Mr. F. Jordan, Witley, Surrey, was second with well finished clusters, and Mr. G. Reynolds was third with examples remarkable for the development of the berries. The entries in the Muscat of Alexandria class were uniformly good, and Mr. W. Taylor was first with large clusters, remarkable both for their fine berry and colour. Mr. C. Griffin, Coombe Bank, Kingston-on-Thames, was a capital second, and Mr. C. Blick, Hayes Common, was third with medium-sized well-finished clusters. Mr. A. G. Hookings, West Moulsey, Surrey, was successful in occupying the first place in the class for Gros Maroc, and had large finely finished clusters. Mr. G. Reynolds and Mr. W. Goodale, Tisbury, Wilts, who were second and third respectively, also had well-finished examples of this handsome grape. Mr. J. Gibson obtained premier honours in the class for Madresfield Court with finely finished clusters, and Mr. W. Howe, Streatham Common, and Mr. C. Warden, Salisbury, were second and third. The prizetakers in the class for Alicante, were Mr. T. Osman, Mr. C. Griffin, and Mr. W. Howe, all of whom had remarkably well-finished clusters. In competition for the prizes for any black grape other than the kinds named, Mr. W. Taylor was first with exceptionally fine clusters of Alnwick Seedling, Mr. J. Bury, Forest Hill, and Mr. J. H. Goodacre were second and third. For white grapes other than the Alexandrian Muscat, Mr. H. W. Ward was first with fine examples of Foster's Seedling. Mr. J. Bury was a good second with the same variety, and Mr. F. Jordan was third with Buckland Sweetwater.

There was a good competition for the prizes for baskets of grapes weighing not less than twelve pounds. For black grapes, Mr. Hookings and Mr. Longley were first and third with Gros Maroc, and Mr. J. McIndoe second with Gros Colmar. Mr. G. Winter, Mr. J. McIndoe, and Mr. Hookings were the prizetakers for baskets of white grapes, all having Muscat of Alexandria.

PEACHES AND NECTARINES were exceptionally well represented. For twelve dishes to comprise equal numbers of peaches and nectarines, Mr. W. H. Divers, gardener to J. T. Hopwood, Esq., Ketton Hall, Stamford, was first with large richly-coloured examples or Dymond, Abec, Prince of Wales, Crimson Galande, Violette Hâtive, and Crawford's Early peaches, and Lord Napier, Pine Apple, Victoria, Dryden, Rivers's Orange, and Humboldt nectarines. Messrs. T. Rivers and Sons, Sawbridgeworth, were a capital second with admirably-finished fruit, especially noteworthy being the examples of Barrington, Alexandra Noblesse, and Gladstone peaches and Albert Victor, Byron, and Spencer nectarines. Mr. R. Potter, Kemsing, Sevenoaks, was third with good fruit. Mr. W. H. Divers also obtained premier honours in the class for four dishes of peaches, the varieties being Prince of Wales, Crawford's Early, Crimson Galande, and Dymond. Mr. J. McIndoe was second with Violette Hâtive, Exquisite, Princess of Wales, and Golden Eagle. Messrs. T. Rivers and Son third. Mr. Divers was again first in the class for four dishes of nectarines, staging Dryden, Pine Apple, Victoria, and Rivers's Orange. Mr. W. Carr, gardener to S. Clark, Esq., Croydon Lodge, Croydon, was second, and Mr. J. H. Goodacre third. There were over twenty competitors in the class for a single dish of peaches, and Mr. A. Alderman, gardener to C. Czarnikow, Esq., Effingham House, Dorking, was first with Sea Eagle. Mr. H. W. Ward followed closely for second place with the same variety, and Mr. W. H. Divers was third with Prince of Wales. The competition was also very strong in the class for one dish of nectarines, and Mr. W. H. Divers, Mr. G. Pymm, Rodwell Hill, Trowbridge, were the prizetakers in the order of their names with Pine Apple.

MELONS were ranged in considerable numbers and the quality, was, on the whole, very good, Mr. J. Neighbour, Bickley Park, was first for a scarlet flesh with Scarlet Gem, one of the oldest and still one of the best in flavour, Mr. G. Woodhams, Model Farm, North Dulwich, and Mr. Griffin were second and third with Benham Beauty. In the corresponding class for green flesh, Mr. S. Mortimer, Swiss Nursery, Farnham, was first with Sutton's Monarch, Mr. J. McIndoe was second with Best of All, and Mr. Budworth was third with Hero of Lockinge.

PLUMS, as might have been anticipated were comparatively few in number, but those staged were of good quality. For four dishes of purple varieties, Mr. Blick, Hayes Common, was first with Kirke's Grand Duke, Prince Englebert, and Monarch, Mr. H. W. Ward obtained the first place for four dishes of red varieties, staging Victoria, Autumn Compote, Pond's Seedling, and Cox's Emperor. In the class for yellow and green plums, the premier award was made in favour of Mr. J. McIndoe who had Jefferson, Green Gage, Bryanston Green Gage, and white Magnum Bonum. Other successful exhibitors in the classes were, Mr. P. Blair, Mr. J. Neighbour, and Mr. A. Evans, Lythe Hill, Haslemere.

FIGS were plentiful and staged in excellent condition, Mr. H. W. Ward was first for two dishes with Brown Turkey, and White Marseilles, and Mr. Evans was a good second with the same varieties.

APPLES AND PEARS in competition for the prizes limited to the produce of orchard house trees were less numerous that would probably have been the case had out-door fruit been admissible. The examples staged were of exceptionally fine quality and showed in a marked manner the value of glass in finishing both these fruits. In competition for the prizes for twelve dishes of apples to comprise equal numbers of culinary and dessert varieties, Messrs. George Bunyard and Co., Maidstone, were first with large and admirably finished fruit of Cox's Pomona, Ecklinville, Loddington Pippin, Warner's King, Bismarck, Emperor Alexander, Okera, Worcester Pearmain, Belle Pontoise, Lady Sudeley and Washington; Mr. J. McIndoe, was second with an excellent collection in which Peasgood's Nonsuch and Washington were particularly good; Messrs. G. Bunyard and Co. and Mr. J. McIndoe were first and second respectively for three dishes of ripe apples, the Maidstone varieties being Worcester Pearmain, Cellini Pippin and Washington, and the varieties from Hutton Hall, Ribston Pippin, Worcester Pearmain, Queen Caroline, and Ribston Pippin. For a collection of pears, ten kinds, Mr. Blick was first with excellent fruit of Doyenne Boussoch, Clapp's Favourite, Souvenir du Congres, Fondante d'Automne, Louise Bonne of Jersey, Pitmaston Duchess, Durondeau, Doyenne du Comice, Princess and Magnate; Mr. J. McIndoe was a close second, his best fruit being that of Clapp's Favourite, Durondeau, Flemish Beauty, Pitmaston Duchess, and Doyenne du Comice. For three dishes of ripe pears the last-named exhibitor had the premier award made in his favour for fine fruit of Louise Bonne of Jersey, Williams's Bon Chretien, Souvenir du Congres; Messrs. G. Bunyard followed closely for second place, staging good fruit of Brockworth Park, Louise Bonne of Jersey, and Pitmaston Duchess.

TOMATOS were well shown, and produced an attractive display of colour. Mr. C. J. Waite, Glenhurst, Esher, was first for six dishes with excellent fruit of Perfection, Hackwood Park Prolific, and other well-known types. Mr. E. Ryder, Orpington, and Mr. W. Wills, Redhill, were second and third with good collections. Mr. Waite was first also in the two special classes for tomatos, in which Mr. J. Slater, Lower Sydenham; Mr. F. A. Beckett, Penn, Bucks; and Mr. W. Palmer, Thames Ditton, also exhibited successfully.

CUT FLOWERS other than dahlias had liberal provisions made for them, with the result that they were shown in large numbers and produced an attractive display. Asters were especially good, and the principal prizes were awarded to Messrs. Saltmarsh and Son, Chelmsford; Mr. J. Walker, Thame; Mr. S. Cooper, Cheltenham; Mr. G. Humphries, Chippenham; and Mr. R. Spinks, Horley. Gladioli were especially attractive. Messrs. J. Burrell and Co., Cambridge, were first in the open class for a collection with about one hundred splendidly developed spikes, comprising many of the fine varieties raised by the firm. In the amateurs' class for gladioli Mr. E. B. Lindsell, Bearton, Hitchin, and the Rev. H. H. D'Ombrain, Westwell Vicarage, Ashford, were first and second respectively with collections of high quality.

COCKSCOMBS AND CHRYSANTHEMUMS were both well shown. For groups of the last-named Messrs. J. Laing and Sons, Forest Hill, were first with a bright, tasteful arrangement; Messrs. Reid and Borneman, Sydenham, were second with a good group, and Mr. N. Davis, Camberwell, was third. Six collections of cockscombs were staged, and the awards were made in favour of Mr. Saunders, Crawley; Mr. R. Spinks, Horley; and Mr. R. Haynes, South Norwood Hill.

VEGETABLES in collections had one class provided for them, and in this the prizes were offered by Messrs. J. Carter and Co., Mr. Waite, and Mr. F. A. Beckett, Penn, Bucks, were first and second.

MISCELLANEOUS CONTRIBUTIONS were so plentiful as to add materially to the attractions of the exhibition. Messrs. W. Paul and Son, Waltham Cross, exhibited a large collection of roses which, in connection with the foliage of ornamental-leaved trees and shrubs, presented an extremely beautiful appearance; Messrs. J. Laing and Sons had a large group of tuberous begonias, which proved immensely attractive, and a collection of apples; Messrs. Cannell and Sons contributed an attractive collection, comprising seedling begonias lifted from the open beds, and cactus and other dahlias; they had also numerous examples of Octavia begonia, a double white variety, distinguished by its freedom of flowering and great beauty. Collections of apples were sent by Messrs. G. Bunyard and Co., Messrs. J. Cheal and Sons, and Messrs. J. Peed and Son, Roupell Park Nursery, Streatham; and from Messrs. Paul and Son, and from Mr. Such came large gatherings of hardy flowers.

NOVELTIES were not numerous, and two only were recognized, the first-class certificates being granted as under.

To Rev. H. H. D'Ombrain for

Gladiolus Mont Blanc. A beautiful variety of continental origin. The flowers are large and of fine form, the colour blush-white, the lower segment painted with rose-purple, the base of the other segments bright purple.

To Mr. T. S. Ware, Tottenham, for

Papaver orientale semi-plena. A variety of the Oriental poppy, having flowers with a double row of florets, the colour as in the type, bright scarlet with black centre.

NATIONAL DAHLIA SOCIETY, SEPTEMBER 5 AND 6.

The annual exhibition of the National Dahlia Society was held at the Crystal Palace on the above dates, in conjunction with the great fruit show, and proved so great a success that both the executive and the exhibitors may be heartily congratulated on the satisfactory results of their labours. There was not perhaps any material increase in the extent of the show, nor was there any falling off, but the average quality of the blooms was perhaps somewhat higher, and the admirable representation of the whole of the sections may be regarded as a distinguishing characteristic of the gathering. The blooms were on this occasion arranged in the concert room, and the general effect was undoubtedly better than when arranged in the nave, as in previous years.

NURSERYMEN had eleven classes set apart for them, and they mustered in such strong force that their contributions formed the most important part of the exhibition. In the great class for seventy-two blooms of show and fancy varieties, comprising not less than forty-eight varieties, the competition was very keen, and the premier award was made in favour of Messrs. Keynes, Williams, and Co., who had large, brightly coloured, and superbly finished blooms of Mr. Spofforth, Miss Cannell, Maud Fellowes, Harry Keith, J. T. West, Mr. W. Slack, James O'Brien, Majestic, Rev. J. B. Camm, Imperial, Mrs. Langtry, W. Rawlings, Robina, Duchess of Albany, Colonist, Hope, William Keith, H. Turner, Mrs. Foreman, Prince of Denmark, Eclipse, Royal Queen, Nellie Cramond, Prince Henry, Julia Wyatt, Mrs. Kendal, Illuminator, Hon. Mrs. P. Wyndham, Flora Wyatt, Gloire de Lyon, Gaiety, James Vick, Prince Bismarck, Ethel, R. J. Rawlings, Peacock, Grand Sultan, Henry Walton, John Bennett, Lady Gladys Herbert, Henry Bond, Burgundy, Madame Soubreyere, Seraph, Magnet, Richard Dean, Countess of Ravensworth, Mrs. Gladstone, Henry Eckford, King of Purples, and Dorothy. Mr, M. V. Seale, Vine Nursery, Sevenoaks, was second, Mr. C. Turner, Slough, third, and E. H. Such, Maidenhead, fourth, with stands of finely developed blooms, differing but little in relative merit. Equally severe was the competition for the prizes for forty-eight blooms distinct, and in the result the first prize was awarded to Mr. C. Turner for the uniformly high quality of the blooms. The varieties staged were W. Rawlings, Mrs. Langtry, Nellie Tranter, Agnes, H. Turner, Glowworm, Harry Keith, J. T. West, Nellie Cramond, Robina, Mrs. Hodgson, Sunbeam, Flag of Truth, Maud Fellowes, John Standish, Perfection, Clara, R. Dean, Colonist, Goldfinder, J. B. Service, Excellent, Diadem, Royal Queen, Ethel, R. J. Rawlings, Peacock, Grand Sultan, Hope, Henry Walton, Prince Bismarck, John Bennett, Royalty, Willie Garratt, Mrs. Kendal, Comte de la Saux, J. T. Saltmarsh, James Cocker, Mrs. Shirley Hibberd, Chorister, Earl of Ravensworth, Lustrous, Mrs. Saunders, Constancy, Miss Cannell, James Vick, Mrs. Gladstone, and Mrs. John Downie. Especially good were the blooms for which Messrs. Keynes, Williams, and Co. were awarded the second prize, and Mr. Seale and Mr. Such, who were third and fourth, were of great merit.

The third class in the trade division was for thirty-six blooms in not less than twenty-four varieties, and in this and the following classes the competition was limited to those who had not entered in the first and second classes. Mr. G. Humphries, Kington Langley, Chippenham, occupied the post of honour with large, finely-finished blooms of Maud Fellowes, Crimson King, Earl of Ravensworth, T. S. Ware, Nellie Cramond, Mrs. Gladstone, Countess of Ravensworth, General Gordon, R. J. Rawlings, Harry Keith, Mrs. Saunders, George Barnes (self), Goldfinder, James Stephens, Vice President, Mr. Glascock, Mrs. Harris, Agnes, Willie Garratt, and John Hawkins. The remaining prizes in the class were made in favour of Messrs. W. Heath and Son, Cheltenham, Messrs. Saltmarsh and Son, and Mr. J. Walker, Thame, Oxon. The exhibitor last named obtained premier honours in the first twenty-four, with superb blooms of Mrs. Gladstone, Maud Fellowes, Prince of Denmark, James Vick, Mrs. Foreman, Jessie McIntosh, Colonist, Willie Garratt, Miss Cannell, J. C. Reed, Crimson King, John Standish, R. J. Rawlings, Senator, Hope, Mrs. George Rawlings, Mandarin, James Cocker, Flora Wyatt, John Bennett, Mrs. W. Dodds, Seraph, and Imperial. Messrs. Saltmarsh and Son, Mr. G. Humphreys, and Messrs. W. Heath and Son were second, third, and fourth respectively. In competition for the prizes for twelve blooms Messrs. J. Gilbert and Son, Ipswich, Mr. S. Mortimer, Farnham; Mr. J. R. Tranter, Henley-on-Thames; and Messrs. J. Cheal and Son were the prizetakers in the order of their names.

The quaintly-formed and brightly-coloured cactus and decorative varieties produced an attractive display, and received a full share of attention from the general body of visitors. In the class for eighteen varieties, to be staged in bunches of six blooms each, Mr. C. Turner was first with finely-developed blooms of Mrs. Hawkins, Asia, King of Cactus, Cochineal, Picta formosissima, Amphion, Henry Patrick, Beauty of Brentwood, Panthea, Sir T. Lawrence, W. Darvill, Constance, W. Reyner, Honoria, and Juarezi; Messrs. J. Cheal and Sons, Crawley, who were second, had a very fine collection. There was a keen contest for the prizes for twelve varieties, also to be shown in bunches of six blooms each, and Mr. M. V. Seale, Vine Nursery, Sevenoaks, was a capital first with Juarezi, Panthea, Henry Patrick, Cochineal, Zulu, Charming Bride, Lady Marsham, Constance, W. Darvill, Mrs. Hawkins, Empress of India, and King of the Cactus. The remaining prizes were awarded to Messrs. Paul and Son, Cheshunt; Messrs. Keynes, Williams, and Co., and Messrs. J. Laing and Sons, Forest Hill.

Pompon and single varieties also proved eminently attractive. Messrs. Keynes, Williams, and Co. occupied the post of honour in the class for twenty-four pompons, ten blooms of each, with remarkably fine bouquets of Lady Blanche, Whisper, Favourite, Darkness, Golden Gem, Red Indian, E. F. Junker, Dora, Isabel, Phœbe (a beautiful new variety which received the distinction of a first-class certificate), Hector, White Aster, Fairy Tales, Little Duchess, Grace, Eden, Gem, Rosalind, Little Ethel, Little Darkie, Leila, Janet, Admiration, and Achille; Messrs. J. Cheal and Sons followed closely for second place; and Mr. C. Turner and Messrs. Paul and Son were third and fourth respectively. Messrs. J. Burrell and Co., Cambridge, were successful in obtaining first place in the class for twelve varieties, and staged Mabel, Favourite, White Aster, E. F. Junker, Fairy Tales, Isabel, Whisper, Darkness, Henriette, Fanny Weiner, Karl Goldenburg, and Grace. The other successful competitors were Mr. G. Humphries, Mr. Seale, and Messrs. Gilbert and Son. Messrs. J. Cheal and Sons distinguished themselves in the class for twenty-four single varieties, ten blooms of each, by taking the first prize. The blooms were of excellent quality, and staged in a manner at once tasteful and effective, and the varieties were Mrs. W. C. Harvey, Cetewayo, Victoria, Miss Linaker, Hugo, Alba Perfecta, Mr. Kennett, Gulielma, Eclipse, Formosa, Albert Victor, Duchess of Fife, Duchess of Westminster, Amos Perry, Miss Ramsbottom, Mrs. Bowman, Miss Roberts, Mrs. J. Coninck, Duchess of Albany, Northern Star, James Scobie, Miss Henshaw, and Marion Hood. Mr. Seale and Messrs. Paul and Son were second and third with good stands differing but little in relative merit. Messrs. J. Burrell and Co. were first for twelve with good bouquets.

AMATEURS had eleven classes devoted to them, and in these ample provision were made for the several sections. The chief class in the division was that for twenty-four show and fancy varieties, and here Mr. T. Hobbs, St. Mark's Road, Easton, Bristol, occupied the first place with large well-finished blooms of Richard Dean, H. King, Prince of Denmark, J. Hickling, W. Rawlings, Nellie Tranter, W. Keith, J. T. West, John Standish, R. T. Rawlings, Joseph Green, Mrs. Gladstone, T. W. Girdlestone, Mrs. Slack, Arthur Blick, Henry Walton, Mrs. Harris, T. Hobbs, Vice-President, Excellent, Alice Emily. Mr. J. T. West, gardener to W. Keith, Esq., Cornwall, was a capital second, and Mr. H. Glasscock, Bishops Stortford, and Mr. T. Anstiss, Brill, were third and

fourth. The prizetakers for twelve show varieties, Mr. S. Cooper, Chippenham; Mr. G. Arnold, Leighton Buzzard; Mr. A. Ocock, Havering Park, Romford, and Mr. W. Seaman, Westbury, Brentwood. The varieties represented in the first prize stand were J. T. Saltmarsh, George Barnes, Maud Fellowes, Willie Garratt, R. T. Rawlings, Crimson King, Goldfinder, Thomas Hobbs, Mrs. Gladstone, Harry Keith, Vice-President, Harry Turner. In the corresponding class for fancy varieties, Mr. J. T. West was first with finely-developed blooms of Mrs. Saunders, Dorothy, T. W. Girdlestone, Duchess of Albany, Frank Pearce, Henry Eckford, Gaiety, Salamander, George Brown, J. Forbes, Hugh Austin, and Mrs. N. Halls. Mr. S. Cooper. Mr. Glasscock, and Mr. W. Mist, Ightham, Kent, were awarded the remaining prizes in the class. There were seven classes for six varieties, and in three Mr. Glasscock occupied the first place, and in the others the winners of the first prizes were Mr. H. Hereman, Chippenham; Mr. West; Mr. W. H. Harris, Chelmsford; and Mr. E. Mawley, Great Berkhampstead.

OPEN CLASSES, some five in number, were provided for varieties to be shown according to their colours, and proved highly interesting. For six blooms of any dark show or fancy variety Mr. Hobbs was first with Willie Garratt, Mr. Austiss was second with James Cocker, and Messrs. Keynes, Williams, and Co., and Mr. H. Glasscock were third and fourth. For six blooms of any light variety Mr. J. Walker was first with Mrs. Gladstone, which was shown by the majority of exhibitors in the class. Mr. West was first for six blooms to comprise equal numbers of any two yellow varieties, with R. T. Rawlings and Joseph Service. In the corresponding class for tipped varieties Messrs. Keynes, Williams, and Co., were first with Mrs. Saunders and Peacock. The same exhibitors were also first for two striped varieties, three blooms of each, with Pelican and Rev. J. B. M. Camm. There was a brisk competition in all the open classes, and the winners of the second, third, and fourth prizes consisted of the more successful competitors in the amateur and trade classes.

MISCELLANEOUS CONTRIBUTIONS included large tastefully-arranged representative collections of dahlias from Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, and Messrs. J. Cheal and Sons.

NEW DAHLIAS were rather numerous, and first-class certificates were granted as under:—

To Messrs. Keynes, Williams, and Co. for

Comedian.—A very fine fancy variety; the blooms rather large, perfect in outline, and with high centre; the ground colour rich yellow, striped crimson and purple.

Phœbe.—A beautiful pompon variety; the blooms rather large and of good form; the colour bright orange scarlet, yellow at the base of the florets.

To Messrs. J. Cheal and Sons for

Gulielma.—A charming single variety; the blooms of medium size and fine form; the florets pure white, with sharply-defined orange-yellow margin.

Northern Star.—A distinct and effective single variety; the florets crimson, edged with bright yellow.

Eclipse.—A fine single variety; the bloom of average size and perfect in outline; the colour brilliant scarlet-crimson.

Duke of Clarence.—A handsome cactus variety; the flowers large; the colour deep marone crimson; valuable for its fine form and distinct colour.

To Messrs. H. Cannell and Sons, Swanley, for

Mrs. L. Shuter.—A cactus variety; the flowers rather small, and of a pleasing lemon yellow colour.

Cannell's Favourite.—A superb cactus variety; the flowers large and of grand form; the colour old gold, shaded deep fawn. A great acquisition in its class, both for its colour and high quality.

Millie Ecupham.—A charming cactus variety; the blooms of average size, good form, and a pleasing shade of light buff.

Glory of Swanley.—A useful decorative variety; the blooms of medium size, full and of a rich scarlet hue.

To Mr. C. Turner, Slough, for

Midget.—An exquisitely beautiful pompon variety; the blooms small and perfect in form, the colour bright rose shaded crimson.

To Mr. H. Glasscock, Bishops Stortford, for

Black Prince.—A remarkably fine cactus variety; the blooms large, of good form, and of a black marone colour.

To Mr. T. S. Ware, Tottenham, for

Mrs. W. C. Harvey.—A very distinct single variety; the blooms of medium size and circular in outline, the colour deep purple with broad band of rose on each side of the florets.

Duchess of Fife.—A handsome single variety; the blooms rather large, and of a rich golden hue, shaded orange.

Maude.—A very beautiful single variety, the blooms of average size and excellent form, the florets pure white with narrow purple band on either side.

ROYAL HORTICULTURAL SOCIETY, SEPTEMBER 9.

FLORAL COMMITTEE.

Present: William Marshall, Esq., in the chair; and Messrs. R. Dean, H. B. May, H. Cannell, C. T. Druery, Shirley Hibberd, F. Moore, G. Paul, J. Fraser, C. Noble, J. Walker, and W. Holmes.

The contributions to the meeting on Tuesday were few in number, the most important being the collections of gladioli from Messrs. Kelway and Son, Langport, and Messrs. Lemoine and Sons, Nancy; the collection of decorative dahlias from Messrs. H. Cannell and Sons, Swanley, and the collection of cut specimens of trees and shrubs from Messrs. Paul and Son, Cheshunt. The collection of gladioli from Messrs. Kelway and Son, Langport, comprised about two hundred finely-developed spikes, and produced an extremely attractive display. The collection consisted exclusively of the fine varieties raised by the firm, who were awarded the silver-gilt Banksian medal. Messrs. Lemoine and Sons' collection was comparatively small, and consisted of varieties raised by the firm by the intercrossing Gladiolus purpureo auratus and G. Saundersianus with the varieties belonging to the Gandavensis section. Messrs. Paul and Son's contribution of cut specimens of hardy trees proved highly interesting. The collection included examples of all the finest trees and shrubs remarkable for the beauty of their foliage, and a few shrubs grown for their flowers. Amongst the latter were Ceanothus azureus, a beautiful species with pale blue flowers; Spiræa callosa, S. callosa alba, S. Nobleana, a beautiful hybrid with rosy pink flowers, and Hypericum oblongifolium, a compact growing and very free-blooming species, with bright yellow flowers. An excellent white aster was also shown by Messrs. Paul and Son, who were awarded the silver Banksian medal. Dr. Masters submitted cut specimens of Acer Van Volxemi, a robust-growing tree of much value for avenues.

The large collection of cactus dahlias staged by Messrs. H. Cannell and Sons, Swanley, contained a large number of novelties, and was not less remarkable for its interest than for its attractiveness. Especially deserving of notice were Cannell's Favourite, Dr. Peters, Maid of Kent, and Lacinita aurea, which received awards of merit, and Glory of the Autumn, a charming variety, the flowers large, and of a rich buff colour, suffused red; Mrs. H. Castor, blush pink, exceedingly pleasing, and Pride of Swanley, a beautiful variety, the blooms white suffused bright pink. The bronze Banksian medal was awarded the firm.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, exhibited blooms of several new dahlias, the most important being Crimson Beauty, an excellent crimson pompon; Henry Freeman, a pure white decorative variety of great promise; and E. F. Taylor, an attractive flower, richly coloured crimson and rose. A very distinct strain of carnations was shown by Messrs. J. Veitch and Sons, Chelsea, under the collective designation of Dianthus caryophyllus Margaritæ. The plants shown were raised from seed sown in a warm frame in March. The seedlings were, when of a suitable size, pricked off into a bed of soil in a cold frame and planted out early in June. They remained undisturbed until the morning of the meeting, when they were potted up, and had evidently suffered but little from the removal. The examples exhibited ranged from ten to twelve inches in diameter, and were furnished with large numbers of buds and flowers, the latter ranging from white to deep crimson. Mr. C. Turner, Slough, exhibited several new pompon dahlias, of which two received awards of merit; Messrs. Daniels Bros., Norwich, submitted two beautiful new godetias named the Duke of Fife and Duchess of Fife respectively, and received an award of merit for the first named of the two. The Duchess of Fife is a charming variety, the flowers deep blush with a large carmine blotch in the centre of each petal. A good form of Lilium longiflorum was shown by Messrs. Watkins and Simpson, Exeter Street, Strand. Mr. Soper, 307, Clapham Road, sent maize cobs and other dried specimens from Iowa.

A silver medal was on this occasion offered by Messrs. Kelway and Son for twelve spikes of gladioli, and this was awarded to Mr. Crasp, gardener to Lord Wimborne, Canford Manor, Wimborne. The varieties shown were good and the spikes well developed.

FRUIT COMMITTEE.

Present: John Lee, Esq., in the chair; and Messrs. F. Jamin, R. D. Blackmore, P. Crowley, Harrison Weir, A. H. Pearson, G. Bunyard, G. Norman, J. Smith, J. Hudson, F. Q. Lane, A. Watkins, and J. Cheal.

The contributions to the meeting of the Fruit Committee were comparatively few in number, but they were by no means wanting in interest. Mr. J. Walker, Ham, exhibited a collection of twenty-one dishes of apples, and was awarded the silver Banksian medal. New Hawthornden, Grenadier, Lord Suffield, Stirling Castle, Duchess of Oldenburgh, Lane's Prince Albert, Cox's Orange Pippin, Cox's Pomona and Worcester Pippin were represented by exceptionally fine fruit.

Mr. Crasp staged a good collection of fruit comprising apples, pears, figs, peaches, and nectarines, and received a cultural commendation. Mr. Selby, Ratcliffe-on-Trent, sent a collection of potatos, for which he received the compliment of a vote of thanks. Several seedling grapes were submitted by Mr. Maher, of Yattanden Court, Berks. Messrs. J. Carter and Co., High Holborn, sent a dish of Market Favourite tomato, and a good fruit of Holborn Favourite melon, a large oval fruit with white flesh and yellow nicely netted skin.

ORCHID COMMITTEE.

Present: H. J. Veitch, Esq., in the chair; Dr. Masters, and Messrs. J. O'Brien, S. Courtauld, L. Castle, F. Sanders, J. Douglas, E. Hill, J. Dominy, and C. Pilcher.

The most noteworthy of the few objects requiring the attention of this committee were the admirably-flowered examples of Habenaria militaris from Mr. White, orchid grower to Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, to whom the award of the silver Banksian medal was made. Mr. White also had an example of Cypripedium glanduliferum, similar in general character to C. Elliottianum, but the flowers are much smaller. Messrs. F. Sander and Co., St. Albans, contributed a small and interesting group, in which was a medium-sized specimen of Miltonia candida superba bearing eight finely-developed spikes, and good examples of Cattleya gigas and C. Gaskelliana. Mr. T. C. Hincks, Breckenborough, Thirsk, sent a bloom of Masdevallia stella, a promising hybrid obtained from a cross between M. Harryana and M. Estradæ. The flower shown was comparatively small, similar to the last-named species in form, and of a bright purplish rose colour. Mr. R. Johnson, gardener to T. Statter, Esq., Stand Hall, Manchester, exhibited good forms of Cattleya aurea and Lælia elegans, and a well-bloomed specimen of Dendrobium album. The handsome Vanda Sanderiana was admirably shown by T. A. Gledstanes, Esq., Gunnersbury, who also had a well-bloomed specimen of Dendrobium formosum, which, as so well known, is one of the finest of the white dendrobes.

NOVELTIES.

The number of novelties submitted to the several committees was large, and a considerable proportion received recognition. First class certificates were granted as under:—

To Mr. T. Statter, Stand Hall, Manchester, for

Cattleya aurea Statteriana.—An extremely beautiful form of this fine cattleya. The flowers are of average size, the sepals and petals bright yellow, the labellum deep golden yellow, marked down the centre with deep crimson and margined with bright rose.

Awards of merit were made as under:—

To Mr. T. Statter, for

Lælia elegans Turneri, Stand variety.—A good form of Turner's variety of this handsome species. The flowers are larger than are those of the type. The sepals and petals are bright rose, labellum rich amethyst purple.

To Messrs. Lemoine and Sons, for the undermentioned gladioli:

Gladiolus New Blue.—A very distinct variety belonging to the Lemoinei section. The flowers are of medium size and borne in elegant spikes, and the colour purple blue with violet blotches on the lower segments.

Lemoinei P. P. P.—A beautiful variety, having comparatively large flowers of a soft orange scarlet colour. The flowers are of good form and highly effective.

Le Grand Carnot.—A distinct variety belonging to the Nancieanus section. The flowers rather large and well expanded, the colour soft red with a white line down the middle of each segment, the two lower segments marked with large cream coloured blotches.

E. V. Hallock.—A charming variety belonging to the Lemoine group. The flowers are of medium size and good form; the colour, cream white, the three lower segments blotched with crimson, two being also tipped with yellow.

Louis Thibaut.—A very distinct and handsome variety; the flowers rather large and of a deep purple hue, with crimson blotch on two of the lower segments.

To Messrs. Kelway and Sons, Langport, for

Gladiolus Leonard Kelway.—A handsome variety, remarkable for its distinct colour; the flowers are of average size, and borne in good spikes; the colour purple crimson with darker markings.

To Messrs. H. Cannell and Sons for the undermentioned dahlias:—

Maid of Kent.—A fine decorative variety; the flowers are in good form; the colour deep crimson, tipped white.

Cannell's Favourite.—A remarkably good cactus variety, described in the report of the National Dahlia Society.

Dr. Peters.—An effective and otherwise excellent cactus variety; the blooms rather large and of fine form, the colour scarlet, shading to orange buff.

Laciniata aurea.—A distinct cactus variety; the flowers of medium size, full, and with laciniated florets; the colour, bright yellow.

To Mr. Charles Turner, Slough, for the undermentioned dahlias:—

Lorina.—A superb show variety; the blooms large, with regular outline and fine centre; the colour, old gold lightly suffused red.

Rubens.—An attractive pompon, the blooms comparatively large and of superb form; the colour deep claret tipped and shaded white.

Marion.—An exquisitely beautiful pompon, the flower small and perfect in form, and the soft rose shaded crimson in the centre.

To Mr. T. S. Ware, Tottenham, for

Dahlia Crimson Beauty.—A superb pompon variety; the blooms of average size and fine form; the colour deep crimson.

To Mr. J. Green, The Nurseries, Dereham, for

Dahlia Black Prince.—A bold and handsome cactus variety; the blooms large and full, the colour deep marone.

To Messrs. J. Veitch and Sons, Chelsea, for

Dianthus caryophyllus Margaritæ.—A distinct strain, remarkable for the dwarf growth and free blooming character of the plants; the flowers are of medium size, with elegantly fringed petals, the colours include white, pink, rose, red, crimson, and marone.

To Messrs. Daniels Bros., Norwich, for

Godetia Duke of Fife.—A valuable addition to this group of useful annuals, which will no doubt become not less popular than the other beautiful forms introduced by the firm. The growth is compact, the plants profuse in blooming, the flowers are large, and the colour rich crimson shaded rose.

To Mr. J. O'Brien, Harrow-on-the-Hill, for

Crocosma aurea maculata.—A fine form of this beautiful species, of which the distinguishing characteristic is the crimson blotch on each segment.

To Mr. Ely, Joyce Grove, Henley-on-Thames, for

Melon Ely's Seedling.—A green fleshed variety, the fruits rather large and oval, the skin deep green and finely netted, the flesh bright green, firm, and richly flavoured.

General Meeting.

At the afternoon meeting, over which the Rev. H. H. D'Ombrain presided, papers by M. Lemoine, of Nancy, and Mr. J. Kelway were read, on "The History and Cultivation of Gladioli." The attendance was considerably above the average, and both papers created much interest.

M. Lemoine dealt chiefly with the varieties belonging to the Lemoinei and Nancieanus groups, which are remarkable for their hardiness, and the distinctive colouring of the flowers. In tracing the history of the varieties belonging to the first-named of these two sections, M. Lemoine stated that his first crosses were effected in 1875 between Gladiolus aureo-purpuratus and Gandavensis varieties. From the seedlings raised from these crosses, Lemoinei and Marie Lemoine were selected, and in due course distributed, the year of their introduction to commerce being 1880. Since the flowering of the first batch of seedlings large numbers have been obtained, as the result of the intercrossing of the new forms with Gandavensis varieties. Of these, about sixty have been introduced to commerce. In selecting, special attention has been paid to hardiness, and those not sufficiently hardy to bear the rigours of the winter were destroyed. It was found that varieties closely resembling Lemoinei were the most hardy. The first of the varieties belonging to the Nancieanus group were raised from a cross effected in 1883 between Gladiolus Saunderianus and varieties of G. gandavensis. The crop of seed was small, and from the few seedlings raised, Maurice Vilmorin and President Carnot were selected for distribution. These two forms were inter-crossed with other Ghent varieties, and the raising of seedlings has been continued up to the present time, with the result that the group has now assumed considerable proportions.

The culture was described as being extremely simple, and it was stated that the varieties belonging to both groups are perfectly hardy, and succeed equally well in both heavy and light soil.

Mr. J. Kelway, in the course of his remarkably able paper, sketched the history of the Gandavensis section, and gave brief directions for the cultivation of the varieties belonging to this important group.

At the close of the proceedings votes of thanks were passed to the readers of the papers and the chairman.

BRITISH FRUIT GROWERS' ASSOCIATION, September 5.

On the first day of the exhibition of fruit and dahlias at the Crystal Palace a conference was held under the auspices of the British Fruit Growers' Association, when papers were read on Fruit Production in Ireland, and other subjects. George T. Rait, Esq., deputy chairman of the Crystal Palace, presided, and there were present upwards of one hundred and fifty fruit growers and others specially interested in the work of the association.

The Chairman, in opening the proceedings, offered, on behalf of the Crystal Palace Company, a hearty welcome to the association, and expressed the pleasure he felt in knowing that it had its birthplace at the Crystal Palace. Reference was also made to the objects of the association, and attention directed to the useful work it had already accomplished. He then called upon

Mr. George Gordon, the vice-chairman, who, with Mr. Lewis Castle, the honorary secretary, has recently made a tour in Ireland in the interest of fruit culture, to read his paper on "Fruit Production in Ireland," which is given in another part of this sheet.

Mr. Lewis Castle having briefly expressed his concurrence in the statements of fact and expressions of opinion contained in the paper,

Mr. Bullock Hall, who has devoted considerable attention for years past to fruit growing in Ireland said, that although a large owner of land in England he was not an Irish landowner, and he therefore regarded the matter more from a social standpoint than from its commercial aspect. He had in travelling through Ireland some years since been much struck at the absence of the small orchards which were so common in this country. He did not concern himself with the dessert apples, but rather with the ingredient of the homely apple-dumpling. He regretted that the Catholic priesthood of Ireland did not encourage gardening as much as they might; they were not, unfortunately, as the French curés were, practical gardeners. It was undoubtedly chiefly to the landowners that they must look for the development of fruit culture in Ireland and experimental orchards as advised in the paper would be of immense value. He had done something in the way of distributing fruit trees in the South of Ireland, and, on the whole, with a considerable amount of success. In some of the poorest districts of south-west Cork he had given some assistance, and Mr. Gordon assured him that the trees so planted were doing well. He was sorry that the present generation was so apathetic, but he was convinced that with the rising population they could do anything. He had received help and encouragement of the most valuable character from the school teachers, and nowhere had he met with children so bright and charming as those who attended the Irish elementary schools. He would urge upon the association to send a few scientific lecturers during the coming winter, who could do excellent work with the teachers in instructing them in the principles of fruit culture.

Mr. Denny Lane stated that from his experience in orchard cultivation and gardening in the county of Cork, he was in a position to testify to the favourable character of the climate of the south of Ireland in many respects for fruit growing, though there were some drawbacks in late frosts and excessive rainfall. The apples suffered especially from too much moisture, and of late years orchards that once were highly productive now yielded so poor a return that the crops hardly paid for the cost of watching. Bush fruits, on the other hand, had proved highly satisfactory, in proof of which he mentioned the fact that in the course of the past summer a breadth of raspberries, occupying two-thirds of an acre, produced a crop which realized £37, although the land had not been manured for nearly three years. Indoor grapes, he found, could be grown as successfully in the south of Ireland as regards the weight and quality of the crop and in the time of ripening as in Jersey. The reasons why the south of Ireland was so far behind the north in fruit culture, were that the north had the advantage of a good system of education for some generations before the south, and that the conditions of land-tenure had in the past been more equitable in the north. He fully agreed with the remarks of Mr. Hall as to the importance of beginning with the schools in improving horticulture and fruit growing in Ireland.

Mr. Albert Bath said the conference was greatly indebted to Mr. Gordon and Mr. Castle for the time and labour they had devoted to the inquiry into the condition and possibilities of fruit culture in Ireland, and for the admirable manner in which the question had been submitted to them. One reason why fruit culture in Ireland had not been developed was, no doubt, the land system, which proves so great a hindrance to the extension of the industry in England. But now there were better conditions in Ireland, and he hoped that as one of the results of the inquiry they would be taken full advantage of. He trusted that the association would be able to adopt Mr. Hall's suggestion as to the sending of lecturers to instruct the school teachers in Ireland.

At the conclusion of the discussion on fruit growing in Ireland,

Mr. T. Francis Rivers read a paper on "Peaches and Nectarines for Market." This was followed by a paper by Mr. J. Smith, of Mentmore, on "Plums for Market," and Mr. George Bunyard contributed a paper on "Cherries for Market."

Mr. J. Cheal, in opening the discussion on the several cultural papers, said, in reference to Mr. Smith's paper on plums, that it showed in a marked manner the importance of fruit growers meeting together at suitable intervals and comparing notes. With reference to Rivers's Early Prolific, which did not succeed with Mr. Smith, he must say that generally it was one of the most profitable of plums; Mitchelson's, on the other hand, although a great cropper was inferior in quality. He would also suggest that in addition to the varieties recommended by Mr. Smith, The Czar, Cox's Emperor, and Prince Englehart be planted. The cutting back immediately after planting advised by Mr. Smith no doubt answered very well on good soils, but on poor soils it was found that shortening the shoots by about one-third gave the best results. Bush trees are now largely planted with much success, but they of course occupy the whole of the ground.

Mr. A. Bath agreed with Mr. Cheal as to the value of Mr. Smith's paper, and urged the importance of more attention being paid to the preserving of plums, so that in seasons of great plenty there may be no waste. This year the crop of plums was almost a failure. He knew a grower, however, who had a large crop of Victoria and Orleans and he attributed the productiveness of his trees to their having had the composition bands round the stems during the past three years.

Mr. Beach mentioned the fact that there were good crops of some kinds of plums at Toddington this year and that green gages were worth £45 per ton.

The proceedings terminated with the customary votes of thanks to the readers of the papers and the Chairman.

Additional interest was given to the meeting by the large collection of apples and pears from Ireland. The collection comprised one hundred and thirty dishes and one hundred and fifty varieties, the latter including many local kinds. The principal exhibitors were Lord O'Neill, Shanes Castle, Antrim (gardener, Mr. C. Warwick); Sir C. B. Barrington, Bart., Glenstall Castle, Murroe (gardener, Mr. R. Wellar); J. F. Lambard, Esq., South Hill, Rathmines, Dublin; A. H. Bannatyne, Esq., Summerville, Limerick (gardener, Mr. Ellicott); and Rev. Mr. Pakenham, Langford Lodge, Crumlin (gardener, Mr. Harding).

TRADE CATALOGUES.

Barr and Son, 12, King Street, Covent Garden.—*General Catalogue of Bulbs, Catalogue of Daffodils.*

Dobbie and Co., Rothesay, Scotland.—*Hyacinths, Tulips, Narcissi, Roses, &c.*

J. Cheal and Sons, Crawley, Sussex.—*Trees and Shrubs, Roses, Fruit Trees, Rhododendrons, &c.*

Ampelopsis Hederacea is so pushed into the background by the peculiar attractiveness of A. Veitchi, that it is quite agreeable to be reminded of its existence by samples of leaves forwarded by Mr. R. Owen, of the Floral Nursery, Maidenhead. One form is five-fingered and richly coloured in ruddy bronze; the other is entire ovate with cuneate base, with large teeth such as in old books would be described as "feather lobed." The colour is a deep brownish bronze shading to sombre green.

Replies to Queries.

Constant Reader: Select the bulbs at once; there is no time to spare.

Parsley.—Standring: It is advisable in most cases to make two sowings of parsley annually, one in March and the other in July, as by adopting that course a liberal supply can be ensured throughout the year. If you consider one sowing sufficient for your purpose, sow in the last named of the two months. Select a readily accessible position and sow thinly in shallow drills. If you have several rows parallel to each other, allow a space of eighteen inches or two feet between them. It is important the soil should be moderately rich and deeply stirred, and if your soil is naturally very light and dry, a mulch of short manure will be highly beneficial.

Training of Gardeners.—Journeyman: The training of young men for positions of trust in the garden should be chiefly done in the private garden, as they will there not only obtain a knowledge of the collection of the several classes of fruits, plants, and vegetables, but will have opportunities for becoming acquainted with the requirements of families. It is not, however, necessary or perhaps desirable for a young gardener to remain the whole of his time in private gardens. On the contrary, it will be an advantage if he can serve two years or so in a first-class market establishment, and a like period in a botanical garden.

Tomatos not Ripening.—W. G.: You are by no means singular in failing to obtain a crop from tomatos in the open. We have during the past few weeks seen large breadths from which it has been impossible to obtain a single well-ripened fruit. In some cases where strong plants were put out the earliest fruit have commenced to colour, but owing to the excess of moisture and the low temperature, a considerable proportion have commenced to decay as soon as the colouring process commenced. Your best course will be to gather the few full grown fruits that have been produced and place them in a dry room or on a shelf in the greenhouse, where, if they are sound, they will in due course attain maturity.

Clothing Shady Wall.—B. M.: You have been properly advised as to the unsuitability of the Virginian creeper for clothing the wall on the north side of your residence. Planted in a shady position, this ampelopsis makes a coarse soft growth, and presents anything but an elegant appearance during the winter, and in the autumn the leaves fall without taking on the rich colours for which it is remarkable. Ampelopsis Veitchi does not make such an objectionably coarse growth when on a shady aspect, as it is more robust; but not adapted for growing in shade, as the leaves undergo little change in colour before they are brought down by the frost. You could not have anything better than one of the free-growing ivies.

Begonia Frobeli.—W. H.: This species is quite distinct in character from the majority of the tuberous begonias in general cultivation, and should be grown somewhat differently. It is much later in coming into growth, and if you dry off the corms with those of varieties now showing signs of resting, they will probably be so injured as to be unable to start into growth in the spring. The proper course for you to take is to place the plants in a light and airy position in a plant house, where they will receive the assistance of a little fire-heat in cold and damp weather. Under these conditions they will continue to bloom freely until December, when they can be dried off. They do remarkably well with the bouvardias and other plants requiring a temperature rather higher than that of the ordinary greenhouse.

Cannas.—M. D.: We are glad to learn that you derived so much assistance from the advice given in these pages on the selection and cultivation of the new race of dwarf free blooming cannas. There is no cause for anxiety as to wintering them, as, in common with the other kinds, they can be kept through the winter with as little trouble as dahlias and tuberous begonias. The best course of procedure is to leave them in the beds until the foliage is destroyed by frost, and then to take up the roots with a moderate quantity of soil about them, and place them on the floor of an airy shed or the greenhouse for the soil to dry. The length of time they should remain depends in some degree upon the character of the soil when the roots are lifted, but usually a period ranging from a week to ten days is sufficient to insure the necessary degree of dryness. For their winter quarters select a shed or cellar where they can be kept safe from frost, pack them close together, and cover to a depth of eight or ten inches with dry soil, cocoanut-fibre refuse, or sand, the fibre refuse being the best. They should remain in their winter quarters until the end of February, when they ought to be potted up. It is important to remove the roots from the plunge bed and pot them rather early, and then allow them to start into growth slowly and with as little fire-heat as possible.

Names of Plants.—Subscriber: The green leaved plant is Hedychium Gardnerianum. It was introduced from the East Indies in 1819, and may be grown in the flower garden during the summer season, but it appears to the best advantage when kept in the greenhouse throughout the year. The coleus is the variety known as Nigressens. The ferns are: 1, Adiantum curvatum; 2, Cyrtomium falcatum. The flowers of Zonal pelargoniums had shed their petals when they reached us, and to give the names of the varieties is impossible. —Eight Years Subscriber: The shrub in fruit is Cotoneaster buxifolia; the other shrub cannot be named without fruit or flowers. Both the fuchsias and Zonal pelargoniums had shed their flowers, and were in consequence unrecognizable.—R. W.: 1, Brexia chrysophylla; 2, Agalmyla Beccari; 3, Ixora Duffi; the truss sent in is not of average size; vigorous plants producing trusses from nine to twelve inches in diameter; 3, Peperomia arifolia argyrea; 4, Physostelma campanulata, known also as Hoya campanulata; 5, Vinca rosea.—H. B. M.: 1, Cattleya Dowiana; 2, Dendrobium Ainsworthi; yes, the last-named is flowering before its usual season, but it is by no means a rare occurrence to meet with flowers in September.—J. W. W., Greenhithe: 1, Rondeletia speciosa; 2, Diplacus glutinosus; 3, Chrysanthemum coronarium; 4, Fuchsia Aurora.—Q. L.: 1, Chrysanthemum maximum; 2, Antennaria margaritacea.—Erin: 1, Spiræa Douglassi; 2, quite out of character owing to the excess of moisture in the parcel; 3, Senecio sylvaticus; 4, Plantago major; 5, Chenopodium urbicum; 6, Davallia divaricata.—Diana: 1, Anemia cicutaria, 2, Davallia bullata; 3, Davallia dissecta; 4, Cheilanthes tenuifolia; the garden labels may be abbreviated as you propose without any violation of propriety; In a botanic garden the full botanical name of a plant must be given, but in a garden for pleasure, a name that identifies the plant is enough, without the aid of a yard of bad latin; nor is it needful to add authorities for names, the current names being all sufficient.—Fernery: 1, Phytolacca icosandra; 2, Scolopendrium vulgare supralineatum; 3, Polystichum angulare; 4, Crucianello stylosa; 5, Veronica longifolia variegata; 6, Epilobium rosmarinifolium.

Propagation of Lilies.—Amateur: In answer to your question, how are lilies propagated? we have to say that existing species and varieties are multiplied by offsets and bulb scales. In increasing them by means of the offsets these are detached from the bulbs when lifted during the season of rest, and planted rather thickly in a nursery bed. They are lifted annually until they are large enough to bloom, and each year they are allowed more space. In effecting their increase by means of the bulb scales, it will be necessary to exercise much care and considerable patience. When the lilies of the kinds you are desirous of increasing are at rest lift the bulbs and carefully detach the outer scales from them, and spread them rather thickly over the surface of a shallow box filled with light sandy soil. Then cover them thinly with fine soil, and place in a frame. During the winter maintain the soil in a moderately moist state, and keep safe from frost by means of coverings or fire heat. Under these conditions the greater portion of the scales will produce plants, and these will rise to a height of two or three inches in the course of the summer. They must remain undisturbed until the growth has died down, when, provided the soil and weather are alike favourable, the bulbs should be planted in a nursery bed in the open. It is most important to bear in mind that the removal of the scales weakens the bulbs, and that those from which comparatively large numbers are taken will not bloom satisfactorily until they have had sufficient time to regain their wonted vigour.

Obituary.

IN the brief notice of the death, on August 30, of Miss MARIANNE NORTH, that appeared in our last issue, reference was made to her generous gift to Kew of the valuable series of paintings of plants and insects that occupy the "North Gallery." This brings the gifted lady into the ranks of public benefactors, and entitles her to the lasting gratitude of the English people. Miss North was the elder daughter of Mr. Frederick North of Rougham Hall, Norfolk, and a lineal descendant of the Hon. Roger North, of literary fame. In 1869 Miss North set out on her travels, visiting Teneriffe, Brazil, the West Indies, California, India, Ceylon, islands of the Indian Archipelago, Australia, and the Seychelles, and employing her pencil everywhere, she soon collected an immense budget of pictorial records of adventurous travel and keen observation. The scenery and vegetation of the countries visited more especially attracted her attention, and her drawings though rough and hasty, and having a certain "chalkiness" of tone, are at once faithful, effective, and as interesting as they are useful. In 1881 she presented her collection of 627 pictures to the nation. But this was not all, for the gallery in which they are displayed at Kew was erected at her own expense from a design by the late James Ferguson, the eminent architect and antiquarian. She has not indulged her love of travel since parting with her pictures; but after superintending the arrangement of the pictures and the unique panelling, which constitutes an exhibition of ornamental woods, she withdrew to lodgings in Victoria Street, where it was her delight to entertain her friends, who included persons of eminence in literature, science, and art, from all parts of the world. Her death was the result of a painful malady, in no way consequent upon her travels, or the many hardships and dangers she had experienced. With beauty of person she combined a sweetness of manner and an inexhaustible fund of knowledge, often expressed with a candour and sparkle of wit not usual with ladies, but quite natural and peculiarly appropriate to a woman of such wide experience of the world and such thorough independence of character.

THE famous nurseries in York have lost a capable director in the person of Mr. JAMES BACKHOUSE, who died a week since at the age of 65 years. Mr. Backhouse inherited the taste for horticulture, which he developed with so much success at the Holgate Nurseries. He was a man of culture, and had a taste for natural history and science generally, but wisely placed his business first amongst the subjects that occupied his mind. The celebrated rock gardens that we have more than once reported on as famous features of the York nurseries, were of his forming and planting, and all that related to beauty in the garden obtained his attention equally with what related more particularly to cultivation and management. His health had never been other than precarious, and he was indebted for the years he attained to his own care and abstemious habits.

Markets.

COVENT GARDEN.

FRUIT.			
Apples.....per ½-sieve	3s. 6d.	to	8s. 0d.
Filberts, Kent, per 100 lb.	50s. 0d.	,,	60s. 0d.
Grapes.....per lb.	0s. 9d.	,,	3s. 0d.
Lemons .....per case	12s. 0d.	,,	21s. 0d.
Peaches .....per doz.	1s. 6d.	,,	7s. 6d.
Pine Apples, English, per lb.	1s. 6d.	,,	3s. 0d.
Pine-apples, St. Michael's each	2s. 6d.	,,	6s. 0d.
Plums .....per ½-sieve	7s. 0d.	,,	12s. 6d.
VEGETABLES.			
Artichokes, Globe, per doz.	2s. 0d.	to	4s. 0d.
Beans, Kidney .....per lb.	0s. 2d.	,,	0s. 3d.
Beet .....per doz.	1s. 0d.	,,	2s. 0d.
Brussels Sprouts....per ½ sieve	2s. 0d.	,,	2s. 6d.
Cabbages.....per doz.	1s. 0d.	,,	2s. 0d.
Carrots .....per bun.	0s. 4d.	,,	0s. 6d.
Cauliflowers .....per doz.	2s. 0d.	,,	3s. 0d.
Celery.....per bun.	1s. 6d.	,,	2s. 0d.
Cucumbers .....each	0s. 3d.	,,	0s. 8d.
Endive.....per doz.	1s. 0d.	,,	2s. 0d.
Herbs .....per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish.....per bun.	2s. 0d.	,,	3s. 0d.
Lettuces .....per doz.	1s. 0d.	,,	1s. 6d.
Mushrooms ...per basket	0s. 6d.	,,	1s. 0d.
Onions.....per bushel	2s. 6d.	,,	4s. 0d.
Parsley .....per bun.	0s. 3d.	,,	0s. 4d.
Peas .....per quart	1s. 6d.	,,	2s. 6d.
Scarlet Runners ...per lb.	0s. 1d.	,,	0s. 2d.
Shallots .....per bun.	0s. 4d.	,,	0s. 6d.
Small Salading...per pun.	0s. 3d.	,,	0s. 4d.
Spinach .....per bushel	2s. 6d.	,,	3s. 6d.
Tomatos.....per lb.	0s. 6d.	,,	0s. 9d.
Turnips..... per bunch	0s. 3d.	,,	0s. 4d.
Vegetable Marrows, per doz.	2s. 0d.	,,	3s. 0d.
CUT FLOWERS.			
Abutilons...per doz. bun.	2s. 0d.	to	4s. 0d.
Asters.....per doz. bun.	1s. 6d.	,,	4s. 0d.

CUT FLOWERS.—*Continued.*

Bouvardias.....per bunch	0s. 6d.	to	0s. 9d.
Callas .....per doz.	2s. 0d.	,,	5s. 0d.
Carnations, per doz. blms.	1s. 0d.	,,	2s. 0d.
Chrysanthemums, per doz. blooms..... ..	0s. 6d.	,,	2s. 0d.
Chrysanthemums, per doz. bun.	2s. 6d.	,,	5s. 0d.
Coreopsis ...per doz. bun.	1s. 0d.	,,	3s. 0d.
Dahlias .....per doz. bun.	2s. 0d.	,,	4s. 0d.
Eucharis ...per doz. blms.	2s. 0d.	,,	4s. 0d.
Gaillardias, per doz. bun.	2s. 0d.	,,	4s. 0d.
Gardenias, per doz. blms.	2s. 0d.	,,	4s. 0d.
Gladioli .....per doz. bun.	5s. 0d.	,,	10s. 6d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Lapageria, per doz. blms.	1s. 0d.	,,	3s. 0d.
Lavender ...per doz. bun.	3s. 0d.	,,	5s. 0d.
Liliums, various, per doz. blooms	0s. 6d.	,,	4s. 0d.
Maidenhair Fern, per doz. bun.....	4s. 0d.	,,	8s. 0d.
Marguerites, per doz. bun.	2s. 6d.	,,	5s. 0d.
Mignonette, per doz. bun.	1s. 0d.	,,	3s. 0d.
Pelargoniums, Zonal, per doz. trusses	0s. 3d.	,,	0s. 4d.
Roses, Coloured, per doz.	1s. 0d.	,,	1s. 6d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	1s. 6d.
Stephanotis, pr.dz.sprays	1s. 6d.	,,	2s. 6d.
Sunflowers, per doz. bun.	3s. 0d.	,,	6s. 0d.
Tuberoses, per doz. blms.	0s. 4d.	,,	0s. 6d.

BOROUGH AND SPITALFIELDS.

POTATOS.			
Regents .....per ton	65s.	to	75s.
Magnum Bonum .....per ton	60s.	,,	75s.
Beauty of Hebron .....per ton	65s.	,,	80s.
Myatt's Ashleaf .....per ton	60s.	,,	70s.
Early Rose.....per ton	40s.	,,	50s.
Imperator .....per ton	55s.	,,	70s.
White Elephant .....per ton	70s.	,,	75s.

MR. F. W. BURBIDGE has reprinted, for special separate circulation, his paper on the "History of Cultivated Narcissi," contributed to the *Journal of the Royal Horticultural Society*.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets After.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
21	S	**16th Sunday after Trinity.** ☽ First Quarter.	5 45	7 0	6 0	1 51	9 30	5 50	6 13	3 4	3 15	56·7
22	M		5 46	7 21	5 58	2 58	10 24	6 40	7 8	3 38	4 5	56·6
23	Tu	Battle of Assaye, 1803.	5 48	7 42	5 56	3 54	11 33	7 42	8 24	4 33	5 7	56·3
24	W	Dean Milman died, 1868.	5 49	8 3	5 54	4 40	Morn.	9 12	10 2	5 49	6 37	56·1
25	Th	Porson died, 1808.	5 51	8 23	5 52	5 10	0 56	10 48	11 31	7 27	8 13	55·9
26	F	Lucknow relieved, 1857.	5 53	8 44	5 50	5 36	2 22	—	0 6	8 56	9 31	55·7
27	S	George Cruikshank born, 1792.	5 55	9 4	5 47	5 57	3 51	0 33	0 59	9 53	10 24	55·5

Orchids in Flower.		Day of Yr.
Dendrobium bigibbum	India.	1890
Dendrobium chrysanthum	India.	264
Miltonia candida	Brazil.	265
Miltonia candida grandiflora	Brazil.	266
Miltonia candida Olowesi major	Brazil.	267
Oncidium bicolor	Gautemala.	268
Oncidium crispum grandiflorum	Oregon.	269
		270

CRYSTAL PALACE.—GREAT AUTUMN FRUIT SHOW, OCTOBER 9TH to 11TH.

Schedules and Entry Forms on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace. Entries close Thursday, October 2nd.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, SEP. 23, AND WEDNESDAY, SEP. 24.—ROYAL HORTICULTURAL SOCIETY.—Grape and Dahlia Conference at Chiswick. Floral and Fruit Committees first day.

Auction Sales for the Ensuing Week.

MONDAY, WEDNESDAY, THURSDAY, AND SATURDAY, SEPT. 22, 24, 25, AND 27.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

MONDAY, WEDNESDAY, AND SATURDAY, SEPT. 22, 24, AND 27.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.

WEDNESDAY, SEPT. 24.—Messrs. Protheroe and Morris, at the Moat Nursery, East Grinstead; Stove and Greenhouse Plants.

THURSDAY, SEPT. 25.—Messrs. Protheroe and Morris, at Highcroft, Husbands Bosworth; Stove and Greenhouse Plants.

THURSDAY, SEPT. 25.—Mr. J. C. Stevens, 38, King Street Covent Garden; Orchids.

THURSDAY, SEPT. 25.—Mr. J. C. Stevens, at The Nurseries, Southgate; Palms, &c.

FRIDAY, SEPT. 26.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

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No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

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The Gardeners' Magazine.

SATURDAY, SEPTEMBER 20, 1890.

THE AUTUMNAL EXHIBITION OF THE ROYAL BOTANICAL SOCIETY OF MANCHESTER held on the Friday and Saturday of last week, differed in some important particulars from the meetings we have long been accustomed to at the same place at the same season in years that have gone. Manchester is like other prosperous cities; it grows, and when the new ship canal is completed and certain districts are in consequence brought within the municipal boundaries, it will be the second city in the empire, and will compete with the metropolis in many matters which are commonly regarded as the exclusive privilege of the political and commercial centre of the State. On the occasion to which we refer Manchester cannot be said to have competed, because, as the case stands, the cotton city enjoys a monopoly of a certain range of horticultural illustration, the result of the careful and persistent cultivation of an idea, and hitherto its claims to pre-eminence in the line it has taken have not been disputed.

The September exhibition in the gardens at Old Trafford was after the customary type, and it brought the giants together. There was a grand display of grapes in three classes for these fruits, and the least worthy of the number might have stood in the highest position at many an exhibition of quite respectable rank. That Mr. Alderman Chaffin, of Bath, repeated the triumphs achieved by him in his own city and subsequently at the Crystal Palace, and again here with a great array of talent against him is a matter of some interest, but it belongs to the report, and it is not the winner of this or that we are now concerned about. The conception and completion of the entire festival concerns us more than any particular detail, and we have to say that the general plan was such as may be commended for consideration everywhere as consistent with the spirit and purpose of a horticultural exhibition, and as an advance in the practical business on all average undertakings of the kind.

We see here the competitive spirit producing its legitimate fruits. The wise people in London and elsewhere who fondly cherish the idea that a show is everything and competition nothing may with advantage compare notes with Manchester in respect of *results*. A show that represents so much shop may be various and interesting and gorgeous enough for the gratification of a class that knows nothing of horticulture beyond the fact that it relates in some way to plants and flowers and fruits. For the stirring up of intelligent interest, for the advancement of the art, for the advantage of the public, an exhibition that excludes from its plan all competition is beyond all doubt a mockery, a delusion, and a snare. A corpse may be dressed to look gay, but so long as the beholders know what it is the sensation of joyousness that a gay spectacle should inspire is all unknown to them. Some exhibitions we have heard of and have sometimes seen may be likened to the bedizened remains of humanity, for in truth they place before us a show of life that but ill conceals the death that is within. There were but thirty classes in the Manchester autumn show, and yet the affair attracted a great and glorious competition, and aroused the interest of horticulturists throughout the length and breadth of the land: they will greet with thoughtful welcome the reports from experts that the horticultural papers will supply, and will in many instances make some brave resolves to lay themselves out for a place in the happy scrimmage at the same place at this time next year.

But we should probably have less to say on the subject here were the competitions and the prizes the only subjects to claim attention. The gardens were gay with flowers, and the ample grass spaces were pleasant for promenaders in the warm sunshine; and there was a first-class military band to discourse sweet music by day, and when night came the gardens and the exhibition were illuminated, and a first-class concert was given in that portion of the noble pavilion, in which the exhibition was held, that has been screened off for the purpose. The Manchester Society has continually prospered and advanced, and has never treated the competitive principle with the disdain it has had to encounter in other places sacred to horticulture that embellish our variable planet. It has pursued a definite policy, and has never swerved therefrom, but has expanded and augmented the returns to its supporters in a way that only a spirited and liberal policy can do. The Society has the advantage of a curator who is at once a man of business and a master of this particular business, and with a man and a policy much may be done that cannot be expected where there are neither. It is no small matter that in the beautiful gardens at Old Trafford a feast of two days was provided for the subscribers, and this included promenade concerts by day and illuminations with outdoor and indoor concerts by night, and every particular of every feature was such as persons of taste and culture and respectable reserve might fully enjoy. It scarcely needs to be added, perhaps, that vulgarities and mere tinsel gentilities were never thought of in the arrangements. But lest any misconception should arise that a word would prevent, we will add that there were no acrobats, no performing monkeys, no switchback, no balloon, and no fireworks. Some of these things may be pronounced other than vulgar, or as tinsel gentilities, but there will be no question raised about the propriety and pleasantness of associating with a first-class horticultural display in a beautiful and suitable edifice of a performance of first-class vocal and instrumental music, and that is just what the supporters of the Royal Botanical Society of Manchester were enabled to enjoy at the close of last week. If you eliminate the competition you devote the thing to death, and *then* a concert would be inopportune.

AMERICAN POTATO CROP will, it is stated in the *Prairie Farmer*, be 100,000,000 bushels below the average.

MR. J. HUGHES, for many years head gardener at Eydon Hall, Byfield, will be leaving shortly on account of the death of his employer, and is, in consequence, open for another engagement.

A SKETCH OF THE LIFE OF REICHENBACH, written by Dr. Dillinger, his executor, has recently been published in pamphlet form by Lucas Graafe, of Hamburgh.

APPLES IMPORTED during August amounted in the aggregate to 126,270 bushels, as compared with 202,972 bushels in the corresponding month of last year.

IMPORTATIONS OF ONIONS last month show a decrease of 8,003 bushels, as compared with the quantities received in August, 1889, the respective totals being 339,219 bushels and 347,222 bushels.

POTATOS IMPORTED in August amounted in the aggregate to 17,008 cwt., as compared with 39,701 cwt. received in the corresponding month of 1889.

MR. GEORGE BUNYARD of Maidstone has published his long promised treatise on "Fruit Farming for Profit." The publisher is F. Bunyard, 29, Week Street, Maidstone.

A BOTANIC GARDEN is to be established on the Brocken, the highest mountain in the Hartz range, and intimately connected with the legends of the Devil and his cohorts. The garden will be under the management of the director of the Gottingen botanical garden, and will be devoted chiefly to the cultivation of the plants indigenous to the Hartz mountains.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The monthly meeting of this society was held on the 9th inst., the Rev. A. E. Lofts presiding. An excellent paper on "Strawberries" was read by Mr. H. Brown. The subject proved very popular, and a capital discussion ensued. A hearty vote of thanks was accorded the essayist for his paper.

THE PROPOSAL TO MAKE PARIS A SEAPORT has an air of sensationalism in it. The proposal is seriously made, and the plan that finds favour is a ship canal from Rouen. The cost would be immense, but the advantage to the trade of Paris would be great, as the duration of the voyage from Rouen to Paris would be reduced to seventeen hours.

THE EIFFEL TOWER IS JUSTIFIED AT LAST.—It has become the favourite resort of princes and other such august personages when in want of a dinner, the restaurant proving equal to the feeding of such lions. Thus a great question is disposed of. France has abolished "princes and lords that are the breath of kings," and the Eiffel Tower has restored them. When restoring in the restaurant, they are enabled to look down on the world, and by imagining themselves monarchs of all they survey, accomplish complete hypothetical restoration.

THE WEATHER has undergone a change of which notice was given by the barometer on Monday last. In our issue for August 30 (p. 518), we anticipated a few weeks of enjoyable weather, and the conditions that ensued were enjoyable indeed. On Wednesday thunder was heard in many places, and a general break up seemed imminent. But we are not expecting a general break up, although the indications favour the expectation of changeable weather generally agreeable. For the present we see no prospect of frost, but the time is not far distant when a change of wind will bring a taste of it.

BRITISH FRUIT GROWING.—In the course of the three summer months, from the two stations of Worthing and Lancing, 35 tons of fruit were despatched by rail weekly, and for the remainder of the year six tons per week, making 663 tons of fruit during the year. Of this amount 350 tons were tomatos, the remainder grapes, cucumbers, apples, &c. The value of the tomatos at 5d. per lb. was estimated at £20,000, and the other fruit at £14,000, making a grand total of £34,000 from the Worthing district alone. The facts were made public at the Brighton Fruit Conference.

A GIGANTIC LILIUM AURATUM has been forwarded to us from Mr. Watson, of 90, Lower Thames Street. It was grown in an 8-inch pot in ordinary compost, and produced one fasciated stem five feet high and four inches broad at the summit. The flowers were crowded in a dense head, and numbered 150 in all, which were only partially developed, 40 of the number becoming prematurely discoloured. Liliums of this kind with fasciated stems appear not to grow out of the vicious condition, and our rule with all such is to destroy them. But we would prefer to keep them were there a prospect that they would mend their ways. In the fasciated state they are simply hideous, and the habit once acquired appears to continue with them. Have any of our readers known of instances of normal growth in off-sets from bulbs that have produced fasciated stems?

THE POTATO CROP is the subject of a letter from Mr. Shirley Hibberd that appeared in the *Times* of September 15. The writer speaks of the progress of scientific potato culture within the past twenty-five years as tending in a marked degree to increase the certainty and with it the quantity and quality of the crop. The series of twelve international exhibitions completed four years since he regards as having proved immensely beneficial in awakening inquiry, promoting interchange of views, observation, and experiment, and, in conjunction with other influences, promoting the establishment of a race of "disease proof" potatos of quality equal to the best of those the disease has obliterated. He places Magnum Bonum so far in advance of Champion for field culture, that he would be gratified if the last-named were swept out of the land.

CANADIAN FARMERS are bestowing special attention on barley with a view to increase the cultivation for the benefit of the English market.

DAHLIAS AND GRAPES will divide interests in the meeting organized for Tuesday and Wednesday next, in the R.H.S. gardens at Chiswick. The entries promise a great show of both subjects, and the list of papers to be read give equal promise of literary and scientific entertainment.

THE REGISTERED PLUMBER makes more fuss than any other registered man or thing whatever. Perhaps that is owing to the interesting fact that he is not registered. We have had to explain that his registration and pretensions thereto having nothing to do with the failure of the plum crop, and that the popular damson, which is not quite a failure, is no child of his. But for all this, the registered plumber goes on fussing; on one day claiming to be registered, and on the next day playing old gooseberry with the gas pipes, or filling the house with effluvia from a drain that he has tinkered. If the plumber should submit to examination and registration, why not the butcher, the baker, and the candlestick maker; and for the matter of that, the editors of horticultural papers? What of the municipal bodies that compel us to waste millions of money on the waste of sewage? Ought they not to be registered as incompetent administrators, corruptors of crystal streams, and criminal diffusers of plague, poison, and pauperism?

CITY TREES are, as a matter of course, becoming small by degrees and beautifully less, because time is against them, and man is not for them. Inner London yet contains a few green trees, and they are probably one and all doomed to speedy extinction. Witness the once noble plane tree in Stationers' Court. What is it now? Alas poor tree; it has been subjected to "pruning!" The trees in the churchyard in Watling Street, that Mr. James Crute planted, have been "lopped," poor things. Now the Grocers' Company propose to abolish their little garden in Princes Street, next the Bank of England, where a few handsome trees have made a most pleasant greenness for many years past. But the Grocers' Company is under no pressure of circumstances; it is only entertaining the happy thought that the ground might be covered with offices that would bring in rent, whereas the trees only minister to a taste that the grocers of to-day are as innocent of as the stone paving of the city streets. But we beg pardon of all grocers in *esse* and *posse*. Probably there is not a single grocer in the Grocers' Company. The companies continue in name but their spirit is gone to Him who gave it, while the ostensible remnants appear to be in the sad and serious keeping of quite Another Party.

DEATH OF MR. WILLIAM HOLMES.

IT is with profound regret that we have to announce the death of Mr. William Holmes, honorary secretary of the National Chrysanthemum Society, which occurred at his residence, the Frampton Park Nurseries, Hackney, on the morning of Thursday last. Mr. Holmes, who has been a great sufferer from diabetes during the past eighteen months, appeared somewhat better in health of late, and those who had the pleasure of meeting him at the exhibition of early chrysanthemums held at the Royal Aquarium on the 10th and 11th inst., congratulated him on his improved appearance. Those immediately interested in the welfare of the National Chrysanthemum Society also indulged in the hope that he might for many years be able to retain the position of honorary secretary which he had long occupied with honour to himself and advantage to the Society. But these anticipations have not been realized, for our friend has passed away, and the National Chrysanthemum Society has lost one of its most able officers and horticulture a distinguished representative. Until Tuesday Mr. Holmes was in his usual health, when he was rather unwell, and on Wednesday morning, after transacting some business, he rapidly became worse, and died at half-past seven on Thursday morning.

At a very early age Mr. Holmes took an active interest in the business, to which he succeeded on the death of his father, and, amongst other things, evinced a remarkable interest in chrysanthemums. In 1877, on the secretaryship of the Borough of Hackney Chrysanthemum Society becoming vacant, he was unanimously elected to fill the post, and the results have more than justified the appointment. In the year in which Mr. Holmes was appointed there were fifty-two members on the books, and the income was £84, of which the sum of £53 was disbursed in prizes. Under his management the number of members increased rapidly and continuously. There had indeed been such a remarkable development in 1883 that in the year following it was, at the suggestion of Mr. Holmes, decided to change the name to that of the National Chrysanthemum Society, of which he was the first honorary secretary. Under its new name the progress made by the Society was so rapid as to surprise the most sanguine of those who had supported Mr. Holmes in bringing about the change of title. In 1886 it was thought by some of the leading members that something should be done to show the Honorary Secretary how highly his labours were appreciated. Accordingly it was decided to raise a fund for the purpose of presenting him with a testimonial, and on the fund being opened subscriptions came in so freely that at the annual dinner, held at the Four Swans, December 13, 1886, Mr. Holmes was presented with three silver épergnes and an illuminated address. During the past five years the progress of the Society has continued unabated, and it may be mentioned, as testifying to the singular ability with which the secretarial duties were performed, that the last year's balance-sheet showed an income of about £850, and that there are now over seven hundred names on the books.

Mr. Holmes, who at the time of his death was in his thirty-eighth year, leaves a widow and six children to mourn his loss. We are sure that Mr. Holmes's many friends will join us in tendering to the family our greatest sympathy in their bereavement, and expressing our deep regret at the loss of one in every way so worthy.

WINTER-FLOWERING CARNATIONS.

By W. BRADBURY.

DURING the past week we have been engaged in housing the perpetual or winter-flowering carnations, and the buxom plants, as they stand in their winter quarters remind me of a promise made some time since that I would briefly refer to the cultivation of these flowers. The usefulness of the varieties forming the winter-blooming section is so generally acknowledged as not to require further discussion. Nor are there two opinions as to the beauty of their flowers. Therefore I will not do more by way of introduction than to remind those who may be desirous of commencing their culture that they will, under proper management, give a good return for the time and space devoted to them.

In proceeding to speak of the details requiring special attention it may be well to first state that my practice has undergone considerable modification of late years, and that the results fully justify the changes that have been made. For some years after I had to bear the full responsibilities of a garden the annual renewal of the stock was effected by means of spring-struck cuttings in accordance with the practice which obtains in the majority of gardens at the present time. These cuttings were taken early in March, and struck with the aid of a brisk bottom heat and comparatively high temperature. I had no great difficulty in obtaining from spring struck cuttings plants strong enough to bloom satisfactorily during the winter following, but the stock had to be raised at a time when the capacity of the propagating pit is taxed to the utmost, and the plants had to be grown during the earliest stages at express speed. These two objections to the course of procedure I was not long in recognising, but I was some time before I could see my way to effect any improvement. After much consideration I decided to see whether the stock could not be raised at some other season of the year, and the experiment made proved successful. The cuttings were struck as readily in the autumn as in the spring months, and whilst reducing the tax upon the propagating and other heated pits in March and April, much stronger plants were obtained. The increase in the size and vigour of the plants was a great gain, and in passing I would say that, whilst not agreeing with much that has been said and written about the pampering of carnations, I am fully persuaded that hardy plants like these should be subjected to as little artificial heat as possible. Under the practice that I have adopted with so much success, the plants, instead of being subjected for a period of about two months in the spring to a roasting temperature and a saturated atmosphere, are grown with but little fire heat beyond what is necessary to keep them safe from frost.

The work of propagation is commenced about September 21, and an effort is made to complete it by the middle of October. In the course of our experience we have found that cuttings inserted at quite the end of the last-named month yield a good percentage of plants. The cuttings are taken off and prepared in the usual way, and are inserted in three-inch pots, three cuttings in each. They may be struck in the autumn without the aid of a hot-bed, but a slight bottom heat is useful in promoting the production of roots, and consequently a bed of spent hops is provided for them. This we make up in a heated frame and plunge the pots to the rim. Here they remain until the middle of February, when they are potted off singly and returned to the frame, the pots being stood upon the surface of the bed. During the winter the frame is ventilated freely when the weather is favourable to the admission of air, and just sufficient fire heat is employed to keep out the frost, and maintain a dry atmosphere. After they have been potted off no fire heat is used except what is necessary for keeping out frost, and to render a strong heat unnecessary we invariably cover the glass with mats in severe weather. If we require the pit in February, as is sometimes the case, the carnations are taken direct from the potting bench to an unheated frame, and the pots stood upon a bed of ashes, frost being excluded by whatever material may be available for covering the glass. It will thus be seen that our plants are ready for potting off before the cuttings are usually struck in the majority of gardens, with the result that they have a much longer period in which to make their growth and acquire strength for the production of flowers during the autumn and winter following.

There is yet another way of propagating perpetual carnations, and as it is specially adapted to the requirements of those who experience a difficulty in striking the cuttings, a short description of the course of procedure can hardly fail to prove useful. At the end of June or early in July, the old plants that have been flowering during the previous winter and spring are bedded out in an open quarter that has previously been broken up to a moderate depth with a fork. They are planted in a slanting direction, and the shoots are spread out regularly, and held in position with a few pegs. The old shoots are then covered to a depth of about two inches with rather fine soil, care being taken to so arrange the young shoots that they stand somewhat erect, with their points above the surface of the soil. If the weather is dry during July, two or three waterings will be beneficial, but in the majority of seasons no watering will be required. By the middle of September the majority of the young shoots will be nicely rooted, and should be then lifted and detached from the old plants. To pot them singly in small sixties is advisable, and they should be placed where they can be kept cool and safe from frost. In March the plants are shifted into larger pots, preferably those three inches in diameter, and placed under precisely the same conditions as the stock raised from autumn-struck cuttings.

The compost most suitable for carnations is one consisting of turfy loam, well rotted manure from the farmyard or stable, and coarse sand, the proportions to be one part each of the manure and sand to every six parts of the loam. In the preparation of the compost a sharp look out must be kept for wireworms and grubs, for both are very destructive to carnations. The repottings must be regulated by the progress made, and as far as possible the plants should not be shifted until they have filled the pots with roots. On the other hand, they must not remain until they have become potbound, as when the growth is checked in consequence of an insufficiency of root space they are slow in recovering, and much valuable time is lost. It is a good rule to employ pots one size larger at each repotting, and as far as practicable they should receive their final shift by the middle of July. Eight inch pots are the most suitable in which to bloom them, and as they are susceptible to injury from an excess of moisture in the soil during the winter, it is necessary to provide efficient drainage. From the time they are established in the three inch pots they must be grown with free exposure, and early in May they can be placed in an open position out of doors, a bed of coal ashes being provided for the pots to stand upon.

They require stopping once, and that should be done by nipping out the point of each plant when they are commencing to grow freely after the first shift. Water must be applied judiciously at all stages of growth, but more especially during the winter. Until they have been shifted into the pots in which they are to bloom, and have filled them with roots, clear soft water should alone be used. Subsequently use rather weak liquid manure and soft water alternately, and continue the use of the liquid manure so long as they remain in the open. If more convenient, the plants may receive a top dressing of some suitable artificial fertilizer at intervals of about three weeks, instead of receiving stimulants in liquid form.

Careful management during the winter is essential to success. A light and airy structure will afford them the most suitable accommodation, and, generally speaking, the middle of September is the best time for taking them indoors. It is an advantage to place them upon an open stage and where they will enjoy uninterrupted light, but it is not so essential to place them so near the glass as in the case of many of the other winter flowering plants. For a fortnight or three weeks after the stock is removed indoors, it will be necessary to keep the house cool and well ventilated, to prevent any injury being done by a sudden change in the atmospheric conditions. At the end of three weeks a reduction in the ventilation and an increase in the temperature will both be permissible. The temperature most suitable during the winter, and indeed until they have become exhausted in the spring, is one ranging from 45 deg. to 50 deg. The ventilation must be comparatively free, as a dry, buoyant atmosphere is essential, and when air cannot be admitted without reducing the temperature below 45 deg., the fire should be started and the ventilators be opened. All watering should be done before noon, and when fire heat is necessary to dispel damp it should as a rule be employed early in the day.

AMERICAN LETTER.

THE CONVENTION OF AMERICAN FLORISTS.

THE Society of American Florists is an extensive one, its roll of membership including all the prominent gardeners, florists, nurserymen, &c., in the United States and Canada. European trade is alse represented by a good percentage of European members. The *American Florist* is the official organ, and not a small part of the business of the society is transacted through its columns. The most important business, however, is held in reserve for the general Convention, which occurs annually in some prominent city of this country or the Dominion. Thus the Convention of 1889 was held in Buffalo, N. Y., that of the present year in this city, and at the latter meeting it was resolved to meet next season in Toronto, Canada. At these Conventions addresses are given by prominent persons, including the president of the society; reports are presented by the various officials and committees; papers are read by experts and discussed by the assembly; and a long list of pertinent and interesting questions, to which anyone may volunteer a reply, find a place on the programme. The usefulness of the proceedings is enhanced by their being absolutely free to the public.

This year's meeting was a very successful one. It commenced in the upper part of the Horticultural Hall, on August 19, and ended August 22. Delegates were present from every important town and city in the United States and Canada. There are numerous gardeners' and florists' clubs throughout this country, and in many cases the members of these attended in a body.

Mr. John Laing, of begonia renown, and Mr. Hugh Dickson, of the firm of Messrs. Alex. Dickson and Sons, Belfast, Ireland, were the only representatives of the United Kingdom that came under my notice in the throng.

Business was commenced on the first day at ten o'clock a.m., with addresses of welcome by the Governor of the State of Massachusetts and the Mayor of Boston. These were succeeded by the address of Mr. Jordan, the president of the society. In the course of his remarks, this speaker dwelt at length upon the importance of horticultural education, and referred to the propriety of commencing with the simpler branches in the ordinary schools. Mr. Jordan also spoke of the Government experiment stations in terms of warm praise, and strongly advocated, on the part of his audience, a closer attention to the result of the investigations and experiments conducted at those institutions. Reports, &c., followed until about noon, when adjournment till seven p.m. left a large portion of the day for sight seeing and pleasure. Papers, and some of the questions on the list, occupied attention during the evening session. The two succeeding days were in a similar way devoted to business, the spare time between morning and evening sessions being utilized to take advantage of trips (arrangements for which had already been made by local committees) to neigh-

bouring gardens and other points of interest. It may be mentioned that the proprietors of several important private gardens in the immediate vicinity took advantage of the occasion to throw their establishments open to inspection, and to show their courtesy by making ample provision for the physical requirements of the visitors. This piece of Massachusetts hospitality was highly appreciated by the strangers, more especially that large number who were accompanied by lady friends.

The last day of the Convention was entirely devoted to pleasure, inclusive of a trip to sea, which was followed by a banquet (at a famous resort), at the invitation of the Gardeners and Florists' Club of Boston. Amusement was also provided, in the form of a bowling contest for valuable souvenir prizes. Several of the clubs, it is said, took part in this event, and the members displayed some rare skill at the work.

Among other important matters, the Society of American Florists unanimously adopted a resolution in favour of Mr. James D. Raynolds, a florist of Chicago, as candidate for the office of Director of the Horticultural Department of the Columbian Fair. This gentleman now has the endorsement of all the important societies in the United States.

The lower part of the Horticultural Hall was devoted to an exhibition by the florists, nurserymen, seedsmen, and others of their wares and specialities. Exhibitors of pots, boilers, frames, greenhouses, garden hose, and similar material found accommodation in another hall.

While the Convention was in progress, the annual exhibition of the Massachusetts Horticultural Society was being held in still another building. The show was on a scale of unprecedented magnificence, in honour of the visiting florists, who, with their friends, were admitted free. Foliage plants were the chief attraction, and they were simply grand examples of cultural skill. The flowering plants were few in number, and, as a rule, of poor quality. This is regrettable, and scarcely atoned for by the superior excellence of the others. But the American gardener makes an undeniably strong point of the foliage plants, and his efforts are materially aided by the bright, cheering atmosphere of his country. Two other notable features of the exhibition were the tanks and tubes filled with foliage and flowers of water lilies and other aquatics, and the construction of several temporary furnished apartments, in one portion of the hall, to increase the realism of the decorated table, fireplace, and mantel which occupied each.

Boston, Mass., U.S.A. UNCLE SAM.

British Association.

ON MIMICRY AS A DEVICE OF NATURE.

By E. B. POULTON, M.A., F.R.S., &c.

THE lecturer said that the great principle of mimicry was first enunciated by Bates in 1862, as the result of his observations in the Valley of the Amazon; it was confirmed and extended by Wallace in the Malay Archipelago and India; by Roland Tuzien in South Africa; by Fritz Müller in Brazil; by Belt in Nicaragua; and by Meldola in England. This great principle had taken its place in the solid framework of biological science, and was now well known and generally accepted. The object of the first and principal use of colour was concealment. These colours were therefore cryptic, including two subdivisions—(1) procryptic, when concealment is a defence against enemies; (2) anticryptic, when it is a means of capturing prey. The meaning of a cryptic appearance is often unintelligible until we see the organism in its natural surroundings. Thus a green pipe-fish was seen to be conspicuous except when surrounded by the leaves of the zostera, which it always frequents; while a brown moth was only concealed when placed among the brown leaves which it resembled. These were examples of procryptic colours. Anticryptic colours were illustrated by a Brazilian frog, which buries itself almost completely in the earth, so that its prey approach without suspicion. Concealment might also be effected by the use of foreign objects, and examples of such allocryptic colours might be seen in certain crabs which deck themselves in pieces of seaweed. Mimicry was closely related to this division of the subject, but differed, because the animal resembled something which was repugnant or dangerous to its foes, or which attracted its prey, rather than an object which was of no interest to either. Mimicry was therefore deferred until after the description of the colours which served as models of it. The second great use of colour was to act as a signal or warning (sematic colours); repelling enemies by the indication of something unpleasant or dangerous (aposematic or warning colours); or signalling to other individuals of the same species, assisting them to escape from danger (episematic or recognition colours). Aposematic colours were illustrated by the conspicuous black and white skunks, with their well-known and nauseous properties, by the conspicuous appearance of certain unpalatable moths, and by an inedible chrysalis which has been recently shown by Porchiniski to possess an appearance suggesting that it has been pecked and abandoned by a bird. Episematic colours were illustrated by the white tail of the rabbit acting as a beacon to those behind. Their are also very interesting allosematic colours, in which the conspicuous appearance and special defence of some other animal was made use of. Thus many crustacea associated with themselves other animals, such as sea-anemones, sponges, and ascidians, which were avoided by the enemies of the former, and there were even two species of crabs which invariably held a sea-anemone in each claw. Mimicry, the third use of colour, in reality closely related to the first use already described, might be defined as false warning and signalling colours (pseudosematic), repelling enemies by the deceptive suggestion of something unpleasant or dangerous (pseusaposematic), or attracting prey by the deceptive appearance of something attractive to them (pseudepisematic). To illustrate pseudaposematic colours (protective mimicry) there were exhibited numerous Indian and African butterflies, which closely resembled other species possessing a nauseous taste and conspicuous appearance. The instances selected to show the various ways in which the resemblance occurs were (1) male and female alike, and mimicking both sexes of some nauseous butterfly; (2) male and female different and respectively mimicking the corresponding sexes of the nauseous form; (3) male and female mimicking different species; (4) the female exposed to more dangers and flying more slowly is mimetic, while the male is not; (5) such mimetic females resemble two or more different species; (6) when a species is mimetic on a continental area, a closely allied species is frequently non-mimetic on some adjacent island; (7) cases in which the mimicry is imperfect and probably recent, the resemblance being in the direction of the type of some group of nauseous butterflies rather than a faithful copy of any single species. Recent work also threw light upon the history of mimicry, Many moths had transparent, scaleless wings, and thus resemble stinging wasps, hornets, &c. It had been shown that the scales thinly covered the transparent part when the insect freshly emerged from the chrysalis, but that they were shaken off during the first flight. This loss was shown to be due to the rudimentary stalk at the base of the scale and the rudimentary socket in which it fitted. When the mimetic resemblance (for example, to a hornet) was very perfect and detailed, the scales which were lost were extremely degenerate in form; but when it was less perfect, they retained a more normal and comp'ex shape. Curiously enough, the degradation of the scales was not attended by any diminution in size, but rather the reverse. Pseudepisematic colours (aggressive mimicry) were illustrated by certain flies which lay their eggs in the nests of bees, &c., and were coloured like the latter so that they could approach with impunity. The examples of "alluring colouring" were also placed under this head, and were illustrated by a lizard with pink flower-like structures at the corners of the mouth, probably serving to attract insects; by a fresh-water turtle, which opens its mouth and moves about two filaments which look like worms, thus attracting its prey; and by the lures of various fishes, which are phosphorescent in the case of certain deep-sea forms and allure the prey into close proximity to the mouth. The lecturer said it was very interesting to observe that even the foreign objects commonly associated with a mimicked species might be copied in the appearance of the mimicker, an example of such pseudallosematic colours being afforded by a South American insect, which had been shown by Mr. W. L. Sclater to resemble a common leaf-carrying ant, together with the leaf itself. The latter was represented by the thin, green body of the insect, which forms a jagged line along the back, coming to a sharp edge as thin as a leaf. It was explained by the lecturer, finally, that epigamic colours are those displayed in courtship. As in the other divisions of the subject, foreign objects might be displayed as well as personal adornments; and examples of such allepigamic colours were seen in the beautiful or curious objects collected by bower-birds. The lecturer, in concluding, said he desired to thank the many gentlemen who had kindly helped in the preparation of the materials for the lecture, and especially the artist, Mr. H. M. J. Underhill, who had so beautifully painted the lantern slides. Colonel Swinhoe had very kindly suggested and lent the Indian butterflies which had been used as examples of protective mimicry; and Mr. H. Grose-Smith had kindly lent the African examples. The comparatively new terms employed in the lecture were due to the kindness of Mr. Arthur Sidgwick. The examples of allocryptic and many of those of cryptic andallosematic colours were painted by Mr. Underhill from the living animals in the Marine Biological Laboratory at Plymouth. The Rev. F. J. Smith had most kindly helped in photographing the examples selected. Mr. W. R. Morfil had kindly translated Porchinski's Russian paper, thus rendering possible the use of some very interesting and recently discovered examples.

A LADY'S TRAVELS IN THE CARPATHIANS.

By Miss MENE MURIEL DOWIE.

The grand-daughter of the late Robert Chambers, of Edinburgh, read a paper on her experience in the Carpathian Mountains, where she travelled for some time during the present year. Miss Dowie's paper, which is shortly to appear in a magazine, described a visit which she paid this summer to Ruthenia. She travelled alone through the Carpathians on horseback or on foot, and with no companion except a peasant attendant. For ten weeks she lived among the peasants, conforming almost entirely to their ways of life. For the greater part of the time she saw no meat, beer, or wine, and night after night, when up in the high mountains, she slept in the open air wrapped only in a cloak. Wild cats, bears, and wolves exist in the Carpathians, but there were no other obstacles, said Miss Dowie, to a girl travelling alone from London to the Russian frontier. Miss Dowie met with no inconvenience. She wore an easily-detachable skirt over knickerbockers; she carried a knife and revolver, and when riding she rode cross-saddle and bareback. Unless riding, she seldom wore sock or sandal, climbing mountains barefoot, with the footgear of the country slung round her neck. After giving an interesting account of the people and villages she passed through, and exhibiting specimens of garments of the country, Miss Dowie said that she had met with several accidents, such as being nearly drowned while bathing in strange rivers, and dislocating her shoulder by a fall, but she regretted that she had never met a bear face to face. She intended to go back to Ruthenia in two years' time but she hoped that nothing she had said would induce any one to follow in her footsteps. There were always floods in Galicia, the country was not pretty, and sanitation was unknown. Galicia was a rich country naturally, with petroleum, salt, silver, quantities of pine, and splendid fruit. No more intelligent peasantry than the Ruthenians existed. Their artistic taste was surprising. There was a future for Galicia when Poland should be on her feet again. No one could travel as she had done without believing that the Polish Eagle would one day wear its crown, and when the war should come she would wish to be a newspaper correspondent or a vivandière.

At the conclusion of the paper, which was much cheered, the chairman said that he had attended many meetings of the British Association, but he had never heard a more delightful paper in the Geographical section. Miss Dowie had shown how a young lady could practically study geography, and her paper contained much that was of real value.

Mr. Ravenstein, in moving a vote of thanks to Miss Dowie, said that she was more entitled to be called a real geographer than many of those who went much further afield. It was a great pity that there should be no association in England and Scotland for the thorough explanation and study of our native mountain ranges.

Sir Rawson Rawson seconded the vote of thanks, which was accorded with much cordiality.

Miss Dowie, in responding, said that she intended to visit the Carpathians again, when she hoped to be able to read a paper which should be of real geographical value.

POPULAR RHODODENDRONS.—At the recent great horticultural exhibition in Berlin, visitors were asked to record their opinions as to which was the most beautiful rhododendron shown. The favourite proved to be the rosy lilac Everestianum, which received 12,800 votes, while a variety called Limbatum, having white flowers with a crimson margin came next, and Viola third on the list.

LARGE, VERSUS SMALL PEACHES.

If the cold and damp summer which is now coming to an end—if it ever had a beginning, so far as real summer weather is concerned—has done nothing more, it has demonstrated without a doubt that there has been none too much moisture for peach trees on open walls, for I have never seen finer, if so fine fruit as I have seen this season. In no case have I met with really small fruit, only when there have been too many left on the tree. Perhaps I have said enough in these pages already on the folly of growers over-cropping their trees. I may, however, remark that the practice still prevails in some places, with the result that only small fruit is obtained. The cultivator who goes in for quantity instead of quality, appears to forget that when leaving so many fruit on his tree he leaves so many stones, or seeds, for the tree to sustain, while it has been proved over and over again in practice that it is the formation and sustaining of these stones that proves such a severe tax upon the tree and prevents the proper development of the fruit. Notwithstanding all that has been said against over-cropping peach trees, there are a good many growers who prefer to grow their fruit with a big stone in the middle with just a thin coating of flesh under a thick layer of tough, indigestible skin that no one can eat. If I did not know better I should be inclined to believe that this class of men had never seen a first-class peach. But it is not so; all that is the matter in this business is they allow their hunger to overrule their judgment. They want large peaches and a lot of them; but they do not find out their mistake until the season is too far advanced to rectify their error. The only thing that puzzles me is that the experience of one season has no effect on their actions in subsequent years. If it had they would not go on repeating their error in over-cropping their trees.

Regarding this practice from a financial point of view, the value of it was made very clear to me last season as to whether it is better to grow large peaches than small ones. The instance I refer to occurred when I was out visiting various gardens. In one case where the peaches were large and highly coloured, the fruit was realizing 6s. per dozen, with a constant demand for more. In the next place, I went to a place a few miles distant, 2s. per dozen was the top figure obtained, and some difficulty was experienced in getting rid of them at that price. In the latter case the number of fruit on a given space was greater, but even the increased number did not make up the aggregate in value obtained by the finer quality fruit. This has always been so, and always will be so, for high-class goods, whether it be fruit or anything else, will find a readier market and realize higher prices than inferior examples, and will pay the best in the end.

It is as well for the grower to bear in mind that overcropping does not end only in the production of small fruit. It has a direct bearing on the health and life of the trees. If it does nothing more, it weakens the trees, and weakness is the forerunner of all the ills that the trees are subject to. We should hear less of the bloom buds dropping and consequent weakly growth and thin crops if the trees were treated more rationally with regard to the number of fruit they are allowed to carry.

I have already incidentally referred to the influence that the damp weather has had in increasing the size of the fruit of peach trees this season. This has been so evident that I wish to direct special attention to it, as it should act as a guide for future practice. The fact that outdoor peaches have been larger this year than usual clearly shows that the trees are all the better when they get abundance of root moisture when in active growth. Seeing that they have had a much greater quantity than usual, does it not show that in drier seasons they do not get enough? I think so, and, what is more, I am well acquainted with the large quantity of water the trees will appropriate advantageously when grown under glass. Therefore, I can quite understand how much they would be benefited if they had an increased quantity when grown in the open air. As a matter of fact, this point has been made quite clear this season by a friend who, notwithstanding all the rain we have had, gave his peach trees a good soaking of manure water once a week while the fruit was swelling. The result of this treatment has been that his fruit has realized the wholesale price of 3s. 6d. per dozen, which, I think, is satisfactory. This makes the matter very plain that judicious cropping and liberal treatment in the cultivation of peaches can be made to pay when climatic conditions are favourable.

I remember a few years ago seeing a sort of covert smile pass over the features of a gardening friend who happened to call one day in the month of June when I was watering the roots of some large apricot trees. I could see by his manner that he did not approve of what I was doing. It was, however, my opinion then, and I still hold to it, that stone fruit trees very often want more root moisture than they obtain; apricots, peaches, and nectarines perhaps more than any others. It appears to me that these fruits are more heavily taxed than any others, owing to their having such large stones to form and fill. We can never tell how great the strain is during their formation and hardening. To the practised eye the behaviour of the trees indicates that it is considerable, for the leaves flag, and in some cases curl over more or less under the influence of ordinary sun heat. They do not show these symptoms of distress when the roots are in a condition to meet the demands of the leaves; it is when they are not that the half-grown fruits fall off and the foliage behaves in the way I have indicated. More root moisture is what they want to sustain a better balance between roots and branches.

Those who have to deal with stone fruit in old gardens may advantageously act on the suggestions here given. They may also use liquid stimulants for their fruit trees much more freely without doing harm than those who have a better soil. I have a well-grounded objection to the use of any of the concentrated manures in a dry state for fruit trees, unless the soil will be well watered afterwards when required. All these forcing manures, when applied in a dry condition, have a tendency to dry up the moisture in the soil to an injurious extent. For that reason more liberal supplies of water must be given when manures are applied in that state to counteract their drying and heating nature.

The best of all liquid manure for fruit trees is that from the farmyard or manure heaps. If this is properly diluted it will help to swell the fruit, and at the same time encourage a healthy and vigorous growth. Sewage water is not near so often available as it might be. When it is judiciously applied to the roots of fruit trees I find it of great value. But it should be applied only to trees that are well established in the soil. If given before there are roots enough to make use of it, it does more harm than good, and, in fact, it appears to destroy the young fibrous roots. J. C. C.

APPLES FOR THE MIDLANDS.

By Mr. A. H. Pearson, Chilwell, Notts. Read at Conference of British Fruit Growers' Association, Leicester, August 5, 1890.

It is my pleasure to address you for a few moments upon the subject of "Apples for the Midlands," and in doing so I wish to look at the question from a market grower's point of view, *i.e.*, with an idea of planting for profit.

It may perhaps strike someone that the idea of planting for profit is out of place, when we look around our orchards and see the trees devastated with the caterpillar, and all prospect of fruit marred, if not blighted. Some will even go so far, I doubt not, as to say that apple growing is a delusion and a snare, but I think there is no reason for us to accept their view. That we have all suffered loss this season, and many of us last season, is true, but I see no cause for despair; such things have happened in the past, and have passed away in due course. I have heard my father speak of a year when our apple trees, which cover nearly 100 acres of land, had scarcely a leaf left upon them, and such a thing as a perfect leaf was hardly to be found. The whole of the trees had the appearance of being scorched, as if huge bonfires had been lighted under them, but in the course of a few days an immense flock of starlings found their way to the orchards, and in an almost incredibly short time they practically cleared off the caterpillar. It will be in the recollection of most of you that a few years ago the oak trees were in many parts of the country completely divested of their foliage by caterpillars, and some few died from the effects, but I never heard that any landed proprietors gave up the idea of planting oaks in consequence, and the old oaks to-day look as luxuriant as ever they did before their trial. The potato disease has not yet frightened our brothers in the Green Isle from cultivating that most useful tuber, nor are we going to turn our backs upon fruit culture because of a few difficulties. It is not my business to speak to you upon the caterpillar pest, but if it were I should advise those of you who have large orchards, and especially those whose trees are large standards, to pursue a policy of masterly inactivity, and instead of purchasing Paris green, London purple, force pumps, and other remedies, to keep your money in your pockets, protect the birds, manure the trees, and leave the issue with Nature.

It is not my purpose to take you through the dim vistas of the past, or to drag in any ancient history of the apple, but before I can speak directly to my subject, I feel it is necessary to say a word or two upon the style of planting to be adopted for profitable apple culture in the Midlands. There are, as you are fully aware, those who decry the system of planting standard apples, and who extol the planting of bushes and pyramids, and others who just reverse things, and say: Plant all standards, bushes are only fit for gardens, and they yield no profit. But is it not the truth to be found between the two rather than with either?

For those who live in districts where labour is abundant, for those who intend to give their own labour and attention to their own plot of land, I believe there is no system to be compared with that of planting bushes or pyramids, and of tilling and cropping the land between with small fruits and vegetables. By this mode of culture we obtain a speedy return for capital invested, and above all we may by care and attention produce fruit of such size and quality that it shall command a ready sale at a good price, no matter what is the state of the market. My friend, Mr. John Wright, has so clearly set forth this system in his admirable little book, "Profitable Fruit Growing," that it will scarcely need doing again in our generation, and I shall say no more about it. On the other hand, much as I admire what our French neighbours call *petite* culture, I am fully persuaded both by reason and experience that those of us who live in districts where neither women nor children will work out of doors need not attempt it. Raspberries and strawberries are paying crops where you have suitable labour, and superintend the work of gathering the fruit yourself, but just try the experiment of putting men at three shillings a day to the work, and where will the profits go? There will always be a large number of planters who will prefer standard trees, some market growers who will cultivate by horse power the land between the trees, using it for vegetable or for grain, and others who will plant orchards upon grass land, or lay the land down to grass after the trees are planted. To this latter class belong most of our agricultural friends, who wish to increase their home supply of apples or to grow them for the market. Into the question of cultivated versus grass orchards, I fear I may not venture further than to say this one word: Whatever merits cultivation may have when properly carried out, it has none when only half done and the land allowed to become covered with couch grass and weeds of every description. I would, therefore, advise farmers and landowners whose men are fully occupied during the summer with haymaking, root-cleaning, and harvest work, to shun cultivated orchards, and plant them in the old fashioned way upon grass, but give them a better system of treatment afterwards than has hitherto been the rule.

My reason for introducing the important question of standard versus pyramid trees is this: Having the fortune, or misfortune, to grow trees for sale as well as for fruit, I find the utmost difficulty to make people believe that the same varieties of apples will not always succeed equally well in both forms. People see a bush in someone's garden bearing a profusion of fruit, and if they are about to plant an orchard they go to a nurseryman and ask for so many standard trees of that variety. It may be that although suitable for a pyramid worked on a paradise stock, it is from its habit of growth quite unsuited for forming a standard tree. Let us take, as an instance, an apple well known in this locality, the Court Pendu Plat, called in my neighbourhood Wollaton Pippin. There are few, if any, apples which bear better in the form of a pyramid, and as the blossom expands later than that of any

other variety, it escapes frost, and the tree is consequently not only an abundant but also a regular cropper; the effect is that but little wood is produced, and the tree is all fruit spurs. To plant such a variety in the form of a standard is a waste of land, as the tree can never occupy anything like the amount of space usually allotted in an orchard, and in most soils this kind is, as a standard, very short lived; even where it keeps alive it makes but little growth. We have trees in our orchard thirty or forty years old, the heads of which are not larger than a good sized black currant bush, and the growth of which is so stunted and gnarled as to prevent the free flow of sap to the extremities, so that even when they bear fruit it is, from lack of proper nourishment, but small and worthless. I could name many other kinds, amongst which occur to me Potts' Seedling, Crystal Palace, Fearn's Pippin, or Clifton Nonsuch, Stirling Castle, and others. Again, there are varieties which are unsuited for standard culture because of the size of the fruit and its liability to be blown off by early autumn gales. We sell every year great numbers of Lord Suffield in the form of standards, but my experience would not lead me to plant it in that form. In making this remark I am not in the least afraid of injuring the sale of these trees; we grow them because the public will have them, and it takes a good deal of preaching both in public and in private to divert the stream of public opinion. For two generations we have inveighed against the Blenheim Orange as a standard, and to-day it is perhaps more popular than ever with small growers. Market men do not, it is true, plant it as they did, but as many trees are sold to day as of almost any other variety. I take it that it is the especial province of the Association in whose name I speak to-day to combat all error, to make black marks against that which is bad, and to call attention to that which is good. The attendances at our conferences show that there is a new life and a spirit of inquiry abroad respecting these matters, and we may confidently hope that in the future knowledge will be more quickly disseminated and more quickly acted upon than in the past. It took thirty years to introduce Cox's Orange Pippin to the British public, and so loth was that respectable body to make a trial of anything new, that I have seen hundreds, and I think I may say thousands, of beautiful bushes of Cox's Orange stand year after year on the quarters until they ultimately reached their final repose on the fire.

I trust I have not wearied you with this rather long introduction, but I must confess I find the subject rather difficult of treatment. A bald list of names is rather tame reading, and, on the other hand, if one gives the rein to one's thoughts on so interesting a question, it is hard to say when or where to stop. Again, when I come to make my list I am confronted by another difficulty. Mr. Wright says there are 1,400 varieties of apples. It is comparatively easy to name fifty or sixty from them as being good, for that would be simply to transfer from a catalogue the list of kinds which, after three generations of trials and experience, we have selected for cultivation, but when we speak of apples for profit we must still further reduce the list. I am thankful to say I have not had practical experience of anything like 1,400 kinds, and I shall not trouble you with anything outside of those varieties which have been practically grown and fruited with us. These number about 200 kinds, most of which are at present in cultivation, although some few have passed into oblivion, and more might do so with advantage.

My selection for standards will be the following:—1, Duchess of Oldenburgh or Russian; 2, Warner's King; 3, New Northern Greening; 4, Bramley's Seedling; 5, Beauty of Kent; 6, Pike's Pearmain, or King of Pippins; 7, Improved Keswick; 8, Ecklinville; 9, Newton Wonder. There are other varieties with strong claims, whose voices seem to ask "Why am I left out?" but for profitable culture the number is probably sufficient. For general utility and for a succession of fruit I should, if reduced to a very small number, take the first three.

It will, I know, surprise my friends from the south to find Duchess of Oldenburgh included at all in my list, still more that she should be placed amongst the first three. I have, however, long been of the opinion that if, as Dean Hole said of roses, I lived in a pike (or toll bar), and had only one rose it should be Gloire de Dijon, so I, under the same circumstances, would choose the Duchess as my sole apple. With us in the Midlands it is a heavy and regular cropper, and its size, colour, and appearance always command for it a ready sale. Ripening in September, it is ready for market before the foreign supply is in, and if desired it can, at the expense of size, be pulled before it is ripe, and finished off in the baskets. The large fruit are quite unequalled for making apple jelly, and the small fruit may with a fairly clear conscience be sold as table fruit. Is there any rose without a thorn? Let it be whispered that her grace is a true aristocrat, being possessed of a skin so tender that every finger-mark shows in a very short time after pulling; but if left in quiet repose for two or three days these marks will disappear.

Warner's King is a first-rate culinary apple; the tree is a free and vigorous grower, a good bearer, and although the fruit attains an enormous size it is not a bad one for blowing off; probably this may be accounted for by the fact that its footstalk is short and deeply inserted, so that the fruit rides firmly on the branch.

New Northern Greening is so called to distinguish it from the old variety, which is so well known, and from which it is probably a seedling; it is, however, no novelty, as we have grown and fruited it for forty years, and I find it catalogued for sale in 1846. The tree is a strong and vigorous grower, a good cropper, and as the fruit is in use from November to April it may justly claim to be one of our most useful apples. It has the merit of being a very early bearer, young standards in the nursery being frequently covered with fruit, and for market has the advantage of weighing well. This variety, with Bramley's Seedling and Newton Wonder, should be planted to the sides of an orchard, where they would from their habit protect less robust kinds from the influence of rough winds.

Bramley's Seedling, although only known to the public since the Apple Conference of 1883, is an apple which has been known locally for thirty years. The tree is a very vigorous grower, of spreading habit, a constant but not an early bearer; fruit large, heavy, and handsome. Distinctly a seedling from the old Caldwell or Rymer, the fruit of which it so much resembles that when medium-sized fruits are mixed with fine fruit of that variety the best judges have been unable to distinguish the one from the other; it has, however, a better habit of growth, is a better bearer, and produces, as a rule, a finer fruit.

Beauty of Kent is perhaps the handsomest cooking apple in cultivation; tree a strong and vigorous grower and a good bearer, liable to canker in some soils, or I should have given it the preference over Warner's King for the first three.

King of Pippins is far and away the most profitable table apple in cultivation; in fact, so far, the only one which has proved profitable for orchard culture;

Improved Keswick Codlin.—This, like the New Northern Greening, seems to be unknown in the south, and does not appear in Dr. Hogg's "Fruit Manual" of 1875, although it has since been brought to his notice. This apple possesses all the virtues of the old Keswick, with the addition that the tree is a better grower and the fruit a shade larger. Everyone knows that the Keswick may be used for cooking at almost any time from early in July to September, and no apple will stick on the tree better when ripe than this variety. When a heavy plum crop and damson crop interferes with the apple pulling we have frequently left them hanging until October. The tree attains a medium size, is an immense bearer, and will grow in almost any soil or situation.

Ecklinville.—An apple of Irish origin. The tree is a fair grower, attaining medium size; fruit large, handsome, and good culinary quality; an immense bearer.

Newton Wonder.—An apple of recent introduction, sent out from Chilwell, received first-class certificate R. H. S., 1887. The tree is a vigorous grower, makes a handsome standard, and equally suitable for pyramid culture; fruit large, very regular in outline, handsome, highly coloured, and weighs very heavily. Modesty compels me to place this apple last on the list, although I think it will prove to be worthy of a higher position. I am fully prepared for the quotation that everyone's geese are swans, and I shall not be surprised if someone asks how it is that such comparatively new apples should be selected. My answer will be that the selection has not been made without carefully testing and weighing the merits of each, and surely it will be conceded that our old orchards need improvement in the varieties grown and the method of culture employed. The days of "Bess Pool," bearing once in seven years; Blenheim and Alexander once in five; "Bartons," bearing every year, but too small for sale when grown, are numbered, as are many others I could name; so I trust is the system of "sticking in a tree" and leaving it without further attention until death comes to its release. To those intelligent cultivators who are improving their orchards by regrafting with improved kinds I may say that any and all of those named (except Ecklinville, of which I have had no experience in this matter) will succeed well and bear heavy crops. It is unnecessary to tell you that weak growing kinds only kill the stocks upon which they are grafted.

Varieties for Pyramid Culture.—1, Potts' Seedling; 2, Lord Suffield (or when that cankers Lord Grosvenor); 3, Ecklinville; 4, Frogmore Prolific; 5, Lane's Prince Albert; 6, New Northern Greening. To these half-dozen cooking apples may be added Duchess of Oldenburgh, Domino, Cox's Pomona, Cellini, Small's Admirable, New Hawthornden, Stirling Castle; and for dessert, 1, King of Pippins; 2, Margil; 3, Court Pendu Plat (already mentioned); 4, Fearn's Pippin; 5, Cox's Orange Pippin; 6, Scarlet Nonpareil; 7, Worcester Pearmain. These are all kinds easily adapted by their natural habit to pyramid culture, also early and abundant bearers. They are all so meritorious that to single any out for especial praise seems almost invidious, yet I cannot help saying that those who have not grown Potts' Seedling as a pyramid will be pleased with it. Its habit is most charming, foliage bold and distinct, and whether with fruit or without an object of beauty. When I say without fruit I mean when fruit is not in season, for it is rare that you fail to find it carrying fruit at the proper season. It would be gilding the rose for me to make any remarks upon Cox's Orange Pippin to-day, since it has just attained its sixtieth birthday, and is now pretty well known to the public; I will only in passing remark that it should be grown in a dwarf form, either bush, pyramid, or espalier, and not as a standard. In conclusion, one word in favour of a very old friend, "Margil." In some parts of the country it goes by the familiar name of "Never-fail," and if you will plant it in a situation where it is not too much exposed to spring frost, you will find it well deserves the title. Perhaps to those of weak digestion it has not so strong an attraction as the more tender Cox's Orange, yet to many its flavour is unequalled, and, unlike its supposed parent the Ribston, it does not canker.

NARCISSUS CULTURE IN THE ISLES OF SCILLY.

By Mr. T. ALGERNON DORRIEN-SMITH, F.R.H.S.

[From the *Journal of the Royal Horticultural Society.*]

TWENTY-FIVE years ago some eight varieties of the Narcissi were growing in the Isles of Scilly, besides those in the Abbey gardens, some almost wild, some in the hedges, and some in the gardens attached to the little farms.

These varieties were: *Telamonius plenus, Odorus major* (Campernelli), *Tazetta ochroleucus* (Scilly White), *Tazetta aureus* (Grand Soleil d'Or) *Tazetta* (Grand Monarque, two vars.), *biflorus poeticus fl. pl.*, and *poeticus recurvus.*

The date of the introduction of these is extremely obscure, except Campernelli, of which two bulbs were presented to Mrs. Gluyas fifty years ago by the captain of a French vessel, and her son now holds the largest stock. The others were introduced probably by the governors, the largest stock being found around their "country seat" at Holy Vale, St. Mary's, or they may have been introduced by the monks residing at Tresco (these monks belonged to the Abbey of Tavistock, and were of the Benedictine order)). There were most of the above varieties growing in the Abbey gardens in the vicinity of the old abbey ruins, as well as many other varieties which had been introduced since 1834 by Mr. Augustus Smith. It occurred to him, seeing the narcissi growing so early and so luxuriantly, that they might be a useful article of export from the islands. He advised some of his tenants to send them up for sale to Covent Garden. He sent up the first lot himself about 1865, which realized £1.

For some years the cultivation was confined to the Abbey gardens, to Mr. R. Mumford, of Holy Vale; Mr. Trevellick, of Rocky Hill; Mr. Gluyas, of Old Town; Mr. T. Mumford, of Newford; and a few others. The demand for flowers was not so great as at present, indeed, when first I came to reside in the islands they did not realize a sufficient amount to go into the culture to any large extent. It was not till ten years ago that it became thoroughly remunerative, and even then a very small quantity was sent to market.

In the year 1883 I went to Belgium, Holland, and the Channel Islands to learn as to the culture, and to judge for myself as to the probability of our working the industry successfully. In the Channel Islands they had turned their attention chiefly to grapes, potatos, and vegetables. There was no great stock of Narcissi, nor did they go in to any great extent for flower culture. Belgium and Holland were a month later than Scilly, so that I considered it safe to embark more extensively in the culture than before, and bought largely for myself and my tenants. The exports rose to 65 tons in 1885, 85 tons in 1886, 100 tons in 1887, 188 tons in 1888, and 198 tons in 1889.

We formed a bulb and flower association in 1885, to promote the culture, and held annual shows under its auspices, and the flower show is now quite

the event of the year in the island. The first year the exhibitors had to be satisfied with myself and my gardener (the late Mr. Vallance) as judges, but since then they have had the advantage of the professional opinion of one of the Messrs. Barr, and a member of Mr. Ware's firm as judges.

The contrast between the first show and the one held this year was most remarkable. There were over seven hundred exhibits this year, and they were so good that, on the advice of a friend, I ventured to send the prize flowers and others to her Majesty the Queen, who was graciously pleased to accept them.

With the export of bulbs we have not been so successful, and up to the present we have been unable to find a good market for the large quantities we should now be in a position to export. I have sent some gratis to the market growers around London, to America, to New Zealand, &c., but so far they do not appear to take. Most of our farmers have studied the way to grow good, sound, marketable bulbs, and on the last occasion some were produced as sound and as hard as any that ever came out of Holland, and that year Dutch Narcissi were as deficient in power to stand forcing as ours were. But this is more particularly the case with the polyanthus varieties.

The very high railway carriage is a great drawback; they are classified too highly in railway rates. There is no reason why they should pay more than late potatos or any other vegetable not of a very perishable nature, whereas they are charged three times as much.

The narcissus fly (*Merodon equestris*), or, rather, the grub of the same, has given us a taste of its powers, though I think, if it were likely to become acclimatized, we should have had a severer example of its voracity ere this. It seems to have the most extraordinary proclivity for selecting the most valuable bulbs. I first obtained it in Sulphur Kroon from Holland; it has since attacked Sir Watkin, *Barrii conspicuus*, C. J. Backhouse, and *Nelsoni major*, but very little else. Do Barr's five-shilling bulbs taate sweeter than others I wonder? It is very seldom that we get any curious sports from the bulbs. I have on two occasions got a single and double incomparabilis, these I sent for inspection to Mr. Wolley-Dod.

The majority of varieties of daffodils or narcissi do well on these islands. There are, of course, some exceptions *C. monophylla, pallidus præcox, triandrus*, and *calathinus* die out; *major* and *maximus* do not flower freely; *Corbularia citrina* and Capax (*Eystettensis*) diminish. The *cernuus* varieties do not improve. Emperor, Empress, and the bicolors are as good as can be grown. *Obvallaris* is sometimes subject to a disease, but, on the whole, is improving. *Spurius* and *Ard Righ* looked sickly, but are now becoming acclimatized. *Rugilobus* is sturdy. *Telamonius, pl.*, in some years cannot be surpassed for colour, though the flowers are occasionally green in situations which do not suit them.

All the *incomparabilis* section do well—Sir Watkin grand. I have never seen such colour as we get in C. J. Backhouse, *Barrii conspicuus*, and other of the crimson-rimmed varieties. *Odorus fl. pl.* (Queen Anne's Double Jonquil) blooms in perfect proportion and colour. Orange Phœnix and Sulphur Kroon are very pure and large; they were difficult to grow at first, but are now improving.

The *Tazettas* are quite at home and in their glory; Grand Monarque especially has most magnificent heads. Bazelman major does not increase. The colours of Soleil d'Or, when left to maturity, are very rich. *Orientalis* (Muzart) is good. *P. ornatus* and *recurvus* do as well as possible. In *poetarum* the eyes are very rich. The *Burbidgei* section is beautiful, and very pure in colour, but too flimsy for a marketable variety. The great feature in all the flowers is the purity and intensity of colour. Whether this is caused by the salt in the air or by a porous soil which does not long retain the moisture I cannot say, but certain it is we are unusually favoured in this respect.

The flowers of the narcissi are nearly all picked before they are thoroughly out, as it is found that they open larger and finer in a damp atmosphere of about 70 deg. than if they open naturally in the air, exposed to the winds and the rain. Of course, this may be carried to extremes, and one occasionally hears of flowers being boiled; but this will have it own remedy. After taking the flowers out of this temperature they are tied in bunches of a dozen stalks each, mostly by girls and women, and then put into water, and on the morning of departure are packed in single layers in small wooden boxes.

I cannot speak of the best sorts of manure for the bulbs with any degree of certainty. Some will take any amount; to others manure is death; some like seaweed, others will not stand it. Speaking generally, the strong-growing varieties will take manure in a decomposed state with advantage, while in dealing with the weaker sorts manuring should be avoided.

The rapid increase in the export between 1887 and 1888 made it evident that the flower traffic would soon be beyond the carrying capacity of the steamer. There had been over ten tons in a day then; so that in 1889 a larger steamer had to be built, longer, broader, and drawing more water. This necessitated a considerable addition to the pier, thousands of tons of granite were put into the sea to export frail and delicate flowers; otherwise the flowers would constantly have to be shipped overnight, and remain in the hot hold of the steamer sixteen hours before starting, to their great detriment, the old pier being tidal. The addition to the pier was made and completed in time for the traffic of this year, this extension, with the original pier, costing £14,000. Up to this year, while the trade was in embryo, no pier dues whatever for flowers had been charged; but before the extension was decided on, the inhabitants were asked if they objected to pay ordinary pier dues, including 6d. per cwt. on flowers. There was no objection raised, and the extension was in consequence made in answer to the unanimous desire of the islanders.

With this considerable capital invested there is very little chance of the pier paying a reasonable percentage; while in the event of the traffic failing, the present owner has to bear the whole of the risk. The original through carriage to London was 9s. per cwt. Two years ago I negotiated a reduction to 7s. 6d, so that, with the present pier due of 6d. added, it costs 1s. per cwt. less to send flowers to London than it did two years ago.

There is no sign at present of any diminution in the demand for flowers; but we may, of course, be defeated in the end by foreign competition, as many other English trades have been. The prices will have to be considerably lower before it becomes wholly unremunerative. We have got our stock of bulbs, and have therefore obtained a considerable start of others.

Let us consider, in the event of a failure, how we should fare. Before the industry commenced there was very little shelter, and no glass, I may say. Now the essence of flower-growing is shelter, and shelters—Escallonia, Euonymus, and Veronica hedges—are becoming general all over the islands, and glass is on the increase; so that if the trade fails, our islands will not be unsheltered and exposed to all the winds of heaven (they say there are five here, N., E., S., W., and one from above), but we shall have sheltered islands from all save the fifth wind, and plenty of glass ought, I think, to stop that, and we shall then be in a position to take every advantage of the mild and temperate climate which has been given us.

It will be a curious thing if an industrious, thrifty, and contented population cannot manage to turn these advantages to account, and so be enabled to carry on the welfare and prosperity which at the present time smile upon these islands, and which I hope, under Providence, may long continue.

SUPPLEMENTARY CHARTERS FOR SCIENTIFIC SOCIETIES.

A point of some interest has arisen of late years as to the new regulations at the Privy Council Office with regard to charters for scientific societies. Formerly the cost of a charter was some £450 in fees, besides lawyers' charges. Under the Joint-Stock Companies Act provision was made for the incorporation of societies for any useful public purpose by certificate of the Secretary of the Board of Trade. The cost is between £20 and £50. There is, however, a strong objection to being mixed up with joint-stock companies, however remotely, although there is an absolute distinction in the constitution. There is likewise a power of registration under the Benefit Societies Acts at trifling cost, but this has not been favoured.

The Royal Historical Society, the Royal Statistical Society, and the Institute of Journalists have lately obtained royal charters of incorporation through the Privy Council at a very moderate outlay of from £100 to £150.

Some of the older societies are embarrassed with obsolete provisions, which a supplementary charter could relieve. The point has not yet been decided whether if they obtain a supplementary charter, they will have to pay £500 for minor advantages, or whether they come under the new regulations, though there is little doubt that the old scale does not apply.

The point has been raised several times at the general meetings of the Royal Botanic Society, and last on the 11th of August. The founder of the Society, the late Mr. Philip Barnes, F.L.S., in veneration of the memory of Linnæus, obtained a provision in the charter that the anniversary should be held at or near the birthday of the great botanist. In earlier days some people were found in London on the birthday of Linnæus, but for several years there has been trouble to get a bare quorum to assemble in the centre of the Regent's Park, the more particularly as the hour is fixed at one, and there are no means of allaying hunger within half a mile. There is lunch for the Council, but there are seldom more than five or six so attracted. Practically, the Council have not met their constituents for many years.

This has very naturally led to complaints, and the desire is expressed that the anniversary shall be held on some convenient day and at some convenient hour. This has been evaded by the administration year after year, on the plea that a new charter would be required, which might cost £500, and for which the Society would have no funds.

The practical result is that this large society has no meeting for discussing its affairs, and the Council in which only one member has this year been changed as usual, is regarded as a close clique. Any observations made now are practically within closed doors. At the last meeting attention was called to the unsatisfactory state of the finances and the grounds. The debenture debt is £12,500, and as in a successful year £200 is paid off, at this rate sixty years will be required, while the Crown lease is approaching its close with no certainty of renewal. In case of non-renewal there will be no realizable assets, and such a collapse as happened to Horticultural creditors at South Kensington.

The condition of the beds and walks was denounced, but it was pleaded on behalf of the Council that there were no funds, and that it is a botanic garden. In the discussion it came out that it was equally starved as an ornamental and as a botanic garden. Attention was called to the necessity of admitting the public to the gardens on payment, as at the Zoological, so as to provide funds, instead of the gardens being kept as a private promenade for a few people, with some fête days. It was urged that the most essential step to give vitality to the society is to enable the Fellows to attend the meetings and to become conversant with the state of affairs before it is too late.

It is possible that other societies may feel the want of relief; but so far as regards the Royal Botanical, the grievance is one which has attracted the attention of the *Athenæum* and other journals, and which the longer it is allowed to exist the more serious it becomes. At the request of some of the Fellows, I have adopted this mode of calling attention to the subject.

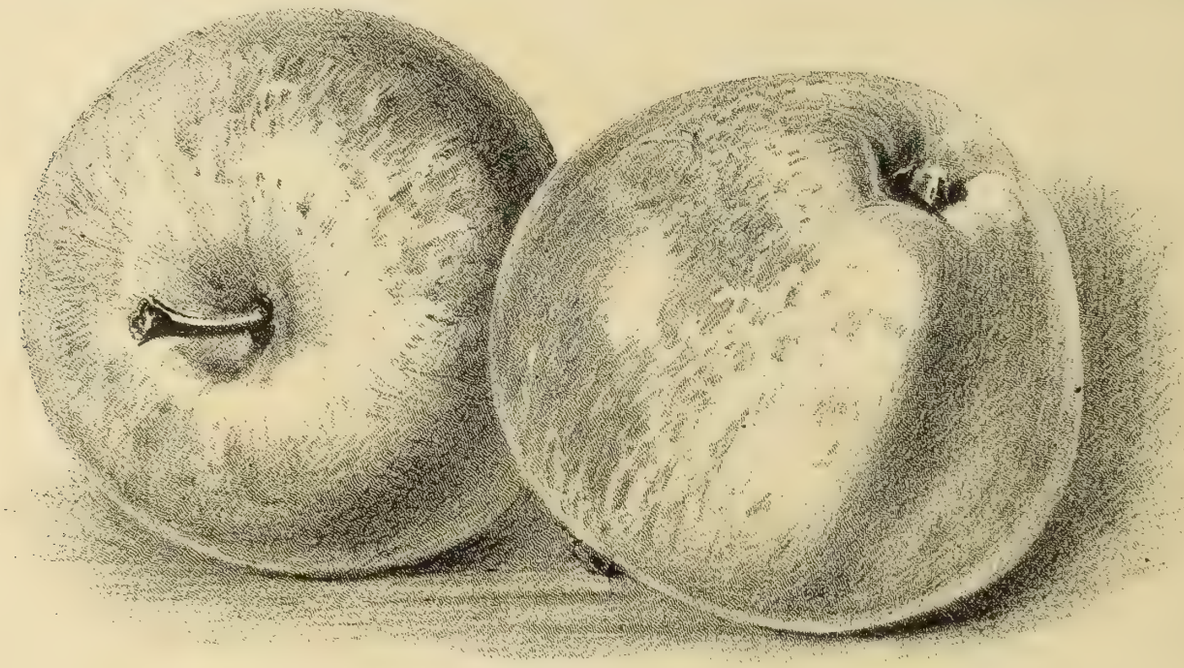
Hyde Clarke, F.R.B S. (1839) (*Athenæum*).

The Cultivation of Early Fruit and Vegetables at Mentone.—The British Vice-Consul at Mentone in his last report remarks that the country round produces an excellent quality of lemons in abundance, which during the winter are sold at 15f. per 1,000, and he suggests that English importers might find this produce worthy of their attention. The crop is easily capable of great extension, being one which the native understands and to which he willingly betakes himself, whereas he neglects market gardening for early vegetables, to which the winter climate is particularly favourable. New potatos grown for exportation, commencing in November and continuing throughout the winter, could be produced with the greatest facility in regularly succeeding relays, as individual experience has repeatedly proved. Until March, and even April, however, the supply in the local market is insufficient, intermittent, and costly. Some English seedlings, planted at intervals of three weeks in some private grounds, produced, by means of irrigation during dry months, magnificent crops from November till April. Were the land intelligently and scientifically chosen and cultivated for the purpose, strawberries, which in certain sites ripen freely in the open air at Christmas, without even bell glasses, could, together with winter peas and asparagus, each unforced, supply the London and Paris markets at an unprecedentedly early period. At present one gardener by profession, a Parisian, alone seems alive to the precious possibilities contained in certain sunny and sheltered nooks, and he regularly furnished the famous Hotel de Paris at Monte Carlo with much of its consumption of winter delicacies in the way of unusually early fruit and vegetables. For the most part, however, the local market has to draw its supplies even of cabbages and onions from Nice and elsewhere. A short cut to competency is, however, found for the native rural population of the whole district, as well as for that of the surrounding country beyond the frontier, in the yearly advent of the large foreign colony. The old people generally remain on the land, and tend it as well as they are able, in the absence of lusty sons and daughters, married and single, who find service, employment, or trade in villas, hotels, and shops during the winter months, and who, together with crowds of Swiss and Italians, return to their land at the end of the season.

DESSERT APPLE, AROMATIC RUSSET.

IN the later days of the spring of the present year we received from Mr. Charles Turner, of Slough, samples of some well-kept dessert apples of the first quality that were of the growth of 1889. Amongst them occurred the one now figured, to which attention may be directed as a profitable apple where keepers are of any account.

Aromatic Russet is quite distinct from Golden Russet, which is sometimes substituted for it, and although an excellent apple is less hardy than the Aromatic Russet, and requires therefore a better climate than the one now figured, which may be described as hardy enough for any place in which apples can be profitably grown, The Golden Russet agrees with its name, being almost entirely covered with russet of a "red gold" colour, and has a bright and shining red cheek. The Aromatic Russet is much covered with brownish grey russet on a greenish yellow ground, with large brown scales on the shaded side, and grey scales on the sunny side, where also there is a tinge of brown which often becomes a full-coloured brownish red cheek. The size and form of the Aromatic Russet are clearly defined by Mr. Slocombe's admirable figures. When well grown it is of medium size, roundish ovate, the eye small, open, sometimes with recurved segments and set in a shallow knobbed depression; the stalk half-an-inch long, slender, inserted in a deep round funnel. The flesh is greenish yellow, crisp but tender, rich but brisk in flavour and decidedly aromatic. Its season is from the end of November to the early part of March.



DESSERT APPLE, *Aromatic Russet.*

PROPAGATING BEDDING PLANTS.

GARDENERS are not unreasonably complaining that the growth of bedding plants is so soft and sappy that they are anxious about getting stock enough to fill the flower beds next year. Many cuttings, especially of the different classes of pelargoniums, have already damped off, and there is no present prospect of getting drier weather to harden up the growth of the stock plants, or should drier weather come the temperature will be too low. It may help those who are in difficulty as to the best means to adopt under the circumstances if I offer a little advice. In the first place, I recommend that greater care than usual should be taken in selecting the cuttings. With regard to pelargoniums, the strong, soft tops of the most vigorous shoots should be rejected, as these will be the first to damp off even when skilfully treated. The best cuttings are those that can be taken from close to the stem, which are frequently just long enough to make a good cutting without shortening. In every case I recommend that the base of the cutting be formed of the hardest growth that can be had, and instead of shortening it back if too long, to insert it its whole length, as if the top is taken off it makes an additional wound to heal, besides offering a position for the damp to settle upon. These long cuttings will, I know, be objectionable in the eyes of those who would prefer to have things always in proper order, but, under the circumstances, they had better bear with it, and two or three weeks after the new year has set in they may shorten their plants if they like. Having made good roots and the growth being fairly hard there will be less likelihood of the plant with roots dying than there was when it was only a soft cutting.

The next point I would direct attention to is that in every case pots should be used in preference to boxes. The porous nature of pots will assist in drying up the excess of moisture in the cuttings; but what is more, if six-inch pots only are used, the cuttings will get more air, as there will be a greater circulation between them. Instead of standing the pots on a bed of soil or ashes, as is often the case, they should have a firm and dry bottom; indeed, whatever can be done to dry up the excess of moisture in the cuttings should have a preference over customary practices. The drainage of the pots should also be more than usual to prevent the soil from retaining too much moisture. For the same reason an additional allowance of sand should be mixed with the compost. These are all matters that if attended to will greatly assist the cuttings to form roots, and will tend to reduce the risk of losses as much as it is possible to do. If I said anything more with regard to manipulating the cuttings, I should say do not remove more leaves than can be avoided. I know that a good many look upon the leaves on cuttings as being in the way and of no use. But that is a mistake; the more leaves a cutting can keep green and healthy, the sooner it will form roots. Too many leaves will, we know, help to crowd the cuttings; but if they are too thick the lower ones will gradually die away, when they can be removed. It will be better for the cuttings for the leaves to die away gradually than to have them cut off at the time they are inserted.

Until the formation of roots begins the cutting pots will require very careful watering. It will be quite safe to keep them on the dry side for several weeks, but not so dry as to cause the cuttings to shrivel up for the want of moisture. A cold pit or frame is the best place in which to keep the cuttings until they have made roots. A thin shade should be placed on the glass in bright weather, and what air is needful should be given at night.

J. C. C.

ANGRÆCUM CAUDATUM.

THE interesting orchid, figured in G.M., September 13, although more than fifty years in cultivation, is still a rare species, and seldom seen in flower. According to Reichenbach, it belongs to the Listrostachy's section on account of the two caudiculæ of the pollen masses being affixed to one gland; hence in this respect it may be classed with A. Chailluanum, A. arcuatum, A. pertusum, and one or two others. It is a native of Sierra Leone, whence it was introduced by Messrs. Loddiges, of Hackney, in whose nurseries it first flowered in 1836. The leaves are strong and leathery, and distichously arranged on the stem. Several flowers are borne on an arching or pendulous raceme, and present a very remarkable appearance. The sepals and petals are dark-green, lanceolate-acute, the latter being generally much reflexed. The lip, however, is the chief attraction, the broad blade being pure white, ending in an acuminate greenish point, while the base is furnished with a brownish spur, which attains a length of six to nine inches. Dr. Lindley was so struck with the length of the spur that he emphasized the impression it made on him by giving the species the specific name of caudatum. There are, however, other species, such as A. Scottianum, for instance, to which the name would now apply equally as well, but which were unknown when naming the subject of this note.

J. W.

DECURRENT-LEAVED MUTISIA.

Mutisia decurrens.

The figure that accompanies this note represents one of the most interesting of the many exotic plants that adorn the gardens of Britain. We do not aver that it is the most beautiful, for in respect of beauty, it is distinct, attractive, and much to be admired; but no claim can be made for it that in beauty it is either unique or exceptional. It is particularly interesting for one reason, that there are few plants so difficult to keep; and for another reason, that to grow it and keep it is easy enough for those who understand it.

Mutisia decurrens is one of forty species of Mutisia, a genus of composites the species of which are more or less remarkable in growth; and many of them not less so for the size and beauty of their flowers. Some of these have pinnated leaves; others have entire leaves that terminate in tendrils, as in the example before us. M. latifolia, figured by Sweet in his "British Flower Garden," Vol. III., second series, t. 288, is characterized by a curious leafage, and winged stems, the flowers being smaller than those of the plant before us, and of a soft rosy pink colour. M. grandiflora is, perhaps, the most to be desired after M. decurrens, but appears not to be in cultivation in Europe at the present time.



DECURRENT-LEAVED MUTISIA, *Mutisia decurrens* (Flowers brilliant orange colour).

The Decurrent Mutisia was introduced by Messrs. Veitch and Son, through their collector, Mr. Pearce, from the Chilian Andes, in the year 1860 or 61, and was figured in B.M., t. 5273. It is a hardy climber, with peculiar decurrent leaves, of a glaucous green colour, and flowers of a brilliant orange colour. It is described in B.M. as "climbing to the height of a few feet." On the wall of the museum

next the pond, in Kew Gardens, a plant may now be seen that is about ten feet high, and has been flowering freely for two or three months past, presenting an attractive appearance, both by reason of the gay colour of its flower-heads, and the distinct form and glaucous tone of its leaves.

If we sum up the merits of this plant by likening it to a climbing gazania, that is perfectly hardy in the climate of London, we shall be giving a fair idea of its claims to admiration. But we have remarked above on the difficulty of keeping it, the consequence solely of the liking of slugs and snails for the young growth as it rises from the ground; for if these enemies have access to it, they will effectually prevent its ever rising to the dignity of a flowering plant. At Kew the difficulty is met by the simple precaution of spreading broken coke over a space of about two square feet where the plant is situated. Over or beneath this the marauders can make no progress, and thus it is secured.

In comparing our figure with the one above cited, and with another in the "Florist and Pomologist," 1862, page 81, we find that in both the flowers are represented of large size and with much broader ray florets. It is not for us to say that they are exaggerated, and indeed, as they are from the pencil of Mr. W. H. Fitch, we take them to be faithful in every particular. But we must say in behalf of our figure that it represents the flowers as they appeared in the Kew specimen when at its best in the month of July last, and the figure is an admirable example of the conscientious work of Miss Ada Brooke.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

ORCHIDS in bloom comprise:—Cattleya bicolor, C. marginata, C. pumila; Cymbidium pendulum; Epidendrum rhizophorum, E. vitellinum majus; Ionopsis paniculatus; Lælia elegans. L. furfuracea, L. Lindleyana; Miltonia Clowesii major, M. candida; Oncidium bicolor, O. crispum, O. crispum grandiflorum, O. leuchochilum; Stanhopea oculata, S. tigrina lutescens; Trichopilia picta; Zygopetalum intermedium, Z. maxillare, Z. rostratum.

THE HOUSE.

THE keeping of game is one of the special cares of the household now, for it is apt to come in gluts, with long reaches of nothing between. If left about carelessly for a few days until you can find time to deal with it properly it is only too likely to be rendered scarcely worth hanging, for the bluebottle flies like meat that is still and warm, and somewhat obscurely hidden in a dark corner. It is worth knowing, although known to many, that flies will not touch joints of meat that hang in a cold dry current of air. But joints laid on a shelf in a larder or kitchen might within the hour be visited by half a dozen mother flies, and if left a few days longer in the same evil position would be found full of maggots. These facts are of great importance now that game is abundant, for any neglect will be likely to lead to serious deterioration. The birds should be hung singly, or in pairs, at a little distance from each other in the coldest place that can be found, and in darkness and draught if possible. No place that is customarily resorted to by servants is fit for hanging meats, because doors and windows will be left open, light will be admitted, and all proper regulations more or less set at defiance. Inexperienced persons are apt to allow birds to hang an unreasonable length of time. It is one thing to have the meat ripe and another to have it offensive. There is a happy mean, easily discoverable where the first suspicion of a tendency to turn occurs, and then, as a rule, the thing is in perfection. Having passed that point, deterioration rather than improvement is the consequence.

CONSERVATORY AND GREENHOUSE.

THERE is nothing more to be gained in the way of hardening the new growth; in fact, a little sun heat under glass will ripen the wood of plants that are still in a sappy condition much more effectually now than sunshine out of doors, besides the safety of glass for whatever is worth keeping. Keep from using fires as long as possible; but if any special reason require it let no rules without reason interfere; set the fires going, dry the houses, and have a change of air while there is no fear of a chill. By good management much may be done now with sun heat. Plants recently potted and housed must be frequently sprinkled, and kept a little close to encourage root action. Do not keep them very wet at the roots; in fact, after the first watering when potted let them go nearly dry at the root before watering again, but sprinkle frequently, and as the lower leaves wither remove them. Keep the house clean and dry, so as to allow as much ventilation as possible amongst hardwooded plants. If the weather is mild and the wind westerly, give air at night to Camellias, Azaleas, Heaths, Epacrises, and other subjects of like habit and hardiness.

STOVE AND ORCHID HOUSE.

ORCHIDS must not be injured by an excess of heat and moisture at the decline of the season. By gradually withdrawing the supplies of water, orchids will go to rest safely at much lower temperatures than are usually adopted; Cattleyas especially must be kept cool now to make them rest.

WINTER FLOWERS must be prepared now or the season will be too far advanced to ensure satisfactory results. Give a few Begonias a shift, and push them on for flowering; look to Euphorbia fulgens and splendens, Poinsettia pulcherrima, Achimenes picta, Lily of the Valley, and pot up from the borders Dielytra spectabilis in plenty; it is one of the best of things to force, and exquisitely beautiful.

FORCING AND FRUIT HOUSES.

PINES ripening their fruit must be kept warm and have less water. Be careful how you give water now, and keep up the heat in the succession pit.

VINES must have their wood ripened now, if it is not so already, or all sorts of evil will befall them. Cut off the ends of any shoots that are green. All superfluous shoots to be removed as soon as possible, and the vines in the early house to be pruned at once, and the border covered to keep it dry and warm; wooden shutters are sometimes used, but straw hurdles are preferable.

FLOWER GARDEN AND PLEASURE GROUNDS.

AURICULAS to be housed for the winter and watered very sparingly. Look over the stock in removing them to the frames; see if slugs are hidden in the hole next the crocks.

BULBS to be potted in successional batches, so as to prolong the blooming season. Pot the early-blooming Gladioli, Sparaxis, Ixias, Narcissus bulbocodium, Jonquils, and Tritonia aurea in a mixture of peat, leaf-mould, and turfy yellow loam, equal parts.

CARNATIONS not yet potted or planted must be disposed of without any more delay, as it is of great importance to have them well established before winter.

CHRYSANTHEMUMS require plenty of water, and twice a week liquid manure, but not a drop of the latter to touch the leaves. See to any tying that has been neglected. Pot up at once those grown in the open ground for conservatory decoration. Of course they must be lifted with good balls, and be potted firm, with plenty of drainage.

TALLIES.—Revise all named plants while there are blooms or fruits to determine if they are tallied correctly. To keep plants correctly tallied will do more to familiarise the mind with their several characters and excellences than any amount of book study; in fact, every garden is a book where, not he who runs, but he who stoops, may read; and everything of real interest should have a tally correctly written.

KITCHEN GARDEN AND FRAME GROUND.

CABBAGE.—Plant out at every opportunity; there is plenty of ground now and there is good time for the plants to grow.

CELERY will be growing freely now, and when a good growth has been made begin to mould up, but not before. Generally speaking, all celery not yet moulded should be commenced, as that begun now will not be fit for use much before November.

CARDOONS have now done growing, and it is time to blanch them for use. Those that have flower-heads upon them are no use; pull them out. Before earthing tie them loosely, so as to keep the leaves and stems together, and prevent the soil going to the hearts; then bank them up high and firm.

CARROTS will not grow much more now, and may as well come up. Store in dry sand in a dry and cool place.

CAULIFLOWERS of the last sowing to be pricked out under hand-glasses and a few to be potted in 60-sized pots to push on for extra early supply, as they can be planted out early in spring on a warm, well-manured border, and have the shelter of old lights, or inverted pots or thatched hurdles, in case of late morning frosts.

TURNIPS must be thinned in good time, and the rows hoed between. Where broadcast the hoe must do the thinning, weeding, and loosening of the soil; but when in drills it is best to thin them by hand, as the hoe always leaves two or three close together fighting for a place which is an evil.

VILLA FARM.

THE matters demanding the more immediate attention of the bee-keeper at the present moment are uniting the weak stocks and feeding up to the proper weight such stocks as are at all light, for unless there is a sufficiency of food it is impossible for them to pass through the winter without being more or less weakened. In feeding bees at this season of the year, as in the spring, let the supplies be sufficiently liberal to enable them to well fill the hives before the cold and wet weather now coming on keeps them closely confined. There is really more robbing going on in the apiary in September than in any other month of the year, and precautions must be taken accordingly, one of the most effectual being to contract the size of the openings very considerably. It is also most essential to avoid leaving pieces of comb, refuse honey, or prepared food about, because when this is done fighting and robbing are sure to take place to a greater or less extent. The feeding bottles should always be covered in some way, and failing anything else, flower-pots of a suitable size may be turned over them and the hole closed with a cork. The brood comb taken from straw skeps should be fixed securely in an empty hive with the aid of sticks, and a stock of bees that has been driven into an empty hive shaken amongst them. When this has been done, and they have settled down amongst the combs, a board should be placed over the hive, and the latter be then turned its right way upwards. If bar-frame hives are employed it will be much more easy to deal with the brood comb from skeps, as it can be securely fixed in the frames of a hive into which one or two swarms have been driven, or of a hive from which the honey has been taken. The bees will hatch all the young brood if supplied with artificial food in moderate quantities, and the stocks will acquire great strength and probably throw splendid swarms in the season following.

Correspondence.

FRUIT AS FOOD.

WILL you kindly allow me to repeat to your rural readers the following offer similar to that inserted last year at this season, in your widely read columns.

As the question of hygiene is now "in the air" it will, we may hope soon be applied to our food. The present is a very seasonable time to suggest the study, with careful experiments of probably the most wholesome and natural of all diets for man, viz: fresh ripe fruits and nuts. The cultivation of these most enjoyable products are being found at least as profitable crops as any that can be grown, as our native fruit of some sorts thrive in every soil, and if juicy and fresh they become often also all sufficient as a beverage for all kinds of work. There seems therefore, every reason to hope that a more general use of fruit as food, would enable us as a nation gradually to eat ourselves out of our agricultural difficulties, and at the same time to find a most effectual means to deliver our country from the "cursed drink" crave, and also very materially to benefit the general health, if we learn to resume man's original diet as fruit eating animals, as all anatomists have described us for some generations past. I shall therefore be glad to forward to all sending an addressed wrapper and two stamps, some literature recently issued bearing upon "Man's Natural Food," "Hints on a Fruit Diet," and also a tract on "Bottling British Fruit" by which fresh fruits can be enjoyed all the year round. As we are now on the eve of a very prolific crop of blackberries these would prove probably to be the most suitable of all to make experiments with in "canning" as the Americans style it, and in the use of native wholesome fruit as food, as well as to lay the foundations possibly of a new and dependable industry for rural districts, for our blackberry crop rarely fails us anywhere.

Woodlands, Vanbrugh Hill, Blackheath, S.E. W. S. MANNING.

Exhibitions and Meetings.

BRIGHTON FLOWER SHOW, September 10 and 11.

Although a few of the fruit classes were hardly so well filled as on some previous occasions, the high average of the past few years was fully maintained, and the visitors could not well have failed to obtain abundant entertainment. The trifling falling off in the competitive classes for fruit was more than compensated by the important collections in the miscellaneous class, and of dahlias, roses, and other cut flowers there was an immense display. Plants were about equal to the average, and the great bank of stove and greenhouse plants in bloom presented an extremely attractive appearance. As in previous years the show was held in the Royal Pavilion, the music-room being devoted to the table decorations, and plants remarkable for the beauty of their foliage, the north drawing-room to the dahlias and other cut flowers, the south drawing-room to the roses, and the banqueting-room to the fruit. The plants grown for their flowers, the groups and the vegetables were arranged in a large tent erected on the lawn. The weather was delightfully fine, and there was a large attendance of visitors on both days.

Stove and Greenhouse Plants grown for their flowers were well represented in point of numbers, and the majority were in capital condition, some of the specimens failed to produce so satisfactory an appearance as could have been wished, owing to the severe style of training adopted, and the prominence of the wire hoops to which the growth was secured. The most important of the several classes was that for eight specimens, and here Mr. Portnell, gardener to Sir A. Lamb, Bart., Beauport, Battle, was first with large well-bloomed specimens of Ixora Williamsi, Erica Aitoniana Turnbulli, E. cerinthoides coronans, an attractive form bearing fine clusters of large scarlet flowers, E. Aitoniana, E. Fairreana, Dipladenia Brearleyana, Allamanda Hendersoni, and Statice imbricata Gilberti; Mr. Meachen, gardener to Mrs. Armstrong, Woodslee, Withdeane, Brighton, was a capital second, having Allamanda nobilis, Bougainvillea glabra, Pimelia decussata, and Eucharis Amazonica; Mr. Currey, gardener to Lieut.-Colonel Pepper, Milford Hall, Salisbury, was third. Mr. Portnell was first also for four, staging Erica Eweriana, E. Irbyana, Dipladenia amabilis, and Allamanda Hendersoni; Mr. Meachen was a good second, his best specimen being that of Allamanda Hendersoni. Mr. Portnell was the only competitor in the class for six heaths, and was deservedly awarded the first prize, the specimens being of medium size and admirably flowered, the kinds, it may be interesting to state, were Erica Aitoniana, E. Aitoniana Turnbulli, E. cerinthoides, E. Irbyana, E. McNabiana, and E. Eweriana.

Ornamental Leaved Plants comprised several excellent collections, but in the music room they did not appear to full advantage. For twelve Mr. Currey was first with huge well balanced specimens consisting chiefly of crotons, palms, and cycads. The crotons were well-coloured, and the palms characterized by their freshness, and the example of Cycas undulata must be mentioned for its high development. Mr. E. Meachen, who was second, had a good collection, in which occurred a splendidly coloured specimen of Croton Queen Victoria. There was a brisk competition for the prizes for twelve plants suitable for the decoration of the dinner table, and Mr. R. Poole, gardener to R. B Evans, Esq., Oatland, Horley, was first with a capital collection in which were excellent examples of Pandanus Veitchi, Aralia gracillima, Cocos Weddelliana, Jacaranda mimosæfolia, Croton Chelsoni, and other well-known plants. Mr. Portnell was a close second.

Soft wooded Plants in bloom were staged in a condition indicating cultural skill of a high order, Mr. Portnell was successful in occupying the first place in the class for six fuchsias; the second award was made in favour of Mr. Collis, gardener to James Barnes, Esq., Brighton, and Mr. Meachen was third. For four fuchsias Mr. Wickham, gardener to J. Humphrey, Esq, Keymer, was first, and Mr. Portnell and Mr. Collis were second and third. The several collections consisted of large well-bloomed pyramidal specimens. Mr. Meachen was first in each of the two classes for zonal pelargoniums, and the most successful of the exhibitors of tuberous begonias was Mr. Collis, who occupied the first place in each of the two classes provided for these flowers, the plants comparatively large and well bloomed.

Groups Arranged for Effect were of a high degree of excellence. For an arrangement of flowering and fine foliage plants Mr. Meachen and Mr. Currey were first and second respectively, and for a group of ferns Mr. Spottiswood, gardener to Mrs. Duddell, Queen's Park, was first with an extremely beautiful arrangement. Mr. G. Miles, West Dyke Nurseries, Brighton, exhibited, not for competition, a group of ferns, which was remarkable both for the excellent condition of the plants and the taste with which they had been arranged. Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, contributed to the miscellaneous class an extremely beautiful group of flowering and ornamental-leaved plants. Conspicuous in the collection were the examples of Cattleya gigas, Oncidium Lanceanum, Dendrobium formosum giganteum, an exceptionally fine form, and Lælia prestans. Greenhouse rhododendrons were also well represented in the collection, amongst others being Taylori, Prince Leopold and Duchess of Edinburgh.

Cut Flowers, for which liberal provisions were made in the schedule, formed a large and highly attractive display. Roses were very strongly represented. Mr. S. P. Budd distinguished himself by taking first for forty-eight trusses and for twenty-four, in each case to be distinct, the blooms large, fresh, and otherwise of high quality; Messrs. Perkins and Son, Coventry, and Mr. D. Booth, Piltdown, were second and third in each class. For twelve trusses of any one variety, Mr. D. Booth was first with finely-developed blooms of Mrs. J. Laing; and Mr. Budd was second with good trusses of Madame Cusin. Dahlias were staged in large numbers, and the majority of the blooms were of high quality. In the great class for forty-eight show and fancy varieties, Mr. J. Walker, Thame, was first with a well-balanced collection of finely-developed blooms. The varieties were Pelican, Purple Prince, Mrs. N. Halls, Richard Dean, Flora Wyatt, J. Henshaw, T. J. Saltmarsh, Imperial, Earl of Radnor, T. Hobbs, Crimson King, Clara, J. Stephens, Mrs. Kendal, W. Rawlings, Queen of the Belgians, Prince of Denmark, J. C. Reid, Peacock, Mrs. Saunders, Mrs. Foreman, Harrison Weir, Senator, Alexander Cramond, Mrs. Dodds, W. Garratt, Grand Sultan, Spitfire, J. T. West, H. Keith, Hon. Mrs. P. Wyndham, Bendigo, Flag of Truce, J. Bennett, Mrs. Gladstone, George Rawlings, Chorister, George Barnes, Champion Rollo, J. Cocker, Mrs. G. Rawlings, Mrs. Slack, Miss Cannell, J. Ashby, Mrs. Gladstone, Mrs. A. Campbell, and R. T. Rawlings. Mr. Walker was first also for twenty-four varieties. Other successful exhibitors in the classes were Mr. G. Humphries, Chippenham, and Mr. A. Rawlings, Romford. Messrs. J. Cheal and Sons, Crawley, were first in the classes for decorative, pompon, and single dahlias, in each case with excellent stands; and they had also in the miscellaneous class a very large and highly-attractive collection, in which all the sections were well represented. Mr. J. Walker was not less successful in the classes for asters than in those for show and fancy dahlias, being first for twenty-four pæony and for twenty-four quilled blooms. Miss Gibson, Saffron Walden, Mr. J. Morgan, and Mr. Garraway, Bath, also exhibited well in the aster classes. Miss Gibson was first for twenty-four bunches of flowers of stove and greenhouse plants, and the prizes for collections of flowers of hardy herbaceous plants were awarded to Mrs. Borrer, Bolney, Mr. Ladham, Shirley, and Mr. R. Miller, Shoreham, in the order of their names.

Table Decorations and Bouquets constituted a large and very attractive feature. For three stands Mr. J. R. Chard, Stoke Newington, was first, for bouquets and wreaths Messrs. Perkins and Son obtained premier honours, and the special prize for an epergne was awarded to Miss Hudson, Gunnersbury House, Acton.

Fruit had twenty-five classes provided for it and if not quite equal to that shown in some previous years there was an abundance of excellent produce. In the open classes for white grapes Mr. T. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, Chertsey, was first with finely finished clusters of Muscat of Alexandria; Mr. J. Bury, gardener to C. Bayer, Esq., Forest Hill, was second with Foster's Seedling. In the gardeners' class for white grapes Mr. Spottiswood and Mr. Osman were first and second, both staging Muscat of Alexandria; Mr. Osman was first in each of the two classes for black grapes with fine clusters of Alicante. Mr. Bury was second in one class with Alnwick Seedling, and in the other the second place was occupied by Mr. J. Gibson, with Black Hamburgh. Mr. Helman obtained premier honours for one melon with Hero of Lockinge. Mr. J. Morgan was second with Scarlet Gem; and Mr. Bradbury was third with the Countess. Mr. J. Hopkins, Framfield, was first for a brace of melons with High Cross Hybrid and Benham Beauty. Mr. Harris was a good first for two dishes of peaches, the varieties being Grosse Mignonne and Barrington. Mr. Osman was second, his best dish being that of Bellegarde. In the corresponding class for nectarines, Mr. Osman occupied the first place with good fruit of Pine Apple and Lord Napier. Mr. Harris, second with Elruge and Pitmaston Orange. For a single dish of peaches, Mr. Harris was first with Royal George, and Mr. F. Sutton, Horley, was second, with Princess of Wales. Mr. Remnant had first place for a dish of nectarines, with Pine Apple. Mr. Broonell, Redhill, was second with Lord Napier. Figs were particularly good, and in the open class, Mr. Thomas, Willingdon, was first with large well-ripened fruit of Castle Kennedy; and Mr. R. Miller was second with Brunswick. In the limited class for figs, Mr. J. Butler, North Lancing, was first, with Brunswick, and Mr. Helman and Mr. W. King were second and third, with Brown Turkey. There was a good display of both culinary and dessert apples, and pears and plums were fairly well represented. Messrs. G. Bunyard and Co., Maidstone, contributed to the miscellaneous class a large collection of exceptionally fine apples; and Messrs. J. Cheal and Sons sent a representative collection of these fruits. There was also a large collection of apples and pears of Irish growth exhibited in connexion with the conference of the British Fruit Growers' Association held on the second day.

MANCHESTER BOTANICAL SOCIETY.

Exhibition in the Gardens at Old Trafford, September 12 and 13.

The autumn show at Old Trafford has always been specially attractive, but this season shows an advance in several directions, and in one direction, that of added social enjoyments, there was a gratifying parallel to the advance in the competition and its results. The exhibition house was not included except in a quite trivial degree in this display, which was confined as regards the leading features to the beautiful pavilion that remains as a memorial of the Jubilee exhibition of 1887. This was brilliantly furnished with fruit and flowers, including banks of cut roses, dahlias, gladioli, mixtures of orchids, stove and greenhouse flowers, pansies, chrysanthemums, bouquets and dinner table decorations. For the horticulturists, the great attraction was the fruit department, but the general public appeared to be more powerfully attracted to the flowers, which were abundant, and for the season wonderful in quality.

Grapes were great in every sense, and the awards of the judges were much scrutinized and discussed with the result that there was a great concensus of opinion in their favour; the competition was close, and many important points were too nearly evenly balanced to permit of a rapid decision. The end of a toilsome and honourable task was seen in the award to Mr. Alderman Chaffin, of Bath, for the coveted first place in the class for eight bunches in four kinds, the prizes being £15 15s. first; £10 second; £5 third. Mr. Chaffin's bunches represented the work of Mr. Taylor, formerly of Longleat, who has for some years past been in the position of gardener in chief to the eminent citizen of the queen of English cities. The eight bunches consisted of two taper, very even, full ripe, and every way perfect Muscat of Alexandria, thirteen inches in length; two Madresfield in the same taper form, but with broader shoulders, and a wondrous finish—indeed, some persons were so profane as to say they were too good to eat, the bloom being such that it would be a sin to disturb it; two shorter and broader bunches each of Black Hamburgh and Alnwick, also in high finish, with a suggestion of the "half-hammered" appearance these have when of the highest quality in respect of growth. Second in this class Mr. William Allan, gardener to Lord Suffield, at Gunton Park, who had two immense bunches of Alicante, and two each of Gros Maroc, Alnwick, and Duke of Buccleuch. The finest bunches in this group were a little uneven, and the Duke of Buccleuch could not be put on any equality of footing with the faultless Muscats from Bath, to say nothing of the Madresfields accompanying them. We were by many persons asked to give an opinion on the spot, but for prudential reasons we reserved opinion until now, and we will add that grand as were Mr. Allan's grapes, there was a measureable distance between them and Mr. Taylor's, and the judges probably devoted more time to the matter than was needful, but that matters little when perfect justice is the end of the story. Equal thirds were awarded to Mr. McHattie, gardener to the Marquis of Lothian at Newbattle Abbey, and Mr. Goodacre, gardener to Lord Harrington at Elvaston Castle. Mr. McHattie had one bunch of Madresfield, three of Muscat of Alexandria, two of Lady Downes, and two of Black Hamburgh. Mr. Goodacre had one Muscat Hamburgh, three of Muscat of Alexandria, two each of Madresfield and Alicante. Two bunches of any black grape: First, Mr. McHattie, with Black Hamburgh; second, F. H. Gossage, Esq., Woolton, with Madresfield; third, R. C. Neville, Esq, Grantham, with beautiful Alicante. Two bunches of any white grape: First, Mr. Alderman Chaffin; second, W. B. Davenport, Esq., Chelford; third, Mr. McHattie, each exhibitor showing Muscat of Alexandria.

EIGHT DISHES OF FRUITS had for leader Mr. J. H. Goodacre, of Elvaston, who put up a splendid lot, including Powell's Late apricots, Victoria nectarines, Black Ischia figs, Barrington peaches, Muscat of Alexandria grapes, and a good Queen pine. Second, Mr. Wallis, gardener to Ralph Sneyd, Esq., Keele Hall, Newcastle, Staffordshire, who presented White Ischia figs, Gros Maroc grapes, Queen pine, Sea Eagle peaches in splendid order, Pitmaston nectarines, Transparent gage plums, and Moor Park apricots. Third, Mr. R. Dawes, gardener to Hon. Mrs. Meynell Ingram, Temple Newsam, who had Moor Park apricots, Stanwick nectarines in good condition, high coloured Royal George peaches, Brunswick figs, a seedling melon, Queen pine, and a great bunch of Barbarossa grapes and a moderate bunch of Bowood Muscat. Eight Peaches: First, Mr. Wallis, with Barrington; second, George Meeking, Esq., Stafford, with Sea Eagle; third, Mr. J. Lambert, gardener to Colonel Wingfield, Onslow Hall, Shrewsbury, with Royal George. Eight Nectarines: First, Mr. J. Lambert, with Humboldt, with great depth of colour; second, Mr. Goodacre, with Violette Hative; third, W. W. Brocklehurst, Esq., Macclesfield, with Pine-apple. In the class for Pine-apples: First, Colonel Dixon, Chelford, with a tall Queen in good colour; second, R. C. Neville, Esq., with a Queen; third, Mr. R. Dawes, for the Hon. Mrs. M. Ingram, with a Charlotte Rothschild in very deep colour. Green-flesh Melon: First, Mr. W. B. Upjohn, gardener to the Earl of Ellesmere, Worsley Hall, Lancashire; second, Mr. James Hunter, gardener to the Earl of Durham, Lambton Castle; third, Mr. Goodacre. Red-fleshed Melon: First, Mr. Goodacre; second, Miss Lord, Ashton-on-Mersey; third, Mr. Grant-Morris, Liverpool. Twelve Pears: First, Mr. J. Hunter; second, Mr. W. Allan; third, Mr. W. Barlow, of Stokehill, Castleton, Manchester.

TWELVE PLUMS.—First, Mr. Allan, with immense samples of Pond's Seedling, measuring by the tape four inches from stalk to crown; second, Mr. G. Hunter, with White Magnum; third, Mr. Wallace, with Kirke's.

TWELVE DISHES OF APPLES, CULINARY.—First, Mr. Samuel Barlow, with magnificent samples of Golden Noble, Stirling Castle, Peasgood's Nonsuch of great size, but as yet quite green; Catshead, Potts' Seedling, Cox's Pomona in quite delicate colour, and in this state closely resembling The Queen, which was also in the collection; Frogmore Prolific, New Hawthornden, Blenheim, a grand sample; Gloria Mundi, Gravenstein. Second, Colonel Platt, Llanfairfechan, with Hawthornden, Mere de Menage, extra fine; Lord Suffield, Peasgood's Nonsuch, Wareham Russet, Worcester Pearmain, Maltster, Lady Henniker, Blenheim, Lord Nelson, Warner's King, and Grenadier. Third, C. Lee Campbell, Ross.

EIGHT DISHES OF DESSERT APPLES.—First, Mr. Samuel Barlow, with grand dishes of Duchess of Oldenburgh, one of the best early table fruit; Margil, Ribston Pippin, wonderful for size and colour; Fearn's Pippin, Washington, Worcester Pearmain, Herefordshire Beefing, and Wormsley Pippin; second, C. Lee Campbell, with American Mother, Cox's Orange, Cellini, White Transparent, Worcester Pearmain, King of the Pippins, Pine Russet, and Irish Peach.

VEGETABLES were not a great feature, but those put up in Class 16 on a side stage in the exhibition house were all that could be desired, and the schedule demanded the large number of twelve dishes. First, Colonel Wingfield, Shrewsbury, with Ne Plus Ultra beans, Student parsnip, Green Globe artichoke, Major Clarke's celery, Nutting's beet, Sutton's Abundance potato (too large), Lockie's cucumber, Perfection tomato, Giant cauliflower, Lyon leek, Snowball turnip. Second, Colonel Cornwallis West, Ruthin, with Golden Perfection turnip, in a most æsthetic state, with perfect form, fairy tails, and delicious deep nankin colour, looking more like a dessert fruit than a turnip, and all the samples in the bunch turned out of the same mould; Perfection tomato, Oxonian leek, Autumn Giant cauliflower, Aylesbury Prize red celery, a fine bundle; The Czar bean, very broad, and as brittle as glass, though more tender; Middleton Park beet, Reading Giant potato, Rousham Park onion, spring sown, girthing 15½ inches; Matchless carrot, Duke of Albany pea, good; Telegraph cucumber. Tomatos were shown in the usual way by Messrs. J. Mason, J. J. Campbell, and G. Meaken. Cucumbers by Messrs. J. Grant-Morris, Lee, Campbell, &c.

DAHLIAS made a great and attractive feature. In the class for twenty-four, first, Mr. N. Walker, Newcastle-on-Tyne, with well-grown and admirably-arranged blooms of Royal Scarlet, Harrison Weir, William Rawlings, Mrs. W. Slack, James Cocker, R. F. Rawlings, Champion Rollo, Mrs. Langtry, Rev. J. Goodday, Flag of Truce, James Stephen, Clara, Mrs. Shirley Hibberd, Mrs. Gladstone, William Garrett, Mrs. G. Rawlings, Rosette, Goldfinder, James Vick, Mrs. D. Saunders, Harry Keith, Vice-President, James Huntley Hope. Second, Mr. T. Painter, Stoke-on-Trent, with a fine lot considering the smoky district they represented. The varieties were Henrietta, Duke of Fife, Rev. J. B. Camm, John W. Lord, James Cocker, Pandora, Champion Rollo, Perfection, Goldfinder, William Garrett, Vice-President, Emily Edwards, Henry Walton, Beauty, Lord Salisbury, John Cooper, Mrs. D. Saunders, William Jackson, Crimson King, Prince Bismarck, R. T. Rawlings, Nellie Cramond. Third, Mr. C. Hockney, Stokesley.

MISCELLANEOUS HARDY CUT FLOWERS shown in class 20 were of the most various kinds, each exhibitor presenting a group entirely different from every other. Messrs. Harkness and Sons, of Bedale, made a grand display with fresh large bunches of an excellent selection, including Rudbeckia speciosa, Lilium speciosum, Spiræa filipendula, the white Tigridium, Papaver nudicaule, Chrysanthemum latifolium, Hyacinthus candicans, Veronica longifolia, Scabiosa caucasica, garden gladioli, phloxes, delphiniums, chrysanthemums, and many more good things. Second, Messrs. Dickson, Chester, with a good selection; third, Mr. S. Barlow, with a collection consisting largely of carnations, gladioli, phloxes, dahlias, agapanthus, pansies, &c. Messrs. Harkness were first with cut roses; second, Messrs. Dickson. In a corresponding class for amateurs, Mr. S. P. Budd, of Bath, first, with seven boxes of superb blooms, four of these boxes consisting of teas only. Second, Mr. A. Whitton, Bedale; third, Mr. S. Barlow, with a fine lot of teas. Forty-eight spikes of Gladioli were led off grandly by Mr. Smith, of Prestwich, who put up his massive flowers in so unskilful a manner that many of them were literally concealed; second, Mr. S. Barlow, with a beautiful lot skilfully displayed. In the class for twenty-four Gladioli, first, Mr. R. Whitton; second, Mr. S. Barlow; third, Mr. R. G. Burgess, of Knutsford. Early-flowering Chrysanthemums made a poor show, very few few of these being suitable for cutting, however pleasing they may be in the beds. First, Messrs. Harkness and Sons; second, Mr. S. Barlow. The best cut show pansies were from Mr. T. Fitton and Messrs. Harkness, and fancy pansies Messrs. Harkness and Mr. Burgess.

CUT STOVE AND GREENHOUSE FLOWERS were a beautiful feature, and the subjects presented were good throughout. First, Mr. F. H. Gossage, who had in his brilliant group a delicious bunch of white Lapageria, Bouvardia President Cleveland, Anthurium Andreanum, Bougainvillea glabra, Vallota purpurea, &c. Second, Mr. Thomas Barnes, of Chirk, with Erica Marnockiana, Allamanda nobilis, Eucharis Amazonica, Allamanda Hendersoni, &c. Third, Miss Lord, of Ashton-on-Mersey.

COLLECTION OF CUT ORCHIDS brought a good competition, Mr. P. Blair, Trentham, taking first place with a delightful lot, in which were Odontoglossum Harryanum, Vanda cærulea, Dendrobium Jamesonianum, Miltonias, Cattleyas, &c. Second, Thomas Statter, Esq., with Cattleya Dowiana, Vandas, Cypripediums, Oncids, Lælias, &c.

The bouquets in the class for two were of the finest order, as will be generally understood when we say that Messrs. Perkins and Co. were prominent contributors, Mr. P. Blair, and Mr. Brown, of Heaton Mersey, following closely, orchids being conspicuous in the magnificent work of these accomplished artists. In the class for two bouquets of roses, first, Messrs. Perkins; second, Miss Lord; third, Mr. Brown, of Heaton Mersey. Miss Lord had the best stand for the dinner table; second, Mr. J. Brown.

A seedling Dahlia, contributed by Mr. R. Shakeshaft, nurseryman, Lymm, gives promise of usefulness. It is admirably made with perfect centre, the colour a soft creamy white; the judges named it *Ivory white*.

A seedling Grape was presented by Mr. Allan, gardener at Gunton Park. It is a cross between Black Morocco and Muscat of Alexandria; a very long, almost oblong berry, black, with good bloom.

A seedling semi-double Dahlia from Messrs. Harkness obtained some admiration. It is brilliant coloured, deep scarlet, and will be a showy garden flower, but too rough for show. It is named *John Burns*.

At the luncheon Samuel Barlow, Esq., presided, supported by the judges and leading exhibitors and supporters of the Society. The toasts proposed were few in number, and the speeches were brief. But time was found for mention of the B. S. Williams Memorial, the subject being of peculiar interest in Manchester, where our departed friend was widely known and deeply respected. The city that keeps the "sacred flame" of devotion to horticulture ever burning has made a liberal response to the appeal of the promoters of the Memorial, and Mr. Bruce Findlay reports that further aid will yet be forthcoming.

WOODSTOCK FLOWER SHOW, SEPTEMBER 9.

Splendid weather attended the holding of the thirty-first annual autumn show of the Woodstock Agricultural and Horticultural Association in Blenheim Park, the scene of many a floral contest. The noble arena was quite lively with the large number of visitors who roamed at will in the extensive gardens and pleasure grounds surrounding the palace. A show of agricultural roots, and dogs, poultry, and other live-stock helped to swell up the sum total of the largest exhibition in the county. Woodstock would not of itself be able to produce sufficient to make an attractive display, but "open classes" and "extra productions" render great aid in that direction.

According to custom his Grace the Duke of Marlborough's gardener (Mr. T. Whillans), arranged a very showy group in the centre of the members' plant tent, consisting of choice pieces of Anthurium Andreanum, Hydrangea paniculata alba, carnation Souvenir de Malmaison, backed by palms and ferns; forming a framework to a setting of orchids, of which the following varieties were presented, viz.: Calanthe veratrifolia; Cattleyas bicolor, gigas, Harrisoni, Gaskelliana, and aurea; Cypripediums selligerum and cardinale; Dendrobiums Deareii and formosum giganteum; Oncidium papilio Kramerii; Mesospinidium vulcanicum; Odontoglossums grande, pescatorei, and crispum; Masdevallia Tovarensis; Lælias elegans and Blenheimensis; Cœlogynes Massangeana, pandurata, and Rœzli; Saccolabium Blumei; and Aerides Saunderiana, edged with adiantums and Caladium argyrites; also a very choice collection of dessert fruit, including large clusters of Muscat of Alexandria and Madresfield Court grapes, Hero of Lockinge and Blenheim Orange melons, Walburton's Admirable, and Princess of Wales peaches; Pitmaston Orange nectarines, Defiance gooseberries, Raby Castle and White Dutch currants; Kirke's plums, Beurre de l'Assomption pears, Ham Green and Acquisition tomatos, and Morello cherries, all of high class form.

G. H. Morell, Esq., Headington Hill Hall (gardener Mr. W. Hovell), sent a useful lot of fine foliage plants to furnish the tables in the fruit tent, and also a set of dessert fruit embracing well-finished Muscat and Hamburgh grapes; Victoria, and Pond's Seedling plums; Hemskerk apricots, Diamond and Alexandra Noblesse peaches, Elruge, and Lord Napier nectarines, Physalis edulis (Cape gooseberry), Mank's Codlin apples, Bon Chretien pears and Morello cherries. Mr. John Walker, Thame, contributed stands of his strain of quilled asters. Triplet trusses of zonal geraniums in the following varieties, viz: Charles Mason, Aurora Borealis, International, Lynette, Constance, Alexander Albriecht, Mrs. H. S. Barker, Edith Strachan, Eva Magenta, Sophie Berkin, Clytie, and Mercedes; and the following forms of cactus dahlias (in four blooms, each with foliage and buds), viz: Lady M. Marsham, Mrs. Hawkins, Charming Bride, Empress of India, Lady Kerrison, Constance, and Jaurezi. Messrs. Sutton and Sons, Reading, staged blooms and plants of their strains of tuberous begonias (six months from the seed). From Messrs. Taylor and Son, Chipping Norton, came groupings of pompon dahlias, very bright, being Florence Macdonald, Mr. Webb, Sunshine, Infancy, Seraph, Grass an Wien, Guiding Star, Nemesis, and Golden Gem, the whole greatly assisting an otherwise large display.

PLANTS.—Very great interest centred in the groups for effect, the card going to G. H. Nelson, Esq., Rousham Park, for an arrangement a trifle rough but full of colour; his plants being palms, crotons, dracænas, Grevillea robusta, Cyperus variegatus, white and primrose form of chrysanthemum Madame Desgrange, begonias, Justicia carnea, Ixora Williamsii, edged with adiantums; Mr. G. Jacob, Witney, second, for a more compact group of dwarfer forms, but containing nice pieces of Cattleyas Leopoldi, Harrisonii, and bicolor; Oncidiums tigrinum and papilio, backed by liliums, palms, ferns, mosses, variegated pine apple, dracænas, crotons, caladiums, achimenes, begonias, and edged with Caladium argyrites, ferns, and blue lobelia. Mr. Jacobs was awarded premier honours for six plants, with full-sized specimens Vinca alba, Crotons Queen Victoria, and Weismanni, Clerodendron Balfourianum, Cycas revoluta, and Kentia Fosteriana; Mr. C. Jacob, Barton, Headington, second, with Crotons variegatum, Dracænas indivisa, Youngi, and Lindeni, Statice profusa, and Pandanus Veitchi, he being placed first for exotic ferns, with well-grown forms of Adiantums Farleyense, Williamsi, and cuneatum, Lomaria Gibba, Pteris umbrosa, and Asplenium nidus avis; Mr. G. Jacob second, with Adiantum cuneatum, C. grandiceps and formosum, Stenochlæna scandens, Davallia Mooreana, and Pteris umbrosa. For one specimen, Mr. C. Jacob took the card for a large Latania borbonica; Mr. G. Jacob second, with a bright Croton Warreni. Zonal pelargoniums,

single and double, were fairly good, the fuchsias in threes being excellent convex bushes of popular varieties, Mr. E Thorne, Kingston Road, Oxford, taking two firsts, as also for flowering zonals. Tricolor zonals were well developed, the brothers Jacob taking first and second with Lass o'Gowrie, Lady Cullam, Mrs. Pollock, and Mrs. H. Cox. Hardy ferns were in the hands of Mr. J. Johnson, Garsington, and Mr. J. Bates, Blenheim Nursery, Oxford, with sixes pretty equally balanced for size, quality, and varieties.

Cut Flowers.—In this department the bouquets were very attractive, all well arranged, and generally composed of choice varieties. Mr. J. Johnson first for twenty-four, and Mr. J. Bates for twelve.

Dahlias. Of these a large number were presented. In the class for twenty-four, Mr. T. Anstiss, Brill, first with compact flowers, the best being Mrs. Forman, Mrs. D. Saunders, Mrs. W. Slack. W. Rawlings, Mrs. Gladstone, Burgundy, Mrs. Langtry, John Forman, J. T. West, Purple Prince, Earl of Ravensworth, Colonist, Miss Cannell, Thomas Hobbs, and Flag of Truce; Mr. J. R. Tranter, Henley-on-Thames, second, being more successful in the class for twelve fancies, his premier flowers being Hercules, Grand Sultan, Pelican, Duchess of Albany, and Professor Fawcett; Mr. Anstiss second, with much the same varieties. For a dozen single forms in triplets, the first card went to T. A. Gillett, Esq., The Elms, Banbury. Asters made a large show. Mr. G. Kirtland, Bletchington, first for chrysanthemum forms; for quilled the premier went to Miss Smith, Begbroke, for a bright lot of Walker's Exhibition strain. Mr. J. Tranter carried off the palm for double zinnias (not large) and trusses of verbenas; Mr. J. Bates taking the first card for triplet trusses of zonals (indifferently staged); Mr. J. Johnson showing the best collection of gladioli spikes. Great pains were bestowed in arranging the model gardens, and the other floral designs, a lyre, an anchor, and a gigantic pair of shears (four feet high) being well defined.

Fruit.—There was a large display; for a collection G. H. Nelson, Esq., was first for dishes of Golden Queen and Black Hamburgh grapes, Bon Chretien, Jargonelle and Pitmaston Duchess pears, Brown Turkey figs, Orleans, Kirke's, and Victoria plums, Worcester Pearmain apples, Pine Apple nectarines, Goshawk and Walburton's Admirable peaches, and red and white currants. The principal prizes in this section went to Golden Queen, Foster's Seedling and Sweetwater grapes, in the white class; Hamburgh throughout for black. Peaches were Walburton's Admirable; and nectarines Lord Napier, Elruge, and Pine Apple. The best forms of culinary apples were Lord Suffield and Grenadier; for dessert Kerry Pippin and Quarrenden; and Bon Chretien pears. Plums were Pond's Seedling, for weight (heaviest dozen 2 lbs 9 oz.); and for dessert, Transparent Gage and Jefferson's. The best melon was a fully ripe example of Hero of Lockinge.

Vegetables.—This department was equal to anything seen in the county during the present season, extra fine cauliflowers, tomatos (Perfection predominating), parsnips, carrots, &c. For Messrs. Sutton and Sons' prizes, Mr. E. Thorne, Oxford, took the premier card, with matchless Reading onions, Autumn Giant cauliflower, Sutton's Satisfaction potatos, Improved Telegraph cucumbers, Sutton's Perfection tomatos, and long carrots; G. H. Nelson, Esq., second. Some gigantic runner beans were staged by Mr. Wingrove (Rousham Park Gardens), but the best dish in the show came from James Holton, Worcester College Gardens, Oxford, who staged Piper's Oxonian, ten inches long, straight, three-quarters of an inch wide, and of fine texture.

Potatos.—Sixteen hundred tubers were staged in competition, all large forms. In the cottagers' classes were many superior dishes, the class for six dishes producing a dozen competitors, the premier being James Boswell, Stanton Harcourt, who put up grand dishes of Reading Giant, Vicar of Laleham, Best of All, Mr. Bresee, Adirondack, and Satisfaction; second prize to Schoolmaster, Vicar of Laleham, Mr. Bresee, Reading Russet, Satisfaction, and Reading Giant; the third card going to International, Early Rose, Vicar of Laleham, Reading Ruby, Adirondack, and Reading Giant. Single Dishes.—*White round*: First, Bountiful, second and third Satisfaction; *coloured round*: First and second, The Dean, third Adirondack; *white kidney*: Reading Giant; and *coloured kidney*: Mr. Bresee. Professionals.—*white round*: First and third, Bountiful, second, Satisfaction; *coloured round*: First, Reading Russet; second, Vicar of Laleham; third, The Dean; *white kidney*: First and third, Reading Giant; second, Walnut Leaf; *coloured kidney*: First and second, Mr. Bresee; third, Reading Ruby. Farmer's Roots were represented by about eight hundred specimens (averaging 12 lbs), and a prime display of drumhead cabbage, corn, honey, &c.

Mr. Walker, Thame, made the awards in the principal classes for plants, flowers, and fruit.

GLOUCESTER AND CHELTENHAM HORTICULTURAL SOCIETY,

September 10 and 11.

The second show for the season of 1890 was held in the Winter Gardens, Cheltenham, on the above days, and the weather being most pleasant, a goodly attendance resulted, especially in the evenings, when the iron and glass buildings and the tents were illumined by the electric light. The bulk of the exhibits (except the cottagers' products and a few classes for vegetables) were arranged in three large marquees.

Plants.—For six in flower Mr. J. Cypher was first (£4), the specimens presented being in fine condition, he staging giant examples of Stephanotis floribunda, Franciscea calycina major, Erica Ewerіana, Bougainvillea glabra, Ixora Pilgrimi, and Allamanda magnifica; Mr. J. F. Mould, second. The prizes in the class for thirty mixed kinds were keenly contested, Mr. Cypher taking the £7 for grand examples of Crotons Angustifolius mutabilis, Countess, Queen Victoria, Sunset, and Warreni, Statice profusa, Erica tubæformis, E. Turnbulli, Allamanda nobilis, Ixora Pilgrimi, Rhododendron Duchess of Edinburgh, Phormium tenax variegatum, Cordyline indivisa, dracænas and palms; the second prize (£5) was awarded to W. Heath and Sons, whose best plants were Crotons Williamsi, Disraeli, Queen Victoria, Youngi, and Weismanni, several examples of a new seedling dracæna, Yucca alœfolia, Pandanus Veitchi, Phormium tenax variegatum, and palms in variety; the third prize was taken by G. Neville Wyatt, Esq., who had nice specimens of Cypripedium Sedeni, Vanda cœrulea, Miltonia candida grandiflora, and Oncidium macranthum, two pretty heaths, several small crotons, dracænas, palms, Alocasia metallica, A. macrorhiza variegata, and Anthurium Andreanum; Mr. J. F. Mould being highly commended.

Ferns.—The best twelve came from Mr. Cypher, who had Polypodium effusum, Cyathea dealbata, C. Burkei, Cibotium princeps, Adiantum cuneatum grandiceps, and other good kinds. The best collection of British ferns came from Mr. C. Lodge, who had medium-sized specimens in fresh condition of Lastrea filix mas grandiceps, L. f. m. polydactyla; L. f. m. Bolandi, L. f. m cristata, L. f. m. Jervisi, Scolopendrium vulgare crispum, S. v. supralineatum, Polypodium vulgare Cambricum, P. v. semilacerum, P. omnilacerum, Polystichum angulare Woolastonei, Athyrium crispum multifidum, and Asplenium marinum.

Fuchsias were plentiful, and generally good. For eight, Henry Chapman, Esq., was placed first with Lord Beaconsfield, Arabella Improved, Mrs. Marshall, Elegans, Thomas King, Lady Haytesbury, Mrs. Rundle, and Mr. Masterman; Mrs. Gillilan, second; Admiral Leach taking third honours.

Zonal Pelargoniums.—These made a long bank of colour. They were tied out to form dwarf convex specimens, and generally furnished with from eighty to one hundred and twenty trusses of flower each, but the foliage in most cases had been sacrificed, the premier set of eight from Mrs. Lingwood, being stems and flowers with but few leaves; H. Chapman, Esq., second, with plants not so fully in flower, but with better foliage.

Achimenes.—One group of these were staged, and they were truly prime examples, the card going to Mrs. Lingwood for Edward Bossier, Mauve Queen, Ambroise Verschaffelti, Longiflora alba, and Admiration.

Begonias were in considerable numbers, the specimens of medium size, but bright, the best six coming from Mr. H. Chapman.

Cut Flowers filled a large run of tabling, occupying the outer sides of the fruit tent. Very noticeable was a dinner-table ornament (three vases), very tastily arranged by Miss Sturt, who had made the best of the costly flowers at her disposal, the design being light yet graceful. Dahlias were the great feature of the tent. For twenty-four Messrs. Heath and Sons, Cheltenham, occupied the post of honour with well-built and nicely balanced blooms of Mrs. Gladstone, Rev. J. B. M. Camm, Herbert Turner, Harry Keith, J. T. Saltmarsh, James Cocker, J. T. West, Mrs. W. Slack, Champion Rollo, Richard Dean, Gloire de Lyon, Prince Bismarck, Vice-President, William Rawlings, Henry Walton, James Huntley, Miss Cannell, Mrs. Harris, Seraph, Imperial, Yellow Boy, John Standish, Clara, and Willie Garrett; Mr. Thomas Hobbs, Bristol, second; Mr. J. Maylett, Worcester, third. For twelve, Mr. J. Newman, Kingswood, led with excellent blooms.

Roses.—Very refreshing were the collections staged in competition. Messrs. Heath and Sons first for a dozen triplets (a shade under the exhibition size), the varieties being Marie Rady, A. K. Williams, Pride of Waltham, Gloire de Dijon, Alfred Colomb, Niphetos, Marie Baumann, Baroness Rothschild, E. Y. Teas, Marquise de Castellane, Duchess of Bedford, and Mr. G. Dickson; Mr. Thos Hobbs, second; and Messrs. Jefferies and Son, third.

Zonal Pelargoniums.—These made a blaze of colour, Messrs. J. Price and Son, Stonehouse, Devon, first, for neatly arranged triplet trusses; Mrs. Lingwood second.

Herbaceous Perennials.—Large numbers were staged in competition or otherwise, the best box being set up by Mr. J. Cypher, who presented neatly posed gatherings of Helianthus multiflorus, H. m. maximus, Lilium lancifolium album, Phlox Attraction, Lobelia cardinalis, gaillardias, delphiniums, pyrethums, Rudbeckia Neumanni, chrysanthemum Madame Desgrange, Tritomia uvaria, and Gladiolus Brenchleyensis; Messrs. Heath and Son second.

Asters were in force and of general excellence, the whole of the prizes going to Bath; for reflexed, Messrs. A. A. Walters, T Evry, and E. Fisher sharing the honours, Mr. Evry taking first in the quilled section.

Gladioli were largely staged. For twelve spikes, the first card went to Messrs. Jeffreys and Son, who had stout spikes; Mr. H. R. Poynter, Taunton, second; and Mr. G. Maylett, Worcester, third.

Fruit.—Sixteen classes were devoted to fruit. For a collection of eight dishes, M. Biddulph, Esq., M. P., was assigned the post of honour for massive clusters of Muscat of Alexandria and Gros Maroc grapes, Temple Newsam melon, Prince of Wales peaches, Humboldt nectarines, Brunswick figs, Moorpark apricots, and Williams' Bon Chretien pears; Lord Coventry, second; and A. J. Shinner, Esq., third. For grapes, the best two kinds (white), came from Rev. Canon Coventry, who had Muscat of Alexandria and Buckland Sweetwater; the second card went to M. Biddulph, Esq., for the same kinds; Mrs. Southwood, third; for two kinds of black grapes, C. L. Campbell, Esq., first, with Alicante and Gros Colmar; M. Biddulph, Esq., second; and Rev. G. Coventry, third. The prizes for three bunches, one variety, going first to Hamburgh, second to Gros Colmar, and third to Madresfield Court; while for one bunch, Alicante and Hamburgh took the cards, the prizes for white going to Muscats. Twelve varieties of apples made a good class, the premier prize falling to A. J. Shinner for large, handsome plants of Nelson's Glory, Manx Codlin, Ecklinville Seedling, Lord Suffield, Emperor Alexander, and Peasgood's Nonsuch, the dessert kinds being Cox's Orange Pippin, Red Astrachan, Irish Peach, Worcester Pearmain, Quarrenden, and White Transparent; Lord Coventry, second; C. L. Campbell, Esq., third. In the single dishes the prizes went to Warner's King, Ecklinville Seedling, Knight's Monarch, Quarrenden, and Worcester Pearmain in the two classes; while for pears Williams' Bon Chretien took all the cards. There was a good competition in the class for four dishes of plums, the first card going to Lord Coventry for Diamond, Kirke's, Jefferson's, and Pond's Seedling. For a melon, the cards went first to Woolstone Gem, and second to Little Heath. The peaches were: First prize, Alexandra Noblesse; Crawford's Early, second; while the best dishes of nectarines were Pine apple and Humboldt. The best four dishes of fruit came from G. Neville Wyatt, Esq, who had grand exhibits of Muscat of Alexandria and Black Hamburgh grapes, Early Silver peaches, and Violette Hative nectarines; Mr. Fletcher, Pull Court, second; and Mrs. Lingwood, third.

Vegetables exceeded in quantity those staged at Bath the previous week, there being four distinct collections of nines, sixes, and unlimited number of dishes. In the big class some idea can be formed of the bulk staged when it is stated that A. J. Shinner (premier) put up twenty-four very large sticks of white celery, fourteen heads of Autumn Giant cauliflower, a full bushel each of brussels sprouts, Duke of Albany peas, and turnips, sixty extra fine Perfection tomatos, sixty Sutton's Seedling potato, sixteen cucumbers, and eighty fruits of Bull's Nose capsicums; Mr. A. Cook, second; and Mr. W. Evry, Batheaston, third. In the class for six dishes the cards went to Rev. G. Coventry, Mr. A. Edmonds, Rodborough, near Stroud, and Colonel Rodgers. For Messrs. Sutton and Sons' prizes the cards went to Lord Sudeley, Lord Coventry, and Mrs. Fletcher, while for Messrs. Webb and Son's prizes A. J. Shinner, Rev. G. Coventry, and Mr. W. Evry divided the honours. The display of tomatos was extraordinary, the Perfection variety taking the cards, the array of Autumn Giant cauliflower demonstrating the popularity of that valuable variety.

The potatos were scarcely so numerous as we have seen them at this show, but they were mostly large, handsome, and fully matured. For twelve dishes the first card went to Colonel Thoyts, for Reading Russet, Abundance, Snowdrop, Purple Ashleaf, Cleopatra, Sutton's Seedling, Adirondack, The Dean, Reading Giant, Satisfaction, and The Daniels; Mr. A. Cook, second; F. Wilmot, Esq., third.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY,
SEPTEMBER 10 AND 11.

The exhibition held by the Royal Caledonian Horticultural Society in the Waverley Market, Edinburgh, on the above dates, was unquestionably one of the best autumn shows that has yet taken place under the auspices of the society. The competition was remarkable for its severity in the majority of the classes, as proved by the fact that there were more than eighteen hundred entries, and in quality the produce was equal to the high average of previous years. The arrangements were admirably carried out, and the market presented a surprisingly beautiful appearance.

FRUIT constituted the most important of the several features of this great gathering, and proved highly attractive to the large body of visitors. There was a smart contest in the class for a collection of twelve dishes, and the first prize was awarded to Mr. McKinnon, Melville Castle, Lasswade, for an exceptionally good collection, comprising large, finely finished clusters of Muscat of Alexandria, Alicante, Gros Maroc, and Black Hamburgh grapes, excellent Royal George and Dymond peaches and Elruge nectarines, and good White Marseilles figs, Moorpark apricots, Kirke's plums, and Gascoyne's Scarlet apples. Mr. J. McIndoe, gardener to Sir J. Pease, Hutton Hall, Guisborough, Yorkshire, was a good second; and Mr. J. Hunter, Lambton Castle, Durham, occupied the third place. In competition for the prizes for eight dishes, Mr. J. McIndoe was a capital first, the grapes, peaches, and nectarines being particularly good. Mr. W. McKelvie, Broxmouth Park, Dunbar, was a close second, and Mr. D. Murray was third with a well-balanced collection. In a second class, for twelve dishes of fruit, Mr. McIndoe was again first, and Mr. J. Hunter and Mr. McKinnon second and third, the collections throughout representing high-class cultural skill. Mr. J. Day, Galloway House, obtained premier honours in the class for twelve dishes of hardy fruit, and Mr. J. Brown, Abercairney, Creiff, and Mr. L. Dow, Newbyth, were second and third respectively.

There was a large display of grapes, about two hundred and fifty bunches having been staged, in addition to those in the classes for collections. For six bunches, Mr. J. W, McHattie, Dalkeith, was first with superbly finished clusters of Lady Downes, Black Hamburgh, and Muscat of Alexandria; Mr. W. Murray, Polmont, and Mr. D. Murray were second and third with admirable collections. Mr. McKinnon was successful in occupying the first place in the class for four bunches, all of which were of exceptional excellence; Mr. A. Kirk, Norwood, and Mr. McHattie were second and third with clusters remarkable for their size and finish. The exhibitor last named occupied the foremost position in the classes for two bunches of Muscat of Alexandria and Black Hamburgh, the clusters in both cases of large size, and the Muscats were of the rich amber colour indicating perfect maturity, and the Hamburghs intensely black and with heavy bloom. Successful also in these two classes were Mr. J. Day, Mr. C. Warwick, Shane's Castle, Antrim, Mr. S. Paterson, Langholm, and Mr. W. Smith, Oxenford Castle. In other classes for grapes Muscat of Alexandria was well shown by Mr. W. G. Pirie, Sunderland Hall, Selkirk, and Mr. John Leslie, Pitcullen House, Perth; Black Hamburgh by Mr. A. Kirk and Mr. Watson, Stirling; Alicante by Mr. G. McKinnon and Mr. J. Caldwell, Langholm; Alnwick Seedling, by Mr. W. Murray and Mr. D. P. Bell, Alnwick House; Gros Colmar by Mr. A. Kirk and Mr. W. Murray; and Lady Downes, by Mr. J. Caldwell and Mr. W. Murray. Pine-apples were admirably shown, and in each of the three classes Mr. J. McIndoe was first, staging an excellent Queen's and Smooth Cayenne. Other successful exhibitors of these fruits were Mr. A. Kirk and Mr. Ramsey.

The several kinds of stone fruits were all well represented both in quality and quantity. Mr. Lunt, Lasswade, was first for twelve nectarines, and in the corresponding class for peaches Mr. S. Paterson occupied the post of honour. The principal prizetakers in the classes for plums were Mr. C. Warwick, Mr. J. Bowman, Pittendirech; Mr. J. McIndoe, Mr. J. McIntyre, Mr. D. Inglis, Hawick Hall, and Mr. J. Sime, Sutton Hall. The best apricots were those from Mr. W. Fry, Dalston, and Mr. J. Brown, Abercairney. Apples occupied a large space, and the fruit was of full average size, and otherwise good. Mr. J. Day was successful in taking the first prize for six varieties of pears, and for twelve varieties of apples Mr. D. Murray was first. Other prizes in these classes were awarded to Mr. J. Henderson, Mr. R. P. Brotherston Tyninghame, and Mr. Cocks Spalding. In the classes for dishes of dessert apples were excellent examples of Thorle Pippin from Mr. Edgar, co. Down, and Mr. D. S. Brown, Chesters, Roxburghshire; Irish Peach from Mr. C. Warwick; Oslin Pippin, from Mr. J. Morrison; Kerry Pippin, from Mr. L. Dow and Mr. D. S. Brown; King of the Pippins, from Mr. J. Brown and Mr. G. Edgar; Cox's Orange Pippin, from Mr. D. Murray and Mr. J. Graham, Coldstream; Ribston Pippin, from Mr. J. Day and Mr. T. Fender, Crieff; Blenheim Pippin, from Mr. D. Murray and Mr. J. Henderson; Court of Wick, from Mr. D. S. Brown and Mr. J. Day. In the classes for culinary apples good dishes were staged; of Ecklinville from Mr. D. Murray and Mr. Cocks; Lord Suffield, from Mr. D. Murray; Stirling Castle, from Mr. R. Sinclair, Congalton, Drem, and Mr. G. Wood; Hawthornden, from Mr. G. Edgar and Mr. P. Robinson; Tower of Glamis, Mr. Paterson, Dunbar, and Mr. C. Warwick; Warner's King, from Mr. Cocks and Mr. F. Cairns; Alfriston, from Mr. D. S. Brown and Mr. D. Lorgan; Dumelow's Seedling, from Mr. D. A. McIver, Prestonkirk, and Mr. Cairns; Northern Greening, from Mr. R. P. Brotherston and Mr. J. Graham.

The contributions to the classes for single dishes were numerous, and generally of great excellence. Marie Louise was well shown by Mr. J. Morrison and Mr. R. Sinclair; Winter Nelis by Mr. J. Cairns and Mr. J. Day, Hacon's Incomparable and Glou Morceau by Mr. R. Sinclair, Jargonelle by Mr. H. McDermont, Alva, and Mr. D. S. Brown, Williams's Bon Chretien by Mr. J. Day and Mr. D. Murray, Louise Bonne of Jersey by Mr. Sinclair and Mr. J. Day, and Beurre d'Amanlis by Mr. Day and Mr. J. McIntyre, Easter Beurre by Mr. J. Morrison and Mr. W. Fry, and Beurre Rance by Mr. J. Cairns and Mr. J. Day. The finest examples of Catillac were exhibited by Mr. J. Paterson and Mr. J. Day, and in the class for a dish of any stewing pear other than the variety last named, Mr. R. Sinclair and Mr. D. Murray were first and second with good fruit of Uvedale's St. Germains. To the miscellaneous class Messrs. Dickson and Co., Edinburgh, contributed a collection of apples from two-year old trees growing in their Liberton Nurseries. The fruit was of good average size, and chief amongst the varieties were Ecklinville, Peasgood's Nonsuch, Emperor Alexander, Hawthornden, Worcester Pearmain, and Tower of Glamis.

FLOWERING AND ORNAMENTAL PLANTS were equally good and the numerous collections formed a fine background to the immense display of fruit. Tables of plants were, as is customary at the Edinburgh exhibitions, highly attractive. Here Mr. R. Grossart, Oswald Road, Edinburgh, was first with a table on which the plants were grown and admirably arranged; Mr. J McIntyre, Darlington, was a very close second, with an arrangement in which the brightly-coloured crotons were conspicuous. For a group of plants to occupy a space not exceeding four hundred square feet, Messrs. R. P. Laird and Sons, Edinburgh, were first with a highly effective arrangement. In the class for groups of conifers, Messrs. Dicksons and Sons were first, with a beautiful collection. The entries were numerous in the class for six stove and greenhouse plants in bloom, and the prizes were awarded to Mr. J. Paterson, Mr. J. Morris, and J. Bald, Canaan House, Edinburgh. Mr. A. Crichton, Southfield, Liberton, was first for three specimen plants in bloom, and for a single specimen Mr. J. Paterson, Millbank, was first and Mr. J. Morris, second. The most noteworthy specimens were those of Allamanda Hendersoni, Bougainvillea glabra, Ixora coccinea, I. Williamsi, and Erica Aitoniana. Mr. J. Paterson was first in each of the two classes for Cape heaths with medium-sized and well-bloomed specimens of well-known kinds. The most successful of the exhibitors in the three classes for orchids were Mr. A. Findlay, 14, Osborn Terrace, Edinburgh; Mr. J. Curror, Eskbank; Mr. J. Paterson, and Mr. R. Grossart. The showy Odontoglossum grande was well represented. Several good collections of ferns were staged and did much credit to the exhibitors; Mr. J. Napier was first for six, Mr. J. Cumming occupied a similar position in the class for three. The best adiantums were contributed by Mr. J. Napier, and the finest gleichenias came from Mr. J. Paterson. There were three classes for British ferns, and in two the post of honour was occupied by Mr. A. R. Henderson, and in the other the premier award was made in favour of Mr. J. McLennan.

The plants grown for the beauty of their leafage were staged in large numbers, and the majority were presented in high class condition. For six Mr. R. Grossart was first, and in that for four Mr. J. McIntyre obtained the premier award. Other successful exhibitors were Mr. A. Crichton and Mr. Cumming. Palms were admirably shown by Mr. R. Grossart, Mr. J. Paterson, Mr. J. Cumming, and Mr. J. McIntyre. Cycads were represented by excellent specimens from Mr. J. Morris, Mr. J. McLennan, and Mr. D. Lawson. Especially good were the crotons from Mr. J. McIntyre, Mr. McLaren, and Mr. R. P. Brotherston, and the caladiums from Mr. J. Paterson and Mr. R. Grossart.

SOFT-WOODED PLANTS in bloom produced a bright display. Chrysanthemums were represented by collections of well bloomed plants from Mr. J. Pearson, Corstorphine, and Mr. J. Donaldson, Murrayfield. Lilies of great excellence were contributed by Mr. J. Bald, Mr. M. Chalmers, and Mr. A. R. Henderson. Vallotas are usually shown well at the exhibitions of this society, and the splendidly flowered specimens staged on this occasion produced a brilliant effect. Mr. G. Wood, Mr. W. Grant, Mr. J. Morris, and Mr. W. Gourlay, were the most successful exhibitors. Mr. J. Fraser and Mr. T. Gibb had the finest zonal pelargoniums, and Mr. A. Thomson and Mr. A. Brown staged finest fuchsias. The last named exhibitor and Mr. Duncan had the best tuberous begonias.

CUT FLOWERS were so plentiful as to produce a display not less remarkable for its extent than for its attractiveness. Roses were exceptionally good for so late in the season, and for thirty-six, eighteen, and twelve Messrs. J. Cocker and Sons, Aberdeen, were first with blooms remarkable both for their size and freshness. Messrs. Smith and Son, Stranraer, and Mr. Hugh Dickson, Belfast, also exhibited successfully in the rose classes. Messrs. Stuart and Mein, Kelso, were first for thirty spikes of gladioli with a beautiful collection. In the trade classes for dahlias the principal awards were made in favour of Mr. J. Lamont, Messrs. R. P. Laird and Sons, Mr. M. Walker, Gateshead, and Mr. M. Campbell, Blantyre. The most successful of the exhibitors in the amateurs' classes for these flowers were Mr. J. Spoon, Mr. J. Pearson, Mr. W. Veitch, and Mr. J. Muir. Chrysanthemums were admirably shown by Messrs. R. P. Laird and Sons, who were first for twenty-four bunches, and for twelve bunches Mr. J. Pearson and Mr. A. R. Henderson were first and second respectively. Asters, stocks, and pansies were all presented in capital condition.

VEGETABLES were staged in large quantities and on the whole were of good quality. Mr. J. S. Richardson, Perth, was at the head of the competitors in the class for twelve kinds and in that for a collection of six Mr. Robertson Hartrigg was first, other successful competitors being Mr. S. Bighton, Egerston; Mr. S. Johnston, Hawick; Mr. J. Hall, Kelso; and Mr. G. Ormiston, Jedburgh. In the classes for collections of potatos, the principal awards were made in favour of Mr. P. Robertson, Mr. H. McDermont, Aloa; Mr. G. Ormiston, and Mr. H. Dunsmore, all of whom had tubers of high quality.

BRITISH FRUIT GROWERS' ASSOCIATION.

The fourth of the series of conferences arranged by the British Fruit Growers' Association for the current year was held at Brighton, on the 11th inst., in conjunction with the autumn exhibition of the Sussex Horticultural Society. The conference was held in the King's Room of the Royal Pavilion, and was largely attended, the spacious room being well filled. The Mayor of Brighton presided, and was supported by the Rev. R. C. Hales, Councillor Ballard, Councillor Booth, and other members of the municipality of Brighton. The Association was represented by P. Crowley, Esq., one of the vice-presidents; Mr. T. F. Rivers, chairman of committee; Mr. George Gordon, vice-chairman; Mr. Lewis Castle, hon. secretary; and Messrs. T. W. Beach, J. Cheal, A. Cheal, C. J. Goldsmith, G. Hammond, W. G. Head, A. Wells Ingram, W. Roupell, R. Smith, and other members.

The Mayor, in opening the conference, said he had a pleasant duty to perform, as the principal man in the borough of Brighton, and that was to heartily welcome the Association to the town. As mayor, it was his desire to do all that he could for any movement that was for the good of the town and the community generally, and it therefore gave him much pleasure to preside on that occasion. There could be no question as to the importance of the work in which the Association was engaged. The objects were manifold, and included the dissemination of information as to fruit growing, and also on the distribution of fruit after it had been produced. The latter was very important, for no matter how large may be the supplies of fruit, they were of but little avail if they were not placed within the reach of consumers. In Brighton, for example, they suffered materially from defective distribution, with the result that the price was beyond what it should be. It mattered not how plentiful fruit was at any time, for the tradespeople only took a limited quantity, and much of the fruit brought into the market was in consequence spoilt. In consequence, the town lost the benefit of a plentiful supply, and the growers the value of the produce. Fruit was being used in larger quantities than at any previous period, and if it could be distributed at a reasonable price, it would be advantageous both to the grower and the consumer. It might perhaps be an advantage to co-operate as they did in America, where things were sent to one centre and dealt with in large quan.

tities, and greatly to the advantage of the growers. This course was now adopted in the Brighton district for milk and butter, and it might probably be adopted with fruit. With regard to foreign competition, he had great faith in Englishmen, and believed that they could accomplish what foreigners could do, and thus prevent money from leaving the country.

Mr. T. F. Rivers read the first paper which was on "Fruit Growing in Sussex." He explained that the Association was formed about two years since at a time when public attention was directed to the fact that a great industry was in danger of passing away from this country, and that no serious efforts were being made to prevent this withdrawal, but the various speeches and essays delivered since the question was placed before the public had secured a very large increase in planting, as might be seen by the agricultural returns. The produce of this planting would no doubt have a very sensible effect upon the fruit markets in time. There had been, and were, many diverse opinions as to the profits to be derived from fruit culture, and unless it could be proved that there was a reasonable profit to be obtained nothing would avail either to prevent or extend the planting of fruit trees in England, or, indeed, in any other country. The basis must rest on the firm foundation of profit to the producer and content to the consumer. Passing on, he said that except in the neighbourhood of the metropolis, there was hardly an orchard of any extent to be seen between London and Brighton. If the land around Brighton could be made available for fruit growing that town alone would require hundreds of acres for the constant supply which was furnished unceasingly by the purveyors from a distance. The fact that this demand was not supplied by the county of Sussex could not be due to the quality of the whole of the land, or to the rigour of the climate, and it seemed much to be desired that the causes of this want of production should be examined and if possible explained. It was grievous that the large sums paid for fruit should not go into the hands of the neighbouring cultivators, as it surely could be placed in the Brighton markets with less expense for carriage than when derived from the great centre of distribution, London. The fine specimens of fruit forming part of the exhibition then being held in the Royal Pavilion proved that it was no fault of the county. Continuing, he said that to secure early profits from fruit orchards at the present day they must plant on a different principle to that of their forefathers. The old lichen-covered trees of the old farm orchards were not profitable, and instead of the acres of grass land planted, with the customary number of trees per acre, the profitable fruit orchard must be condensed into a compact compass.

Mr. J. Cheal said it was a comparatively easy matter to recommend the growing of more fruit, but it should be understood that a person could not take up fruit culture and put produce into the market in a day or month, or even a year. He agreed that there was abundant room for an extension of fruit culture and also a want of better means for bringing fruit to the consumer after it had been produced, and endeavoured to instil into the minds of those who might be disposed to commence growing fruit the fact that they should be careful to make a right start. Of course they should consider whether they intended to supply a retail or wholesale market, or a jam factory, and select the fruit they intended to grow accordingly. In Sussex there should be more fruit grown. Around Brighton a great deal of fruit was grown, and there should be more. The great question to be considered was good cultivation, and they, to be successful, also had to exercise perseverance.

Councillor Ballard, in the course of some brief remarks, said he felt it would be well if the rural School Boards gave some technical education in budding, grafting, and pruning of fruit trees. Growers would then in a short time be able to obtain men who understood the rudiments of these operations, with the result that they would be performed more expeditiously and satisfactorily than when undertaken by men who have but little, if any, knowledge of the several details.

Mr. George Gordon, in complying with the request to refer to the large collection of Irish apples exhibited, briefly described the condition in which Mr. Castle and himself found the orchards in various parts of Ireland. He also directed attention to the success with which the various kinds of hardy fruits are grown in orchards and gardens that are under the charge of experienced men. He said it struck them both that it was a lamentable state of things to find a country so largely dependent upon the products of the soil, and so well adapted for the cultivation of the hardier kinds of fruit, obtaining a large proportion of its supplies of apples from America, France, and other distant places. They believed they would be able to show by their report that fruit culture could be carried on with considerable profit in Ireland, and looked forward with hopefulness to a great improvement in, and material extension of, the fruit growing industry in that country.

Mr. J. Roberts followed with a paper on the cultivation of "Grapes for Market." In the course of his paper he strongly recommended large houses with ridge and furrow roofs, and side lights not less than six feet in height. In houses of this description the vines are planted at stated distances apart over the house, and trained erect. It was claimed that vineries so arranged will afford two-thirds more training space than would span-roof structures of a similar size, with the result that the crop would be three times heavier.

Mr. Iggulden's paper on "Tomatos for Market" was next read. In the course of the paper the details of special importance were ably discussed, the importance of light and air being insisted upon.

Mr. A. Cheal, in the course of the discussion upon Mr. Iggulden's paper, referred to the rise of tomato and fruit growing at Worthing, and said it had now become a great industry in the district. During three of the summer months he said it was estimated that an average of thirty tons of fruit was sent from Worthing by rail each week, and an average of five tons for the other nine months. From Lancing it was estimated that three tons a-week were sent for three months, and one ton a week for the other nine months. This made 585 tons of fruit from Worthing and seventy-eight from Lancing. In addition, it was estimated that over 25 per cent. was sent to Brighton and other places by road from Worthing, as well as a considerable quantity from Lancing. About 350 tons of tomatos were produced in the district, £20,000 was the estimated value of the tomato crop, and £14,000 of the other fruit, making a total of £34,000.

Mr. R. Smith's paper on "Wall Fruits" was the last item in the programme, but in consequence of its length and the lateness of the hour, a portion only could be read, that dealing with the cultivation of the peach being taken.

On the motion of Mr. G. Hammond, a vote of thanks was accorded the readers of papers; and a hearty vote of thanks, proposed by the Rev. R. C. Hales, was accorded the Mayor for presiding.

"Ten-thousand-times-sprinkled-with-gold" is one of the poetic names which the Japanese are fond of bestowing upon their chrysanthemums.

ROBERT'S LITTLE HOLLERDAY.

My hollerday, or sum of it, was spent in Hopen Spaces. Hif anybody has got two eyes in his hed, and a hart in his buzzom, wants for to see what can be done with about 40 hakers of land—witch the most respecfool Gardiner told me was about the size of the Queen's Park at Kilburn—let him go there on a fine Summer's Arternoon, and see jest about five thowsen children a playing about there, all free and hindependent, and appy, with two fountings to drink when they're ot and thirsty, and a nice littel Jim Nasyum to climb up and down. They ain't allowed to play at Cricket coz there ain't not room enuf, but I did see two bold little chaps, about six a peace, a breaking of the Law, and a playing at the forbidden game, with a jacket for the wicket and a stick for a bat, and the kind-arted Gardiner hadn't got hart enuff to stop 'em.

He told me as how, when the Copperashun fust took possesshun of it, it was nothink but a Baron Swomp, but that, what with the spending of lots of money, and the souperintending genus of Major Makenzie, in two years it was maid to blossom like a rose. I spent a werry plessant arternoon there, and drove home in style on the Box Seat of a reel Company's Bus. The nex day I went to Higate Wood, another of the grate works of the good ole Copperashun. And lawks, what a difference! No swarms of children a playing about on the grass, but lots and lots on 'em a racing about among the hundreds of trees, and their warious fathers and mothers a looking on with smiling faces and prowd looks. There is one place in the werry middle of the Wood where no less that sewen parths meets, and there the Copperashun Committee has bilt up a bewtifool Founting, and a long hinskripshun in praise of Water, tho I shood dout if they speaks from werry much pussonal xperience. I was told as how, when they fust hopened the Founting, the Chairman made a bewtifool speech, and ended by saying, "Water, brite Water for me, and Wine for the trembling Debborshee," and then they all went off to a jolly good dinner.

With that artistick taste as so distinguishes 'em, they have crissened the place where the seven roads meets, "The Seven Dials." There was crowds of peeple there, all enjoying of themselve in a nice quiet way, and altogether it was a werry werry nice site.

The werry next day I started in the warm sunshine for pretty West Ham Park, and had a leetle adventure as ushal, for jest as I got there who shoud I meet but the rayther sillybrated Parson of the Parish—tho' judgin by aperience I shoud have took him for the Bishop of Essex—and seeing me in my new Hat and my best black Coat, he werry naterally took me for a inquiring Wisitor, and told me all about the good deed of the Copperashun in saving the Park for the good of the Peeple. There was some werry little chaps a playing Cricket as before despite of the Law, and they had a reel bat too, and one on 'em, seeing me a looking on apruvingly, gave the ball such a tremenjus blow that he got a tooer, so I called out braywo!

There seemed a lot of washing going on jest outside the Park, the white shirts and settera, flustering gaily in the breeze. But, as the Poet says, "they're allus Washing somewheres in the World!" The common peeple was orderd to walk on the footpaths, but a gardiner told me as them orders was not ment for such as me. I had a most copious Lunch for tuppense in the helegant Pawillion, and being in a jowial and ginerus mood, I treated six of the jewvenile natives to a simmeler Bankwet. Then there is the sillibrated Band as the Copperashun perwides twice a week, on which occasions reserwed seats is charged a penny each. The werry adwanced state of the musical taste of the nayberhood may be judged by the fact, that at a Concert close by, a "Ode to a Butterfly" was to be played on a base Trombone!

The Gardiner told me as there was such a crowd of children on larst Bank Hollerday that there was hardly room to move about, tho' the Park is 80 hakers big; but as I am told that such a space wood hold about 80 thousand, quite cumferal, I thinks as he must have slitely xadgerated. *Punch.*

PLUMS FOR MARKET.

A Paper by Mr. J. Smith, Mentmore Gardens. Read at the Crystal Palace Conference of the British Fruit Growers' Association, September 5.

In the few practical remarks that I am about to make it is not at all necessary for me to decide from what part of the globe we first obtained our cultivated plums, whether from America, Asia Minor, or if they were found wild in Europe; this can be best determined by our botanical friends. I consider the plum next in importance to the apple in a commercial point of view. In years of plenty they can be dried, in which state they will keep good for years. They can also be made into jam, which will keep good for a considerable time.

In growing for market one of the first questions asked is, What varieties would you recommend? Now, this is a very important point, for when you go into a nursery to purchase trees you will find, as a rule, all varieties are charged the same price, except it be some new and untried variety, which may be charged a fancy price for a year or two. It is a well-known fact to fruit growers that in certain localities and certain soils one variety will flourish and bear abundant crops year by year, while other varieties will never grow enough fruit to pay for the first outlay. I may just give one well-known instance to impress on growers the importance of this being well understood before recommending certain varieties for any given district or soil. At Sawbridgeworth Messrs. Rivers have, as a rule, splendid crops of Rivers' Prolific Plum; in fact that variety seems perfectly at home in the stoney clay of that district. Here, in a chalky clay which suits many varieties admirably, Rivers' Prolific grows freely, but seldom bears any fruit, although, as a rule, the trees flower freely. The question of selecting suitable varieties for any given district can only be learned by practical experience and observation. Growers of the plum are aware that the number of varieties of the cultivated plum is almost legion. I have just gone through one catalogue before me, and find no less than 237 varieties described, with a supplemental list of some 180 more, or in all, say, about 400 varieties. Now, this would plant about four acres of ground of one plant or tree of each variety. But would any grower who had any idea of making a profit be foolish enough to plant these, or even half this number? It would be a far more profitable investment to plant only one variety on the four acres, but this I should by no means recommend. My idea of plums for market is to find out five or six varieties that are known to succeed in the district, and plant only these.

I have already remarked that certain varieties favour certain districts. Here the soil is a strong chalky clay, and the following varieties are grown by hundreds, and in the case of the damson by the thousand: Green Gage, Jeffersons, Mitchelsons, Gisbornes, Victorias, and damsons. Victorias and damsons are most grown.

This might well be termed the "Home of the Damson," for many acres are planted, and during the fruit season from twenty-five to thirty tons per week of these are sent away from our railway station. The damsons here

sell for more money than any other variety grown. In seasons of plenty they have been sold as low as £3 per ton, and other years they have made from £35 to £40 per ton.

The plan adopted is to plant on grass land at a distance of twenty-two feet apart each way. This will give about 105 trees per acre. Nothing but standards should be planted, and they should always have a clear stem of six feet. Before deciding to plant a field, the ground selected should be thoroughly drained, as stagnant water about the roots would soon prove fatal to the trees. In planting young trees a small portion of rotten manure may be mixed with the soil if the ground is poor, but I never make a point of recommending much manure to be placed in immediate contact with the roots while the trees are in a young state. I consider it better to nearly mulch the trees with rotten manure after they become established. In planting the trees should be kept slightly above the ground level, as they are sure to settle down, although the ground is made firm, which I should strongly recommend. Immediately the trees are planted they should be securely staked, and the heads cut close back, only leaving two or three eyes on the young growths. Established trees should be gone over every year, and a certain portion of the small shoots removed, so as to keep the centres of the trees clear and open for the sun and air to reach every part of the trees. In many districts where the plum flourishes, I am aware that they are grown much closer, and many growers prefer bush trees, but of this style of growing I have had no practical experience, and shall pass it over for someone who has had experience to take this part of the subject up. In the orchards here sheep, calves, and poultry are kept to the mutual benefit of all.

It sometimes happens that some of the young trees will in a few years become "stunted" and hardly make any growth, more especially damsons. My plan with such trees is to cut them hard back, almost to the stem; by this means they often start away and make vigorous growth. If the ground is at all poor it is a good plan before cutting them back to lightly break up the surface all round the trees, say six or seven feet all round, and on this ground spread three or four barrowfuls of good manure. If this is done early in the autumn, so that the rains can wash the properties of the manure to the roots, the trees will start away with fresh vigour, and form fine healthy shoots the first season. I consider the damson the most profitable for field cultivation. Next to it comes the Victoria plum. Many acres of damsons are grown here, and from experience I find the Farleigh, or Cluster damson, is the hardiest of all; it will be found fresh and good when other varieties of the damson are completely spoiled by frost. The prune damson as grown here is very late and hardy; the tree is of a spreading habit of growth, and the leaves are larger than any other variety I know.

I shall conclude with a few remarks as to the marketing of plums; next to growing them this is of the most importance to the gardener. How to make the best of them is the question? I have known growers who have taken great pains to pack as much straw as possible in the bottom of the sieves, so that they may have more bulk for market; this, I can assure growers, is a mistake. It is also a mistake to select the very best samples for the top of the baskets. I have been sending plums to market by the ton for the last fifteen years, and my plan is to pack the bulk of one uniform quality throughout, and where this is done the buyers soon get to know, and purchase accordingly.

Replies to Queries.

W. H. Price.—Send to GARDENERS' MAGAZINE, 148, Aldersgate Street, London, E.C. Carriage and postage paid.

Salvias.—W. Fisher: All the salvias flowering during the autumn and winter bloom most satisfactorily when placed in a rather small house, where they can have a position near the glass, and the assistance of a temperature ranging from 45 deg. to 50 deg. They will require moderate supplies of water at the roots, and the atmosphere should be kept rather dry.

Dandelions.—S. Oswald: We suppose the task of digging out would be too much for you. They may be quickly killed by putting a little guano on the crown of each. The result will be brown patches not agreeable to the eye. But the winter will obliterate these and bring grass in place of the dandelions.

Fruit Growing.—E. J. H.: The soil of which you have sent us a sample appears to be in every way suitable for bush fruits of all descriptions. It is probable also that apples, cherries, and plums would succeed in it, but it appears to be rather too light for pears. Before proceeding to plant extensively it will be advisable to make inquiries on the spot with a view to ascertain what fruits thrive in the immediate neighbourhood.

Spring Flowers.—M. D.: Two of the most important points in the production of a display of spring flowers is to have strong well prepared tufts of the several kinds, and to plant them immediately the beds and borders are cleared of the summer bedders. It is not of much use to bed out small weakly plants of violas and other things flowering in the spring, as there is but little time for them to acquire strength, and when planted so late that they have not time to become established by the winter, they seldom bloom satisfactorily.

Names of Plants.—F. A. Hanson: 1, Fothergilia alnifolia. This is one of the witch-hazels, and allied to Hamamelis. 2, Fraxinus pubescens; 3, Clematis flammula; 4, Lavatera acerifolia.—Far-far-away: 1, Cœlogyne ovalis; 2, Brassavola nodosa; 3, Bolbophyllum Careyanum; 4, Zygopetalum cordifolium.—Pteris: 1, Platyloma cordata; 2, Polystichum auriculatum; 4, Davallia fumarioides; 5, Drynaria juglandifolium; 6, Scolopendrium Krebsii.—J. Turner: 1, Rudbeckia subtomentosa; 2, Rubus radula; Dracocephalum Canariense; 4, Lathyrus Macraei; 5, Helianthus angustifolius; 6, Rudbeckia asperrima.—Forfar: The plant is the Elephant's Ear, Hymenodium crinitum, a tropical fern allied to the polypodies. It requires stove culture, but will thrive in the greenhouse or fern case during the summer.

Planting Fruit Trees.—F. B.: It will not be advisable to commence the planting of the fruit trees until nearly the end of October. The preparation of the ground should be commenced at once, that it may be ready for the reception of the trees as soon as the season is sufficiently advanced for their removal. It is a good practice to stir ground to be planted with fruit trees to a depth of eighteen inches or two feet, but it is not in many cases prudent to bring the bottom spit to the top. Unless the soil is in a very impoverished condition, no manure should be applied when the quarters are being prepared, as young trees invariably make a sufficiently strong growth during the first two or three years of their being in their new quarters, and to manure them afterwards is a very easy matter.

Violets.—R. M.; The beginning of October is early enough to lift the violets intended for flowering under glass during the winter season. Those required for the conservatory must be put in pots or deep pans, but the plants grown simply for the supply of flowers can be potted up or replanted in a frame, but the best course is to bed them out within the pit or frame. It is an advantage to assist them with just sufficient bottom heat to maintain them in a progressive state during the winter, and for the maintenance of the requisite degree of warmth there is nothing better than a bed of newly-gathered leaves. A bed of leaves of a sufficient size to receive the frame to be devoted to the violets should be made up to a depth of three or four feet in a sheltered position. A slow and steady fermentation being desirable, the bed should be trodden rather firm as it is being formed. When completed, place the frame upon the bed, and cover the surface to a depth of eight or nine inches, with a moderately rich and thoroughly friable soil. In two or three days the violets may be planted in the bed. It will be advisable to lift them with moderately good balls, and they should be planted just far enough apart for each tuft to stand clear of its neighbours. Make the soil moderately firm, well water them in, and keep the frame rather close for a few days to enable them to quickly recover from the check received. Subsequently the frame must be freely ventilated, excepting in frosty weather, a moist, stagnant atmosphere being injurious to both foliage and flower buds. By this course of procedure they will produce a continuous supply of flowers during periods of severe weather, provided, of course, the plants are kept safe from frost by the judicious use of protective materials. You should add to the varieties at present grown Wellsiana, the finest of all the single blue violets, the flowers being large, deep blue, and produced in great profusion during the greater part of the winter, if the weather is open; and Swanley White, the best of the double whites. This is not quite so free in flowering as Marie Louise, but it produces a good crop of flowers, which are remarkable both for their purity and fragrance. A few strong plants of each variety purchased now would give you a liberal supply of flowers during the winter, and a good stock of runners in the spring.

Housing Chrysanthemums.—H. B.: The exact date on which chrysanthemums should be taken indoors depends chiefly upon the season, it being a good rule to leave them outside to as late a period as is consistent with their safety. In 1888 large numbers of plants were rendered practically worthless by the severe frost at the beginning of October, and last year to avoid a similar loss growers housed much earlier than is usual, with the result that the majority bloomed considerably in advance of their usual time. From the present time it will be necessary to watch the weather very closely, and as soon as a severe frost is anticipated to take the chrysanthemums indoors. For some time after housing the whole of the ventilators must be opened as widely as possible, excepting, of course, in frosty weather.

Pot Vines.—Young Gardener: You have probably misunderstood the advice given by your friend. Vines in pots that are to be fruited next year should not be repotted or otherwise disturbed at the roots, but vines that are to be cut back and grown on for planting in the autumn or fruiting in the year following will require a shift. Those to be forced during the ensuing winter will derive considerable assistance from a top dressing consisting of fibrous loam and horse droppings in equal proportions. In the application of the top dressing remove a portion of the old soil from the surface, fix a zinc collar inside the rim of the pot, and of a sufficient height to stand three or four inches above the upper edge of the rim, and then fill the space firmly with the prepared compost. This should be done when the vines are pruned.

TRADE CATALOGUES.

THOMAS S. WARE, HALE FARM NURSERIES, TOTTENHAM, LONDON.—*Autumn Bulb Guide—Part I., Crocuses, Hyacinths, Tulips, Amaryllis, &c.; Part II., Narcissus, Lilies, and Iris.—Tree and Herbaceous Pæonies, Carnations, and other Florists' Flowers.*

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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Morn.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.		Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.			1890
28	S	**17th Sunday after Trinity.** ○ Full	5 56	9 24	5 45	6 15	5 18	1 24	1 45	10 49	11 10	55·4	Bolbophyllum Careyanum	Nepaul.	271
29	M	*St. Michael*, Michaelmas Day. ☾Moon.	5 58	9 44	5 43	6 35	6 43	2 6	2 28	11 31	11 53	55·2	Oncidium leucochilum	Mexico.	272
30	Tu	*St. Jerome.*	5 59	10 4	5 41	6 54	8 6	2 48	3 7	—	0 13	55·0	Paphinia cristata	Demerara.	273
		October.													
1	W	Pheasant-shooting begins.	6 1	10 23	5 40	7 14	9 27	3 28	3 48	0 32	0 53	54·7	Stanhopea oculata	Mexico.	274
2	Th		6 3	10 42	5 38	7 40	10 46	4 7	4 26	1 13	1 32	54·5	Stanhopea tigrina	Mexico.	275
3	F	Treaty of Limerick, 1691.	6 5	11 1	5 35	8 12	After.	4 43	5 1	1 51	2 8	54·3	Zygopetalum intermedium	Brazil.	276
4	S	First English Bible printed, 1535.	6 7	11 19	5 32	8 52	1 8	5 19	5 39	2 26	2 44	54·0	Zygopetalum maxillare	Brazil.	277

CRYSTAL PALACE.—GREAT AUTUMN FRUIT SHOW, October 9th to 11th.

Schedules and Entry Forms on application to Mr. W. G. Head, Superintendent, Gardens Department, Crystal Palace. Entries close Thursday, October 2nd.

Auction Sales for the Ensuing Week.

Monday, Sept. 29, and Wednesday, Thursday, and Saturday, Oct. 1, 2, and 4.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

Monday, Sept. 29, and Wednesday and Saturday, Oct. 1 and 4.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.

Monday, Sept. 29.—Messrs. Protheroe and Morris, at the Gas Field Nursery, Richmond, Surrey; Nursery Stock.

Tuesday, Sept. 30.—Messrs. Protheroe and Morris, at the Friars Place Nursery, Acton, W.; Greenhouse Plants and Glass Erections.

Wednesday, Oct. 1.—Messrs. Protheroe and Morris, at the Ash House Nursery, Parsons Green, Fulham; Nursery Stock.

Wednesday, Oct. 1.—Messrs. Protheroe and Morris, at the Windlesham Nursery, Bagshot; Nursery Stock. (Three days.)

Friday, Oct. 3.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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The Gardeners' Magazine.

SATURDAY, SEPTEMBER 27, 1890.

The Grape and Dahlia Conference of the Royal Horticultural Society attracted a considerable company to Chiswick on Tuesday and Wednesday last, and many of the newer Fellows saw the Society's garden for the first time. On these occasions it is impossible to give any special attention to visitors, and not a few curious and inquiring persons see less than sufficient to justify the endeavour. There are matters of interest on every hand, but as they are not conspicuous, but rather require to be sought out, the general exploration that would so abundantly reward the observant and critical eye is by few attempted, and by those few under peculiar disadvantages. The official staff is small, and the collections are in many instances somewhat removed from the ordinary course of traffic, which tends towards the vinery, and away from the houses in which figs, fuchsias, pelargoniums, and peaches are grown. It would be well if this impediment to progress could be removed. It is so much easier to discover defects than to organize remedies, that we touch the subject with hesitation; but we feel that many will agree with us in the proposal that on special occasions a guide to the gardens would be of considerable service. And there could be no better guide than an intelligent gardener experienced in piloting visitors, and if a suitable man were appointed to act on all occasions when the general public are invited, there cannot be a doubt that the gratification of visitors would be greatly augmented, and the Society would derive corresponding advantage.

The exhibition of grapes and dahlias was in every sense acceptable. The tent appropriated to the flowers was magnificently furnished, and the collections were skilfully arranged, both to display the beauties and illustrate the merits of the several great groups as well as the individual varieties of dahlias. In his opening paper, on the "Origin of the Florists' Dahlia," Mr. Hibberd spoke of it as the most wonderful of all flowers for its variability, and the gay tent echoed in forms and colours innumerable the declaration. There is no flower in cultivation that ranges so far and wide in variation, for the changeable chameleon is nothing to it, and the fabled Proteus is left far behind. But the opening discourse went beyond this, in the assertion that all the reputed species, from Coccinea to Glabrata, from Frustranea to Superflua, one and all are but forms of Dahlia variabilis, and Mr. Hibberd's pet theory of the monotypic character of all the florists' favourites was substantiated by appeal to the plants and flowers and drawings collected on the table for illustration of the subject. It is not necessary now to enlarge on the proposal, for the essay will appear in print in due time, and the botanists and florists will handle it as it pleases them.

Where so many good things were shown it was impossible to withhold praise from any. But we must emphasize the praise that is due in the case of two special features of the show. Mr. H. Cannell, of Swanley, who led the way with the single and the cactus dahlias, presented a series of groups, illustrating the progress of the several classes through their early forms, and onward to the present time. In this collection, also, were many of the reputed specific forms in their proper pseudo-specific character, and with them several curiosities, not the least interesting being the ridiculous little green dahlia, known as Viridiflora. The other specially interesting group was the series of magnificent show flowers, raised by Messrs. Rawlings, of Romford, of which we hear ever and anon in reports of exhibitions, and in selections of the best for general cultivation. In the conservatory, the exhibition was admirably supplemented by a collection of books and drawings, generously lent by Mr. C. Harman Payne; and here we met with that delightful paper by M. Thouin, with its admirable figures so clearly displaying the earlier forms of this famous flower.

In the way of grapes a curious circumstance occurred. There was a good show on Tuesday, and a better show on Wednesday, for many contributors of grapes had fixed in their mind that as Wednesday was the day for grape talkee, it was the day on which grapes alone were wanted, the Tuesday being, as they supposed, monopolised by dahlias. Still, the show of fruit on the first day was full of interest, and the good samples made an impression, as it is their wont to do. Here a collection of peculiar value, both in relation to the history of the grape, and to the more distinctive qualities of the cultivated varieties was presented by William Roupell, Esq., whose persistent enthusiasm is of the greatest value as an encouragement to the lovers of the subject who might be deterred from the endeavour to gratify their taste through proximity to the metropolis and the influence of its atmosphere. In a suburb but a few miles removed from London Mr. Roupell grows many kinds of fruit with conspicuous success, and on this occasion he put up a collection of curious grapes, the result of much searching and of ingenious application in horticultural practice. The grapes from great gardens were great in their qualities, and far removed from competition with Mr. Roupell's picturesque pets. After admiring the curious rosy grapes, and strawberry grapes, and grapes as translucent as glass beads—many of them delicate things to eat, and particularly useful to invalids—it was another exemplification of the abounding variability of typical vegetable forms to turn to the grand bunches of Gros Colmar, Madresfield Court, and Muscat of Alexandria, with their suggestions of luxurious living, and of horticulture carried to a high stage in the region of fine arts.

The great attraction on Wednesday was the reading, by Mr. R. D. Blackmore, author of "Lorna Doone," of a paper on the "Enemies of the Vine." The space walled in at the head of the conservatory for the literary entertainment was closely packed with hearers, who were well rewarded by Mr. Blackmore's admirable reading of an essay in which his mastery of the elegancies of style was delightfully associated with his mastery of the practical business suggested by the title of

his paper. Nor was he content to follow in customary ways in the handling of a subject so appropriate to the occasion. His matter was as fresh as his manner, and his paper will make a most valuable contribution to the Society's Journal.

The influx of grapes on Wednesday was in consequence of the appointed competition in modes of packing for carriage by rail or parcel post. The competition was essentially a good one, and illustrated most directly the point we have so frequently urged, that competition is rather ignored than encouraged by the R.H.S., and that there is, on the part of the Council, an unhealthy dependence on trade contributors for the material requisite to an exhibition. The trade would gladly see their customers encouraged, and the encouragement would bring new life into the Society and all its work.

On both days the conferences were well attended, and the several papers were received with appreciation. That points of difference were discovered in the proposals of successive speakers was as desirable as it was natural. For all to flow smoothly on without a difference of opinion might be satisfactory in one sense, but it would somewhat argue adherence to mere commonplaces that admit of no contention, or it might imply such a degree of indifference as favours a languid acceptance of everything, good or bad, new as the moment, or as obsolete as the fashion of a bygone century. Differences fairly stated awaken attention, kindle interest, and deepen rather than weaken impressions that are in accordance with truth. There is much in the history and variation of both dahlias and grapes to be suitable for discussion, and we could could contentedly behold on such occasions a much more frequent divergence of opinion than we have witnessed hitherto. The weather was a trifle unkind to the business, but all things considered, the two days of the conferences were of a profitable nature, and should tend to advance the Society in the public estimation.

STAINES AND DISTRICT CHRYSANTHEMUM EXHIBITION, November 13.

AUBERGINES GROWN IN THE SOCIETY'S GARDEN made an interesting feature of the Chiswick meeting. The great purple is the best for the table. But a remarkable variety that will be valued for ornamental purposes produces a fruit like a small tomato, regularly and deeply corrugated, the colour dazzling vermilion. It is a beautiful thing, and worthy of attention.

A REPORT ON PLUMS, by Mr. Malcolm Dunn, embodying results of the Plum Congress in Edinburgh last year, will be received by all pomologists as a valuable document. The subject is by no means "used up" for literary purposes, and there is a charm of freshness in Mr. Dunn's report, which adds to its interest and usefulness. It is published by Niell and Company, Edinburgh.

A NEW MODE OF DISPLAYING DAHLIAS was illustrated by Mr. Phippen, of Reading, in the Dahlia Exhibition at Chiswick. They were tied in large bunches on stiff rods mounted on stands. The system may be likened to that by which music is supported on portable holders for outdoor concerts. The bunches were a trifle too formal, but they were singularly effective, and the group made a truly splendid feature.

A LETTER ON THE POTATO, by Mr. H. W. Ward, of the Gardens at Longford Castle, appears in the *Times* of Thursday. It is full of good practical advice on the true principles of cultivation, and is not the less interesting that it touches on a few controversial points. Mr. Ward holds that artificials, such as Peruvian guano, tend to lessen the proportion of diseased tubers, and he objects to lifting immediately on the crop attaining to a suitable size, on the ground that the tubers do not keep so well as those allowed some time to ripen in the ground.

MESSRS. LAING AND SONS' GROUP OF TUBEROUS BEGONIAS, occupying a corner of the dahlia tent at Chiswick, was regarded by many persons as the most effective lot hitherto presented to public notice. The plants were well grown, and in fine condition as regards their flowers, and they were arranged in a singularly effective manner in respect of colours; while a few light-leaved palms were dotted in amongst them, and an edging of adiantums gave a neat finish in front. The final touch was given by the peculiar light, which was considerably less than full daylight, the canvas and the shade of a neighbouring tree having a modifying effect eminently favourable to the beauty of the arrangement. In many instances, groups of tuberous begonias have been too strong in colour, and certain bricky tones of red have predominated. But here were rich tones of crimson softened by shades of rose and pink, with a fair proportion of yellow and white.

THE WEATHER has been of the changeable, but generally agreeable, character anticipated in our last note. The storm on Tuesday appears to have been general over the south-east of England, and attained to grand proportions for an hour or two in London. The peals of thunder occurred very opportunely during the Dahlia Conference at Chiswick in the way of elemental applause, attaining a fine climax when the vote of thanks to the chairman was adopted, not only with unanimity but with acclamation. It is not every chairman who obtains a salute from the artillery of heaven, because, of course, every chairman does not deserve it. The prospect continues agreeable. Changes may be expected, but we see no signs of coming frost, but rather of warmth and occasional showers.

NATIONAL CHRYSANTHEMUM SOCIETY.—The meeting of committee announced for Monday evening next at Anderton's Hotel, will of necessity be of an important nature, and it is hoped that all members of committee who can attend will do so. The chair will be taken at seven precisely.

GUILDHALL FRUIT SHOW.—The exhibition organized by the Fruiterers' Company, to be held in the Guildhall, London, October 6, 7, and 8, will be opened by the Lord Mayor, and admission on each of the three days will be by tickets only, for which no charge will be made, while care will be taken to distribute them to persons likely to take a practical interest in the objects of the exhibition. At a recent meeting of the Executive Committee it was resolved that section 2 for tenant farmers shall be open both to those who rent and those who own farms, provided the extent of land occupied with fruit does not exceed one acre in extent, As the last day for entries is Wednesday next, October 1, intending exhibitors are advised to complete their arrangements without delay. Schedules and all particulars may be obtained from the Secretary, Mr. O. C. T. Eagleton, 40, Chancery Lane, London, E.C.

DEATH CONTINUES TO HARRY THE HORTICULTURISTS, and last week we had to report the loss of one of our ablest and most earnest workers in the floral branch of the comprehensive art. Mr. William Holmes, of Hackney, the first honorary secretary of the National Chrysanthemum Society and a great mover in the cause, was taken almost suddenly and at an age when, whatever a man may have done, it may be assumed that his best days for usefulness are yet to come. The loss reaches far beyond his private circle, and deep regard for the man, no less than of respect for the worker, mingles with the sense of profound regret that has followed upon the sad announcement. At the meeting of the Floral Committee on Tuesday a resolution of sympathy and condolence with the bereaved family was unanimously adopted, and, being signed by the chairman, William Marshall, Esq., was forthwith despatched to Mrs. Holmes. The following is the text of the resolution: "That, having been informed of the death, on the 18th instant, of their friend and fellow labourer, Mr. William Holmes, this Committee desires to convey to Mrs. Holmes and her family a message of sympathy and condolence, assuring them that by reason of his personal merit and distinguished services to horticulture, the loss of their late associate is by them deeply regretted."

MR. SAMUEL BARLOW'S APPLES that won golden opinions at the recent Manchester exhibition have been the subject of inquiry in that city. In reply thereto Mr. Barlow has published a statement, from which we copy the following: "The apples were grown at Llandudno, and were mostly—not all—grown under glass, but without the use of artificial heat. In the neighbourhood of Manchester I fear it is impossible, under the most favourable conditions, to produce fruit of equal excellence. At Stakehill it is difficult to keep trees in the open garden alive. At Llandudno there is not so much difference in the quality of apples grown in the open garden or grown under glass as many might suppose. The soil and the atmosphere are the same in both cases; there is more sunlight in the open garden, and consequently a better colour of the fruit. Under glass the blossoms are better protected from spring frosts, the fruits are sheltered from rough winds, hail, and other storms, so heavy fruit can ripen out without risk of being blown off, and from the absence of marks made by knocks and bruises a higher degree of finish in the fruit is attained. My trees are young, averaging about seven years old; they are dwarf, four feet to six feet high, and are of the classes known as pyramidal, bush, cordon, and espalier. They are planted under glass in a well-prepared border, with the roots near to the surface, and are well cared for all the year round. The leading fruit nurserymen publish very good catalogues of apples, in which the fruits are divided into culinary and dessert, and subdivided into early, medium, and late kinds. Further, they give good directions for culture of a plain and practical character. The foundation of success in apple growing, as in everything, is love for the subject. This will induce intelligent observation, study, and devotion, and will give another interest and another pleasure to life, which is thereby prolonged and made happier.—Yours, &c., SAML. BARLOW, Stakehill House, Castleton, September 17, 1890.

THE LATE MR. WILLIAM HOLMES.

THE funeral of the late Mr. William Holmes, whose death it was our painful duty to announce last week, took place in the Abney Park Cemetery, Stoke Newington, on Wednesday afternoon, and the immense gathering of horticulturists and others bore ample testimony to the high estimation in which our late friend was held. The National Chrysanthemum Society, in whose interest he had so freely given of his time and strength, was strongly represented, many members having travelled long distances to pay their last tribute of respect. Other societies having for their object the advancement of horticulture were also represented by some of their most distinguished members. But large as was the assemblage of horticulturists, it formed a comparatively small part of the great gathering, which included representatives of the Central Hackney Conservative Association, of which the late Mr. Holmes was chairman, and of the Hackney District Board of Works, the Trustee Board, the Hackney Vestry, the Hackney Benevolent Pension Society, and the Earl of Zetland Lodge of Freemasons, of all of which he was an active member. It was estimated that there were nearly a thousand persons present.

The wreaths sent by private friends and the several public bodies with which Mr. Holmes was associated were numerous and extremely beautiful, and included a large and very tastefully-arranged wreath of white chrysanthemums from the members of the National Chrysanthemum Society.

At the meeting of the Floral Committee of the Royal Horticultural Society on Tuesday, it was unanimously resolved, on the motion of W. Marshall, Esq., the chairman, that a message of condolence be sent to Mrs. Holmes, in which the committee express their sympathy with her in her bereavement, and their regret at losing such an able member.

CYPRIPEDIUMS AND CATTLEYAS AT CHELSEA.

The Cypripedium is rapidly acquiring a position as the most important of the entire family of orchids. Ask any orchid fancier or cultivator in the early weeks of September if he has anything in flower? We know what the answer usually is. "You may count all we have in flower on the fingers of both hands." Not expecting to see much, I looked in at the Royal Exotic Nursery in the King's Road, and found more than I expected. Cattleyas and Laelias in the large house are a sight to look upon; immense well developed pseudo-bulbs, such as the best cultivators in the most favoured districts of England might well be proud of. Cypripediums are also of the most vigorous development. Indeed, it is quite plain that however much the flowers may be affected by the atmosphere within the radius of London smoke and fogs, these insidious enemies have no injurious effect upon the condition of the plants. The large number of Cypripediums in flower shows that as a genus, it may be depended upon to furnish us with flowers all the year round. I will give the names in order as I jotted them down in my note book when passing through the houses, and the list will show very conclusively how much we owe to the hybridist for the great improvement made in this genus during the last few years.

Cypripedium Ashburtoniæ is in flower and is a handsome garden variety, a cross between C. barbatum and C. insigne; the upper sepal is green with brownish veins, and a broad white apical margin. Besides the ordinary form, there were also in flower two varieties, viz., *expansum*, with a broader dorsal sepal, having more white at its apical part; and *superbum*, a well formed variety with good colour.

C. mima was finely in flower; a small specimen had two handsome flowers on one spike, it is one of the more recent Chelsea hybrids, and is still a scarce plant. It was raised by crossing C. Lawrencianum with the pollen of C. Stonei, and is quite intermediate between those fine species, having more of the colour of C. Lawrencianum. The upper sepal is well marked with marone purple lines, the laterals greenish with almost black spots, the tips blackish brown, the lip reddish brown.

C. H. Ballantine is another recent hybrid produced by crossing C. purpuratum with C. Farrieanum. It is a distinct and beautiful cypripede, reminding one of the much older C. vexillarium. The upper sepal is whitish marbled with purple, the laterals are marked with lines and spots of a purple colour.

Of *C. T. B. Haywood* there were several varieties; it shows its hybrid parentage, having the broad blackish band of C. Drurii down the centre of each sepal. The whole flower is very beautifully marked with pale pink purple.

C. orphanum is another C. Drurii hybrid, and of the same type as T. B. Haywood, but much darker.

C. Swanianum is a very beautiful and free-growing variety, between C. Dayanum and C. barbatum.

C. gemmiferum is quite distinct, and is well marked with green spots and veins all over.

C. œnanthum superbum is very beautiful in its richly-marked dorsal sepal, which is claret-red veined and spotted purple, margined white.

C. nitens was also very conspicuous, and reminded one in its upper sepal of C. insigne Maulei, but the staminode is more of its other parent, C. villosum.

C. selligerum is well known as a free-growing hybrid raised by crossing C. barbatum with C. philippinense.

Another hybrid, not so well known, is *C. marmorophyllum*, a cross between C. Hookeræ and C. barbatum. The dorsal sepal is greenish stained purple; the laterals have more purple, and the lip is a dull dark purple.

C. cardinale, *C. Sedeni candidulum*, and *C. conchiferum* were all finely in flower, and are well-known garden varieties.

C. Harrisianum is of interest and importance, because it is the first hybrid cypripedium raised in English gardens. It is now well known; a dark variety was in flower.

The handsome *C. Morganiæ* was well in flower, in the form of a strong plant with handsome spikes of its richly spotted flowers; the most beautiful hybrid ever produced.

The above are all garden hybrids raised in England, and compared with examples of the original specific forms, in flower at the same time and place, the superiority of the products of our hot-houses is plainly manifest. As an example of one of the most beautiful specific forms, I noted *C. Spicerianum*, of which there was an early bloom, but on comparing with the fine garden variety raised in this nursery *C. Leeanum superbum*, a seedling from it crossed with C. insigne Maulei, the superiority of the garden form is at once acknowledged.

C. superbiens (Veitchii) was also in flower; a beautiful thing it is, and the parent of many more beautiful garden varieties. It may not be generally known that all the plants of C. superbiens in cultivation at the present time have been obtained from two original plants. The first introduced by Messrs. Rollisson from Java or Assam (?), which plant was sold to Consul Schiller, of Hamburgh, in 1855. The second plant was sent to Messrs. Veitch by their collector (Lobb) in an importation of C. barbatum from Mount Ophir. It is supposed that the habitat given of Messrs. Rollisson's plant is an error, and that it also came from Mount Ophir.

C. Schlimii is seldom out of flower, nor was it on the occasion of my visit. This species is well known, and imported plants are very variable in character. It is also remarkable as being one of very few orchids that are self-fertilizing, and it seeds freely if left to itself.

C. concolor was also noted as being in flower, a rather difficult species to manage, and interesting as being botanically related to the group of which C. niveum, C. Godefroyæ, and the later C. bellatulum are the most important examples. C. concolor has been found growing on limestone cliffs facing the sea, and it succeeds better under cultivation when nodules of limestone are used instead of potsherds for drainage. It requires plenty of water, and the temperature of the East India house.

C. Parishi, of which there was a handsome spike with three flowers, is remarkable for the distinct formation of its flowers. It is one of the discoveries of the Rev. C. Parish, who found it growing "in the decayed fibrous roots of Drynaria quercifolia, a very common fern in the region of Moulmein," but always on trees, and nowhere else.

C. javanicum, also in flower, must not be omitted; the flowers are of a prevailing green colour, and a variety of a deeper green has been named *virens*.

Not much space has been left for any remarks on the few Cattleyas and Lælias in flower, but there are a few species that add interest and beauty to a collection at this season, when the bulk of them are either making up or maturing their pseudo-bulbs.

Lælia grandis was finely in flower. It is not a new plant, being one of M. Pinel's introductions from Bahia, in Brazil, more than forty years ago. Messrs. Low, of Clapton, again received it from Bahia, and exhibited it in London in 1864. Two varieties were in flower, one with larger, brighter flowers than the other. The sepals and petals are of a distinct buff colour, the lip purple shading off to paler purple at the margin. This species requires a higher temperature than is usual for such species as thrive in the Cattleya house.

Cattleya velutina is a distinct, though not showy species, and has a sweet perfume. Though introduced from Rio de Janeiro, it is supposed to be a hybrid, probably between C. bicolor and C. guttata. This is a matter that may easily be verified by crossing the two species in our own gardens. The claims of other supposed natural hybrids have been established in this way already. It has been freely imported during the last few years. Some very beautiful examples of C. bicolor added a distinct feature to the collection. The flowers are not of large size, but the greenish brown sepals and petals contrast oddly with the rich crimson-purple of the labellum.

A few specimens of the useful free-flowering *Cattleya Gaskelliana* prolong the season of the C, labiata type.

C. eldorado were just opening their flowers, to be followed in a short time with *C. Bowringiana*, *C. Leopoldi*, and other autumn-flowering species, which are now sufficiently numerous to furnish a display of Cattleyas and Lælias all the year round. J. D.

ORIGIN OF THE FLORISTS' DAHLIA.

The opening paper at the Dahlia Conference at Chiswick, on Tuesday, was by Mr. Shirley Hibberd, the subject being "The Origin of the Florists' Dahlia." Instead of reading in the customary manner from written or printed copy, Mr. Hibberd entered upon a free, extemporaneous discourse; and with the aid of a series of drawings, was enabled to interest his auditors in a subject that appears not to offer many points of general interest.

He divided his subject into two parts, the historical and the biological. The earliest description of the dahlia extant is in the "Treatise on the Animals and Plants of New Spain," by Francisco Hernandez, published at Madrid in 1615. From this time there was no more heard of the flower for a hundred and fifty years. It was again heard of in 1787, when Nicholas de Menonville was sent from France to Mexico to obtain, by any means, the cochineal insect and the plant on which it fed. This explorer reported having seen in the gardens great asters on stems six feet high, with leaves like those of the elder tree, and this augmented the desire in Europe for the possession of the floral wonder. The desire was gratified in 1789, when a parcel of seeds was sent from Mexico city by Vincent Cervanti, to be grown by the Abbé Cavanilles, in the Botanic Garden at Madrid. Of these, England secured a share through Lord Bute, who was at that time in Madrid, and secured a few, which he sent home to Lady Bute, who grew them in her greenhouse, so that in the year 1790 the living flowers of the dahlia were actually seen in this country. But the nature of the plant being misunderstood, it was soon lost to cultivation; it was, in fact, killed by kindness, for the pet idea of that time was that all exotic plants required a high temperature and a stifling atmosphere.

The year that followed was the first in the proper history of the plant, for then Cavanilles, in his Icones, gave it a name as Dahlia coccinea, the generic name being a compliment to Andreas Dahl, author of a treatise on the Linnæan system of botany. This name was subsequently set aside by Professor Willdenow in favour of Georgina, in compliment to Professor Georgi, of St. Petersburgh; but in 1832 the original name was restored on the sole ground of priority, and from that time has been generally used.

The formation of the florists' dahlia began in the year 1813, when Donkelaar, of the Botanical Gardens at Louvain, obtained a series of double flowers, which were freely distributed. But from about the year 1830 the French had been assiduously cultivating it, though but little was heard of their operations in this way, owing to the influence of politics in every department of public intelligence. But the advancement of the flower in French gardens was revealed when the Allies entered Paris in 1814, for the English amateurs found single and double varieties in profusion, and it seems that the credit for all this was due to Donkelaar, who had first persuaded the plant to display its variability, and had freely distributed his improved varieties. Thus the dahlia came in with the French Revolution, and it attained to the dignity of a florists' flower concurrently with the downfall of Napoleon, who was the "child" of that revolution.

Turning to the biological history, the figures of Dahlia coccinea ("Botanical Magazine," t. 762) and of Dahlia variabilis (B. M., t. 1885) were contrasted with the flowers in the exhibition to show that although the several forms of dahlias were known 80 years ago, the interval had been one of continual progression, the earliest doubles being so unlike those of the present day that one might say that their relationship was botanical rather than floral. The progress of the flower in all the qualities that are valued and sought by the florists was continuous until about the year 1850, the golden time being from 1830 onwards, when the prices of the new varieties ranged from twenty to thirty shillings, and the dahlia supported publications of its own, one of its ablest advocates being the "Dahlia Register." In those golden days the principal trade cultivators were Wheeler, of Warminster; Brown, of Slough; Heale, of Calne; and Glenny, of Isleworth. In one of his advertisements in the year 1836 Mr. Glenny announced that the selection he had made represented the best amongst 3,000 seedlings. For some time after this date Mr. Charles Turner, of Slough, and Mr. George Rawlings, of Bethnal Green, advertised their new varieties at fifteen shillings each, but after 1850 there was a visible decline in the popularity of the flower. The years 1860 to 1870 was a dark time in the history of the dahlia, but in 1870 the National Dahlia Society commenced operations, and accomplished a genuine revival, and this was the more gratifying as it was on the broad basis of recognizing the single and the cactus varieties that were then coming into favour, the first cactus variety, Jaurezii, of recent times being shown by Mr. H. Cannell in 1872. Previous to this, however, the cactus group had been prefigured in Brown's "Glow-worm," 1836, a portrait of which Mr. Hibberd presented to the meeting.

The dahlia was described as the most variable flower known, and a detailed account was given of the changes that take place in the development of the single to the double flower. The dissection of the flower revealed the differences between the florets of the ray and the florets of the disk, not only as to outward form, but as to their relation with the sexual systems, one direct tendency of the doubling process being to sterilize the flower. Some very interesting particulars were given on the seeding of show dahlias and on the limits of variation in this variable flower. Of the extent of its variability Mr. Hibberd was enabled to discourse the more freely when he announced his belief that all our dahlias, save and except the South American Dahlia

imperialis, are representatives of one species. Thus he fuses frustranea with superflua and even glabrata he regards a miniature form of variabilis, which name for strictly technical purposes he considers should represent the one species of which the other reputed species are but geographical forms. His reasons for those views would occupy more space than we can afford for them, but as the full text of the discourse will appear in the society's journal, those who are curious on this part of the subject have but to wait for the publication to satisfy their curiosity.

British Association.

AGRICULTURAL CHANGES IN ENGLAND DURING THE PERIOD 1450-1650.

By Professor W. J. ASHLEY.

RECENT writers have called attention to the agrarian changes in England in the 16th century—changes which may be briefly described as the substitution of pasture, or of a convertible husbandry with a preponderance of pasture, for the tillage of the old common-field system. The object of the present paper will be to determine the methods by which, and the extent to which, the change was effected. For this purpose it is necessary to distinguish between the various parts of a manor :—1. As to the demesne. It had long been usual, where the lord was non-resident, to lease the demesne to a farmer. This, as applied to agriculturists, seems to have been the earliest, and for some time the most important, use of the term; and it was probably only during the 16th century itself that it came to be more generally applied to tenants of all sorts. Here the lord could not be hindered from taking the land into his own hands, when the lease expired, and devoting it to pasture; or from taking advantage of the increased demand for land for sheep-breeding to demand a higher rent. So far as the demesne lay in intermixed strips in the common fields, difficulties might arise owing to the claim of the tenants to commonage on the fallow, though it is improbable that they would receive any support from the Law Courts; and the withdrawal of such strips from tillage would hasten the break-up of the common-field system as a whole. But it remains to be determined to what extent the demesnes were still composed of such intermixed strips. 2. As to the lands possessed by freeholders. Here again there would probably be no legal obstacles in the way of enclosure; and the effect of such action upon the three-field system would depend on the extent to which free holdings still lay in the common fields, which has not yet been ascertained. 3. As to the common pasture and waste. Legislation and legal decisions as to the right of approver probably gave the lords, where the pasturage was at all extensive, a tolerably free hand. Where the pasturage was limited the lords could, and frequently did, overstock it with their own sheep. The diminution of common pasture would have an injurious effect upon the common-field tillage, and would lead, in some measure, to its abandonment. 4. But the chief interest of the subject lies in the villein, customary, or copyright tenancies. In the second half of the period, such enclosures as did occasionally take place would appear not to have involved the dispossession of landowners, and to have been injurious only to the cotters. But there is abundant evidence that great numbers of customary tenants were dispossessed during the first half of the period, especially in the early years of the 16th century. And this brings us to the important point—viz., that the agrarian changes were facilitated by the law of customary tenure; which but slowly recognized, or, at any rate, provided means for enforcing, the right of the customary tenants to undisturbed and hereditary possession. The law as it appears towards the end of the period in Coke is very probably itself the outgrowth of the policy of the Government, and of public opinion, the relation to the action of the lords of land, and does not represent the older law. This seems to be shown, among other arguments, by the history of the celebrated clause, in the later editions of Littleton, as to the judgment of Chief Justice Brian, and by a comparison with legal doctrine in other countries—*e.g.*, in North Germany, where the conditions were in several respects similar. The views which have of late years been taken of the history of land tenure in the middle ages have been unduly coloured by the assumption that the manor grew out of a free community, and that the lord's legal rights were all encroachments. It would seem more likely that the legal right of the lord to dispossess his villeins is very ancient; that it was exercised most sparingly for centuries merely because it was rarely profitable; that as soon as it became profitable it was exercised; and that it was not taken away until it had had great practical consequences. A similar point is illustrated by the development of the law as to fines on succession. It is probable also that in many cases the way was prepared for the removal of customary tenants by the substitution of leases for copyhold. The extent of the revolution can only be exactly estimated when due regard has been paid to each of the possible directions in which change could be effected. All that can be here attempted is to take the most important innovations—the enclosure of the open arable fields—and discover the area affected. This can be done to some extent upon the evidence of contemporary writers: thus there is a concurrence of authorities that Essex and Kent were pretty completely enclosed (in this sense). But the vague declamations of the pamphleteers of the period need examination—*e.g.*, in the case of Oxfordshire; and even such a fact as the rising in Norfolk does not bear the interpretation which it might seem natural to put upon it. A more satisfactory basis for an estimate is to be found in the information given in the reports of the Board of Agriculture, in Arthur Young's "Tours," and in Enclosure Acts, as to the extent to which common fields still survived in 1750.

SCHOOL BOTANY.

By Professor MARSHALL WARD.

He said that botany ought to be taught in schools because of the interest which the subject aroused in the mind of a child and the ease with which it could be taught. The study of botany cultivated and stimulated those powers of accurate observation and comparison and conscientious recording of results so much needed by all, and which came naturally to children who were not too much under the bane of a mere instruction system. The value of such teaching was not to be measured by the number and kind of facts remembered, any more than historical knowledge consisted of being able to remember the dates of battles and other events. The elements of botany afforded to the teacher the cheapest, the cleanest, and the most convenient means of cultivating in young children the power of observation and comparison direct with Nature, and afterwards teaching them to generalize. At present in colleges and other special institutions there was a great waste of time in the case of students, who went insufficiently prepared for the work, and this applied no less to physics and chemistry than to natural history and botany. The only remedy for this state of things was for teachers to leave the blind worship of facts which at present dominated schools, and, instead of measuring a scholar's progress by the amount of dogmatic information which he imbibed and put into an examination paper, look to his understanding the relation between facts, thus paying less attention to *data* and more to the inferences to be drawn from them, and the way in which he intelligently described what he saw. Let the teacher try the experiment of imparting the lesson direct from Nature, and it would be found that the new exercise would have a good effect. The discussion was continued by Professor Oliver, Dr. Forsyth, Professor Green, Professor Horton, Professor Hillhouse, and Professor Geddes.

A REMARKABLE FIG TREE.

"La Nature" gives an account of a remarkable fig tree growing in Brittany, near St. Pol-de-Leon. It is not more than five or six yards high, but it covers an area of about 480 square yards. The spreading branches rest on props, which cause it to form avenues, one of which is thirty-four yards long. Very little could be learnt of the history of the tree. An old farmer said he had always known it as it is now, and all the information he could give about the yield of figs was that for two or three months in each year it gave an abundant supply for all who wanted them, and there were more than were wanted. St. Pol-de-Leon has evidently not been interfered with by any fruit growers' association.

THE PRESENT STAGE OF THE ORDNANCE SURVEY.

By Mr. HENRY T. CROOK.

Mr. Crook said that it was strange that, when the need for accurate maps was daily increasing, there should be a falling off in the sale of the national maps, for the making of which the nation had paid an enormous sum. This was mainly attributable to the fact that the maps did not meet popular requirements. The Ordnance Survey Department had undertaken more than it had the means to carry out in any reasonable time. The survey had suffered severely from constant Parliamentary interference, and the result was after more than a century's existence the department had not completed one of its works. It had not yet produced on any scale a uniform map of the British Isles. Besides other disadvantages the important question of price affected the sale of the ordnance maps. An outlay of at least 7s. 6d. was necessary to procure the ordnance sheets of a district in handy portable form. Of the whole the southern counties of England no satisfactory topographical map existed, and for the remainder of England and Wales the utility of the existing maps was destroyed by their antiquity. The system of agency monopoly greatly restricted the circulation of the maps and prevented the public at large from obtaining them readily. The establishment of a revision department was absolutely necessary, which could only be done by increasing the proportion of the annual grant devoted to revision. This would not be done unless strong representations were made to the Government. Mr. Crook then read to the section a letter from Sir Charles Wilson, the Director-General of the Ordnance Survey, in which he said that the Ordnance Survey Department cannot be held responsible for the obsolete character of many of the maps or for the system under which they are now sold to the public. The question was really one of money.

ITALIAN GRAPES FOR ENGLISH TABLES.

IN the *Times* of September 17, occurs the following from the correspondent at Naples :—"On the 10th inst., there was an interesting exhibition of grapes for the table at Portici. It is one of the results of the commercial enterprise undertaken by England and Southern Italy, and an article in the *Corriere di Napoli*, headed 'Uve di Tavola, La esposizione de Portici e L'Italo Britannica,' urges very strongly the promotion of this branch of trade. England, it says, consumes annually about 250,000 quintals of grapes for the table, valued at £500,000, equal to 12½ millions of Italian lire. This enormous supply is derived principally from Spain, Portugal, Belgium, and Bordeaux, but it is asked, Why should not Italy, with her glorious sun, enter into competition with these countries, or become another contributor to the demands of London for the luxuries of the South? Hitherto the difficulty of transport has been an obstacle, but now that the Italo-Britannica Company has been formed, steamers leaving Southern Italy and Sicily twice a month will remove that obstacle. All that remains to be done is therefore for people to put their shoulder to the wheel. They have a beautiful climate, grapes of a delicious quality, and now ready means of transport. A viticultore, however, gives a wise word of caution to speculators. 'It will be well,' he says, 'not to indulge in dangerous illusions, and to be convinced that on arriving in London grapes do not acquire a fabulous price.' Italy for the most part does not cultivate grapes for the table, whilst England, with her hothouses, and Belgium, which has acres of ground covered with glass, produce this delicious fruit in great abundance. Why should not Italy? After the vintage grapes are scarcely to be found in the market except in a damaged state, whilst in Southern Italy and Sicily, so highly privileged, were the gratuitous power of the sun to be used, every season might be provided with grapes far superior to those which are 'forced' in England or Belgium and other northern countries. As to preserving the fruit, that which does not ripen till after October may be kept fresh all the winter, whilst in Termini it remains on the vines in the open air with very slight precautions; so is it in Terra d'Otranto and other provinces of Southern Italy. The 'viticultore,' after eulogizing the beauty of the climate, and describing the facilities for the cultivation of grapes for the table, winds up with directions for packing. He does not recommend the use of sawdust, but rather of very fine shavings of cork. One might imagine that the long and judicious article in the *Corriere di Napoli* might have been written by a shareholder in the Italo-Britannica Company, but whether so or not it will have the effect, I think, of creating an occupation at home and of a foreign trade which will prove highly lucrative. Good grapes were sent to the Royal Institute of Encouragement at Portici from Tivoli, Lecce, Torre del Greco, and many other districts. The jury, however, gave the honour of the day to Carmine Perna, of Barra. In fact, says the article I have quoted, the Naples and London line is destined to have a great future from the increasing consumption of our produce in England. It is, however, probable that our garden stuff and our fruit will have the advantage over every other kind of exportation."

CHOICE WINTER-FLOWERING CARNATIONS.

By W. Bradbury.

In continuation of my notes on the cultivation of the winter-flowering carnations, I now propose to make a few suggestions on the selection of varieties, and to give a few hints on purchasing the plants. To select judiciously is not less important than to cultivate with skill, for there is a wide difference in the value of the varieties that have a place in trade lists. Some are wanting in vigour, others are comparatively shy in flowering, and, in addition, there is a considerable difference in the quality of the flowers of varieties in the same lines of colour. Hence the necessity for selecting with the greatest care.

With reference to the most suitable time for purchasing stocks of winter-flowering carnations, I have no hesitation in saying that there is no season of the year in which the purchase may be so advantageously made as the present. Strong examples obtained at once can be depended upon to bloom more or less freely throughout the winter, and, what is not less important, they will give a good crop of "grass" for propagating purposes, provided no considerable proportion of the shoots has been taken off. Strong plants in five-inch pots purchased now will necessarily cost more than will small examples obtained in three-inch pots in the spring, but the additional expenditure involved will be more than balanced by the flowers produced during the winter, and the cuttings they will supply. When they are received they will require exactly the same attention as plants that have been grown at home in accordance with the directions given in my recent communication. They should therefore be allowed to remain undisturbed at the roots, but if they are in a vigorous state of health an occasional supply of weak liquid manure will be beneficial to them.

In turning to the varieties at the command of the cultivator it is at once seen that those producing white flowers form an important and useful group. Cultivators differ considerably in opinion as to which is the best white carnation, a fact of some interest as showing that there are several of a high degree of excellence. For the production of flowers from the present time until midwinter, Mdlle. Carle is unsurpassed It is very free, and the blooms are large, of good form, and produced on comparatively long stalks. Bridesmaid is so free and continuous in blooming that its flowers may be had in profusion throughout the winter. L'Hermine is a dwarf-growing and free-blooming variety, rather largely grown for market, but the flowers are not equal in quality to the other varieties mentioned. La Belle, one of the oldest of the white varieties now in cultivation, has unfortunately a thin straggling habit, but it is comparatively free, and the flowers are large and delightfully fragrant. In continuity of flowering it has but few equals, as when the plants are in a thrifty condition the blooms are produced in succession from the autumn until the spring following. The growth may be trained to stakes fixed in the pots, or to the roof trellis, as may be most convenient.

The scarlet and crimson varieties rank next in importance to those with white flowers because of the usefulness of the blooms for bouquets, epergnes, and other arrangements. Several excellent additions have been made to this group during the past few years, and one of the most important of these is Duke of Fife. This variety has a very robust habit, strong plants rising to a height of three feet or so, and bears large brilliant crimson flowers, which are produced profusely and continuously throughout the winter season. Winter Cheer is another novelty, bearing crimson-scarlet flowers, but it is of a quite different type to the variety immediately preceding it. The growth is dwarf and the flowers are of medium size, but it is so free as to yield an abundant return. A. Alegatiere, which has long been in cultivation, still holds its own as one of the most useful of the high coloured varieties. The growth is neat, and the flowers are brilliant red and produced in great abundance. Other scarlet and crimson flowered varieties that can be recommended comprise: Mrs. Keen, a superb variety producing large crimson flowers of good quality; Thomas Wallis, a showy variety, with large scarlet flowers flaked with crimson; and Whipper-in, an excellent free-blooming variety, the flowers large and of a brilliant scarlet hue.

The intermediate shades include a considerable number of extremely beautiful varieties. Especially good are Irma, dwarf in growth, and producing a profusion of deep rose-coloured flowers; Enchantress, a free-blooming variety, the flowers pink flaked with purple; Le Favori, a strong-growing and free-blooming variety, the flowers large, and of a bright pink hue; Miss Jolliffe, a dwarf-growing and very free-blooming variety, the flowers rather small and of a pleasing soft pink hue, the most useful of all the light pink carnations for the supply of cut flowers; Jean Sisley, salmon, suffused red, distinct and red; Pride of Penshurst still maintains its position as the best of the yellow selfs for flowering in pots; and the old Prince of Orange is unquestionably the most useful of the yellow grounds for the supply of cut flowers during the winter and spring.

TRANSFORMED VEGETABLE MARROW.

The letter of "Amateur" noting a supposed "change of habit in Vegetable Marrows," was in part replied to in an editorial note appended to the letter at page 516. We have received several letters confirming our conjecture that "Amateur" had been growing the "Bush Marrow," which, in our note we spoke of as the "Tree" marrow, trusting too much to our treacherous memory. We have to thank the writers of the several letters intended for the information of our inquiring correspondent; but it would not profit him or others to publish them. The plant that has mystified "Amateur" is in proper form as the *Bush Marrow*, and should have been supplied so labelled. —Ed.

PREPARING FOR WINTER IN THE APIARY.

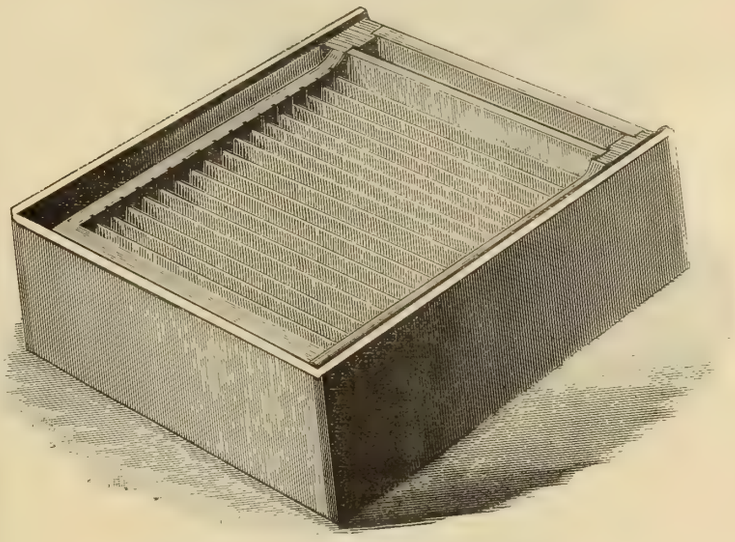
The month of September is the month of all others to lay the foundation for another year's work, for if proper attention is given to each stock now in the way of feeding if necessary, and all put together snug and compact, no further attention will be necessary until another year. But in the majority of instances feeding will be necessary, and no time should be lost in completing this work before the cold weather sets in.

Among the many improvements that have been introduced of late years among feeders, none meet the case of autumn feeding so well as Canadian Rapid Feeder here illustrated. This enables the bee-keeper to give sufficient syrup in one night to supply the whole colony well into next year, and this is a great advantage when honey is short, as the bees are very prone to rob, and this leads to injurious fighting. Under the system of rapid feeding the work is got through so much sooner than under the old system.

The illustration shown above represents Howard's Improved Rapid Feeder, which, when complete, has a sheet of glass over it which prevents the bees from passing out, this having been removed for convenience of illustration. To use this feeder properly it is necessary to remove the quilt, so that the bees may have free access to the two sides and end of the feeder, and the syrup should always be given hot. The warmth of the syrup sets the bees into activity, and it will surprise many the quantity of syrup a good colony of bees will take down. This should always be given at night, and care taken that no bees can escape or gain admittance from outside the hive.

All partly filled sections and empty section crates should now be removed, and all hives that have been doubled should be put back to their usual size. Ten standard frames is a good number to winter on.

Where bees have been allowed to swarm freely and have been hived



HOWARD'S IMPROVED BEE-FEEDER,
For feeding once in autumn to supply the stock until the spring.

separately, and the number of colonies exceeds what the bee-keeper wishes to preserve, two such colonies may be gradually brought together and eventually joined. Apiarist.

AMPELOPSIS HEDERACEA.

Although A. Veitchii is much admired here for the effective summer clothing it puts on to walls over which it runs, and this with no trouble in the way of nailing or tying to wires as in the case of the above-named, it is not regarded as being of sufficient importance to dispense with the older variety altogether. Our old friend certainly can lay claim to being the faster growing kind of the two, and more useful for training up tall tree stems than is A. Veitchii. For the purpose named, Hederacea is capital, and also is it to mix with Irish Ivy. Then the early loss of its leaves is not felt nearly so much as is the case where it is growing alone. It almost is a matter for surprise when I say what a splendid contrast there is in the colour of the leaves of this ampelopsis and the red bricks of the house over which it grows with a western aspect. The charm, of course, is in the fact that the bricks are so dull a red, and the colour of the leaves so brilliant as they are at this time. Facing the west, as previously noted we have a broad patch of A. Hederacea, and in a south-eastern position we are encouraging the Veitchii variety to cover a part of the wall. By this means we have a continuation of tints from these two varieties. The Veitchii variety has scarcely commenced to assume its autumnal tint, whereas the other kind has lost many of its leaves. This latter variety strikes readily from cuttings taken off six inches long, choosing the current year's growth at a time when the wood is pretty well ripe. Dibble them into sandy soil in a cold frame. Most of them will strike root and make serviceable plants by the following May, when they may be planted on a border for another season's growth. Both sorts delight in nourishment at the roots, and if a quick growth is to be had, stimulants should be freely given. A. Veitchii especially delights in copious supplies of liquid manure at the roots during the hot days of summer, which have a tendency to induce the plant to absorb much moisture from the soil where it is freely supplied. E. M.

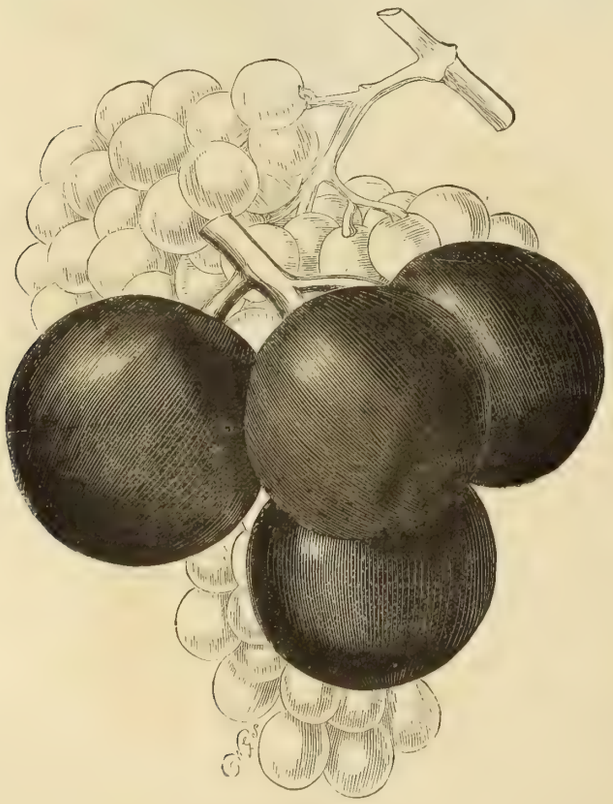
GRAPES AT CHISWICK, 1890.

A MORE appropriate place for a grape conference could scarcely be found in the vicinity of the metropolis, than the venerable vinery at Chiswick. This fine structure, for a long time past one of the best grape houses in the world, was figured in GARDENERS' MAGAZINE, December 22, 1877. It is but a part



BLACK HAMBURGH (Best form of bunch and berry).

of the structure it was originally intended to establish here, and that accounts for its peculiar appearance, as of a ship turned bottom upwards, for it is but a wing of the conservatory designed by Mr. Alfred Ainger, which, if completed, would have had a length of five hundred feet. It was built by Messrs. Bailey, of Holborn, and completed in 1838, when, this being done, the remainder of the plan was abandoned. The measurements are, length one



GROS COLMAR.

hundred and eighty feet, width twenty-seven feet, height from floor to apex of roof twenty-seven feet. The materials are glass, iron, and brick. After more than fifty years' service it stands firm, and but little different to its original state as regards structural soundness and efficiency.

The house stands east and west on a raised platform, and having been found unsuitable for a general collection of plants, has proved admirably adapted for grape vines, affording great length of rafter with uninterrupted light and abundant ventilation. With all the difficulties that the grape grower has to encounter, it might have been expected that this vinery would have had its episodes of sadness, but it has had none. The mildew, phylloxera, and other plagues have never in any serious degree assailed it, and we must attribute to good management the happy immunity it has enjoyed as well as the general success that has attended its occupation as a trial house for vines, of which there are seventy, all planted in open borders. Here is a list of the occupants:—2 Alicante, 1 Aramon, 1 Black Monukka, 1 Black Prince, 1 Braddick's Hamburgh, 8 Black Hamburgh, 1 Buckland Sweetwater, 2 Black Tokay, 1 Black Morocco, 2 Dutch Hamburgh, 25 Frankenthal, 1 Gros Guillaume, 2 Gros Colmar, 1 Golden Hamburgh, 2 Lady Downes, 1 Madresfield Court, 1 Mrs. Pince, 1 Muscat of Alexandria, 1 Mill Hill Hamburgh, 1 Muscat Noir de Jura, 1 Muscat Hamburgh, 2 Royal Ascot, 2 Raisin de Calabre, 4 Royal Muscadine, 1 Trebbiano, 1 White Nice, 1 West's St. Peters.

On the tables forming part of the exhibition on Tuesday and Wednesday last were representative samples of all the more important varieties of grapes now in cultivation contributed from many gardens and representing, generally speaking, a highly satisfactory evidence of the perfection to which the cultivation of the grape has attained in this country. On those varieties we present a few notes that may be useful at this juncture, with figures illustrating their distinctive characters.

BLACK GRAPES.

ALICANTE is one of the famous grapes being renowned for beauty, but often of inferior table quality. It is of Spanish origin, but has been long in cultivation in the South of France, where its name, *Espagnia Noir*, is a testimony to the source whence it was derived. The leaves are downy on the underside which gives them a silvery appearance and they are late in changing colour, and die off at last clear yellow or slightly tinged with red. The



ESPERIONE OR ESPIRAN.

bunches are large, the berries oval, quite black with a dense bloom. Mr. Meredith "made" this grape by his superior cultivation at Garston. He grew it in a high temperature and added to its magnificent appearance a better flavour than it usually has, and that never can be secured excepting by high cultivation.

ALNWICK SEEDLING was first introduced to public notice by Mr. Bell, of Clive House, Alnwick, 1876. It is a seedling from the Black Morocco, which it resembles. The growth is vigorous, the leaves large, deeply serrated; the bunches large, with usually one large shoulder; berries roundish, purplish black, with rich blue bloom; flesh firm, with sweet, rich, piquant flavour. A free growing and free fruiting grape of the highest quality, and keeping well. It requires to be set by hand to ensure a crop, and this is the only point of special importance in its cultivation.

ANGERS FRONTIGNAN was raised at Angers by M. Vibert. The vine is moderate in growth, fruitful; leaves roundish, dying off reddish; bunches medium; berries small and roundish, purple-black, with thick bloom; flesh firm, tender, sweet, and rich, with agreeable Frontignan flavour. An excellent grape, succeeding in Hamburgh house, ground vinery, or open wall. When well-finished the flavour, though peculiar, is generally liked.

BLACK HAMBURGH may, in its several forms, be regarded as the most important of the grapes that are grown for the table. It has about twenty synonyms, a proof of its excellence and wide diffusion. It derives its name from the fact that it was obtained direct from Hamburgh by Mr. John Warner, who had a garden at Rotherhithe in the year 1724. For a long time thereafter it was Warner's Black. In Germany it is more generally cultivated than in this country. The vine is of vigorous constitution, the leaves of medium size, smooth, pale green, usually dying off a dull yellow colour. The bunches are of medium size with broad shoulders, the berries should be large and half-hammered roundish ovate, the colour deep bluish black with a fine but not dense bloom. The flesh is firm, but melting, rich, and pleasant; it is a grape that may be eaten by all, and it never cloys the appetite. As a garden grape this is one of the easiest to cultivate, and it produces the finest fruit when planted in an outside border. The list of synonyms and notes on cultivation and comparison of varieties that will be found in Mr. A. F.

Barron's admirable work on "Vines and Vine Culture" are of the highest practical value.

Black Monukka was introduced by Mr. Johnson, formerly gardener at Hampton Court, and is supposed to be of Indian origin. The vine is robust and requires much space, the leaves large, the bunches large, broadly shouldered, and tapering, the berries small, acorn shaped, colour grizzly black with a thin bloom. It is thin skinned and of an agreeable flavour, but being shy to bear, and requiring much space and time for its development, is not adapted for general cultivation.

Black Morocco is an old grape that once became famous as the Kempsey Alicante, but is now but little grown. The vine is robust, the leaves large,



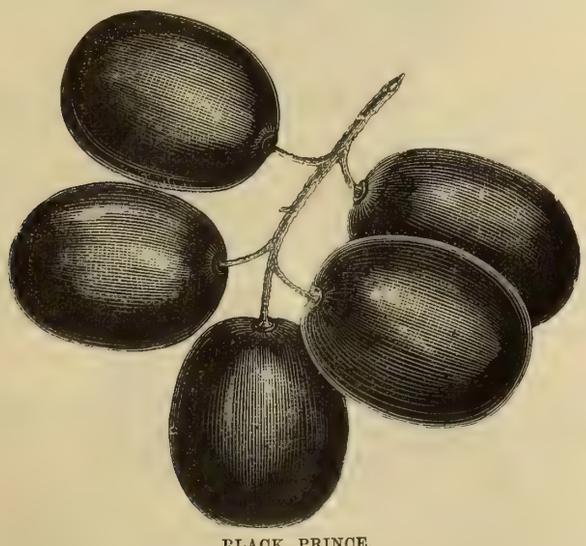
BLACK HAMBURGH.

much cut, dying off reddish. The bunches are large with irregular shoulders, and a tapering outline; the berries long, ovate, blackish, but always a little red near the stalk. Flesh firm, rich, piquant. It is a beautiful grape, but the vine is so shy that it is worth the attention only of the curious.

Black Prince is an old variety now quite out of favour. The vine is vigorous and very fruitful, leaves roundish, dying off purplish. The bunches are long and tapering, berries medium roundish ovate, skin dark purple with a thick bloom. Flesh juicy and sweet with a slight astringency. Being of second class quality it cannot compete with Black Hamburgh, but has been found useful for cultivation in ground vineries and on open walls, as it always colours well and ripens early.

Dutch Hamburgh differs from Black Hamburgh; the berries are larger and handsomer, covered with a dense bloom. But the flesh is inferior to that of the Black Hamburgh, and the bunches are liable to irregularities through imperfect setting. Though in one sense a magnificent grape it is really not worth general cultivation.

Esperione is an ancient grape of greater value and importance than would appear from the slight repute it bears. The vine is vigorous, with a brownish striped bark and deeply lobed leaves that die off in brilliant crimson and purple hues. The bunches are shouldered and tapering, well set, the berries medium size, quite round, with a distinct sature, the colour dark purple with thick bloom, the flesh agreeable, sweet when well ripened. Although far from a first



BLACK PRINCE.

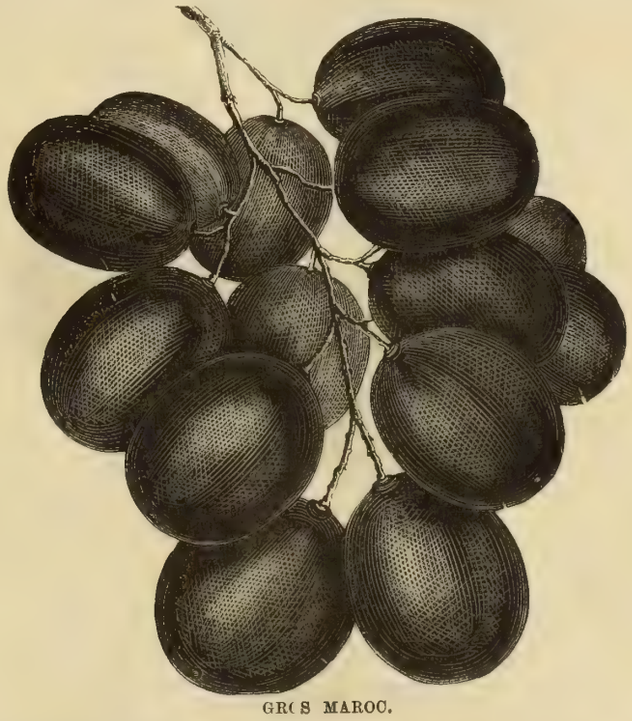
rate grape, and therefore not to be recommended as superseding any other, it is of special value for open wall culture, and was turned to excellent account by the late Mr. C. Roach Smith in his vineyard at Strood, as from this grape he obtained one of the finest wines ever made in modern times in this country.

Gros Colmar is one of the most popular of black grapes by reason of its great size and beauty. It was introduced to this country by the late Mr. Thomas Rivers, and it was soon afterwards grown by Mr. Standish and Mr. W. Thomson for market. Dr. Hogg says it has long been known in Germany as Gros Kölner. It is described under the name Gros Colmar in the catalogue of Jacquermet-Bonnefont of Annonay for 1858. It is probably of Caucasian origin, and the German name Kölner refers to its dense bloom and resemblance to charcoal. The vine is vigorous and free, the leaves large and broad, dying off mottled amber with reddish margin. Bunches medium, often broad and short, and irregular. The berries are large, round, thick-skinned, jet black, with dense bloom; when highly ripened of excellent flavour, but generally speaking this showy grape is far below the Black Hamburgh in quality. One of its virtues is that it ripens late, and often commands a good market. Though free, and not requiring any peculiar management, it cannot be said that this is an easy grape to cultivate. It needs special care in thinning, and the constant exercise of caution against overcropping, and a considerable heat with more than the average of time for perfect ripening, and unless well ripened it is but a poor thing, though so noble in appearance.



GROS GUILLAUME OR BARBAROSSA.

Gros Guillaume is the Barbarossa of gardens, the true Barbarossa being a grizzly grape, comparatively unknown. We should prefer to enter this under the second name now given, but as Mr. Barron follows Dr. Hogg, it would be only aiding to perpetuate confusion were we to follow custom and repudiate authority. Gros Guillaume, generally known as Barbarossa, was first brought into note by Messrs. Butcher, of Stratford on-Avon. The vine is vigorous, leaves large, dying off early, of a reddish colour; bunches very large, shoulders broad, tapering; berries medium sized, roundish, deep black with a fine bloom; the flesh tender, but not high flavoured. A magnificent grape for appearances, the bunches attain to a great size and fine colour. It is best grown on Black Hamburgh as a stock, but being an uncertain grape,



GROS MAROC.

late in ripeing, requiring much heat, and being far from first rate in flavour, it is not adapted for general cultivation.

Gros Maroc was introduced by the late Mr. Rivers in the year 1855, and has acquired considerable popularity. The vine grows vigorously, the leaves are large and deeply serrated; the bunches medium, tending to a triangular outline; berries large, ovate, the colour deep plum with a thick bloom. In flavour it is agreeable and lively, but often quite second rate. A showy grape, easily managed, and as it fruits freely and colours well it is acquiring favour with market growers, and is likely to take a leading place to the disadvantage of some better varieties.

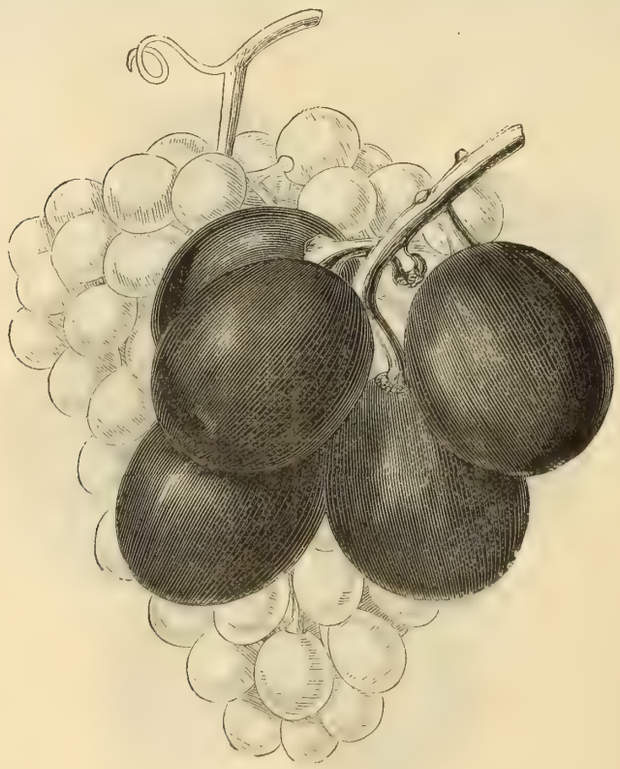
LADY DOWNE'S SEEDLING was raised by Mr. Foster, gardener to Viscount Downe, Beningborough Hall, York, and was first exhibited before the Royal Horticultural Society, 1845. It was raised from the Black Morocco crossed with the Sweetwater, the same seeds producing this and Foster's Seedling, a circumstance of peculiar interest. The name is most appropriate, for the bunch from which these two varieties were obtained was sent in to the luncheon table and Lady Downe herself selected and sowed the seed, and not until the plants were up were they handed to Mr. Foster for further management. The vine is a good grower, starting late, the leaves roundish, downy,



LADY DOWNES.

dying off reddish; the bunches long, moderately shouldered, and rather cylindrical than tapering; the berries large, roundish, with thick skin, purplish black with thick bloom and a tinge of red next the stalk; flesh green, firm, unpleasant when not well ripened, but in a finely-finished sample sweet, rich, and lively. Easily grown in Hamburgh temperature, but the better for a little extra heat to promote perfect ripening. It forces well, keeps well, and is deservedly valued both for domestic and market culture.

MADRESFIELD COURT was raised by Mr. Cox, gardener to Earl Beauchamp, at Madresfield Court, Great Malvern, from Muscat of Alexandria and Black Morocco. It was awarded a certificate by R.H.S. 1868, and from that date has made steady progress in public favour. The vine is of moderate growth, free, leaves medium, deep green, dying off a dark crimson colour. The bunches are large, regularly tapering; berries large, long ovate, skin tough, purplish-black with very thick blue bloom; flesh greenish, tender, deliciously flavoured, and when highly finished with slight muscat flavour. As an early grape it is of the greatest value, as it requires but little heat; it bears freely and sets well. As a market grape it is worthy of special attention, but for the home supply it is not the less a variety of the highest merit.



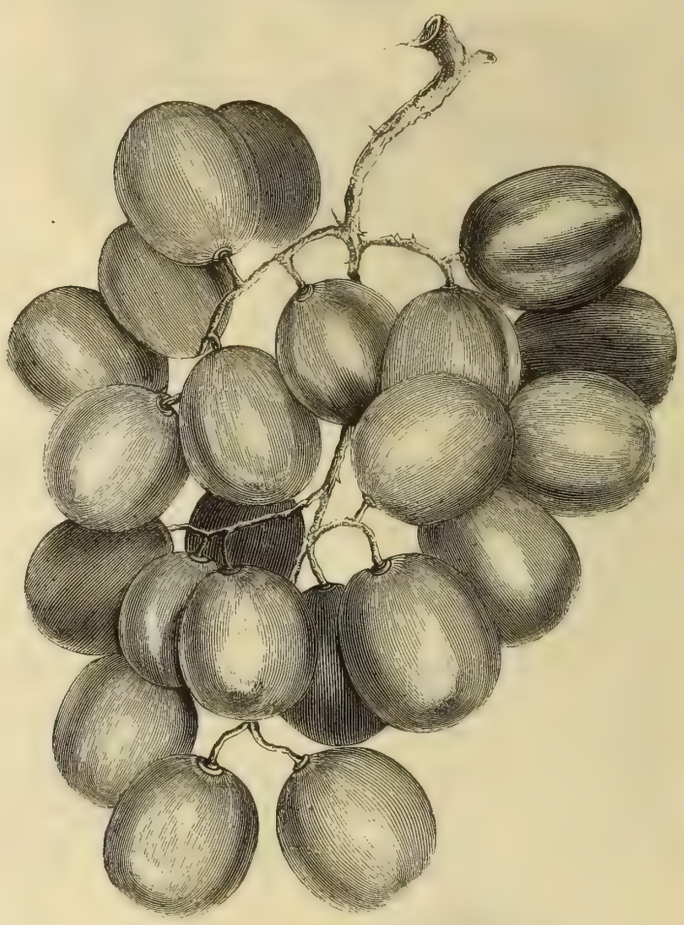
MADRESFIELD COURT.

MILL HILL HAMBURGH is a noble grape, the history of which is unknown. The vine is of strong growth, the leaves large pale green, often sickly in appearance when in perfect health. Bunches medium size, broadly shouldered, often irregular; berries very large, round, skin thin, reddish black, with a thin bloom; flesh tender, melting, rich and agreeable. Mr. Barron says "superior to the Black Hamburgh," but we have not often found it so. It is a somewhat troublesome variety, apt to grow too fast, and to fruit shyly, but when well done a fine grape.

MRS. PINCE was raised in nearly the same manner as Lady Downe's Seedling; the seed being selected and sown by the late Mrs. Pince, of Exeter. In the year 1863 it was awarded a certificate by R.H.S. The vine is of strong growth and excellent behaviour, fruiting freely; the leaves strong, full green. Bunches moderate, tapering, often divided at the apex; berries medium, long ovate, purplish black with a thick blue bloom; flesh firm, rich, sweet, with a decided muscat flavour. This grape requires muscat temperature, and because of this is often met with in less than first-class condition. With the best of cultivation it does not colour well; in fact, there appears generally something wrong about it and yet it must be pronounced as a first-class variety.

MUSCAT HAMBURGH is of ancient renown and has many synonyms. The vine is a moderate grower with large, deeply lobed leaves that die off yellow. The bunches are large, irregular, with drooping shoulders; berries large, ovate, purple black with a fine bloom; flesh melting, juicy, rich, with muscat flavour. A troublesome variety, owing to its tendency to shank, and it appears to lose character when assisted with foster roots, although the best success has been attained by putting it on Black Hamburgh. It is a fine grape, requiring a warm vinery and not suited for general cultivation.

ROYAL ASCOT was raised by the late Mr. John Standish, of Ascot, from a cross between Bowood Muscat and Muscat Trevéren. The vine is vigorous, fruitful, often producing bunches on the young laterals; in fact, this variety will soon wear itself out unless severely restricted to a reasonable crop, for it bears almost too freely. The leaves are large, roundish, deeply toothed. The bunches are smallish, broad, irregular, and require severe thinning; the



CALABRIAN RAISIN.

berries are roundish, skin thick, purplish black, with thick bloom, colouring early; flesh firm, with rich piquant flavour. A most useful grape, requiring a longer time to ripen than appears, owing to the appearance of colour considerably in advance of ripening.

TRENTHAM BLACK is a good grape for the household vinery, the growth moderate, fruitful; leaves of moderate size, deeply toothed; dying off pale yellow or brilliant red. Bunches medium, broadly shouldered, freely set; berries medium, roundish ovate, skin thin, very black, with a fine bloom; flesh tender, juicy, most agreeable and refreshing, and admirably suitable for a delicate palate. Although this comes near to Black Hamburgh in general character, it requires more warmth to finish it well; but if fully ripened in September it will keep until March. As a market grape it is not of much consequence, but in a garden it is worthy of a house to itself.

RED AND GRIZZLY GRAPES.

AHBEE is of Indian origin, the vine robust; leaves large, deep green; bunches large, tapering, with large shoulders; berries large, roundish oval, when full ripe, greenish tawny, with a blush of rose on the side next the sun. Of flavour it has none. When grown in a restricted root space in a good heat it has much beauty, and that is its only recommendation.

CHASSELAS ROSE, raised by M. André Leroy, of Angers, has been long cultivated at Chiswick. The vine is vigorous and fruitful. Bunches medium; berries small, round, of a clear rosy red; flesh firm and juicy, with a sweetwater flavour. A good grape for its colour, and succeeds perfectly in a cool house or ground vinery.

GRIZZLY FRONTIGNAN is an old grape of Continental origin. The vine is of moderate growth, fruiting freely; leaves medium-sized, deeply toothed, dying off yellow; bunches medium, long, cylindrical, not usually shouldered; berries smallish, round; skin thin, dull red or tawny on the side exposed to the light, on the under side paler; flesh firm, rich, pleasant, with musky flavour; if allowed to hang for some time acquires an agreeable raisin flavour Requires a warm vinery, and is very apt to shank.

Gromier du Cantal is of Continental origin. The vine is robust, leaves very large, deeply toothed. Bunches large, broadly shouldered; berries large, roundish; skin thin, pale green on the shaded side, but on the sunny side pleasingly variegated in shades of brown and rose. Flesh firm with good sweetwater flavour. It requires no particular care unless it be to prevent



MRS. PINCE OR PINCE'S MUSCAT.

shanking, to which it is so liable that we doubt if it is worth a place in any house even for experimental purposes.

Lombardy is originally of continental origin, but has been raised from seed of a dried raisin in this country. The vine is vigorous, but shy in fruiting. Bunches large, broadly shouldered; berries medium, roundish, pale red or grizzly. Flesh sweet. A late grape that is liked by many, but will never become a general favourite.

Madeira Frontignan, introduced from France by Mr. Rivers. The vine is a good grower, and fruits freely; leaves small, roundish; bunches smallish;



WEST'S ST. PETER'S.

berries medium, round, reddish purple; flesh firm, very rich, with muscat flavour. A fine grape that will ripen well in Hamburgh temperature.

Muscat Champion, raised by Mr. Melville, gardener at Dalmeny Park, about the year 1858 from Mill Hill Hamburgh and Canon Hall Muscat. Vine vigorous, shy; leaves large, dying off yellow; bunches medium, broadly shouldered; berries very large, round; skin thin, dark red or grizzly, sometimes black; flesh melting, juicy, rich, with decided muscat flavour. A fine grape, handsome, but difficult to manage if allowed to grow freely. Mr. Harrison Weir has many times exhibited it in excellent condition as the produce of a ground vinery.

WHITE GRAPES.

Ascot Citronelle obtains a good character from Mr. Barron. The vine is of moderate growth, fruiting freely; the bunches small; berries small, roundish oval, white or straw-coloured. Flesh tender, rich, with muscat flavour. A fruitful cool-house or wall grape, that we have often seen and tasted, and never considered of more than commonplace merit.

Buckland Sweetwater has acquired considerable fame, and deserves it. The raiser resided in Buckland, in Surrey, and this circumstance explains the name. As a candidate for public favour it dates from 1860. The vine is moderate and well-behaved, fruiting freely. Bunches medium, with broad shoulders; berries largish, round; skin thin, greenish-white; when well ripened a delicate straw-yellow, but if long kept becoming whitish and flavourless. Flesh juicy, with agreeable sweetwater flavour. It requires the warmth of the Hamburgh house, and does not thrive on the open wall.

Canon Hall Muscat.—First known at Canon Hall, Barnsley, but believed to be a seedling from Muscat of Alexandria. Vine too free in growth; leaves large, pale green, deeply lobed, dying off yellow. Bunches large; berries large, roundish; skin thin, pale yellow. Flesh firm, rich, with true muscat flavour. A troublesome grape, requiring a high temperature and extra good management to set it properly. When well done one of the grandest of grapes, but quite unsuited for general purposes.

Chasselas Musque has numerous synonyms. The vine is of moderate growth and fruits freely; leaves smallish, roundish, dying off pale yellow. Bunches medium, tapering, boldly shouldered; berries small, round, when full ripe of a pleasing amber colour, with a slight suffusion of bronze. Skin thin, liable to crack; flesh firm, rich, and bright in flavour, with muscat aroma. Requires no special cultivation, and is useful for pot culture. Mr. Barron says before being fully ripe it should be thinned to a mere skeleton; and, he adds, that Mr. Blackmore allows it to fruit on suckers, and is very successful. In our opinion, it is unworthy of serious attention.

Chasselas Vibert, raised by M. Vibert, of Angers, is a white, of good quality, ripening early. The bunches are small, berries medium, round, clear



MUSCAT OF ALEXANDRIA.

white. Flesh firm, of excellent sweetwater flavour. Useful for warm wall or cool house. Mr. Barron says: "The best early grape."

Dramant Traube is a scarce but excellent white sweetwater, ripening early. The bunches are smallish and irregular, berries roundish ovate, greenish yellow. Flesh sweet and agreeable. Useful for cool house or wall.

Dr. Hogg is one of the many good seedlings raised by the late Mr. Pearson, of Chilwell. The vine grows vigorously, and fruits freely. The bunches are long and tapering: berries medium-sized, round, when ripe, transparent amber. Flesh firm, sweet, with Frontignan flavour. Requires more heat than Black Hamburgh to ripen it thoroughly. It is one of the best of its class, and worthy of general cultivation.

Duchess of Buccleugh, raised by Mr. W. Thomson, at Dalkeith, and certificated by R.H.S., 1863. The vine is a strong grower, fruitful, well behaved. The bunches are long and tapering; berries, small, round; skin, thin, when ripe, yellowish, with a thick bloom. Flesh tender, sweet, with rich muscat flavour. An excellent grape requiring rather more heat than Black Hamburgh to ripen it properly.

Duke of Buccleugh, raised by Mr. W. Thomson, at Dalkeith, and certificated by R.H.S., 1872. Vine vigorous and often too free in growth, leaves large, roundish, deeply serrated. Bunches large, angular, or bluntly pyramidal; berries large, roundish; skin thin, of a pale greenish yellow changing to clear amber when well finished. Flesh tender, juicy, and, though luscious, not cloying. At Clovenfords, Mr. Thomson produces enormous quantities of this grape in a superb state of colour and flavour. It is quite a cool house grape, and succeeds in a ground vinery.

Dutch Sweetwater is named here only for the purpose of saying that it is not a good grape of its class, and cannot be recommended.

Ferdinand de Lesseps was raised by the late Mr. Pearson, and was certificated by R.H.S. in 1870. The vine is a strong grower, not highly fruitful, but requiring no special treatment. The leaves are large and deeply cut. Bunches small, tapering; berries small, oval; the colour a pale amber. Flesh tender, juicy, and fragrant, suggestive of strawberries. Requires the temperature of the Hamburgh house, and though a good grape, is of little use except as a curiosity.

Foster's Seedling is one of the most popular of white grapes, and deservedly so. It was raised by Mr. Foster at Beningborough Hall, Shipton, and came from the same sowing of seeds as that which produced Lady Downe's Seedling. The vine is of free growth, and produces abundantly;

leaves large, deeply lobed, downy; dying off yellow. Bunches medium; boldly shouldered; berries medium, oval. The colour is not often what it should be. When well finished, this grape is of a whitish yellow with a tinge of russet on the side exposed to the sun. In this state the flesh is melting, juicy, and pleasant. When of a greenish colour, as it commonly is, the fruit is agreeably flavoured, but when allowed to hang for some time it becomes worthless. It will thrive in a cool vinery, but is better in the Hamburgh house, and is one of the few grapes that are worthy of a place in every garden.

GOLDEN CHAMPION is one of many grapes raised by Mr. W. Thomson, at Dalkeith. The vine is somewhat too robust, and ripens badly; as a cropper it is moderate. The leaves are large, roundish, deeply toothed, and die off a deep yellow colour. Bunches large, boldly shouldered; berries large, round or obovate, on stout warted stalks; skin greenish-yellow, with a tinge of green, even when well ripened. Flesh firm, juicy, sweet, and satisfying. A fine grape that often proves troublesome. Mr. Thomson has grown it well on the Hamburgh.

GOLDEN HAMBURGH is of uncertain origin. The vine is a moderate grower; leaves large and broad, pale green; bunches large with bold shoulders, loose; berries large, roundish; skin thin, pale yellow when well ripened; flesh tender and sweet, but not of high quality. This variety appears to have lost the character with which it began life in this country. From 1857 to 1870 it was in great favour, but is now but little cared for.

GOLDEN QUEEN, one of Mr. Pearson's seedlings, is an oval white muscat, of no particular merit.

GROVE END SWEETWATER was raised at Grove End, St. John's Wood, and was placed before the R.H.S. in 1821. The vine is a moderate grower and fruits freely, the bunches and berries being small, greenish white or amber, very sweet and agreeably flavoured. An excellent cool house or wall grape.

MADELEINE ROYAL is a hardy, free-fruiting sweetwater, of no particular merit, but early, good-looking, and useful. It is much grown on the Continent, but has never been in high favour in this country.

MRS. PEARSON, raised by the late Mr. Pearson, at Chilwell, from Black Alicante, crossed with Ferdinand de Lesseps. The vine is vigorous and well-behaved; leaves of moderate size, deeply lobed; bunches large with handsome shoulders, tapering; berries roundish, skin thick, deep green until quite ripe, when the colour is greenish amber. Flesh firm, juicy, sweet, and with rich muscat flavour. Ripens late and slowly, needing a liberal muscat temperature. When well done it is a superb grape.

MUSCAT OF ALEXANDRIA is the grandest of the white grapes, and a necessity of every vinery from which high-class produce is expected. It is an ancient variety of unknown origin. The vine is a vigorous grower, the leaves of medium size, deeply lobed, dying off early. Bunches long and tapering, berries large, ovate; skin thick, greenish yellow, but when well ripened a full amber colour almost yellow, with a russet tinge on the side exposed to the light. Flesh firm, sweet, rich, with strong muscat flavour. A good sample leaves on the palate a sense of satisfaction as of a good deed accomplished in tasting it. To do this well good cultivation is needful, although the vine is by no means tender, and will fruit freely in the Hamburgh house. To set it a dry atmosphere is necessary, and to secure high finish the temperature must be higher than the Hamburgh house affords. But, for all this, we often see the two doing well together.

MUSCAT OF HUNGARY is probably of Hungarian origin. The vine is hardy and fruitful. The bunches of moderate size; berries medium, ovate; skin thin, greenish yellow; flesh firm, with agreeable muscat flavour. It is occasionally labelled Muscat of Alexandria. The Hamburgh house suits it perfectly.

RAISIN DE CALABRE, or Calabrian Raisin, is of higher merit than commonly reputed, and has been many times recommended in these pages for its good character and usefulness. The vine is vigorous, and fruits freely; leaves of medium size, dying off early pale yellow; bunches of full average size, tapering; berries medium round or roundish ovate, loosely hung; skin whitish; flesh firm, sweet, not rich. A good grape for a late house, and keeps well until March.

ROYAL MUSCADINE is the best grape for warm walls and ground vineries, but will thrive and ripen early in the Hamburgh house. The vine is vigorous, fruiting freely; leaves small, dying off a pale yellow colour; bunches medium, usually tapering; berries small, round, pale greenish yellow, with a tinge of brown when well-ripened; flesh firm, juicy, pleasant, and better when kept until somewhat shrivelled. The best of its class.

ROYAL VINEYARD made a great promise, but has not fulfilled it. Though handsome, and keeping well, it has but a poor quality, and as it requires the heat of the muscat house, it is not in general favour.

SYRIAN is a strong grower of ancient renown, and believed to be the veritable grape of Eshcol (Numbers xiii. 23). The vine is robust and fruitful; leaves large, downy; bunches of immense size, loose; berries large, ovate; flesh firm, juicy, pleasant, but with no special character. Will succeed in the Hamburgh house, but requires much space.

TREBBIANO is of unknown origin. The vine is of more than average vigour, but ripens well; the leaves are large, soft, downy, deeply toothed; bunches very large, boldly shouldered; berries medium, roundish, greenish-yellow changing to pale yellow; flesh firm, juicy, sweet, but not rich. Much grown for late supplies; it thrives with Hamburghs, but requires much room. Being handsome and keeping well it makes amends for lack of high quality,

WHITE FRONTIGNAN is an old variety of fine quality, but little known. The vine is of moderate growth, fruiting freely. Bunches medium, cylindrical; berries smallish, round, greenish-yellow, and when full ripe tinctured with russet; flesh firm, sweet, with a fine muscat flavour. An excellent white grape, that will thrive in a cool house or ground vinery, but is of better quality when grown in the Hamburgh house.

WHITE TOKAY is an old grape not generally known, but of excellent quality. The vine is a vigorous grower, fruiting freely; the leaves large, deeply toothed; bunches large, with handsome shoulders; berries large, ovate, greenish-white or clear pale amber; flesh firm, juicy, and when well ripened rich. Succeeds in the Hamburgh house, but ripens slowly.

THE CROWN LANDS OF NEW ZEALAND are obtaining increased attention, and to meet inquiries for information, the Minister of Lands has issued a "New Zealand Crown Lands Guide," which is published at Wellington, price one shilling. This will prove a serviceable handbook for the use of intending emigrants, and of course will have some value for the world at large in the great body of facts it contains illustrative of the progress of the colony.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

GREENHOUSE PLANTS in bloom include:—Abutilon Boule d'Or. A. Emperor, A. Royal scarlet, Aponogeton distachyon, Habrothamnus elegans; Lapageria rosea, Nerine Fothergilli, Tacsonia Van Volxemi, Vallota purpurea.

THE HOUSE.

WINDOW-BOXES should now be cleared and replenished with hardy evergreens, and in arranging them in the boxes over-crowding should be avoided. The subjects enumerated will be of equal service for potting for the decoration of the window-sill, and in no case should they be so large that they cannot be readily put in an eight-inch pot. Very frequently evergreens potted up for the purpose indicated are too large and exclude the light to an injurious extent from the apartments.

CONSERVATORY AND GREENHOUSE.

AZALEAS must now be put into the coolest places, to have a perfect rest before being again started into growth. Put a mark on those selected for the first bloom in order that they may have special attention. It is too early, however, to begin forcing any of them yet.

CAMELLIAS that have been out of doors must be housed. Do not allow any of them to become very dry, or the blooms will fall before they are fully expanded. Thin them of the medium-sized buds, leaving the forwardest and the smallest to give a long continuance of bloom.

BEDDING PLANTS lately housed must have water enough to prevent their flagging till they become somewhat established in their pots, but everything possible must be done to discourage growth. Avoid as far as possible all pruning in of soft shoots, and keep the plants as far as is convenient their full length; this will promote the perfect ripening of the lower parts.

ORANGE TREES to be put into winter quarters, and have a thorough cleansing, and the soil in the tubs or pots to be renewed on the surface with substantial compost.

STOVE AND ORCHARD HOUSE.

BEGONIAS for winter flowering deserve the little attention they require now. A nice free soil, containing some proportion of loam—say at least a third—and a warm moist position are their chief requisites. They never flower freely unless they first grow freely, in which they resemble nearly all other plants under the sun.

ORCHIDS generally are resting, but where growth is proceeding vigorously it must not be checked, or spot will be the result. Keep the house scrupulously clean, and be particularly careful in the use of the syringe and water-pot. Do not allow anything to go dust-dry; it is a most unnatural condition for any orchids. Cattleyas and Stanhopeas must have but small supplies of water now, and the temperature must be reduced.

FORCING AND FRUIT HOUSES.

FIGS that have ripened off their fruit must be allowed to go rather dry at the root, to promote a perfect ripening of the wood; but where the trees are still swelling their fruit they must have the aid of manure water.

GRAPES not yet ripe must be ripened off at once. It will not do to delay the process. Let them hang after they are ripe if you like, but do not allow them to ripen at a pace so slow that rotting will occur instead, and presently produce pulp instead of berries. Nor can any grapes be expected to ripen now without fire-heat and plenty of fresh air; give them both, and the result will be perfect finishing and a good flavour.

FLOWER GARDEN.

AURICULAS to go to winter quarters. Water sparingly and give plenty of air.

AZALEAS, KALMIAS, RHODODENDRONS, and other peat plants should be planted at once. They can be selected now with bloom-buds perfected, so that a display next season is ensured. Let there be no stint of proper stuff to plant them in; they are expensive in the first instance, and it is absurd to plant them in such a way that in a few years they are sure to perish.

CARNATIONS to be smoked if any fly is about them, and to have full exposure to all weathers for the present.

TULIP beds to be made ready for planting.

PANSIES to be protected against slugs, and the ground trod firm between them.

FRUIT GARDEN.

STRAWBERRIES.—To promote the maturation of the crowns in the open ground, let the plantations be carefully weeded, and all the runners removed, and old plants between the rows be spudded out as weeds.

WALL TREES will be the better for losing their leaves. But they must not be removed with violence. Pass over them occasionally a new pliable birch-broom, to brush off leaves that are loose at the joint. This will expose more and more of the wood to the hardening influence of the sun and atmosphere.

KITCHEN GARDEN AND FRAME GROUND.

FORCING to be prepared for according to the demand for asparagus, sea-kale, rhubarb, &c. Take up all the roots that are to be used in the first batch, and lay them in by the heels; the roots force better if taken up some little while beforehand, especially for the earlier supplies, for which the plants are still in a somewhat active state, and needing to be artificially rested. This method answers also to afford an opportunity for trenching the ground, as every piece cleared of roots can be deeply stirred, manured, left a little to sweeten and pulverize, and be planted if necessary with roots for succession crops.

CAULIFLOWER plants to be put out under hand-lights and in frames; some to be potted for early growth. None of these must be far from the glass, however they are kept, and the more often the glass is taken off them the better.

MUSHROOM BEDS to be spawned. It will be loss of time to hurry the operation by inserting the spawn while the heat is too high. The safe temperature is 60 deg. to 70 deg.; if the bed is some degrees above that wait a few days without disturbing it, for any disturbance will give a fresh start to the fermentation and run it up again to a high pitch; and besides the more solid the bed the better, so long as it is not quite as hard as a brick. It is a pity this delicious esculent is not more commonly grown. Every amateur should have a mushroom bed; the whole culture is nearly as simple and certain as growing mustard and cress.

Spinach.—Thinnings of the winter crop will make very acceptable dishes on the table now. Early sown spinach is rather too luxuriant this season; probably the latest sown will be the best in the spring.

VILLA FARM.

Excepting in a few districts the gathering of honey has been over for some time past, and the wise apiarian has harvested the whole of the produce to be taken up this season. But there are beekeepers, by no means few in number, who delay the taking of honey until quite late in the season, under the impression that the bees continue to add to their store so long as the weather remains open enough for them to leave the hives. But this is a mistake which must again and again be pointed out. Excepting in districts in which the bees have had access to moors, very little honey has been gathered during the past six weeks or so, and in most cases where the honey has not been taken the hives have lost considerably in weight. There should certainly be no longer a delay in harvesting the honey, whether the bees have been on the moors or not, for it cannot now be left without considerable loss. In the case of the Woodbury and other bar frames it will be a simple matter to take a part or the whole of the combs as may be thought desirable, but in dealing with the old-fashioned skeps the exercise of both care and judgment is necessary. Probably the best course is to drive the bees from the hives from which the honey is to be taken into empty hives, and there unite them with stocks occupying hives furnished with combs in good condition. Then feed liberally for a short time to provide an abundant supply of food for the winter season.

Notes of Observation.

ANNUALS AMONG ROSES.

With a view to brightening up the rose beds and borders during the months of August and September, when there are but a few blooms of roses to be seen, we planted and sowed various annuals amongst them during April and May, and the result is most satisfactory. The beds, which have hitherto been devoted to roses entirely, have been made to look quite gay, and will continue so for some time by the present appearances. This extra gaiety in the garden has been obtained without any apparent interference with the welfare of the roses, as far as can be judged at present by the condition of the plants. Never did the roses make so much growth in the autumn, and of such a promising kind; not a sign of mildew is anywhere to be seen; the foliage is healthy and strong, and will be much assisted by the extra bright weather at present experienced. Around the edges of small beds, where the roses are thickly growing, we planted dwarf asters, one colour only in each bed. In small, circular shaped beds, occupied by China and moss roses the asters were planted over the surface among the roses, also dwarf kinds to contrast as well as possible with the roses; for instance, along with Cramoisie superieure we planted dwarf white asters, and with white moss roses were put out dwarf crimson asters. Of these I had a capital selection; no other sorts that I am acquainted with can equal these for dwarfness of growth and freedom in flowering; so well do they look that I must double their numbers next season. To give greater variety, the Victoria strain in mixed colours is planted around a large bed, which adds considerably to the appearance of the bed itself.

In the centre of a large bed which is occupied with half-standard roses Shirley poppies were sown, and have grown as high as the stems of the rose-trees, and for a long time past have looked very pretty, the flowers of the poppies brightening up that part of the bed considerably. In another long border, wholly occupied with dwarf roses, and which are planted rather wide apart, double scarlet and white poppies as well as Shirley ones were sown in batches, keeping them separate in colour and thin also, which reduces their height of growth. When allowed to grow thickly together they become drawn up weakly, and are too tall to be useful. Purple and white candytuft, Phlox Drummondi, Leptosyne maritima, Nemesia bicolor, and several other things were sown and planted among the roses in different parts of the garden, all of which have assisted in making those parts gay at a time when there otherwise would have been nothing but dulness, and, more than this, vast numbers of flowers have been available for cutting from for the vases, &c. Lilium auratum, Hyacinthus candicans, Gladiolus Brenchleyensis, and a host of other things might be used for this purpose. Mignonette, where a dwarf subject is required, is capital; the rich soil of the rose beds just suits the mignonette, producing much finer spikes of blooms, and consequently more perfume than from small blossoms, it being mainly for its fragrance that mignonette is grown. Such plants as I have named are but short-lived, and do not rob the soil very much to the detriment of the rose trees. The great point to observe is not to overdo the sowing and planting of the auxiliary subjects. So long as there is space between these plants and the rose bushes no harm can be done; but by injudicious management the attempt to beautify a part of the garden would become a decided failure. E. M.

EPILOBIUM ANGUSTIFOLIUM.

I can corroborate all you say (page 527) on the merits of this willow-herb, and go further still in praise of it. After the flowers are past and the seed pods filled, they begin to burst, covering their whole length with white woolly-looking threads, the covering of the seeds. This appears to grow until the whole length of the flower spike is a mass of fluffy-looking down, which, when in a mass in the shrubbery, and happens to be backed up with some shrubs of a dark colour and evergreen, renders this perennial as interesting a subject then as when in full bloom. In a cut state, spikes two feet long, arranged loosely in a tall vase, is the way this form and the white one look the best. I prefer the latter for cutting. When once established in any position it is very difficult indeed to get rid of the roots if required, as every piece, no matter how small, will grow and very quickly cover a large piece of ground. E. M.

A MAN TRAP IN THE GARDEN.

If any of your readers have the misfortune of living in a neighbourhood infested with night depredators of gardens, who steal fruit or flowers or poultry, I advise them to do as my friend has done: set up a man trap. The friend to whom I allude has for several years been much annoyed and has suffered loss through the thieves who go about at night robbing gardens of their choicest fruit and flowers. A notice board placed in a conspicuous position near the entrance gate warning people that spring guns and man traps were set in the grounds at night had no effect. The robbers came all the same; choice peaches on walls vanished just as they were on the point of ripening, while in the winter newly planted Standard Rose trees disappeared in a strange sort of way. Things got to such a pass at last that my friend became desperate. I believe he would have done something serious if he had found a stranger on the place at any time after dark. Fearing that some trouble would occur, I advised him to carry out what the notice board actually suggested, that the board should no longer be misleading, but point to actual facts, so that those who ventured inside the grounds could prove for themselves whether the notice was true or not. In fact, I advised him to have a man trap made, and during the day suspend it in the air by the side of the notice board. I am glad to say it has had the desired effect, not a purloining creature has visited the garden since, and no wonder; a more ghastly instrument of torture no one could desire to see. The trap is an enlarged form of the ordinary gin or trap used for catching rabbits. It is about five feet long and three feet wide at the widest part. Every part is made thoroughly strong, with a spring of sufficient force that no ordinary man could release himself once a leg or an arm got inside its frightful jaws. Whether it is lawful or not to set up such an instrument of torture to protect our gardens, neither I nor my friend have stopped to inquire, nor does it matter much. In fact I should not feel any alarm if I caught one of the midnight robbers in one of these traps, even if my doing so was placed before an English jury, as I believe the majority of them would commend the action.

I ought to have mentioned that the instrument is taken down in the afternoon, presumably for being placed in some part of the garden during the night. But it is not often set up now. The fact that passers by the entrance appear to notice its removal in the afternoon to some other position leaves the would-be robbers in doubt as to where it might be during the night. So they fight shy of making more than a passing acquaintance of its action. C. J.

[The possible verdict of a jury is not the vital point raised by the letter of our correspondent. A jury must act in conformity with the law, and the judge never fails to state the legal case when the jury appear to need enlightenment. To place a man trap where it may possibly trap a man is illegal, and therefore if the facts were substantiated a jury would be bound to convict. The exhibition of the trap beside the notice is no infringement of the law, but to place the trap for action would, in any case, be a misdemeanour, and in an extreme case might result in a verdict of manslaughter.—Ed.]

APPLES FALLING EARLY FROM THE TREES.

I do not know if the complaint is general that many sorts of apples are falling this season earlier than usual. Here in the West it is rather wide-spread, both in orchards and gardens, and no one seems able to assign a reason for it. By the second week in September such sorts as King of the Pippins, Blenheim Orange, and Warner's King, began to fall rapidly. Yet there is nothing in the appearance of the fallen fruit to indicate that they are ready for gathering. Although sound and without a blemish the fruit is certainly not ripe. The form of the trees makes no difference, the fruit comes down as freely from my pyramids as it does from my friends' standards. If the fruit is cut into halves there is not the least signs of any maggot in the core or any other insect. What makes the case the more remarkable, there has been no wind to cause the fruit to fall. One begins to wonder what the effect will be should the equinoctial gales set in before the proper time arrives to get in the fruit that may be left. J. C. C.

OUTDOOR PEACHES.

The present is a capital time to assist the trees in preparing them to give us a crop of fruit next year. Early and mid-season varieties have succeeded extra well this season here. The last fortnight's hot sun has done much to colour up and ripen the fruit, which is really of good flavour. By timely attention to those trees from which the crop has been gathered in the matter of a judicious thinning of the branches, cutting out those which are becoming bare, and retaining a stock of well-ripened, moderately vigorous young shoots, something can be done towards putting the trees into a bearing condition for next season. Far better is it to go over the trees now in the matter of pruning, removing such shoots as will of necessity be required to be taken out in the spring, it being a great mistake to crowd the trees with wood, and quite useless is it to leave that until the spring, which can quite as well be taken out now, thereby allowing more space for that remaining to ripen the buds. A thorough soaking of clear water at the roots will also prove an advantage. Any roots that are washed bare should be covered over with some turfy loam and wood ashes, or a thin mulching of decomposed hotbed manure of a light nature will be of service in encouraging root production. By no means disturb the roots with a fork or any other tool, with the idea of digging the border, for a width of four feet from the wall. For the last seven years the soil about our peach trees has not been molested in the way of digging, but it gets a lot of trampling upon not only through the attention required for the peach trees themselves all the year round, but in front of the trees is a wide herbaceous border which needs a good deal of attention in the matter of staking, and such like. Much of this work has to be done from the back of the border, which is really the peach border; consequently the soil is extra firm, being trodden upon in all sorts of weather, and being a very stiff soil it runs together pretty solid. Any-

how the treatment the peaches receive seems to agree with them very well. About every two years the plants in the herbaceous border are replanted, the whole being taken up, the border trenched two feet deep, which cuts all peach tree roots off in a line of the wall at the distance named, and which induces more fibrous roots to be made by the fruit trees than would otherwise be done, which I regard as a distinct gain. In bright weather such as we are now experiencing the foliage should be vigorously syringed now and again, which will do much to dislodge insects that have sought a comfortable site for the winter upon the peach trees. E. M.

Calls at Nurseries.

MESSRS. GEORGE BUNYARD AND CO.'S NURSERIES, BARMING, NEAR MAIDSTONE.

ALTHOUGH the flag hangs out at the "Old Nurseries," Maidstone, the main portion of Messrs. Bunyard's army is encamped on the heights of Barming, a few miles distant, and there it is engaged in a continuous campaign. The Barming Nurseries lie high and dry in a comfortable climate and on a good loamy soil, and we see amongst the fruit trees, which number in all about half a million, free, healthy growth, and a very considerable production of fruit, even on young nursery trees that have not completed their education. All possible subjects in the way of trees and shrubs appropriate to the park, garden, and orchard, are grown here, and we may revel amongst thousands of Spanish chestnuts of a nice size for planting in new woodlands, or we may find consolation for the disappointments of life in beholding how young apple trees show exhibition samples of fruit on trees in the second year from the graft, some of those carrying from six to a dozen apples suitable to make a pile on an exhibition table. It is quite easy to talk of half a million young trees, and to add a few hundreds of thousands of odd things that fill great spaces; but it is less easy to walk over them or through them or round about them, and the legs are not so long as the figures when it comes to practical comparison of things that can be surveyed in words with things that one may endeavour to survey as matters of fact. But it is a great advantage to be enabled to see nursery work as it is carried on in such a place as this where experiments are always in hand, but the true commercial test is applied finally that the end may be the production of a serviceable article, for anything short of that is uncommercial, and tends in the way that is opposite to prosperity.

One of the facts that give character to the place is the free, healthy growth visible on every hand. Apple trees show leaves that are often as large as the palm of a man's hand, which is certainly beyond the average of growth prevailing generally. The wood and the fruit correspond; there is nothing gross in either, but perfect maturation with the highest degree of vigour—there is an outcry occasionally made against the huge samples of fruit that certain exhibitors place upon the tables, and people talk about "forcing" and "extravagant manuring" and other such methods of promoting what is called "size versus quality." There may be seen in the great nursery quarters here fruit of every kind in its season presenting on young trees all the charac teristics of exhibition quality, but naturally produced without any aid from manure, or even from thinning, because in such a great collection, to give special attention to the production of samples of things of only ordinary importance would be simply impossible. In a plantation of, say, ten thousand apples or pears who would be so fatuous as to talk of watering pots or thinning? No one certainly, who has any idea of business or of gardening. One example may be given for the advantage of persons who, when they see something better than common-place productions, jump to the conclusion that a "trick" has been practised. In walking, and sometimes riding, through the great brakes of young fruit, the writer noticed endless examples of such as may be termed "sample" fruit on trees ranging from the size of an ordinary umbrella to the size of an [ordinary man, and for amusement solely took forcible possession of one fruit of Grenadier apple, one of half a dozen holding near to the stem of a tree in its second year of existence. This fruit was found to girth 13½ inches and to weigh 13 ounces, being perfect in form, and with a skin highly polished by the industrious hands of Dame Nature. It would have been a mere question of muscular exertion to fill a waggon with such from the little trees, but only one was wanted, for one is as good as fifty when a general view of such a matter suffices. To the people who are in haste to talk about the adoption of "artificial" means to produce "abnormal" results, the demonstration of the simplicity and naturalness of the whole affair and the impossibility of anything else, will, of course, be ready to rush to the other extreme and say that the results simply prove the peculiarly favourable nature of the soil and the climate. Now, to a certain extent, they would be right in that, for the soil here is certainly good, and if the climate is by no means perfect—for spring frosts play tricks here as elsewhere, and the rainfall does not reach a figure favourable to grossness—yet the climate is one of the best in England, the summer heat being softened by breezes from the sea, and the constant movement of the air in winter being generally a good defence against damp and fog. But let it not be supposed that soil and climate will do all that needs to be done either in the production of trees or of fruit. The truth is that within a certain range consistent with the limits of the business, the highest talent, the ripest experience, and the most unflinching industry are brought to bear on this great outdoor manufactory. The manner in which the ground is kept clean by the plough that a pony or donkey draws through the rows of trees mile after mile, chopping up the weeds and stirring the surface, tells a tale of growth and maturation. Success depends on small things no less than on large things, and some tasks of importance are regulated as to time with the nicest precision, the almanac and the barometer between them, giving the signal when to begin and when to stop. At the time of the visit by the present reporter three weeks since, the budding of apples was in progress, the buds being inserted low down and close over the roots, to give the purchaser the greatest possible amount of tree with the smallest possible amount of stock; and trees thus made may be formed to any model afterwards, whether bushes, pyramids, espaliers, or standards, with allowances, of course, for the natural habits of the variety.

As apples have button-holed us, a few further observations occur. First then, in this year of a small fruit crop, apples and pears abound in this great nursery. In the next place, the paradise stock in the way of fruitfulness is a conspicuous success, while the crab stock is a failure. This remark need not have any general application; the crab stock has its uses and is of great value and absolutely necessary. But in this particular season trees on the crab show no fruit, while trees on the paradise through not universally fruitful, are generally productive, and a considerable number of varieties are bearing as freely as in one of the best years for fruit. Again, there is a note of observation to be made on a new style of tree of which considerable numbers have been produced. It may be described as a standard with a fruitful stem, for the stem is furnished with short growth from the ground line upwards to the point where the head branches out. There are lots of fruit on these furnished stems, but as a matter of course, as the head spreads the side spurs that clothe the stem will have to be cut away, and the prudent cultivator will remove them a few at a time, as their behaviour may indicate that they intend to give up competing with the growth that overshadows them. The object of forming trees of this fashion is to enable the planter of standards to gather fruit at once from side spurs, and ensure an early return. There can be no doubt the new style will show considerable advantage. And yet, again, to complete this budget of new notions, the tantalizing Blenheim Orange has been coaxed into early fruitfulness. There are some hundreds of young trees in the form of free bushes worked close over the collar of a stock that has been selected for the purpose, and these come into bearing within seven years, so that the man who plants Blenheims may now reasonably expect to see the fruit of his industry, that is, if he is not already too old to see anything. Yet once more, the practice of summer pinching is now entirely given up here. Experience told against it as a pernicious practice that spoilt good growth to put in its place soft growth that the winter might kill, and that, if spared, would give no summer fruit.

Amongst the apples that are particularly fruitful this year are Bramley's Seedling, Bismarck, Cellini, Cox's Pomona, Cox's Orange, Duchess of Oldenburgh, Ecklinville, Gascoigne's Scarlet, Duchess's Favourite, (making an immense show with its great clusters of highly coloured fruit), Grenadier, New Hawthornden, Irish Peach, Lane's Prince Albert, Lord Grosvenor (immense foliage and always healthy, far better than Lord Suffield); Mere de Menage, King of the Pippins, Potts' Seedling, School-master, Stirling Castle, The Queen, Worcester Pearmain.

Ribston Pippin may yet be restored to our gardens, for it is bound to prosper on the paradise, and in a good climate with a generous soil makes a liberal return as an espalier tree.

Lord Suffield is like a comet that shines only at certain seasons, and in the intervals is unhappily concealed from view. The concealing agency is mildew, for it is more subject to this pest than any apple grown, and prudent planters will allow Lord Grosvenor to do duty for it in places where it has not given satisfaction.

Pears on quince stocks have made a good growth. Pears on pear stocks have also made a sufficiency of useful wood, but have shown but little fruit. The dwarfing stocks do certainly make an abundance of surface roots, and probably in an unfavourable autumn ripen their wood more perfectly than trees on free stocks. But it is difficult to generalize on exceptional facts, although in a case of this kind sound generalizing is likely to prove of great practical value. That famous market pear that the amateur of pears does not doat upon, Beurre Clairgeau, is a great cropper this year and the fruit is handsome. The delicious Bon Chretien or Bartlett, has given a great crop, and the trees on the quince are marvels of fertility. The delicious Belle Julie, though not much to look at, shows a good crop that will soon be ready to give delight at the table. Doyenne du Comice, one of the finest autumn pears we possess, is giving a grand crop on the quince. It is one of the most desirable of pears for garden cultivation as it can be grown in any form, and makes a profitable wall tree. Durondeau is one of the pears of 1890, and, while good enough for anyone, it will prosper almost anywhere. The pear stock suits it for large work and the quince for all ordinary purposes. There is as much money in this pear as in any, because it bears freely and is in perfection soon after Christmas, when dessert pears are much wanted. Fertility is worthy of its name, and though second-rate it is early and makes a capital market fruit. Jargonelle has been fine, and there is some virtue in the old form of free-growing standards, for they bear prodigiously. You may see Jargonelle cured of its wild ways here by being seated on the quince, making a profitable smallish tree. Josephine de Malines is a grand pear for use in spring, shows a good crop, and its companion, Easter Beurre, is not without sign of usefulness. This, however, is less hardy than Josephine, and in many places needs a wall. Pitmaston Duchess is grand and may even be talked of as a discovery. It needs a pear soil and a pear climate to show its capabilites, and in favourable circumstances it is the most profitable pear for market growing. A grower in the district has 300 bushels this year from bush trees. Certainly it should stand before Chaumontel everywhere, except in the few places out of the Channel Isles, where that vexatious variety has proved itself worthy of attention.

The collection of cherries here is one of the most extensive, and when the fruit is gone the size of the leaves tells of a cherry climate. But as there is no hardier fruit than the cherry, the soil is the matter of first importance. Nor are soil and climate the only matters that demand consideration, for birds of all kinds are so partial to cherries, that it is well nigh impossible in many places to obtain ripe fruit, because, if it is not gathered unripe it will never more be seen. Orchard cherries grown for the cook and the fruit factory are not wanted in gardens, and the sweet cherries that rank amongst the most delicious and wholesome fruits that can be eaten, can only be secured in perfection with the aid of a cherryhouse, and then the cherry is in a world of its own, and to frail humanity that cherry world is a land of delight. Messrs. Bunyard's cherry, peach, pear, and fig houses are spacious span roofed structures, admitting light from all sides, with no roof ventilation, but abundant side ventilation and a service of hot water just sufficient to exclude spring frosts. The business carried on in these houses is not exactly of the common-place pattern. Peach and nectarine trees suitable to furnish a wall off-hand are here trained in double rows, the trees reaching to the roof, and every tree is proved as to correctness of label, and every quality of growth and condition before it is suffered to leave the place. People can buy maiden trees and trees of all ages and sizes and shapes for all imaginable purposes, but it is not usual for wall trees fully made with stems half as thick as a man's wrist and heads spread out over many square yards to be proved under glass, and prepared for final planting with all the care that can be imagined in the preparation of specimens. But here they are, and they lift with roots one could rave about, were roots of any kind worth a rave, or the sudden furnishing of a peach wall with trees to clothe it a matter of very great concern to the people who square themselves to the practice, and reckon it amongst their common-places.

The houses here pay their rent in fruit as well as in trees; the stone fruits have been a great crop, and the figs are now amongst the wonders of Barming.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, SEPTEMBER 23 AND 24.

CONFERENCE ON GRAPES AND DAHLIAS.

THE conference on grapes and dahlias organized by the Royal Horticultural Society was held in the Chiswick Gardens on Tuesday and Wednesday, and although not so successful in some respects as could have been wished, was by no means wanting in interest and usefulness. Dahlias were contributed in immense numbers, and arranged in the long tent which, as usual, was erected upon the lawn; they produced an interesting and highly attractive display. Grapes on the other hand were sparingly contributed, and it may be mentioned as a point of some interest that of the twenty members of the committee, two or three only exhibited. The Floral, Fruit, and Orchid Committees met on the first day, and the contributions to the meetings of the first two committees materially enhanced the attractions of the gathering.

GRAPES.

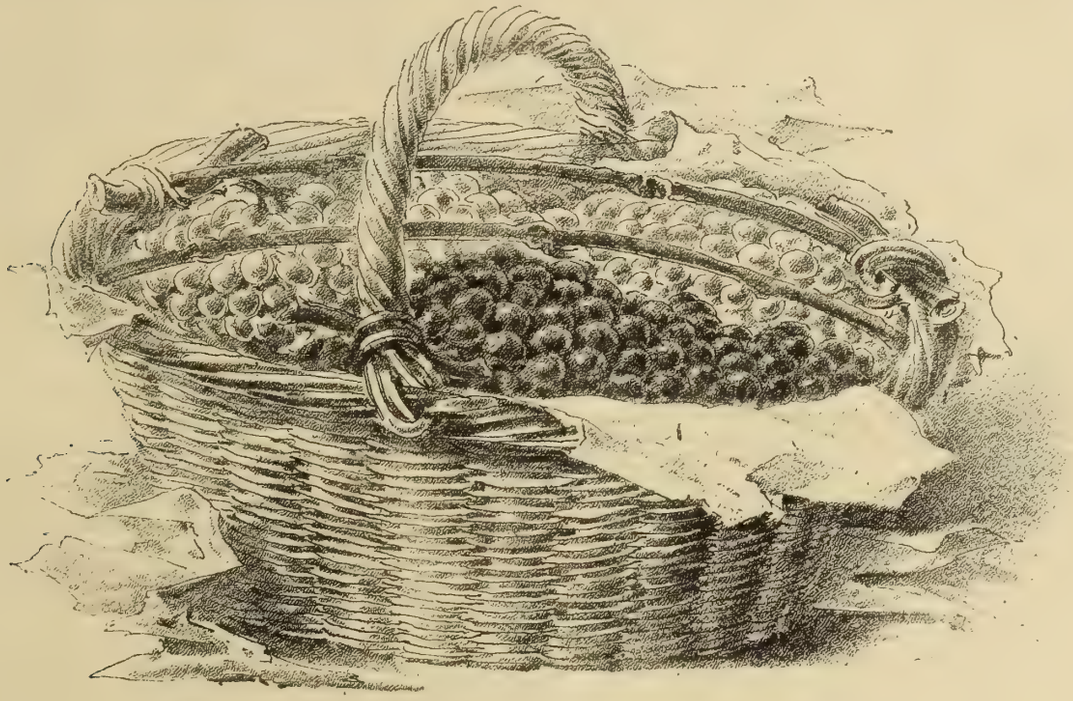
The grapes were arranged in the large vinery, in which the meetings for the reading and discussion of the papers on these fruits and dahlias were held. The most important of the collections were those from W. Roupell, Esq., Harvey Lodge, Roupell Park, S.W.; Mr. J. Wallis, Keele Hall, Newcastle, Staffordshire; and the society's gardens, all of which were remarkable for their high quality and comprehensive character.

Mr. Roupell, who was awarded the silver Banksian medal, staged nearly thirty varieties, amongst which were well-finished clusters of the Frontignans and other kinds, more remarkable for their high flavour than for the large size of either bunch or berry. The white varieties included Royal Muscadine, Duke of Buccleuch, very finely coloured; Chasselas Vibert; General Della Marmora, a medium-sized fruit of good appearance, the berries oval and greenish white; Diamant Traube, an excellent Hungarian grape belonging to the Sweetwater section, for which the exhibitor was awarded a certificate of tion, in which were represented Lady Downes, Golden Queen (exceptionally good), Mrs. Pince, Gros Colmar, Alicante, San Antoni (a late black variety of good appearance), Gros Maroc (which, it may be mentioned, was introduced by the firm), Ryton Muscat (a distinct amber coloured variety, the bunches long and tapering, the berries of medium size and oval in form), Madresfield Court, Muscat of Alexandria, Mrs. Pearson, Early Saumur (a small Sweetwater-like grape), Early Silver Frontignan (a small grape, greenish white in colour), Tokay Frontignan (a distinct variety, the clusters small, and the berries of a greenish yellow hue), Esperione, Buckland Sweetwater, Royal Muscadine, and Black Hamburgh.

The collection from the society's garden, staged by Mr. Barron, was remarkable for its comprehensiveness and high quality. The varieties included Black Hamburgh, Madresfield Court, Black Prince, Gros Maroc, Royal Ascot, Dutch Hamburgh, West's St. Peters, Muscat Hamburgh (exceptionally well coloured), Mrs. Prince's Muscat, Gros Colmar, Lady Downes, Alicante, Barbarossa, Alnwick Seedling, Black Monukka (a distinct grape, the bunches large and the berries small and oval), Muscat of Alexandria, Royal Muscadine, Foster's Seedling, Raisin de Calabre, Golden Hamburgh, and Buckland Sweetwater. Messrs. J. Peed and Son, the Nurseries, Norwood Road, S.W., presented a collection including large, finely-finished clusters of Alicante, Gros Maroc, Trebbiano, Golden Queen, and White Syrian. Mr. T. Miles, gardener to Lady Hutt, Appleby Towers, Ryde, Isle of Wight, exhibited large, well-finished clusters of his new grape, Appleby Towers, which was certificated last year.

The chief exhibitor of grapes grown without the aid of artificial heat was Mr. J. Clarke, Albion Nursery, Hale Road, Farnham, who had a collection of great excellence. Especially good were the clusters of Madresfield Court, Lady Downes, Alnwick Seedling, Gros Colmar, and Gros Maroc. Mr. Clarke also exhibited in the class for grapes of high flavour well finished examples of Muscat of Alexandria, Madresfield Court, Gros Maroc, and other well-known kinds.

Two classes were provided for examples of packing grapes, one for grapes packed for market and sent by rail, and the other for grapes for private use



GRAPES AS PACKED IN BASKET, with a lining of paper and wadding, by Mr. STEPHEN CASTLE.

the first class last year; Mrs. Pearson, well finished and of the rich amber colour, indicative of perfect maturity; Muscat of Hungary, a distinct grape with small round berries and of but little value, requiring a high temperature and more sunlight than grapes usually obtain in this country; Dr. Hogg, a small but delicious grape; Troveren Frontignan, greenish yellow, tinted rosy red; Early Golden Frontignan, an amber-coloured grape of good appearance and high flavour; Chasselas Musque le Vrai, a small, green, unattractive grape; Primavis, greenish yellow, tinted red; Trebbiano and Canon Hall Muscat, the clusters of the last-named not over large but exceptionally well finished. The black varieties comprised Gros Colmar, Alnwick Seedling, Lady Downes Seedling, Black Frontignan, Purple Constantine, Strawberry Grape, a distinct kind, with small round berries, dusky black, with powerful aroma and distinct strawberry flavour; and Raspberry Grape, a distinct variety, with small red berry; and Madresfield Court.

Mr. J. Wallis exhibited a collection comprising medium-sized and well-finished clusters of Black Hamburgh, Barbarossa, Gros Maroc, Black Prince—now seldom seen on the exhibition stage in such good condition—Mrs. Pince, Muscat Champion, Mrs. Pearson, Muscat of Alexandria, Golden Queen, Lady Downes, Alnwick Seedling, Gros Colmar, Alicante, West's St. Peters, Trebbiano, and Old Tokay. Mr. G. Wythes, Sion House Gardens, Brentford, sent good dishes of Muscat of Alexandria and Bowood Muscat, the bunches large, with fine berry, and of good colour. Mr. J. Willard, Holly Lodge, Highgate, staged baskets of Stillward's Sweetwater and West's St Peters, two fine old grapes, of which but little is now heard. In both instances the clusters were of large size and superbly finished. Mr. A. Greenfield, 62, Park Street, Stoke Newington, exhibited Gros Colmar, Grosse Kölner, a black grape with medium-sized berries, and Dodrelabe, a black variety, with round berries of fine colour, and carrying a heavy bloom. Mr. A. G. Hookings, gardener to S. W. Grayston, Esq., Hurstside, West Moulsey, presented a small but extremely fine collection, the bunches large and superbly finished. The varieties included Mrs. Pearson, Alicante, Foster's Seedling, Gros Maroc, and Gros Colmar, the last named being represented by four superb clusters.

Messrs. T. Rivers and Son, Sawbridgeworth, exhibited an excellent collec- to be sent by post or rail. In the second of the two classes a silver-gilt cup was offered for the best example of packing, and as proved by the number of exhibitors, the competition excited much interest amongst cultivators. There were about twenty entries, and the cup was awarded to Mr. Dawes, gardener to Hon. Mrs. Ingram, Temple Newsam, Leeds. The grapes from Mr. Dawes were packed in an oblong box, eight or nine inches in depth, and was lined with dry moss and soft white paper, and reached their destination in the most perfect condition. In packing the grapes the bottom and sides were lined with moss and soft white paper, and the bunches then carefully arranged and fixed firmly in position by additional moss being packed between the paper and wood-work. The grapes had soft paper and a layer of moss placed over them previous to the lid being fastened down. Mr. J. Hudson sent grapes packed in a small wicker basket, and on being opened were found to be in such excellent condition as to enable him to press Mr. Dawes closely for the first place. Baskets are in some respects preferable to boxes, for whilst bunches of all sizes can be readily packed in them, considerable care has to be taken in selecting the bunches when boxes are to be used. Mr. Stephen Castle, manager to Messrs. Quertier and Co., Fordingbridge, sent two cross-handled baskets, in each of which the grapes were in as good a condition as when cut from the tree. Both in these and in Mr. Hudson's baskets the sides were lined with some soft material and paper, and the bunches were securely fastened to the edge of the basket by the stalk. In Mr. Hudson's basket the bunches touched each other on the inner side, but Mr. Castle so arranged the bunches that there was a space of half-an-inch or so between the row of bunches on either side. Mr. C. Chapman, Chislehurst, sent a box of grapes in which the bunches were securely fixed to sliding boards in a slanting direction. An example of the form of packing adopted by the Society was exhibited, and in this the grapes were packed in a box padded with wood wool.

On Wednesday Mr. George Munro, Covent Garden Market, exhibited a large collection comprising upwards of forty baskets to illustrate the production and packing of grapes for market. About twenty of the baskets had been received from the Channel Islands, and these contained from 9lb. to 10½ lb. each, and were fitted with cross handles. The bunches were in all cases packed

tightly in a more or less vertical position, and in a few instances only did the berries show any trace of rubbing. The varieties represented by the Channel Islands produce were Alicante, Muscat of Alexandria, Lady Downes, Black Hamburgh, Gros Maroc, and Gros Colmar, and the chief growers were Mr. Poat, Mr. J. L. Mansell, and Mr. C. Bichard. In the collection were ten cross-handled baskets containing from 11lb. to 12lb. of grapes grown by Messrs. Parrott Brothers, Normandy Park. The varieties were Gros Colmar, Alicante, Muscat of Alexandria, Foster's Seedling and Buckland Sweetwater, and the whole of the produce was of high quality and without the slightest trace of rubbing. Fourteen baskets of grapes grown by Mr. Sweet, of Whetstone, and Mr. Peter McKay, Finchley, and forming part of Mr. Munro's collection were interesting as showing the method of packing adopted when the fruit is sent to market by road. The baskets used are about two feet in length, eighteen inches in width, and four inches in depth, and hold from 13lb. to 15lb each. The bunches are carefully arranged on their sides, with the stalks of the bunches round the sides outwards, and the baskets are then put into shallow hampers just large enough to receive them. The fruit was of exceptionally high quality, and free from any signs of rubbing. The varieties were chiefly Alicante and Muscat of Alexandria.

Silver Banksian medals were awarded to Messrs. T. Rivers and Son, Mr. W. Roupell, Mr. Hookings, Mr. Sweet, Mr. St. Clair, and Messrs. Parrott Brothers for collections of grapes.

Certificates of merit were granted as under: to Mr. Stephen Castle, Mr. C. J. Waite, Mr. Hudson and Mr. Chapman for examples of packing; to Mr. Roupell for Grizzly Frontignan, Canon Hall Muscat, and General della Marmora; to Mr. Hookings for Gros Colmar and Gros Maroc; to Mr. G. Wythes for Bowood Muscat; to the Society for Black Monukka, Muscat Hamburgh, and Alnwick Seedling; to Mr. J. Louden for Muscat Champion, Alicante, and Black Hamburgh; to Mr. J. Wallis, for collection; and to Mr. H. Balderson for Black Monukka.

DAHLIAS.

Although no prizes were offered, the contributions to the dahlia classes were so numerous that the blooms staged produced a large and highly attractive display. Show, fancy, decorative or cactus, pompon, and single varieties were all well represented, with the result that the exhibition was of exceptional interest to cultivators and others who devote special attention to dahlias.

Mr. C. Turner, Slough, staged an immense collection, which was specially strong in show, fancy, and pompon varieties, all of which were represented by blooms in a high state of development. The show varieties of special excellence comprised Mr. Glasscock, Thomas Goodwin, Hope, Mrs. Gladstone, Buttercup, Mrs. David Saunders, Queen of the Belgians, Shirley Hibberd, Mrs. Langtry, Clara, Eclipse, Burgundy, Thomas Hobbs, Miss Cannell, Mrs. Shirley Hibberd, Herbert Turner, Picotee, Sunbeam, Joseph Ashby, Colonist, Joseph Green, Imperial, and J. T. West. The fancy varieties included Rebecca, Mrs. N. Halls, General Gordon, John Lamont, Hugh Austin, Gaiety, George Barnes, Pelican, Rev. J. B. M. Camm, Chorister, Dorothy, and Mrs. Saunders. The pompon varieties were staged with much taste, and formed an important feature in the collection. The finest of the pompons were Amelia Barber, Isabel, Juliette, Darkness, Gem, Favourite, Mabel, W. Carlisle, Whisper, Eccentric, and Fairy Tales. Chief amongst the decorative varieties were Panthea, Henry Patrick, Professor Baldwin, Beauty of Brentwood, Mrs. Hawkins, and Honoria.

Messrs. Keynes, Williams, and Co., Salisbury, exhibited nearly one hundred and fifty blooms of show and fancy varieties, and large collections of pompon and decorative varieties. Chief amongst the show varieties were Herbert Turner, Crimson Globe, one of the finest flowers of its colour, Colonist, Clara, King of the Crimsons, Glowworm, James Vick, Pelican, Diadem, Maud Fellowes, James Huntley, Mr. Spofforth, Seraph, Mrs. Jefford, Shirley Hibberd, Mrs. Gladstone, and Triumphant. Conspicuous amongst the pompons were Phœbe, a new flower of high quality; E. F. Junker, Janet, Grace, Red Indian, Hector, and Golden Gem. The most attractive of the numerous decorative varieties staged were Lady Brassey, Panthea, Juarezi, Honoria, a beautiful variety with large flowers of a bright canary yellow colour. Messrs. J. Cheal and Sons, Crawley, had a very attractive collection in which the single varieties formed an important part. The following comprise some of the best of the singles represented in the collection, namely, Eclipse, Guliema, Northern Star, Duchess of Fife, new flowers of the current year; Lady Montefiore, Victoria, Gertrude, Miss Ramsbottom, Snowflake, Sunningdale White, Marion Hood, Miss Gordon, Cetewayo, Formosa, Hugo, Florrie Fisher, Mr. Kennett, Miss Henshaw, and Queen of Singles. Remarkably good also were the decorative varieties, of which W. Darville, Mrs. G. Reid, Lady Brassey, Robert Maher, Mrs. Douglas, General Gordon, and W. Rayner were made note of for their distinct character and attractive colouring.

Messrs. H. Cannell and Sons, Swanley, sent a thoroughly representative collection comprising nearly four hundred and fifty varieties and including all sections. The decorative varieties, set up in large bouquets and including a considerable proportion of the beautiful novelties introduced by the firm presented an effective appearance. Specially deserving of mention are Glory of Swanley, Annie Goddard, Sidney Hollins, Maid of Kent, Millie Scupham, Yellow A. W. Tait one of the finest of the decorative kinds with yellow flowers; Mrs. Hunt, Mrs H. Carter, W. Darville, Panthea, Mrs. J. Douglas, and Amphion. Messrs. J. Laing and Sons, Forest Hill, staged a collectionremarkable alike for its extent, the high quality of the blooms, and the taste shown in the arrangement. The collection included all the sections, the single pompons and decorative varieties being exceptionally good. Messrs. Paul and Son, Cheshunt, contributed a large and thoroughly representative collection which was tastefully arranged and presented a singularly effective appearance.

One of the most interesting of the contributions was the collection from Mr. A. Rawlings, Old Church, Romford, consisting of varieties raised at the Old Church Nursery. From three to twelve finely developed blooms were staged of each variety, and the collection as representing the work of the Messrs. Rawlings in the improvement of the show and fancy varieties obtained much attention. The varieties shown were J. T. West, Shirley Hibberd, Mrs. G. Rawlings, John Henshaw, Clara, R. T. Rawlings, W. Rawlings, T. J. Saltmarsh, Mr. Glasscock, Henry Eckford, T. S. Ware, Mrs. D. Saunders, Queen of the Belgians, George Rawlings, Frank Pearce, Mr. G. Harris, Harry Turner, and George Smith. From Messrs. Saltmarsh and Son, Chelmsford, came an excellent collection of show and fancy varieties in which Gloire de Lyon, a pure white self of much value; Constancy, Walter, Miss Cannell, Mrs. D. Saunders, James Vick, Harrison Weir, Mr. Glasscock, Mrs. Langtry, T. J. Saltmarsh, W. Jackson, Imperial, and Lady Gladys Herbert were represented at their best. Mr. G. Humphries, Kington Langley, presented a good collection of well developed blooms in which the following fancies were well represented, namely, Dorothy, John Cooper, Lottie Eckford, Mrs. John Downie, Phillip Ladds, and Buttercup. Messrs. Heath and Son, Cheltenham; Mr. Tranter, Henley-on-Thames; Messrs. Peed and Sons, and Messrs. Dobbie and Rothesay, also staged collections of excellent blooms.

Especially attractive was the collection of cactus dahlias shown by Mr. G. Phippen, Reading, to illustrate their adaptability for large decorations on festive occasions. The blooms in large bouquets of twelve blooms or so in each were arranged to form a broad bank at one end of the marquee, and judiciously interspersed with light feathery palms; they produced an effect at once rich and tasteful, and obtained for the exhibitor much praise.

The principal exhibitor in the class provided for private growers was Mr. J. T. West, Cornwalls, Brentwood, who had a representative collection of admirably grown blooms. The show varieties most conspicuous were Mrs. Gladstone, Mrs. Rawlings, Sunrise, Lord Chlmesford, Mr. Glasscock, Mrs. Saunders, George Barnes, J. Stephens, and William Keith. The most noteworthy of the fancies were Miss N. Halls, Gaiety, Rev. J. B. M. Camm, and Henry Glasscock. The chief pompons were Fair Helen, Favourite, Isabel, Daisy, Grass au Wein, and conspicuous amongst the decorative varieties were Beauty of Brentwood, Marchioness of Bute, and Miss Stanley. Mr. W. Salmon also exhibited well in the amateurs class.

The following medals were awarded to exhibitors of dahlias: Silver gilt Flora. To Messrs. J. Cheal and Son, Messrs. Paul and Sons, Mr. C. Turner, Messrs. Keynes, Williams and Co., and Messrs. John Laing and Sons. Silver Flora. To Mr. T. S. Ware, Mr. E. Phippen, Mr. A. Rawlings, Mr. J. F. West, and Messrs. H. Cannell and Son. Silver Banksian. To Messrs. Dobbie and Co., Mr. G. Humphreys, Messrs. Saltmarsh and Son, and Messrs. Heath and Son. Bronze Banksian. To Mr. J. Tranter, Messrs. Peed and Son, and Mr. W. Salmon.

Certificates of merit were awarded for dahlias as follows:—

To Mr. Burbury, Arundel Castle, Sussex, for

Beauty of Arundel.—A handsome cactus variety; the blooms large and full, and of a glowing crimson colour shaded bright purple-rose.

To Mr. C. Turner, Slough, for

Eldorado.—A superb show variety; the blooms large with even outline and of good depth; the colour rich purple-crimson shaded rose.

Othello.—An excellent pompon; the blooms of average size and fine form; the colour rich marone-crimson.

The Mikado.—A charming pompon; the blooms small, perfect in form, and attractively coloured rose-crimson and white.

To Mr. J. T. West, Cornwalls, Brentwood, for

Daisy.—An exquisitely beautiful pompon; the blooms of average size and fine form; the colour deep yellow, shaded orange in the centre.

To Messrs. J. Cheal and Sons, Crawley, for

Centennial.—A beautiful cactus variety; the blooms large, full, and of good form; the colour rich purple-crimson.

To Messrs. Keynes, Williams, and Co. for

Comedian.—An excellent fancy variety, the blooms large, even in outline, and of great depth; the colour deep yellow, striped crimson and purple.

Phœbe.—A beautiful pompon, perfect in form, and of a bright orange colour.

To Mr. T. S. Ware, Tottenham, for

Melita.—A distinct pompon of high quality, and effective in colour.

FLORAL COMMITTEE.

Present: William Marshall, Esq., in the chair; and Messrs. J. O'Brien, R. Dean, J. Walker, G. Paul, H. Cannell, H. Turner, W. H. Williams, J. R. Tranter, W. C. Leach, R. B. Lowe, J. T. West, J. Dominy, J. Douglas, P. Blair, J. Cheal, B. Wynne, E. Hill, and E. Mawley.

The most important of the contributions to the meeting of this committee were the magnificent collections of tuberous begonias from Messrs. John Laing and Sons, Forest Hill, to whom the silver-gilt Banksian medal was awarded; and Messrs. H. Cannell and Sons, Swanley, in whose favour the award of the silver Banksian medal was made. The last named firm had, in addition to their general collection, a group of Begonia Octavie, a beautiful double variety, dwarf in growth, and bearing a profusion of neat pure white flowers. Messrs. Harkness and Sons, Bedale, staged a large and very attractive collection of hardy flowers, consisting of huge bouquets of phloxes, pyrethrums, chrysanthemums, Japanese anemones, sunflowers, and other seasonable subjects. A silver Banksian medal was awarded the firm. An attractive collection of early chrysanthemums was exhibited by Messrs. Reid and Borneman, Sydenham, to whom a bronze Banksian medal was awarded. Messrs. J. Laing and Sons presented two examples of Mrs. Alpheus Hardy chrysanthemum, bearing large well-developed blooms. Messrs. J. Veitch and Sons, Chelsea, contributed a collection of beautiful flowering and other shrubs, comprising Escallonia montevidensis, Arbutus unedo rubra, Abelia rupestris, and Desmodium penduliflorum. The firm also exhibited two beautifully variegated forms of the Pampas grass and cut flowers of Magniflora grandiflora, and greenhouse rhododendrons. Mr. J. O'Brien sent cut flowers of a double oxalis, and from Messrs. J. Lee and Sons, Hammersmith, came well-developed examples of a beautifully variegated cornus, and Mr. Powell sent a pure white form of Crinum Powelli.

On Tuesday the committee examined the trial collections of dahlias growing in the Society's gardens, and conferred the customary three marks (× × ×), the equivalent of a first-class certificate upon the undermentioned varieties: Show—*Condor, J. B. Service, George Rawlings, Ovid, Mrs. Gladstone Cyprus, Royalty, Leah, Primrose Dame, Royal Queen, Diadem, Mrs. Glasscock, Pioneer, Mrs. Harris,* and *Toison d'Or.* Fancy—*Grand Sultan, Queen Mab,* and *General Gordon.* Bedding—*Yellow Pet.* Cactus or Decorative—*Honoria, Panthea, Juarezi, Empress of India, Mrs. Hawkins, Henry Patrick, Charming Bride,* and *Lady Kerrison.* Pompon—*Darkness, Princess Sophie Sopida, Cupid, Admiration, Brunette, Millie Wood, Fairy Tales, Whisper, Mdlle. Valentine Faconet, Fanny Weiner, Gem, Anna Zachman, Dove, Red Indian, The Khedive, Rosetta, Rosalie, Janet, Lady Blanch, Mabel, Sunset, E. F. Junker, White Aster, Fashion,* and *Isabel.* Single—*Miss Linaker, Mr. Kennett, The Sport, Alfonsa, Lady Monckton, Cetewayo, Formosa, Florrie Fisher, Miss Henshaw, Kate, Marguerite Bruant,* and *Flora Macdonald.*

FRUIT COMMITTEE.

Present: J. Lee, Esq., in the chair; Dr. Hogg, and Messrs. J. Willard, G. Wythes, James Hudson, W. Bates, G. W. Cummins, P. Crowley, H. J. Veitch, J. Douglas, F. Q. Lane, H. Balderson, A. Dean, J. Laing, G. Bunyard, and J. Cheal.

Mr. T. Bradshaw, gardener to the Marquis of Downshire, Hillsborough Castle, Lisburn, County Down, Ireland, exhibited a seedling late white

grape, under the designation of the *Marchioness of Downshire*, of great promise. The variety was raised a few years since by Mr. Bradshaw, from a cross between Muscat of Alexandria and the White Gros Colmar, the last-named being the seed-bearing parent. It is of vigorous growth, highly productive, and sets freely. The bunches are of large size, long, tapering, and well shouldered; the berries large, roundish, oval, the skin greenish yellow, changing to amber, the flesh firm, rich, and refreshing, with trace of muscat flavour. The fruit can be had in good condition several months after it has attained maturity, and the variety promises to take a foremost position among the late white grapes. Mr. Dunn sent good bunches of John Downie grape, a handsome, late-keeping black variety.

Mr. Barron staged collections of apples, tomatos, peppers, and aubergines, grown in the Society's gardens. Messrs. Keynes, Williams, and Co. exhibited a promising culinary apple under the name of Chorister Boy. Mr. Miller, Esher, submitted two baskets of excellent fruit of the Barrington peach from a tree trained to an east wall. Melons were exhibited by Mr. W. Palmer, Thames Ditton; Mr. Maher, Mr. Wythes, and Messrs. J. Carter and Co., the last-named firm staging a fine fruit of Holborn Favourite.

NOVELTIES.

Awards of merit were made as under:—

To Messrs. Pitcher and Manda, for

Lælia Eyermanni.—A distinct species, the flowers rather large, the sepals and petals soft purplish lilac, the labellum lilac, white, and yellow.

To Messrs. Reid and Borneman, for

Chrysanthemum Lily Stevens.—A beautiful pompon, with pure white flowers.

BRACKLEY FLOWER SHOW, September 17.

Brackley, a small town in Northamptonshire, lies on a descent on the banks of the river Ouse. Its name appears to be derived from the brakes, bracken, or fern, with which this part of the country was formerly overrun. It was originally of much greater extent, and a place of no mean importance, of which indications may be traced. Of great note in Saxon times but destroyed by the Danes, it rose again, was walled, and had a castle, the site of which was visible in Leland's time. Subsequently to the Conquest, it became one of the great staples for the sale of wool, its wool fair being continued down to the present year of grace. Near the town is Bayard's Green, a plot of ground, celebrated in the days of chivalry for martial exhibitions, tournaments being held from 1249, and here in 1264, the barons met to treat with King John. During the turbulent days of King John and his barons, a hospital (now a ruin) was founded here for the members of Magdalen College, Oxford, who sought it as a place of refuge during troublous times. The hall, which has been rebuilt, contains 105 shields, blazoned with arms. The town boasted of three crosses, one very ancient, ornate and curious (supposed to have been erected by the staplers), was taken down in 1746. The town consists of one street nearly a mile in length. In later prosperous times the manufacture of shoes and pillow lace formed a prominent industry; but now is seldom seen.

"Yon cottager who sits at her own door,
Pillow and bobbins all her little store:
Content though mean, and cheerful if not gay,
Shuffling her threads about the live long day:
Just earns a scanty pittance, and at night
Lies down secure, her heart and pocket light."

But to the show, which was connected with an exhibition of agricultural horses, hunters, farmers roots, butter, poultry, &c., in the College Pleasure grounds, near the centre of the main thoroughfare. Formerly, the flower shows held here attained large proportions, but the present display was but a poor revival after three years omission. Two large tests proved ample for staging the products, which for the most part were of high quality, but not one article was named, the following being the leading items in the display:—

PLANTS.—For a group [for effect, on space twelve feet by six feet, there were three exhibits, the first card going to Mr. J. Price, gardener to H. Gosling, Esq., Westbury Manor, for a bold semi-circular arrangement in which neat cocos palms, ferns, golden crotons, pelargoniums, double primulas, Primula obconica, begonias, Pandanus Veitchi, and celosias made a bright mass, edged with adiantums and Panicum variegatum; Mr. King, gardener to W. Allen, Esq., Evenley Hall, second, who had effectively-massed liliums, crotons, begonias, pandanads, palms, dracænas, Cyperus variegatus, Caladium argyrites, Gladiolus Colvilli, Impatiens Sultani, and small ferns; Mr. E. Slarke, gardener to Earl of Ellesmere, third. For six foliage, Mr. Price first, for full-sized examples of Cycas revoluta, Pandanus Veitchi, Crotons Williamsi and Weismanni, Latania borbonica, and Acalypha musaica; Mr. King second, with smaller specimens of Crotons Warreni and Angustifolius, Latania borbonica, Dracæna Youngi, Acalypha musaica, and Yucca aloifolia. The only other class for plants was for six exotic ferns, Messrs. Price and King taking the cards; in the second group was an ordinary form of lycopodium, which scarcely fulfilled the requirements of the competition.

CUT FLOWERS included a few choice trusses of zonal pelargoniums, splendid quilled asters from Mr. C. Gunthorpe, Buckingham, who had also the best dozen of reflexed forms. The best lot of twenty-four roses came from Mr. W. J. Ridge, Thornborough, whose premier flowers were Marechal Niel, Niphetos, and Madame Lambard; he also taking the cards for hand-bouquet, ladies' dress spray, and six button-hole bouquets; these latter were very choice, and were formed of neat rosebuds, tuberoses, forget-me-nots, bouvardia pips, and fern fronds. A box of dahlias and some giant orange-yellow marigolds were commended; and Messrs Perry and Son, Banbury, staged as extras wreaths, bouquets, button-holes, and collections of hardy flowers. Some excellent collections of a dozen bunches each of flowers were presented. Mr. W. Goodwin, Stoke Lyne, being first for gatherings of Tiger lily, Phlox White Queen, Statice profusa, double white petunia, Eucharis Amazonica, tuberous begonia, Bougainvillea glabra, Czar violets, double pink bouvardia, and tuberoses; Mr. Steers, gardener to E. Slatter Harrison, Esq., Shelswell, second, having very tastily arranged bouquet of Salvia patens, Chrysanthemum maximum, C. Burridgeianum, Helianthus multiflorus, Lady Neville clematis, Vallota purpurea, scarlet verbenas, tropæolums, begonias, &c., relieved by graceful panicles of grass.

FRUIT.—As in the other sections, there was but a limited show. For white grapes, Mr. C. Hagram, gardener to Lady Mary Chateris, was first with very golden clusters of Buckland Sweetwater; Mr. Rewbury, second, for Foster's Seedling; for black, the cards went to Mr. Rewbury and Mr. J. Price, for Alicante. For six dishes, Mr. Price led with Worcester Pearmain apples, Gansel's Bergamot pears, Masterpiece melon, Morello cherries, Muscat grapes, and Royal George peaches; Mr. C. Chatwell, gardener to Rev. Rees-Moggs, second, for Black Hamburgh grapes, Moor Park apricots, Cape gooseberries (Physalis edulis), Victoria plums, a green-flesh melon, and Elruge peaches. In the single dishes, Bon Chretien pears, Alexander apples, Kirke's and Orleans plums, took the cards. The best melon was Masterpiece.

VEGETABLES.—This department was fairly well represented. For a collection, the premier card went to Mr. W. Slarke, gardener to Earl of Ellesmere, who had Autumn Giant cauliflower, Duke of Albany peas, Reading Giant potato, Perfection tomato, Rousham Park Hero onion, and Ne Plus Ultra bean; Mr. Rewbury, gardener to F. J. Myers, Esq., Charlton, second. Mr. W. Slarke, exhibited a collection of onions in the following varieties, viz.: Improved Wroxton, Rousham Park Hero, Anglo-Spanish, Ailsa Craig, The Lord Keeper, Advancer, and Royal Jubilee, all sent out by Mr. H. Deverill, Banbury. The amateurs and cottagers produced very fine carrots, parsnips, peas, and potatos; of the latter the winning cards went to Amateurs: *White Round*—First, Abundance; second, Satisfaction. *Coloured Round*—First, Reading Russet; second, Vicar of Laleham. *White Kidney*—First, Sutton's Seedling; second, Satisfaction. *Coloured Kidney*—First and second, Mr. Bresee. Cottagers: *Coloured Round*—First, Vicar of Laleham; second and third, Adirondack; *White Round*—First, Abundance; second, Satisfaction. *Coloured Kidney*—Mr. Bresee all through. *White Kidney*—First, Satisfaction; second, International; third, Reading Giant.

CHERRIES FOR MARKET.

A Paper by Mr. G. BUNYARD.

Read at the Conference of the British Fruit Growers' Association, Crystal Palace, September 5, 1890.

KENT is the greatest cherry producing county in England. They were introduced there in the time of Henry VIII., and put under the care of Richard Hains, the king's fruiterer at Newington, a village near Sittingbourne, on the main road from London to Dover, and the family is now represented there by men of the same name in the fruit trade. This parish still maintains its reputation as the best district for the culture of the cherry, and in the deep brick earth there they attain to a great size, as much as 70 or 80 feet high. The annual sales attract buyers from all parts, and are the event of the year in the locality.

The older orchards have been planted in a haphazard way, but the more modern are in straight lines at 24 to 48 feet apart, and are perfect visions of Paradise when in full flower with their graceful wreaths of snowy white, the beauty of which cannot be imagined by those who have never seen them; in fact, for the blossom alone cherries are worthy of a place in parks and garden enclosures. All these orchards are in grass, and form convenient sheltered spots for lambing and for cattle, which, however, are not put in when the leaves fall, or into young orchards where they eat the boughs. In order to produce the finest fruit, large, juicy, and of good colour, these orchards are maintained by fattening sheep in them, such being well fed on corn, cake, and rich foods. Pigs are sometimes kept in such orchards, and in order to get direct benefit they should be penned in a limited space until the grass is eaten away, and then they are moved to the next space, and so on. It is better to do these limited portions thoroughly than to allow the animals a full run. During the time the leaves or fruits are on all cattle are kept out, as they will break the lower boughs, and in young orchards do irreparable damage.

In starting fresh plantations there are several ways of procedure—

(a) If the land is already in grass, holes of two feet square are prepared, and the trees planted at 24 to 30 feet apart, the roots being as much upon the surface as possible, and they are "cradled" with chestnut battens securely fixed. As this wide planting is a great loss of space, the smaller-growing apples, plums, and damsons are planted between them, such extra trees paying for their cost before the cherries come to a profitable age; and when the cherry boughs meet the other trees, which would be in fifteen or twenty years, they are cut out. Old cherry orchards cannot be too highly manured, and one grower told me he had fattened about four sets of sheep per annum in his orchards, and that the cherries were so fine that he sold the crop for £1,000 on a small average; but young orchards of cherries should only be planted in the ordinary soil.

(b) Another way, and one which brings a quicker return, is to plant cherries 30 feet apart, and fill up with apples, pears, or plums at 15 feet, and then to plant the ground with red or black currants and gooseberries at five or six feet apart. In this case the land has to be dug annually and heavily manured in winter, but a crop is taken the second year, and in the fourth or fifth year the apples and other fruits come to bear, the cherries following about the sixth or eighth year.

It is important that land under cherries should not be cultivated, and for the first three or four years four feet from the trees is left untouched; this is gradually increased when in about ten or twelve years the bush fruit is removed and the land laid to grass, the intermediate trees being removed as before.

(c) A Kentish plan is to put cherries in hop gardens at thirty-six feet apart, and after eight or ten years to lay the whole to grass; they make much progress in this way, as hops must be cultivated highly to be remunerative. A danger in this case arises from too fresh growth, as gum is induced by occasional frosts acting on the sappy wood.

The pruning of cherries is of the simplest. They are best allowed a year's growth before cutting back, which should be severely done in order to produce a well-formed balanced head of, say, five branches. The extra shoots are cut away, and from this time onward the trees make a naturally regularly balanced head, and only require the boughs to be thinned when they cross each other, or are too thickly placed. A man should be able to get his head and shoulders between them easily. If any shoots break or twist off in a gale or through the burden of fruit, they should be cleanly cut away with a sharp knife, and if the form of the tree is seriously injured by this loss, the trees must be cut in hard to form them again; but, as a rule, the less cutting there is the better, and if a saw is necessary the exposed end should be rounded with a sharp knife to assist Nature in healing the wound. All young orchards should have the fruit gathered by means of step ladders, as the boughs cannot bear the weight of the ordinary ladders when young (under ten years old).

When the trees make over a foot of growth yearly they will be better left without any stimulants, but if the new wood is but six to nine inches long they should be assisted with the manure before named, or by the application of liquid manure or top-dressings of any description of dung, or failing that bone dust, Odam's blood manure, Thomson's manure, or any similar chemical fertiliser will assist them. The cherry naturally roots upon the surface, and thus feels the benefit at once.

In making new orchards care should be taken to plant a considerable quantity in one spot, otherwise birds will take the crop. A few cherries in a

mixed orchard are rarely a paying investment. When in bulk it pays to have a man to scare or shoot the birds on the ground day and night. To do this a hut should be provided for him to sleep in, and he can thus keep off other larger animals to whom cherries are a luxury. In the day he assists to move the ladders for the pickers, who in Kent are frequently women, who earn good money at the work, either by day pay or agreement per half-sieve of 24 lbs. One gathering generally clears the trees, but it pays well to pick the sunny side first, and also the outsides of the branches; this causes the remaining fruit to swell up, and if these larger examples are marketed in 12 lb. baskets or "quarters," they frequently make 20s. to 30s. per bushel, or 5d. to 9d. per lb.

In setting out an orchard of cherries care should be exercised to keep all of one kind together, and if alternate rows of the stronger kinds (such as Napoleon, Black Tartarian, Bigarreau, and Elton are made to alternate with such growers as Black Cluster or Carone, Black Hearts and Brown Hearts), the grass below is not so much shaded, and consequently is of better feeding quality. Another useful and delicious race of cherries, but little grown out of Kent, are what are locally called Reds, being the Kentish and Flemish, or the Montmorency of the Continent.

These are rather later than the sweet cherries, and are far more delicious to preserve or for tarts than any others; in fact, the jam from these sorts is a perfect sweetmeat, and comes near to tamarinds in its delicate and pronounced ratafia like flavour. These (reds) never make large trees, and are short lived, so that they are frequently used to plant between the larger kinds or for the odd distances on the outsides or in angles where there is not space for the strong growers. I would specially commend these to the Scotch growers, who would find them even better than their noted Dundee marmalade. Taste sample made 1889. After the main boughs decay they send forth fresh growth from the stem or the stumps, and in that way fruit for fifty years, but their average life is only about twenty five years, by which time they have well paid their way. This race are also the best for drying. The Morello Cherry is of similar growth, succeeds well as a standard, while the May Duke and others of that race are useful for sheltered spots.

As regards varieties. the following list includes those generally planted for profit, and can be relied on for extended culture; fully developed trees of two or three years in the head are worth 180s. to 250s. per 100, but the Kent growers prefer those with one year's heads, at 130s. to 170s. per 100.

White or Heart Cherries.—Kent Bigarreau or Amber, Napoleon Bigarreau, Florence, Elton, Frogmore Bigarreau, Governor Wood.

Red Cherries.—Kentish, Flemish, Olivet, Morellos.

Black Cherries.—Early Rivers, Werder's Black Heart, Waterloo, Black Eagle, Black Cluster or Carone.

Duke Cherries.—May Duke, Late Duke, Royal Duke.

For private gardens the following are useful as standards: Early Lyon's, Emperor Francis, Ludwig's Bigarreau, Nouvelle Royale, Tradescant's Black.

In connection with this subject I would suggest that orchard trees should have at least a stem of six feet, and should be trees worked on the wild Gean, as the stems so formed are hardier and less liable to gum and die than when they are worked low and run up on their own stems; and grafted trees are preferable to those "budded."

Grass orchards of cherries are largely planted in Kent, as there is always the chance of three crops, viz., cherries, mutton, and wool, and it is rare for all these to fail. The following notes may interest your members as to the nature of cherry orchards in Kent. The custom is to sell the fruit upon the trees about fourteen days after the flowering, and from the fall of the hammer the buyer puts in his own men and takes all the risk, finding his pickers, overlookers, packers, &c, and delivers them to the rail himself, the grower simply taking the proceeds of the sale less 5 per cent. commission. When it is considered that this only represents a part of the produce of the land, you will understand that a cherry orchard on a holding often adds letting value to an estate or single farm. In fact, a cherry orchard never goes begging for a tenant. From £20 to £40 per acre is an average price for an established orchard; choice lots have made £80 per acre. Plantations of dwarf cherries are not grown except the Morellos, which, as pyramids, bear as fine fruit as from a wall, and from the large number of trees per acre must prove a profitable investment.

There is yet another cherry grown in Kent of great importance. It appears to be the wild Morello, or the native form of it. This produces a small flat fruit, which is somewhat acid in taste, but the juice is of high specific gravity, and is the base of the famous Grant's Morello Cherry Brandy, which is made at Maidstone only, and is to the so called cherry brandies of the trade and the Kirkshe-waters of the Continent as real Highland whisky to poor gin. The maker is a neighbour of mine, and a most conscientious and painstaking and scientific distiller, who spares no pains or expense to maintain the high qualities of this wholesome and delicious cordial. The growth of this tree resembles a birch more than a cherry, and it soon assumes a pendant form from its copious crop and the wiry growth it makes yearly.

I have dealt hitherto with cherries on a large scale, but they may be profitably grown by cottagers on the gables of their houses, and by farmers on their walls and buildings, and will in these positions produce fine large fruit, which can readily be protected by fish netting, which is doubtless cheap in these parts. Such fruit would be ready to pick before the outside crops, and command a good price packed in ½ lb. or 1 lb. punnets.

The packing of cherries is in Kent done in this way. After having first lined his basket with blue paper, the ends of which lap over about one and-a-half foot (in order to turn back to cover the fruit when the basket is full). The fruit being gathered, the packer carefully passes them through his hands in tipping out the picker's basket, and then removes any bird-pecked, unripe, or smashed fruit, and with a quick shake settles the fruit firmly in the receptacle. This is generally placed on the scales, so that the proper weight (24 lbs.) is given, allowance being made for the basket. He then levels the top with his hand, and spreading the paper over and tucking in the edges, places a small portion of brake, short dry grass, or fine straw upon the top, and fastens this with two pieces of wood pointed at each end to fix under the rim of the sieve. After cutting off the ends that protrude beyond the outside of the rim the work is done.

The baskets have a hollow base, so that when set one on the other the fruit is not smashed. The sticks usually used to pack are split hazel of about two inches round, or the shoots of the cob nuts taken out in "wanding" the nut plantations.

The price of cherries varies much with the weather and the crop, from 1d. to 8d. per lb. In your district, where possibly cherries could be delivered direct to the shops, the packing at the top could be avoided by using baskets which fit one on the other, and they would in this way be less bruised, and open fresh and inviting.

GARDEN CHERRIES.

For pyramids on Mahaleb stock, where they can be netted, Early Rivers, Belle d'Orleans, May Duke, Black Eagle, Governor Wood, Archduke, Nouvelle Royale, Royal Duke, Waterloo, Ronald's Late Duke; and for tarts, &c., Morello, Kentish Red, Flemish, Olivet. For walls the best are Early Lyons, Early Rivers, May Duke, Governor Wood, Black Eagle, Bigarreau Napoleon, Florence, Bigarreau de Mezel, Black Tartarian, St. Margaret's. Amongst the little known kinds Emperor Francis, Guigne de Winckler, Ludwig's Bigarreau, and Windsor from America we think are destined to become established favourites.

Cherries are in some places very successfully grown up the rafters of cold peach houses as single cordons; grand examples are thus produced, which attain a large size. For this purpose the following are useful, and possibly cordons on the Mahaleb are preferable: Black Eagle, Black Tartarian, Florence, Early Rivers, Bigarreau Napoleon, and St. Margaret's would be the best.

Replies to Queries.

Asparagus.—You may move the youngest beds with advantage, and we advise you to do so.

Clematis.—R.: The kinds you name are of small growth and are best cultivated in the form of bushes with one or two stout stakes to support them. When well established in this form they are interesting; but they are not good enough to be worthy of a wall.

Names of Fruit.—G. B. Julian: The handsome fruit No. 1 is New Hawthornden; 2, Cox's Pomona.—B. Forman: 1, Rambour Franc; 2, Margaret; 3, White Paradise; 4, Mere de Menage.—Aspinall: 1, Beurré Bronze; 2, Beurré Boisbunel; 3, Ringer; 4, Hereford Costard; 5, First and Last; 6, Orange Goff, much like, but distinct from Dumelow's Seedling.

Phloxes.—G. B. Julian: The following are crimson varieties of high quality: Van Houtte, rich full crimson, robust and free; Chant du Depart, nearly the same, but the pips larger and half a shade darker; Gloire de Neuilly, full reddish crimson, brighter, but less rich than the two former; Coccinea, like the last, a brilliant thing; Louis Chate, scarlet crimson, changing to purplish, a fine variety; Resplendens, the lightest of the series, dazzling scarlet crimson.

Tree Pœonies.—A. L. B.: Your light soil and exposed situation scarcely promise success, but we cannot say that you will not succeed, because these plants are perfectly hardy in many places that appear unsuited to them, and probably soil is of more importance than climate. The herbaceous pœonies are quite likely to succeed with you, for a sandy soil suits them fairly well if aided by reasonable manuring. You may plant herbaceous pœonies with confidence, but we advise that a few tree varieties be grown for, say, three years, and by their behaviour you may judge what will be prudent as to the future.

Plants for Shady Position.—A. H. B.: The following comprise some of the most suitable hardy perennials for planting in shady positions: Anemone japonica, A. japonica alba, Aquilegia vulgaris, Asperula odorata, Asters in great variety, Bupthalmum grandiflorum, Campanula latifolia, C. persicifolia, Digitalis in variety, Doronicum plantagineum, Epilobium angustifolium, Helianthus in variety, Lupinus polyphyllus, Mimulus moschatus, Myosotis sylvatica, Rudbeckia californica, R. hirta, Spiræas in variety, and Vincas green and variegated.

Tomatos.—Hartlip: Your disaster may be attributed to irregularity of management. To give no air for a week and then to invite a hurricane by opening all doors and ventilators is not the way to grow tomatos. The water supply appears to have been as irregular as the supply of air. We can but advise you to follow a reasonable course of procedure. The tomato plant is not a tender thing, though it is not in a proper sense of the word hardy. You may ripen the green fruits you have cut by hanging them in any warm place, and if near a window all the better. But they will be but poor samples whatever you do with them.

Hoop Petticoat Daffodils.—E. A. R.: The Hoop Petticoat daffodils present a charming appearance during the time they are in flower when grown in pots. They should be grown in five or six-inch pots about six bulbs in each, and a light rich compost employed. Potted early in the autumn, and kept in an unheated frame, they will bloom during the winter season, when their exquisitely beautiful flowers will add a great charm to your little alpine house. The Large Yellow, White and Large Sulphur are the best for general culture. The largest size bulbs should be purchased and potted up immediately they come to hand, as it is not advisable to keep them out of the soil long after the present time. When they are at rest, place the pots in a sunny position in a pit or greenhouse to ensure the bulbs being well ripened.

Dandelions.—S. V.: You remind us of the case of the prophet's advice on washing in Jordan. We have had to deal with a lawn of about an acre in extent that was greatly disfigured by daisies, dandelions, and docks, and these were entirely expelled by dusting them with guano. It was put on during hot, dry weather, and at odd times, when an hour or two could be spared for the job. The lawn was carefully treated as regards rolling and mowing, and at the end of the second season of this simple course of treatment the condition of the turf was not far from perfect. A heavy coat of manure put on in the early spring would prove effectual in reducing these weeds and encouraging the grass. All large flat-leaved plants are seriously injured, and easily killed outright, by the action of strong manures; and these do not greatly affect the grasses, which, moreover, have a greater power of recovery. We cannot give you any directions for charming them away, and it needs not to be said that it is merely a matter of time and strength to dig them out. You have had but little experience with grass turf, and you fail to see the philosophy of the case. You have never seen large leaved plants in meadows survive the destructive effects of the droppings of cattle. But the grass reappears as those droppings are spread and washed in, and thus it happens that mere manuring destroys weeds and promotes grasses and clovers.

TRADE CATALOGUES.

DICKSONS (LIMITED), CHESTER.—*Select Roses.*

BENJAMIN CANT, COLCHESTER.—*Roses.*

JARMAN AND CO., CHARD, SOMERSETSHIRE.—*Bulbs, Conifers, Fruit Trees, &c.*

HOOPER AND CO. (LIMITED), MAIDA VALE.—*Bulbs.*

DANIELS BROTHERS, NORWICH.—*Dutch Flower Roots.*

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets After.	High Water at London Bridge. Morn.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
5	S	**18th Sunday after Trinity.** Last	6 9	11 37	5 30	9 40	2 5	6 1	6 23	3 4	3 26	53·7	Cattleya labiata ..... Brazil.	278
6	M	*Faith, Virgin, and Martyr.* [Quarter.	6 10	11 55	5 27	10 38	2 51	6 50	7 19	3 48	4 15	53·4	Cattleya Percivaliana ..... South America.	279
7	Tu	Archbishop Laud born, 1573.	6 12	12 12	5 25	11 40	3 28	7 54	8 37	4 44	5 19	53·0	Cypripedium Spicerianum East Indies.	280
8	W	Battle of Torres Vedras, 1810.	6 14	12 28	5 22	Morn.	3 56	9 27	10 14	6 2	6 52	52·6	Epidendrum sceptrum ... Colombia.	281
9	Th	*St Denys.*	6 16	12 45	5 20	0 48	4 20	10 54	11 29	7 39	8 19	52·5	Lælia anceps ..... Mexico.	282
10	F	Oxford Michaelmas Term begins.	6 17	13 1	5 18	1 56	4 39	Noon.	—	8 54	9 25	52·3	Odontoglossum crispum... Colombia.	283
11	S		6 19	13 16	5 15	3 5	4 56	0 25	0 45	9 50	10 10	52·1	Phalænopsis Sanderiana East Indies.	284

THE ROYAL AQUARIUM, WESTMINSTER.
GREAT AUTUMN FRUIT SHOW.
OCTOBER FLOWERING CHRYSANTHEMUMS, VEGETABLES, &c.,
WEDNESDAY, THURSDAY, AND FRIDAY, October 15th, 16th, and 17th.
Owing to the lamented death of Mr. William Holmes this Show will be under the Superintendence of Mr. Richard Dean.
Schedules, &c., to be had from
Miss Holmes, Frampton Park Nurseries, Hackney, London.
To whom all entries should be forwarded.

WIMBLEDON ROYAL HORTICULTURAL SOCIETY.—GRAND SHOW OF CHRYSANTHEMUMS, &c., DRILL HALL, WIMBLEDON, on November 13th and 14th, 1890. Challenge Cup (value 15 guineas) and £5 for 24 Incurved (not less than 18 varieties), and 24 Japanese (distinct); Cup (value 5 guineas) for group of Chrysanthemums.—Schedules may be obtained of Hon Secs., Dr. Walker, 12, Lingfield Road, and Mr. W. Thomson, The Nurseries, Wimbledon.

Exhibitions and Meetings for the Ensuing Week.

Monday, October 6, to Wednesday, October 8.—Fruiterers' Company.—Exhibition of Hardy Fruits.
Thursday, Oct. 9, to Saturday, Oct. 11.—Crystal Palace.—Fruit Show.

Auction Sales for the Ensuing Week.

Monday, Wednesday, and Saturday, Oct. 6, 8, and 11.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.
Monday, Oct. 6.—Mr. J. C. Stevens, 38, King Street Covent Garden; Roman Hyacinths.
Monday, Wednesday, Thursday, and Saturday, Oct. 6, 8, 9, and 11.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.
Monday, Oct. 6.—Messrs. Protheroe and Morris, at the Nurseries, Sunningdale; Nursery Stock. (Six days.)
Tuesday, Oct. 7.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 87 and 68, Cheapside; Lilies.
Tuesday, Oct. 7.—Messrs. Protheroe and Morris, at the Wood Lane Nursery, Isleworth; Nursery Stock.
Wednesday, Oct. 8.—Mr. J. C. Stevens, '38, King Street, Covent Garden; Camellias and Freesia refracta alba.
Wednesday, Oct. 8.—Messrs. Protheroe and Morris, at the Pine Apple Nursery, Maida Vale, W.; Greenhouse Plants and Glass Erections. (Four days.)
Friday, Oct. 10.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, OCTOBER 4, 1890.

Reports on the Potato Crop of the Present Season, now placed before our readers, are of interest equal to any that have been published in past years, and as regards the present year they are the only reports of a circumstantial character, and from cultivators of the highest competence, that have appeared anywhere. The returns made to us in July, with particulars of garden and orchard crops in general, we refrained from publishing, on account of the unfavourable conditions that were prevailing, and the probability that serious changes would occur in the interval between reporting and printing. It was therefore necessary to trouble certain friends a second time for later reports, and we restricted the number with a view to cover much ground and great diversity of experience without multiplying details.

For the ready response to our request for information we can but say, in the words of the Prince of Denmark, "much thanks." The generous freedom with which information is supplied is doubly gratifying, for it will tend to dispel injurious rumours, and it directly illustrates the fact that the cultivation of the noble tuber has made, and is making, healthy scientific progress.

It will be seen that as a general result of those late inquiries we learn that there is no scarcity of potatos in the land. Prices may advance as winter approaches, and the stocks forced upon the market for early sale are lost in the general consumption. Famine prices are not to be feared, for there are sound potatos in plenty, and generally speaking the quality is excellent. The old enemy could not allow a cold, rainy summer to pass without making a demonstration, but there is nothing mysterious; nothing that can be reasonably spoken of as inexplicable in the distribution of the disease this year. It has appeared where it might have been expected, and it has sought out the kinds that we know to be subject to its attacks and that usually suffer first and most severely. When by repeated comparisons of performances and results we find there is a certain degree of uniformity of correspondence as of the relation of cause and effect, we feel that the business has acquired a certain degree of scientific precision, and that consequently our fate is to a very considerable extent in our own hands. The heavy soils and humid valleys have seen the disease, but not in many places has it attained to any great degree of virulence. Lands lying high and dry have escaped the visitation; the plant kept its health, although in the cold time it grew but slowly, and now the crop of tubers is one that will pay for lifting, and will have a value in the market probably in advance of ordinary averages. Prices have been so low in the last few years that there should be no surprise felt at the reduction of the area apportioned to potatos; and a moderate rise that does not pinch the poor will be advantageous, for if potato culture were to decline, the prospect, under present circumstances, would be a dark one for the masses of the people. There is no such calamity to be feared, but prices will advance beyond the unremunerative standard of the past two or three years.

Disease proof potatos are things to believe in as well as to hope for. We possess a few that are worthy of the designation, and we may reasonably hope for more. The reports now before the reader embody facts of the highest importance in the particulars given of the relative tendency to disease of the varieties that take the lead for profitable culture. There is none that can be described as disease proof or proof against disease in the severest sense of the term, but there are varieties that so commonly and generally escape annihilation, and that give profitable returns in bad seasons that we must allow the eulogistic characterization, and look for their comparative immunity to some peculiarity of character that may be communicable to their offspring. The far-famed Magnum Bonum is a best type of a disease proof potato, and we find it tough in the fibre, thick in the skin, immensely vigorous in constitution, and productive beyond the average of its class. That Champion should have competed with it so long as it has done is somewhat surprising and tells of good seasons, for in a bad season the Champion is a poor thing, and one of the first to caution the cultivator against mistakes in selecting.

Reports from Ireland represent the case as considerably less dreadful than it has been represented. There is a considerable crop of useful roots in the Emerald Isle, but disease has made much havoc in districts where ignorance most prevails, and where the lazy-bed system is in general favour. The cultivation by the peasantry is deplorably deficient in all that is requisite to complete success, and only a most favourable combination of circumstances could in any year save them from dire disaster. They plant the worst of seed in the worst of ground, and plant so close that the plant may be said to be poisoned by its own exhalations. The top growth of the potato must have light and air, and the bottom growth must have a warm dry friable bed and a sufficiency of alkalies and phosphates such as an exhausted soil cannot supply. The people need teaching, and in Ireland there are competent teachers enough, for in the districts where potato culture is carried out for commercial rather than for domestic purposes the work is well done, and intelligence and industry have their reward. We hear much of national education, but it seems beyond the wit of the promoters of popular education to do anything

towards enabling those they teach to earn a living. Children are taught to repeat like parrots lessons that consist of words alone; there is no school garden; no training in industry, no such exercise of the faculties on things visible and tangible and commonplace as will awaken interest in facts and direct the mind to the exercise of common sense. We have seen vast improvements in this department of public duty, but what has been done is as nothing to what should be undone. There is grave need for undoing the greater part of all the teaching that rests on books, and the substitution of things for words is more to be desired than any forcing into proficiency in subjects that lie far away from the business of life, and that if entitled to a place anywhere should be in the embellishment of the mature mind that has already mastered the elements of worldly wisdom and the principles that tend to success in business. Ignorance and whiskey are far greater enemies to Ireland than the potato disease, and that, bad as it may be, is not so bad as it is represented.

Ramsbottom Floral Society.—Annual Exhibition, November 15th.

Mr. Percy T. Ingram announces for publication a volume of verse entitled "A Garland from Hesperides." It will be published by subscription by Mr. W. Clarke, High Street, Grantham.

Elizabethan Gardens formed the subject of an address by Mr. George Gordon, at the meeting of the Croydon Gardeners' Society on Tuesday evening.

Chiswick Gardeners' Association is engaged in organizing a concert in aid of the Gardeners' Orphan Fund, to be given in the Vestry Hall, Chiswick, on Wednesday, October 29.

United Horticultural Benefit and Provident Society.—The annual dinner will take place October 23, at the Cannon Street Hotel. Mr. E. R. Cutler will preside. A good muster of the friends of this growing society is anticipated. The secretary is Mr. W. Collins, 9, Martindale Road, Balham, S.W.

Yokohama sends us a Nursery Catalogue, a fact of present interest, soon, probably, to be ranked with the commonplaces. It is the "Catalogue of the Nurserymen-Gardeners, 21 to 28, Nakamura, Yokohama, Japan," and the subjects are Plants, Trees, Bulbs, and Seeds.

Essex Field Club.—The Eleventh Annual "Fungus Foray" will be held on Friday and Saturday, October 10th and 11th, in Hatfield Forest, near Great Hallingbury, a remnant of about 1,000 acres of the great forest of Essex. The head quarters for the meeting will be at Bishop's Stortford. Papers will be read, and an exhibition of Fungi and other botanical specimens held under the direction of Dr. M. C. Cooke, and Mr. George Massee. Any of our readers wishing to attend should communicate with Mr. W. Cole, *Hon. Sec.*, Essex Field Club, Buckhurst Hill, Essex.

Abnormal Pears appear to be conspicuous amongst the products of the season. Messrs. Bunyard have favoured us with samples in which there is a mixture of leaves with the fruit, and a second fruit is forming on a basis, conbisting of a pear, from which a ring of leaves proceeds. A pretty example of pear rising out of pear is furnished by Mr. J. Pinner, of Cambridge. The fruit of the pear is essentially a swoollen stem, and that leaves should sprout from the crown or encircle the bulge as with a coronal is not so inexplicable as at first sight appears.

New Cactus Dahlias reach us from Messrs. H. Cannell and Sons, of Swanley. They are of the right pattern as to size and form, and surprisingly brilliant in colour, glowing crimson, vivid carmine, orange-scarlet, and deep rosy buff, deepening to a flame-like shade of red. It is a matter of some interest that in most places this season the cactus group have lifted their flowers well above their leaves, whereas the great fault of some of the best has been that the leaves overtopped the flowers. They seem to have heard the complaints, and to have voluntarily mended their ways. We hope the examples of good behaviour we have noticed have been sufficiently general to satisfy the cultivators.

A William Holmes Memorial follows as a natural consequence of the death of the much-respected and singularly earnest worker, whose honourable name it will perpetuate. The National Chrysanthemum Society and the Borough of Hackney will probably co-operate, both for the better accomplishment of the object in view, and to prevent the possibility of a divergence of views as to the form of the memorial. It is important to note that a meeting for consideration of the subject will be held at the Royal Aquarium, Westminster, on Wednesday, October 15, at four p.m. An exhibition is fixed for the same day, and the date is therefore one that will suit the general convenience.

Fruiterers' Company have made good progress with the fruit show, and on Monday next the Guildhall of the City of London will present a new appearance within, although outwardly the edifice will be unchanged, and the police and the pigeons will be the guardians of the approach as by custom sanctioned. The amount of fruit expected will far exceed the capabilities of the space within the hall itself, but, happily, the overflow will be admirably accommodated, and there is fair promise of a magnificent exhibition. The competition will probably exceed three thousand dishes, and it is not unlikely that miscellaneous contributions will, in the aggregate, constitute an attractive and interesting feature. For the three days of the show—Monday, Tuesday, and Wednesday next—tickets of separate colours will be issued, and there will be no admission by payment, but by ticket only.

BOUVARDIAS.

The value of these small-growing shrubs for the production of a supply of flowers from early in the autumn until the spring could not be well over estimated, for not only are their flowers exquisitely beautiful, but they readily lend themselves to floral arrangements of all descriptions. Having to meet a large demand for hand and button-hole bouquets and sprays during the winter, in addition to providing liberal supplies of cut flowers for the indoor apartments, we grow the bouvardias largely, and none of the winter blooming plants give a better return.

In the course of my experience I have carefully tried the various methods of culture recommended during the past quarter of a century, and although I have been successful in obtaining a good return in each case, I am persuaded there is no better way of growing than to keep them in pots throughout the year. Naturally anxious to reduce the labour as much as possible, I was ready to lend a willing ear to the advocates of the planting out system. We have been told from time to time by men occupying good positions that the best of all the methods of culture is to plant the bouvardias in a bed of good soil early in the summer and leave them undisturbed until the beginning of the autumn. It was urged as sufficient reasons why the practice should be adopted that not only would much labour be saved during the summer months, but that much larger plants would be obtained in the course of the season. It is quite true that plants occupying a well prepared border require much less attention than others of a similar description with their roots confined to pots. It is also true that they grow to a much larger size in a given period. So far there is no cause for complaint against the advocates of planting out, but the saving of time and the mere size are not the only matters to be considered in the management of a stock of bouvardias. The point at which the cultivator must aim is the production of an abundant supply of flowers, and plants that have occupied a border during the summer do not bloom so freely or continuously as do those which have been kept in pots. When lifted they usually suffer more or less, frequently losing a considerable proportion of their foliage, and when they have recovered from the check they produce comparatively few flowers. The measure of success obtained in planting out depends chiefly upon the season. In hot, dry summers the plants make a short jointed, firm growth, and suffer but little when lifted. They also give a good crop of flowers. On the other hand, in a cool, moist summer such as that through which we have just passed they produce long, soft growths, from which it is useless to expect many flowers. They also present a miserable appearance until they have recovered from the check imposed upon their growth during the lifting process. We have just lifted from a south border two dozen plants so large as to require nine-inch pots for their accommodation. They are nearly double the size of examples of the same age that have been grown continuously in pots, and from their present appearance I shall be much surprised if they produce half as much bloom. I have had similar experience in several years previously, and I do not intend potting out any more, excepting it may be a few old specimens intended for the supply of cuttings.

We renew our stock of bouvardias by root and branch cuttings in spring, and of the two I prefer the latter. The old plants are encouraged to rest as soon as the season of flowering is over by gradually reducing the supply of water, and keeping them rather dry for several weeks. They are then pruned, and encouraged to make new growth by overhead syringings and moderate supplies of water at the roots. As soon as the new shoots are from two to three inches in length the work of propagation is commenced, the tops being utilised for the purpose. All healthy plants are kept a second year, and in some cases they are retained until the third year, as the old and thrifty examples invariably bloom in the most profuse manner. They are repotted soon after the shoots have had their tops taken off, and in the process the old ball is materially reduced, and they are returned to pots of the same size or one size larger, as may appear advisable. The young plants usually have two shifts after they have been removed from the cutting pots. They are also stopped once or twice. During the spring they have a position in a structure in which a brisk temperature and a moderately moist atmosphere are maintained. Then they are transferred to a pit for the summer months. A friable and moderately rich compost is found the most suitable.

The most useful of the older kinds are Humboldti corymbiflora, Jasminiflora, and Alfred Neuner, three fine white kinds of the most distinct character. Priory Beauty and Queen of Roses, two pink varieties, and Dazzler and Hogarth, both fairish, have scarlet flowers, and are remarkable for their freedom of flowering. The new varieties of special excellence are President Cleveland, brilliant scarlet, very fine; Mrs. Green, salmon pink, free and pleasing in colour; and Rosea multiflora, bright rose pink. These three are valuable acquisitions in their several lines of colour, and can be strongly recommended.

G. H.

Mr. George Eldridge has been engaged as gardener to G. W. Young, Esq., Branksome Manor, Branksome Park, Bournemouth.

The Death of Alphonse Karr must be counted with the losses of the year in the ranks of the horticulturists. Though a novelist and journalist, his heart was in the garden much more than in the inkpot or the printing office. His horticultural work at Nice was of the quiet kind, and gave repose to a spirit that had participated in the gaieties of French society even to satiety, so that we did not hear much of him beyond an occasional pleasant whisper of his devotion to roses and violets, and the social amenities of a land famous for its fragrant flowers. His best book, after all, though he wrote many, is his delightful "Tour Round My Garden."

BEAUTIFUL BULBS FOR THE CONSERVATORY.

By William Bradbury.

The display of flowers in the conservatory and greenhouse during the spring months cannot be too varied, and therefore cultivators would in many cases do well to give more attention to the miscellaneous bulbs suitable for flowering under glass than they usually receive. I have long grown a considerable number of kinds as supplementary to the hyacinths, tulips, and narcissi, and find them much appreciated both in the conservatory and in the drawing-room. First to be mentioned is

Allium Neapolitanum, a very distinct species that of late years has become very popular for bouquets and other arrangements, enormous quantities of the flowers being sent to Covent Garden every season. The growth is moderately vigorous, the foliage is elegant, and the flowers are pure white, and borne in neat umbels. It is a point of some instance that both the leaves and flowers are free from the odour characteristic of the members of the onion family, and the flowers can therefore be employed for any purpose. Grown in six-inch pots, several bulbs in each, this allium can be employed with good effect for the decoration of the conservatory, but we find it most useful for the supply of cut flowers. In growing the bulbs for this purpose they are put rather close together in boxes about six inches in depth, and filled with light rich soil. The boxes are placed in the open and covered with some loose material, in accordance with the practice which generally obtains; and when new growth has commenced they are removed to a frame, where they are kept safe from the frost. From the frame they are draughted as required to a pit, in which the temperature is just sufficient to start them slowly into growth. It is not advisable to subject the bulbs to so high a temperature as would be necessary in starting hyacinths required for flowering early in the year.

Chionodoxa Luciliæ is one of the most beautiful of the miscellaneous bulbs suitable for flowering under glass during the spring months; and although not specially adapted for floral arrangements in a cut state, it should be rather largely grown, It is important to have selected bulbs of home growth, as the imported bulbs are so variable in quality as to render it impossible to achieve much success with them. We grow the chionodoxa in five-inch pots, and put the bulbs rather close together to secure a good mass of flowers when the plants are in bloom. Owing to the early period at which the flowers are produced naturally, forcing is quite unnecessary, and we leave the plants in the cold pit until they are coming into bloom. We ventilate rather freely in favourable weather, and are careful to exclude frost by means of liberal coverings of protecting materials. Examples such as are obtained by the practice here briefly described, present an extremely beautiful appearance, and are in much request for placing in fancy receptacles in the drawing-room and other of the indoor apartments. *C. sardensis*, which has dark blue flowers, is also useful, but less beautiful than the first-named of the two species. *C. gigantea* is of much value, the flowers much larger than those of C. Luciliæ, and also of finer form.

Freezia refracta alba is of exceptional value for the supply of flowers for bouquets, and is extremely useful for contributing to the attractions of the conservatory. Under a judicious course of culture a successional supply of flowers may be had from the beginning of January. The growth, it may be mentioned, is light and elegant, and the flowers are produced in neat spikes from five to nine on each, and are pure white and deliciously fragrant. Those intended for the conservatory are grown in five-inch pots six bulbs in each, and those required for the supply of cut flowers are put in boxes, and the distance allowed the bulbs is about two inches each way. The bulbs should be placed in the plunge bed when potted, and remain there until they are commencing to grow freely, when they must be removed to a light and airy structure. The water supply must be carefully regulated, for when the soil is kept too moist the foliage turns yellow and the flowers do not attain their full development. This freezia may have the assistance of fire heat when wanted in bloom at the earliest possible period, but they should have but little artificial heat when the flowers are expanded, as they retain their freshness for a much longer period when they expand in a cool temperature. To have them in bloom at mid-winter it is necessary to start the first batch of bulbs in August, and to maintain a succession of flowers the bulbs must be potted at intervals of three or four weeks until December. *F. Leitchlini* is well worth growing, although less useful than the first named.

Iris reticulata is a gem for flowering under glass, but unfortunately the bulbs are still too expensive to admit of its being grown extensively in pots. The growth is remarkable for its elegance, and the flowers are violet-blue blotched with golden yellow, and delightfully fragrant, the odour resembling that of the violet. We grow them in five-inch pots, and put four bulbs in each. The bulbs are potted in the course of the autumn and placed in an unheated pit or frame, where they remain until they are coming into bloom. From the time of flowering until they reach the resting stage they must receive the most careful attention to ensure the proper development of the new bulbs, as to replenish the stock annually is out of the question.

Ammobroma sonoræ, a singular Californian plant in the way of our Broomrapes, forms the subject of an interesting note in the recently-issued "Contributions from the United States National Herbarium." Until this year its host plant was not known, but, as the result of the investigations of Dr. Palmer, it has been ascertained that it grows freely upon both Franseria dumosa and Dalea Emoryi. The plant grows in deep sand, and is gathered for food by the Cocopa Indians, who eat it raw, boiled, or roasted, the flavour when cooked being similar to that of the sweet potato.

Calls at Nurseries.

HARDY PLANTS IN THE HALE FARM NURSERIES, TOTTENHAM.

A thriving business has a tendency to grow, and, as it appears to us, there is no business that grows faster than a thriving nursery. At every fresh visit to such a place we see more land taken in, and more plants going out; and the trade often grows as fast as the trees, and the roads that ran yards grow to miles; and to "go over the place" means that there must be a hard day's work, and the end of it that only a part of the whole has been seen. People unused to such business put on a sceptical air when they read of miles of roads in a plant growing establishment, but if they will test their own credulity by a perambulation of a big place, the scepticism will give place to astonishment, and possible fatigue will cut short the the experiment, for to "walk off one's legs" is to spoil the appetite for all else save dinner and a rest.

The growth of the business at the Hale Farm Nurseries is the result of a sound policy persisted in from the first, and often under great disadvantages. Mr. Ware resolved to restrict his operations to a certain range of subjects that are represented in his catalogues, and to make any sacrifices, take any trouble, and even to incur any number of losses to carry out the scheme in spite of any and every difficulty. If a plant came into demand he took care to have it, and to have enough of it, even if he had to search all Europe or any other part of the world for a supply. One consequence of this policy is the amassing of the most extensive collections, and another consequence, the growth of a great trade and the necessity for large cultures to meet its demands. On entering the place we were shown a block of ten thousand of Lemoine's new gladioli on one hand, and a little lot of two hundred thousand carnations on the other. At another turn we stop to admire a piece of seakale making magnificent crowns, and as it stretches away (to use the language of the street) into the middle of next week we find a sort of relief in learning that there are only fourteen acres of it. They force none, cut none; the stuff is all sold in roots for other people to utilize. Other things are in like proportions, and the dahlias, phloxes, chrysanthemums, wallflowers, pinks, pæonies and such, make enormous totals, and compel one to ask in surprise where do they all go to?

It would be a mistake to ask the reader to give further attention to such generalities, but a few notes on subjects that attracted our attention may prove at once useful and interesting.

Hollyhocks are in perfect health here, as in many more good nurseries, where good cultivation prevails. The soil is a substantial but kindly loam, and suits about ninety-nine per cent. of all known plants that are commonly grown in gardens. One great block of hollyhocks has presented an extraordinary spectacle. The noble spires ran to ten and twelve feet and flowered superbly, many of them even now having gay flowers, at the very top of the steeple. It is found that the more distinctive varieties come so true from seed that there is not much propagating practised, and when that is done, cold frames are found sufficient. Seedling plants now preparing for next year's flowering have enormous leaves brilliantly green, without a spot, and one need not look to see if they have been disleafed to keep them clean, for their huge completeness tells that disease has never touched them.

Variegated Comfrey *(Symphitum officinalis fol. var.)* makes a great show, and is at this time somewhat coarse with vigorous growth. But the variegation is still good, and a great block of it is a kind of surprise as we come upon it suddenly. It is a singularly good plant of its class, and brilliant in spring when grown in a frame or in a sheltered nook of the rockery.

Border Marguerites.—It is well we can find a colloquial name for two famous plants, because they are sometimes chrysanthemums and sometimes pyrethrums, and both these very proper names lead to confusion in the minds of many. There is a kiad of perpetual puzzle for people to distinguish *Chrysanthemum maximum* from *Chrysanthemum latifolium*. And one reason of the perplexity is that the second is larger every way than the first. If you liken the first to the ox-eye, Chrysanthemum leucanthemum, but with larger flowers and much longer leaves, you can for ever distinguish it from Chrysanthemum latifolium, which is more robust in habit, grows taller, and produces larger flowers; it is, in fact, a noble marguerite. We have many times pointed out these distinctions, but inquiries arise and the world has yet to be convinced.

A New Gladiolus from America is one of the great guns here at the present time, and is to be fired off in all directions for flowering next season. It is called *Snow White*. It passes all the established whites in size, substance, and purity, making huge spikes, with flowers of the finest form and substance, and reported to wear well in the hottest summer weather of the northern states. The best way to manage this will be to pot early and plant out early, and to cut the spikes as soon as half a dozen flowers are open, and let them complete themselves in water under cover. If planted late and left to finish on the ground, the flowers are slightly streaked with pink, and for general purposes are none the worse for that.

Sunflowers make a wondrous show, and the old sorts are in such great pieces that it seems as if all the parks in the country might be planted freely without using up the stock. The plant formerly known as *Helianthus multiflorus grandiplenus*, but now catalogued as *Soleil d'Or*, surpasses all other sunflowers for garden purposes, being less in size than the largest, but large enough, quite double, dazzling orange yellow, and so profuse in flowering as to be in the nature of a "sensation plant." *Helianthus rigidus*, also known as *Harpalium rigidum* keeps its character in the great crowd, though the competition is severe.

Shrubby Veronicas obtain less attention than they deserve, for at this season they give us a quite new style of floral decoration, and though the large leaved kinds of the *Andersoni* and *Lindleyana* types are a little tender, a very little care suffices for them, even in the climate of London. People who are unfamiliar with these would do well to purchase them when in flower, as they lift well, and soon recover from removal. For a large plantation the prudent way would be to turn out young stuff from pots in the month of May, but to lift and plant now will do very well in cases where the planter does not well know his subjects. There is a great breadth of the pretty *Veronica Traversi* which is worth growing for its foliage, but it flowers freely, and is perfectly hardy.

Liliums are nearly over, but the Lancifoliums and Auratums are still showing good flowers, and are dying off respectably. A grand and particularly serviceable plant is *Lilium platyphyllum* of the auratum section, but not a native of the auratum country, and not given to bad auratum ways. As this becomes known it will take the place of auratum in gardens where easy ways and safe speculations are in favour. A grand bloom of *Lilium Wallichianum superbum* has been secured, and is now fresh and fine. Th

flowers are large, funnel-shaped, the inner colour soft buff-tinted yellow, the outer colour whitish with a few thin streaks of purple. This is much to be desired. *Lilium Nilgirense* is flowering in pots in an open bed, but will not be left out for the winter. The stock may be worth housing, for in a nursery all wants must be provided for us as far as possible. But as this lily is not a proper one for the cultivator who wishes to lead a happy life, we will say no more about it.

VALLOTAS are grown in great quantities, and are flowering delightfully. They keep them going gently all the winter, for this plant should never be dry, and all through the summer should have abundance of water, with a reasonable change occasionally to weak liquid manure. The fine variety known as *Eximia* keeps its character, and we conclude these notes with the firing of a parting shot that should be heard in all the realms of horticultural expectation. There is a *White Vallota* in existence, and in course of propagation for the good of the world at large.

Exhibitions and Meetings.

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the General Committee of the National Chrysanthemum Society was held at Anderton's Hotel, on Monday evening, and as it was the first meeting since the death of Mr. W. Holmes, the late honorary secretary, there was a large attendance of members of committee and representatives of affiliated societies, forty-four being present. The chair was occupied by R. Ballantine, Esq., who, in opening the proceedings, referred in fitting terms to the death of the honorary secretary, and expressed a hope that as the society must ever be the most important testimony to the good work accomplished by the late Mr. Holmes in promoting the cultivation of the chrysanthemum, every member would do his best to maintain the society in the high position it now occupies.

The minutes having been read by Mr. R. Dean, and duly signed,

The Chairman proposed in suitable terms that a letter of condolence be sent to Mrs. Holmes, and the motion having been seconded by Mr. E. C. Jukes and supported by Mr. H. Cannell, was unanimously adopted. The letter was as follows:—

"DEAR MADAM,—

"On behalf of the General Committee of the National Chrysanthemum Society, we desire to assure you and the family of the late Mr. William Holmes that we sympathise with you most profoundly in the terrible trial which has befallen you.

"To you the loss must be irreparable. We, as individuals, mourn over the early death of one who had endeared himself to us by his many high personal abilities, and as members of the above committee desire to place on record our sense of the sad loss sustained by the society through his removal. Mr. Holmes has ever been its life and soul, and its success is mainly due to his earnest, able, and self-sacrificing labours in its behalf.

"As long as the National Chrysanthemum Society endures the name of William Holmes will be held in loving and honoured remembrance.

"We are, dear Madam———."

The letter was signed by the whole of the officers and members of committee and others present, and Mr. Ballantine was requested to send it to Mrs. Holmes.

The question of appointing a secretary to carry on the work until the end of the financial year was next considered, and after some discussion it was resolved to invite Mr. R. Dean to fill the post. Mr. Dean having signified his willingness to act as secretary, it was decided, as Miss Holmes had kindly consented to continue to assist with the clerical work until the end of the year, that all communications relating to the business of the society be addressed to Mr. Dean, Frampton Park Nurseries, Hackney, E.

In proceeding to the ordinary business a letter was read from Mr. Swift, stating that, as he had removed to Dover, he felt it necessary to tender his resignation, both as a member of the General Committee and of the Floral Committee. The resignation was accepted with expressions of regret, and the vacancy on the General Committee was filled by the election of Mr. F. Moore, of Bexley, and that on the Floral Committee by the election of Mr. H. Shoesmith. The Wellington (New Zealand) Horticultural Society and the Exmouth Gardeners' Mutual Improvement Society were admitted into affiliation, and several new members were elected.

On behalf of the Catalogue Committee Mr. C. Harman Payne stated that the copy for the new centenary edition of the Official Catalogue was in the hands of the printer, and it was hoped that it would be ready for publication before the end of the current month. In referring to the several features, he stated that the new catalogue would contain 1,000 varieties more than were entered in the last edition.

The Chairman stated at the close of the formal business that it was proposed to raise a "William Holmes Memorial" in Hackney, and that the committee, having the matter in hand wished to know whether the National Chrysanthemum Society would co-operate with them. A wish was generally expressed that the Society should raise an independent memorial, and it was ultimately decided to hold a meeting at the Royal Aquarium on October 15, at 4 p.m., to consider the matter.

A HOBBY FOR COUNTRY SCHOOLMASTERS.

The monthly meeting of the Aberdeen branch of the Educational Institute of Scotland was held in Aberdeen on Saturday, 27th ult., Mr. Allan in the chair. Mr. T. W. Ogilvie, demonstrator of Natural History, Aberdeen University, read an interesting paper on "The Fertilisation of Plants." He said country teachers had an excellent opportunity of working out the flora and fauna of their respective districts, but he had observed with regret the extreme infrequency with which those opportunities were embraced, and he had chosen this subject in the hope that he might induce some to take up such an interesting study as an antidote to the *ennui* with which country teachers, who had not a hobby, must be affected. He referred to some striking and interesting cases of co-relationship between insects and flowers, after having described the structure and function of flowers. The importance of cross-fertilisation he said, was seen in the effect which followed, the plants germinating more rapidly, growing quicker, and being more fertile than those which were self-fertilised. Cross-fertilisation was accomplished by such agents as wind, and to a less extent by water, by birds, by snails; but the great agents in effecting this process were the insects. The habit of bees in visiting flowers was peculiar. They would find that very often they pretty closely followed one particular species of plants, always working by a definite plan—generally from below upward. This, it was shown had an important bearing on the cross-fertilisation of certain plants. Some flowers were habitually self-fertilised, and some were so constructed that at one stage they were capable of cross fertilisation, and at another stage they were self-fertilised, it being better that inferior seeds should be produced rather than no seeds at all.

Mr. Adam, rector, Free Church Training College, Aberdeen, paid a high compliment to the ability of Mr. Ogilvie as a lecturer, and moved a cordial vote of thanks to him for his valuable and interesting address. Mr. Mavor seconded the motion. He thought the æsthetic taste of the children might be stimulated by having this subject taught in school. He put a question to Mr. Ogilvie, who, in reply, said if the pollen from one species was carried to the stigma of another distinct flower the effect was nil. Cases of hybridisation were cases where pollen was carried from one species to the stigma of another very closely allied species. Other members paid tributes to the lecturer for the skilful way he had handled the subject and the vote of thanks was passed unanimously.

DUTCH HORTICULTURAL SOCIETY.

At the meeting of this Society, July 17, First-class Certificates were awarded to:—

Messrs. E. H. Krelage and Son, Haarlem, for Begonias *Mr. Stanley*, and *Kenau*, Gladiolus *Incomparabilis*, Lathyrus odoratus *Mrs. Sankey*, *Splendour*, *Boreatton*, *Delight*, *Mrs. Gladstone*.

Mr. C. G. Van Tubergen, jn., Haarlem, for *Hæmanthus abyssinicus*.

Messrs. Zocker and Co. for a collection of *Iris Kæmpferi*, and Rosa rugosa *Madame Georges Bruant*.

Amongst miscellaneous contributions were the following:—

Dr. Nees, of Nijkerk, presented a specimen of Stanhopea tigrina, with 19 flowers.

Messrs. Ant. Roozen and Son presented Galtonia candicans, with variegated foliage

Mr. J. L. Quarles van Ufford, of the Hague, presented a plant of Odontoglossum crispum Papayan.

Messrs. Van de Putte, of the Hague, presented Dracæna lineata with variegated foliage.

At the meeting held August 26, First-class Certificates were awarded to:—

Mr. C. G. Van Tubergen for *Crinum Powelli*, Kniphofia hybrida *Obelisque*, Tydæa hybrida *Novelty*.

Messrs. E. H. Krelage for Gladiolus Lemoinei *Oriflamme*, Gladiolus Gandavensis *Snow-white*, Gladiolus Nanceianus *Charles Baltet*, Gloxinia hybrida *Defiance*, and Montbretia crocosmæflora *Rayon d'Or*.

Mr. P. W. Voet, Haarlem, for Gladiolus Colvilli *Rosea*.

Mr. J. T. Van Berg, jn., of Jutfaas, for tuberous Begonia *Erecta gigantiflora*.

The Botanical Society of Leyden for Vriesia splendens formosa *Suringar*.

Messrs. Groenewegen and Co. for Anthurium Andreanum *Atropurpureum*.

The Zoological Garden, Rotterdam, for Rhododendron *Prince Leopold*.

Amongst miscellaneous contributions were the following:—

Messrs. Zocher and Co., Polygonum orientale fol-var., Rubus phœnicolasius, a group of Marguerite carnations, Begonia Phœbus, and a variegated-leaved lime.

Messrs. Krelage and Son, Gladiolus Lemoinei Stutzberg and Marceau, Gladiolus Nanceianus Laforcade, and 17 species and varieties of Agapanthus.

Mr. C. G. van Tubergen, jn., Cyrtanthus Mackeni, Polygonum sphærostachyum, Tigridia Pringlei S. Watts.

Mr. O. J. Quintus, of Groningen, Lysimachia clethroides.

Mr. H. J. van Heyst, of Wyk by Duurstede, Crinum Mackoyanum, Hæmanthus tigrinus, Eucomis punctata, and Roscoea purpurea.

Messrs. Van Namen, of Zwyndrecht, a "great bean," called Early Long of Zwyndrecht.

SALE OF NURSERY STOCK IN THE NORTH.

THE closing days of last week witnessed the dispossession of the greater portion of the nursery stock at the Forbesfield Nurseries, Aberdeen, belonging to Messrs. Morrison Brothers. The sale—one of the most important and extensive ever held in the north—was necessitated on account of a great portion of the nursery ground having been feued for building purposes. During the three days on which the sale was held, over three thousand lots were disposed of. Extensive purchases were made for Fasque House, Aberlour House, Esslemont House, Udny Castle, Fyvie Castle, &c., while the local nurserymen and others from a great distance, both north and south, made large purchases, as also did a number of Aberdeen gentlemen. Single shrubs were ranging from 2s. 6d. to 40s., while 5s. was a common price. The roses, comprising 20,000, were eagerly bought up by a large number of local ladies and gentlemen. The prices from start to finish were considered very satisfactory, and the sale, on the whole, a success. Mr. Farquhar, Old Echt, was auctioneer.

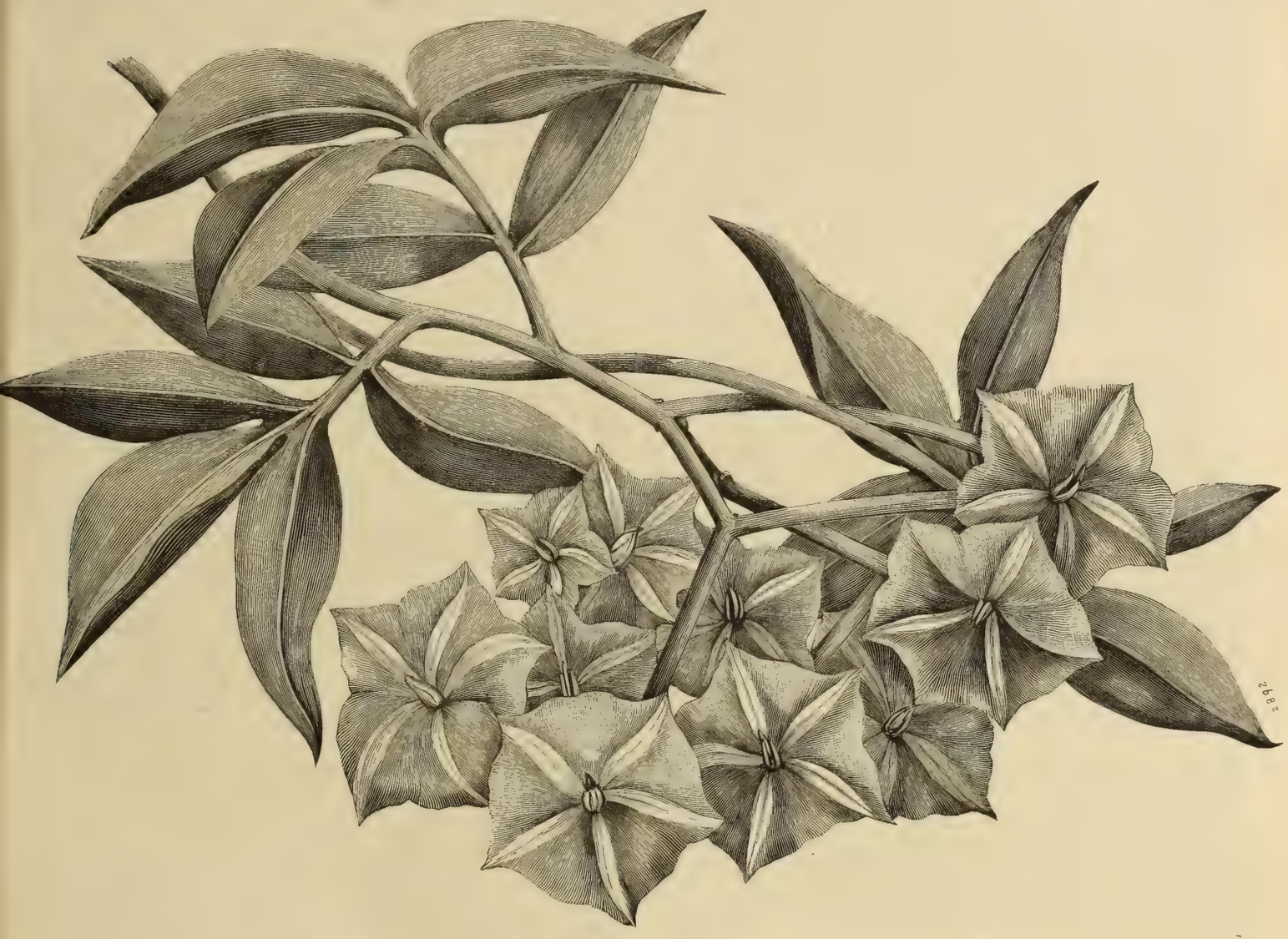
MR. ROBERT GREENFIELD, who has occupied the dual position of head gardener and bailiff at Warwick Priory for nearly twenty years past, has purchased the business of Mr. E. Crump, florist and fruit grower, at Leamington.

BANKRUPTCY OF OAKSHOTT AND MILLARD.—At the first meeting of creditors at the offices of the Official Receiver (Mr. Cecil Mercer), 95, Temple Chambers, Temple Avenue, there was a large attendance of creditors. The Assistant Official Receiver presided. The gross liabilities are £11,526 17s. 6d., of which £11,097 7s. 8d. is expected to rank against the estate. Of this amount £10,911 8s. 5d. is owing to unsecured creditors. "Other liabilities" amount to £210 15s. 3d., of which it is expected £40 4s. 3d. will rank against the estate for dividend, also £145 15s. to preferential creditors, who were returned as follows: For rates, wages, &c., £142 12s.; for rent, £432 12s. 10d. The assets are put at £4,709 9s. 7d., made up of: Cash in hands of solicitors on account of costs of petition, £12; stock-in-trade, £1,700; fixtures, fittings, &c., £910; horses, carts, van and trolleys, £181; book debts (good), £1,705 2s. 6d.; doubtful and bad, £201 7s. 1d. From this amount has to be deducted £429 9s. 10d. due to preferential creditors, thus leaving a deficiency of £6,817 17s. 11d.

DR. WENDLAND'S SOLANUM.

Solanum Wendlandi.

Amongst the many beautiful objects in the water-lily house in the Royal Gardens, Kew, the climbers that clothe the roof do not fail to obtain the admiration they are entitled to, although the lilies in the tank make first claim on our attention and compete severely against the roof plants for a monopoly of it. The interesting gourds, with their queer shapes, and in some instances brilliant colours, leave not much room in the mind for the appreciation of such a plant as the solanum now figured. Yet it contrives to assert itself, and has a special kind of attraction in the suggestion it affords of fitness for the home conservatory. In not many places may such lilies be grown, or even such gourds as are here, but the beautiful solanum, spreading freely in festoons from rafter to rafter, and presenting delightful garlands of green leaves and purple flowers, proclaims its fitness for universal cultivation, for in fact we have in this quite new plant a substantial addition to the list of first-class greenhouse climbers.



DR. WENDLAND'S SOLANUM, *Solanum Wendlandi* (Flowers soft slaty purple, changing to pale rosy-shaded purple).

Solanum Wendlandi was sent to Kew by Dr. Wendland, director of the Royal Gardens at Herrenhausen, in the year 1882, and being now established its character is fully displayed, and we may say without fear of question that in the past season it has delighted all beholders. It is a native of the cold regions of Costa Rica, where it climbs trees. This habit it has retained at Kew, and in the water-lily house it appears perfectly happy, for it has been flowering since June, and the effect it produces is both distinct and gratifying. The figure in B.M., 6,914, represents the flowers as larger than in our figure, and the leaves are less decidedly trifid than our figure represents them. Our drawing was made in the lily house from the plant as it grows, and it is certainly faithful. Probably the B.M. figure was prepared from a plant flowered in a pot, and brought up to high condition by extra care in cultivation.

The plant is entirely glabrous, with green stem and branches armed with a few short prickles; the leaves variable, the uppermost three lobed, all bright green with yellowish midrib and veins. The flowers are in terminal cymes, the corolla at first a beautiful soft, slaty purple which changes to delicate pale rosy purple, shading to soft grey; the anthers yellow. The fruit is described in B.M. as globose, but the Kew plants have not as yet produced fruits. In a further stage of development the older plants may prove fruitful, and a new attraction may be hoped for, the fruits of free growing solanums being not unseldom gaily coloured.

ORCHID NOTES.—REICHENBACHIA.

Part I. of a new series of the above important work has just been published with an appreciative notice of the late Dr. Reichenbach. The learned professor was born at Dresden in 1824, and since 1845 had given his chief attention to orchidology. Dr. Lindley died in 1865, and from that time his work, as far as it related to orchids, was ably conducted by Dr. Reichenbach. It has been well said of this laborious worker that "his devotion to orchids amounted to a consuming passion; not a scrap, nor a note, nor a sketch, however rough, came amiss to him if it related to an orchid. To him meals and clothes were necessary evils, but his herbarium was a prime necessity of existence." His useful life was cut short on the 6th of May, 1889. The unique herbarium of preserved orchids and the drawings of orchids have been left to the Imperial Hof Museum in Vienna, under the conditions that they shall not be exhibited until about the date May 6th, 1914. Other hands will supply the necessary press matter for the coloured plates in the "Reichenbachia." The naming and classification of orchids has been undertaken by the Royal Horticultural Society and the authorities at Kew, and younger, if not more able men, will do their best to continue the work so well done by him who has gone from amongst us.

The first plate in the new series is one of the very finest garden orchids :—

Cypripedium Morganiæ Burfordiense.—The ordinary form is one of the finest hybrids raised in the nurseries of Messrs. James Veitch and Sons, Chelsea, and described by Dr. Reichenbach in 1880.

The present variety figured was raised in the gardens of Sir Trevor Lawrence, Bart., M.P., by crossing a long petalled form of C. Stonei with the Demidoff variety of C. superbiens. It has a larger slipper, and broader and more richly spotted dorsal sepals. It is a free growing plant, and requires the heat of the warmest orchid house, with a shady and moist atmosphere. It is stated that the plants do better with a third part of fibrous loam in the potting compound; and it is also very gratifying to know that they grow more freely than either parent. All these hybrid cypripediums may be kept in luxuriant health if they are not over-potted or the decayed organic matter allowed to accumulate in the pots. Fibrous loam and sphagnum decays within a year, but the best fibrous peat holds together much longer. When repotting I remove all the finer powdered material with a pointed stick, and carefully work the fresh compost in amongst the roots without breaking or disturbing them much, and they speedily begin to run freely into the new material. Thrips attack the leaves, and they are also liable to be overrun with scale, but if they are clean to begin with, and the cultural directions are followed carefully, they do not suffer much if the parasites are carefully washed off by hand as soon as they are perceived.

Cattleya Bowringiana is also figured. It is quite distinct as a species, and as far as my experience may be taken as a guide it is easily grown, not requiring a great degree of heat. It is stated that as many as seventeen flowers have been produced on one spike in Messrs. Sander's St. Albans Nursery. When thus grown it is one of the most beautiful of cattleyas, and the colour of the flowers ranges from pale to rich deep rose purple. It produces its flowers in October and November, and is a useful added attraction to the waning year. It was first introduced by Messrs. Veitch from British Honduras in Central America in 1884, where it was "found on the cliffs by the side of a rapid stream flowing over a succession of waterfalls, and where the atmosphere is always highly charged with moisture owing to the rapid evaporation from the stream during the dry season and the excessive rainfall at other times of the year." Messrs. Sander had a large consignment sent home by their collector in 1887, and it is now plentiful in collections. The editor warns cultivators against overpotting the plants, and recommends mixing some crocks, charcoal, or broken bones with the peat and sphagnum compost.

There is a fine plate of the handsome nigro-hirsute, Dendrobium formosum. This fine Indian species is so well known in collections that description is almost unnecessary. Its large pure white flowers, with a yellow blotch on the lip, are freely produced, and its culture is now well understood, for which we have to thank the collectors, who now give us much more useful information than heretofore of the natural conditions under which the plants grow, temperature, &c. The plants do best in baskets, with not too much potting material about the roots. The baskets should be suspended not far from the glass roof, and on the sunniest side of the house. When growing, water must be freely applied, and the temperature may be the highest that is given to orchids. In the winter season dryness and rest are necessary to prepare the plants for another rapid summer growth. Hitherto they have not been kept for many years in vigorous health, but given the right cultural conditions there is no reason why they should not grow as freely, and continue for as long a period in vigorous condition as Dendrobium nobile.

Phaius tuberculosus is a splendid species, well figured. This plant "is indigenous to Madagascar, inhabiting dense, shady, almost trackless woods in the interior, its fleshy fusiform stems, attaching themselves by their roots, traverse the interstices formed by the rough bark until they reach the rich moss-covered humus with which the ground abounds." The difficulties of collecting these beautiful orchids seem to be almost insurmountable, and only men reckless of health, let alone personal comfort, can be found to undertake the work. Sir Trevor Lawrence, Bart., M.P., first exhibited Phaius tuberculosus before the committee of the Royal Horticultural Society on March 8, 1881. It was introduced two and a half years previously by Messrs. Sander, through their collector, Mons. Leon Humblot. I stated in the Gardeners' Magazine how well Messrs. Sander were growing the plants, and flowering them in their establishment from an importation made in 1887. The plants are growing in a tropical house, and in the moistest of moist atmospheres. They do not require much material about the stems, but seem to revel in the moist growing sphagnum placed near the stems. They also do well in shallow teak baskets.

J. Douglas.

THE JAPAN PINK.

The Heddewigi variety of Dianthus embraces many lovely forms and colours of this charming annual, which, when planted in a mass, make a great show, even in a season like the present, which has been considerably too wet to suit many flower garden subjects. This Dianthus has flowered most freely for a long time, and promises to continue for some time yet. Most varied are the colours produced by a single packet of mixed seed, from pure white to intense dark red in all shades. I might say that the deeply laciniated edges of many of the flowers render them doubly attractive. Where pure white flowers of this genus are required, the variety named The Bride is distinctly to be praised for its purity of colour. Like all other annuals, Dianthus Heddewigi should never be coddled in heat, but should be given cool treatment, sowing the seed earlier to make up for the little longer time needed to enable the plants to be strong enough to plant out. They should be grown stocky in cold frames or temporary turf pits preparatory to planting in the position in which they are to flower. Our plants are growing in a mass in an oval-shaped bed, amongst them are dotted three or four plants each of Perilla Nankinensis and Acacia lophantha, which add greatly to the effectiveness of the arrangement.

E. M.

Notes of Observation.

SOME INTERESTING SPORTS.

I regard sports as one of the most interesting class of phenomena of the vegetable and animal worlds, and the further revelation of them a most desirable addition to human knowledge. Evolution from a beginning is deeply interesting, as is gradual production by selection, but this jumping or leaping by sports seems to offer a kind of opening to fresh discoveries which gradual progression will not account for, and which at present we are ignorant of the laws of. I am led at this time to write by the appearance of a sport of the well-known double zonal, F. V. Raspail, named Turtle's Surprise, and truly a surprise it is. Most growers know that this beautiful Raspail is the very best crimson scarlet in cultivation for most purposes, especially as a cut flower producer all the year round; but it has one great fault, and that is its lanky habit, its joints being so long that it soon runs up to the glass of the house in which it is grown. Now this Raspail, after being grown for years, has sported not only into a dwarf habit, but with a white flower stalk, and even the stem of the plant itself in its early growth is white too, becoming with age, striped light and dark green. The plant is so striking to the sight that one is at once convinced that it must be a double sport or seedling of the single one called West Brighton Gem, the only well-known instance of a zonal with white flower stalks. I do not know the parentage of West Brighton Gem; perhaps someone can give particulars of its origin and if there is any relationship. Raspail, I believe, is of French origin. There is another thing, too, in relation to this. A day or two after I heard and saw this Turtle's Surprise I was also told that the same thing had occurred in another place which I visited, and am convinced that it is the same, so that we see in this instance what has often been remarked before, that after a plant from seed has been grown for years without sporting, it will sport in one or more places either the same season or within a season or two. I may here state that for the information of those who may wish to see this sport, that it can be seen at Messrs. Cannell's nursery at Swanley, Kent. Of course my own experience for some years past has been mainly directed to sports in chrysanthemums of the early sorts, but although these are mostly sports in the colour of the flowers in several instances, the habit of the plant and time of blooming is changed thus in the three following instances:—The first which happened some years ago was a sport of the Early Yellow Precocité, which preserved its colour, but sported late, and very much taller, about twice the original height. The next was a sport from the Early Yellow Fiberta from the root. This was into a much taller plant, and late instead of early, with quite a different habit and foliage, and a flower of different shape, and the colour deep orange, almost red, instead of the lemon-yellow of the parent. This I named Root-Sport. The last of these three instances is Lady Lilian, a late sport of the Early Madame Desgrange. In this case the colour remains the same, but the plant is much taller and stronger, and so much later that at this date (September 23) I can only just see the buds, and the Desgranges growing beside it are, some of them, over and cut down. I hope this may provoke someone else to have a say on this interesting subject, and a collection of facts on which there may be a hope to build up a law of these occurrences which at present appear to be erratic wanderings of exuberant nature. Let no one think these investigations are useless, for the door is open to boundless improvement in this direction. If Bahia oranges can grow without pips, and the Sultana raisin (Ascalon grape) without stones, why not peaches without stones, or cotton rolls with staple four times the length of those at present, and fewer bolls to pick? I believe this latter has been partly realized in the United States.

W. Piercy.

Forest Hill.

MICHAELMAS DAISIES AND PYRETHRUM ULIGINOSUM.

Last autumn we planted all the varieties of the former race of plants by themselves on a wide border, and for the sake of variety added plants of this pyrethrum, or the Great Oxeye, as it is sometimes called. These latter were planted at the back, the growth, which reached fully seven feet high, was kept neatly tied up with the aid of a single stout stake placed at the back of each plant, to which the growth was fastened with tarred cord as it progressed. The result is a gay autumn display. In addition to the pyrethrum several kinds of the asters are now in bloom, such as Ericoides, Amellus Bessarabicus, and some others which are not known to me. The object in planting them in this position was mainly due to the fact that their previous quarters in the shrubberies were becoming crowded, and as these flowers are appreciated here very much the change of quarters has been a happy idea, as the show of bloom is interesting as well as useful. When these daisies are massed together much better opportunities are given to compare one sort with another than when they are scattered all over the garden.

E. M.

SUTTON'S SEEDLING POTATO.

As this potato is now becoming well known amongst exhibitors, I thought a reference to it may interest some of the readers of the Gardeners' Magazine. This is the fourth season I have grown this variety, and in the four years I have exhibited it five times, and have taken five first prizes with it for the best kidney potato, each time in good competition. This year I planted forty sets, and when I lifted the crop I selected forty tubers, which turned the scales at 70 lbs. They were much too large, but I might say that most of the tubers were clean and of good shape. I could have selected heavier tubers, but they would have been rough. The remainder of the crop from the forty sets weighed 278 lbs., making a total of 348 lbs.

The Gardens, Hasfield Court, Gloucester. John Aplin.

ASTER AMELLUS BESSARABICUS.

Without a doubt this is one of the best of the perennial asters, it associates so well with other plants that it is valuable for the lovely contrasts it affords. For instance, a broad band of it around the outside of a mass of Madame Desgrange chrysanthemum looks uncommonly well, both flowering together. Planted besides patches of Rudbeckia Newmanii in the herbaceous borders it is especially noteworthy, as it makes a grand display. Along with mixed summer flowering plants in a border, such as cactus and other dahlias, marguerites, Gladiolus Brenchleyensis, and such like subjects it prolongs the display. In such a border, too, it is one of the best flowers the hardy garden produces for cutting, as it keeps fresh in water a considerable time. In fact no matter where it is placed it is conspicuous, for its bright mauve colour is exceedingly showy. It is surprising what large flower heads will come from an apparently small root when growing in good soil with plenty of moisture at all times at the root. Directly flowering is past is the best time to replant and increase the stock if necessary by dividing the roots. E. M.

STRIKING ROSE CUTTINGS.

At this season of the year there is in most gardens a lot of useless growth on rose trees that may be utilized in making cuttings that if properly treated may in twelve months be converted into plants. In saying this I do not want to raise hopes that cannot be realized. What I wish to do is to show that with a reasonable amount of care and patience, anyone in possession of rose trees, may find amusement in putting in the cuttings, and at the same time procure a fair percentage of plants for the trouble. There are many who think that they must purchase all the rose trees they want, but if they set about propagating them in the right way, and choose the right sorts to deal with, they need not do so. If there is a good number of hybrid perpetuals to cut from, these are as good as any to experiment with in the way I propose. But if there is a weak-growing plant, pass it by. For this purpose we only want strong growers. If long shoots three feet or more in length are to be had, that is the kind of growth required. Cut off the soft tops of these and throw them away; but the firm hard wood may be cut into lengths of nine inches each. From the perpetuals we may pass on to the various climbing roses, especially such as Gloire de Dijon, Reine Marie Henriette, Cheshunt Hybrid, Aimee Vibert, and the varieties of the Ayrshire and Monthly roses. All these will root freely in the open ground if the cuttings are properly selected and inserted by the middle of October. I must, however, warn the reader not to expect all the cuttings put in to grow into plants, as some of them will most likely die, but if the work is done carefully, from 40 to 50 per cent. will grow. This is a very fair percentage when we think of the small amount of labour required to put in a few hundred cuttings, and the very slight accommodation provided for them.

The best position for the cuttings is where they will be shaded one half of the day. The shade may, be from distant trees or buildings, or such as is provided by a border bounded by a wall in an east or west aspect. The most important point of all, however, is the setting of the cuttings in the soil, unless the base of the cutting is firmly fixed in the earth it will not live, for if the soil is loose about its base the air will find its way about it and wither it up before it has formed roots. The best way to plant the cuttings is to open out a narrow cut with a spade, and then to tread the bottom of the cut to make sure of a firm bottom for the cutting to rest on. When this is done and the cuttings placed about nine inches apart, the soil may be filled in and firmly trodden so as to make the cuttings quite secure. A little loose soil on the top will then leave everything in good order. No attempt must be made to disturb the plants until they have stood twelve months. Weak ones should remain for two years. It will increase the chance of success if all the leaves are removed, but if this is too much trouble plant them with their leaves attached and hope for the best.

J. C. C.

APPLE HEREFORD BEEFING.

This apple must not be confounded with the Norfolk Beefing. Indeed, it could not be by any one practically acquainted with the two varieties. The Norfolk apple is a good one, as the tree makes a splendid standard with a large spreading head, and it bears freely. But the Herefordshire sort is better, as the fruit is more handsome and the flesh somewhat more tender than the other. It has also the advantage of being quite a reliable bearer on pyramid or bush trees if not severely pruned. When allowed to hang upon the tree until the middle of November, the fruit will keep sound and in good condition until June. Somerset.

FRUITING OF THE PASSION FLOWER.

It is not unusual to see the common passion flower fruiting freely in the open air; but it is less common to see old plants in that condition than young ones. It may perhaps be difficult to explain why this should be so, at the same time I do not think we need to be in a perplexity over it. The explanation appears to me to be that young plants fruit more freely than old ones, because the growth is not so much crowded; it therefore gets better ripened. Old plants make such a mass of shoots that they crowd each other to an injurious extent. I think if the plants received more attention in the early part of the summer by having the weak growth cut clean away, that the shoots which are left would be more likely to fruit, as the plant would not have so much leaf surface to sustain. Any way, it is worth a trial, for there are few more good things amongst creepers than this passion flower when in fruit. What makes the plants more conspicuous when in this condition is, that there is always plenty of foliage to associate with the fruit, as the latter hangs like golden balls upon the branches, making a very pleasing effect. J. C. C.

GLOBE ARTICHOKES.

It appears to me to be rather strange that the only sort of this artichoke to be met with in the majority of gardens in this country is the one which bears large round heads of flowers of a purplish colour. Yet people who have resided much on the continent say that the sort which bears light green coloured flower-heads, which are more pyramidal in shape, is the best in flower as well as being more tender to eat. Whether my information is correct or not I cannot say, but a person tells me, whose opinion I have every reason to respect, that in a few years the globe artichoke will become as much appreciated as tomatos are at the present time. Rob.

[The best globe artichoke is the *Large Green Paris*.—Ed.]

STORING TUBEROUS BEGONIAS.

I do not write this note for the purpose of instructing the experienced gardener. My object is to be of some use to amateurs like myself, who grow these beautiful flowers, but have none too much room for storing them during the winter. When I first began to cultivate these begonias I lost several tubers every winter, either through keeping them too damp or too dry. I kept them in my greenhouse, at first on a dry shelf, where they shrivelled up for the want of water; then I kept them on the floor, where they got too wet from the drip of the plants which stood on the stage. I then sought the advice of the ever faithful G. M., which said, keep them in a cool place away from frost in the pots in which they were grown. It occurred to me that to follow out these instructions, the cellar was the best place to store my stock for the winter. To the cellar I have taken them every winter since, and forget all about them until the spring. About the beginning of March I take them out and repot in fresh soil, giving those roots that have made the most growth larger pots. This is all that I do to them in respect to keeping and potting. Yet my friends tell me I am a successful cultivator, as I have a long and continuous display of flowers with a minimum amount of trouble. Southern Amateur.

PERENNIAL SUNFLOWERS.

The various kinds of helianthus coming under the above heading are extremely useful at the present time to brighten up the borders of the herbaceous garden and shrubberies, producing also numerous flowers, which are useful in a cut state and last fresh a long time. The colour as a rule is appreciated by most people.

Helianthus rigidus is the first to open its flowers, and ranks as one of the finest of the genus. By some this variety is known under the name of *Harpalium rigidum*, but it really belongs to the genus helianthus, and is now generally known as such. The flowers are fully four inches in diameter, bright golden yellow, with black disc, and most useful for cutting. In the kitchen garden at Orton Hall it is grown in large masses for this purpose. The soil there evidently suits it exactly, and it can easily be imagined what an effect is produced by masses twenty feet long and about six feet wide, as it is there cultivated purely for cutting from. From three to four feet is the height which it generally grows. I have often thought the flowers were finer, and the growth more dwarf in the northern counties of England as compared with those plants of it growing in the south.

H. multiflorus plenus is the double perennial sunflower, and succeeds the former variety in its time of flowering—the end of July. It is certainly one of our best border plants, growing about five feet high in good soil. It succeeds best when divided and replanted every two years. The slugs seem to be very fond of the tender shoots just before they appear above the ground. These small black garden tyrants bury themselves just under the surface of the soil, and as the shoots commence to grow destroy them wholesale if not disturbed. The best plan is to remove the soil from the crowns in February, covering them over with soot; on this place some soil, and at the end of March repeat the dose. In this way a good growth can be assured.

H. multiflorus grandiplenus, by some named "Soleil d'Or," differs from the former both in the formation of the flowers and the colour also, the latter being decidedly orange yellow, whereas in the former it is golden yellow; the petals in this are more inclined to be quill-shaped than in the other. In cottage gardens this variety has been in existence in this neighbourhood many years. It is superior to the previous named sort in its freedom of flowering, richer in colour, and blooming as it does on single stems, the double flowers are more useful for cutting for vases. We have it growing amongst single and cactus dahlias at the back of a border, where its colour harmonizes well with such dark coloured kinds of dahlias as Paragon, for instance. It not being convenient to plant the roots in their present position in the autumn, they were broken up into quite small pieces and planted in good soil in the reserve ground, and left there until the end of May, when the growth was quite a foot high. They were then lifted carefully with good balls of soil attached to their roots, and replanted in new positions. They have done well, showing the adaptability of this plant to "bedding out" treatment.

H. multiflorus maximus. By some this is styled the Great Perennial Sunflower. From its growth it deserves its name too. Here in the borders in stiff soil, planted last October, it has reached a height of eight feet, and is most profusely flowered. The blooms average six inches across, are a soft golden yellow, with a distinct disc, most valuable for cutting and flowering late. At the present time (September 24) they are fully in flower. It is the latest of all in opening, and deserves extended cultivation. Amongst tall-growing shrubs it is a decided acquisition.

There are other varieties of this genus, but enough has been named here for ordinary garden use. The best method of supporting the stems is to fix at the back of each plant a stout stake, nearly the height the growth will reach, to this fasten loosely, but securely, the branches or stems singly, thus avoiding the "bunching" so objectionable. E. M.

CACTUS DAHLIAS.

Although some eleven years only have elapsed since Messrs. H. Cannell and Sons introduced the extremely beautiful and justly famous Dahlia Juarezi to cultivation in this country, the cactus varieties, of which it is the principal progenitor, now form a group of considerable importance. They have in fact become so numerous that at the recent Dahlia Conference at Chiswick they formed one of the most striking of the several features. From the first Juarezi, with its quaintly formed and brilliantly coloured flowers, obtained a firm hold upon the public mind, and concurrently with the multiplication of varieties having flowers of a similar character there has been an increase in the popularity of the section. Being equally remarkable for their distinct form, effective colouring, and adaptability for decorative purposes in a cut state, it is not surprising the flowers should be held in high estimation, or that the finest of the varieties should be largely grown. It was at one time thought by those who take a superficial view of what is going on about them that they would wholly supersede the show and fancy varieties, and eventually push them out of cultivation. So far from their having done this, they have helped to make the show and fancy varieties more popular, with the result that they are grown more largely at the present time than at any period in their history, as proved not only by the magnificent exhibitions held during September at Chiswick, Sydenham, and Westminster, but by the large number of blooms staged at the shows in the provinces during August and the following month.

Cactus dahlias have not only obtained attention for the supply of cut flowers for dressing epergnes and for other bold decorations, but they have been largely grown for the embellishment of the garden. In some instances they have proved satisfactory, but in the majority of cases they have been very disappointing. Instead of the brilliant display anticipated, the cultivator has had for his trouble large plants with but few blooms, and those so placed as to be more or less hidden by the masses of luxuriant foliage. Some growers have been so unsuccessful in flowering Juarezi, Mrs. Hawkins, and other of the finest varieties, as to declare that they are of but little value other than for the supply of cut bloom. Knowing this, it appears desirable to state that when in any case the growth is so vigorous that the flowers are hidden by the leaves, the system of culture is at fault. Growers fail in many cases to recognise the difference in growing dahlias for garden decoration and for the production of exhibition blooms, and in consequence apply the manure as freely in one case as in the other. As a matter of fact, dahlias grown for the embellishment of the flower garden and supplying flowers for indoor apartments, do not require any manure, unless the soil is in a very impoverished state. In proof of this, it will suffice to direct attention to the trials of dahlias now being carried out at Chiswick under the skilful direction of Mr. Barron. The beds and borders in which they are planted did not receive any manure when being prepared, and as the result, the cactus and other varieties are flowering in the most profuse manner, and produce a series of brilliant effects. Varieties like Juarezi, which attain a height of five or six feet under the conditions that usually obtain, are here about three feet in height, and bearing a profusion of flowers rising well above the foliage. The examples of the last named form are so unlike those commonly



CACTUS DAHLIA, *Prince of Wales* (Flowers orange-scarlet).

met with, that it was with some difficulty the other day I was able to convince a friend who has grown Juarezi from the first year of its introduction, that they did not represent a distinct dwarf type. It is interesting to note that with the dwarfing of the plants, and the increase in the number of flowers, there is not any material diminution in their size. The same remarks apply with equal force to the other sections, more especially the singles. I would strongly advise those who grow dahlias for home decoration, to break from the rules that regulate the course taken by those engaged in the production of blooms for competitive purposes, and refrain from the use of manure in any form, unless, of course, the soil is very thin and much impoverished, and then it should be applied in the most sparing manner possible.

Several remarkably beautiful varieties have been added to the cactus section during the current season, and foremost amongst these are the novelties introduced by the Swanley firm, who must be regarded as the pioneers in their cultivation and improvement. Especially noteworthy are: *Cannell's Favourite*, a superb variety, the flowers large and of the true cactus type; the colour rich golden yellow, shaded fawn. *Maid of Kent*, a beautiful flower of a rich crimson colour, the florets tipped pure white. *Dr. Peters*, an effective variety the flowers of medium size, the colour rich orange scarlet, shading to deep yellow. *Glory of Swanley*, an extremely useful variety, the blooms of medium size, full, and of a glowing crimson-scarlet. As it is very free in blooming, it will be exceedingly useful to cut from. *Mrs. J. Douglas* is one of the most beautiful of the series, the flowers are large, the florets are long and somewhat twisted, and the colour is a pleasing shade of buff, suffused with rose. *Mrs. L. Shuter*, an excellent flower of a medium size and a bright lemon-yellow colour; and *Millie Scupham*, a pleasing buff-coloured flower.

The novelties of other raisers of special excellence comprise *Beauty of Arundel* (Burbury), a fine variety, the blooms large, full, and of a glowing crimson hue, shaded brilliant rose-purple; *Black Prince* (Green), a distinct flower of large size and fine form, the colour blackish marone; valuable for the contrast it affords to the light flowers. *Centennial* (Ware) an excellent variety, the blooms rather large and quite full, the colour rich magenta-crimson, the edges shaded blackish marone; and *Robert Maher* (Ware), a beautiful variety, the flowers similar in form to those of Juarezi, and of a rich golden-yellow colour.

In referring to the older varieties, it appears desirable to first direct attention to those under trial at Chiswick which received the customary three crosses when examined by the Committee of the R.H.S. on the day of the Dahlia Conference. Taking them in the order in which they appear in the trials, we have *Honoria* (Keynes), a handsome variety, highly valuable for competitive purposes, but not of much use in the garden. The blooms are large, full, and well built, the colour bright yellow, shaded fawn. It has a serious defect; the flower stalks are so thin that they are not strong enough to bear the flowers erect, with the result that the blooms hang down, and are hidden by the foliage. *Panthea* (Keynes), a very fine variety, the flowers large, and of a bright orange-red hue. They are freely produced, and borne well above the foliage, the plants producing a good effect. *Juarezi* must be mentioned for the freedom with which it is flowering, and the fine effect it produces. *Mr. Tait* (Cannell), a useful variety, the flowers



CACTUS DAHLIA, *Charming Bride* (Flowers white suffused and tipped rose).

white, with split florets, and freely produced above the foliage. *Empress of India*, a robust growing variety, rising to a height of about five feet in height. The blooms are of large size and good form, the colour rich marone crimson. *Sydney Hollings* is an exact counterpart of Empress of India in habit and the size and shape of the blooms, but it differs in the flowers, being of a purple marone colour. *Amphion* (Keynes), a distinct variety, the flowers large, and of a pleasing salmon colour, shaded with yellow; the flower stalks are very short, and in consequence the blooms cannot rise above the foliage. This was not certificated, but it is so distinct in colour as to merit attention. *Mrs. Hawkins* (Ware), a robust, growing variety, producing large, finely formed flowers of a soft primrose yellow. To ensure this variety being useful in the garden, it must be planted in poor soil. *Henry Patrick* (Ware), the best white in the section, and invaluable for the supply of cut flowers. The plant is rather tall, but when the soil is not manured it is very free, and the blooms are borne above the growth. *Lady Kerrison* (Cannell) an effective variety, the flowers of medium size, the ground colour bright yellow, the florets suffused or edged with red. *Charming Bride*, an extremely beautiful variety, introduced by Messrs. Cannell from America. It is dwarf in growth, very profuse in flowering, and the blooms are of medium size; the colour white tipped, and suffused bright rose.

Conspicuous in the trial collection is *Cochineal* (Ware), a crimson variety, much deserving of special attention. Although it failed to obtain recognition, it is one of the most useful in the collection. The plant is rather dwarf in growth and profuse in flowering, and the blooms are of medium size and good form; the colour brilliant crimson. Also in the collection is *Glare of the Garden* (Cannell), a dwarf-growing and profuse-blooming variety, with medium-sized scarlet flowers. For the supply of flowers for small decorations, it is unequalled by any other variety in its colour. One other variety must be mentioned, and that is *Prince of Wales* (Cannell), a noble flower of a brilliant orange-scarlet colour. It is of medium height and very free, and even in comparatively rich soil the flowers are borne clear of the foliage; consequently it can be depended upon to produce a good effect in the garden. G. G.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Hardy plants in bloom include:—Aster Novæ Angliæ, A. pulcherrima, Colchicum autumnalis, C. atro-purpurea, Tritoma glaucescens, Viola pedata, V. lutea grandiflora, Coreopsis grandiflora, Liatris pycnostachys, L. spicata, Silene Schaftæ, Zauschneria californica.

THE HOUSE.

Those who are desirous of having a good display of bulbous plants in the spring must begin to make preparations with as little delay as possible; the present moment is indeed most favourable for starting hyacinths, tulips, and other bulbs for indoor decorations, and it appears desirable to remind those who are partial to hyacinths in glasses that it is not necessary to grow them in water from the first. Hyacinths can be shaken out of the soil and put in the glass when in full bloom without material injury; and as the finest spikes are produced by pot plants, the preferrable course is to grow the bulbs in pots until the spikes are nearly developed, and then transfer to glasses. Tulips, the Van Thols more especially, should be grown in boxes until they are in bloom, and be then arranged in pots or in fancy receptacles as may be desired. By this course the whole of the flowers in each basket can be had in precisely the same stage of development, a point of no small importance when required for the drawing room.

CONSERVATORY AND GREENHOUSE.

Ericas can be better wintered in a spacious and airy pit than in the greenhouse. It is certainly best to subject them to as little fire-heat as possible, though they must be kept safe from frost. Water only on fine days, and then as early as possible; keep the plants hardy, and if they are exposed to three or four degrees of frost they will take no harm if kept dark till thawed.

Mignonette sown now in pots of rich light soil, started with a little bottom heat, as on a bed of leaves or nearly worn out manure, and kept in a pit all winter, will bloom early next spring, and a few may be forced. It requires but little skill to flower Mignonette at any period of the year; but at this season one important caution must be given and that is, to grow the winter stock in pots that are well drained, and not wet the leaves.

Verbenas and Petunias from autumn cuttings are best kept with Cinerarias and Primulas, as the same treatment will serve for all, and they will require fumigating more frequently than other plants.

FORCING AND FRUIT HOUSES.

Cucumber Plants to fruit during winter will now be showing signs of fertility, in which they must not be too much encouraged, unless they are strong. If allowed to bear too early, they will soon cease to be productive and the fruit will be small and inferior. Keep them carefully trained; take the leaders up their full length before stopping, then stop every side-shoot at the second joint. Pinch off the young fruit until the plants are in a robust state, with plenty of large healthy leaves; if fit to begin bearing thin the crop moderately.

Mushroom House. - Large beds, well made, retain such a genial heat that, with good manure and good spawn, success is pretty certain. The best prospect of success is when the manure can be selected as it comes from the stable, or, better still, in the stable itself. The best place in which to grow mushrooms on a small scale is in a dark, warm, unventilated shed, with a brick wall at the back. The droppings should be raked together in ridges, every day or two, until there are sufficient for a bed. While they are accumulating they should be turned over and drawn up in small heaps or ridges again, every two or three days, to prevent a rapid fermentation. When there are sufficient of these heaps to make a bed, wheel into the shed as much turfy sandy loam as will equal one third the bulk of the manure, and mix all together, and allow the mixture to remain in one heap for two days, which will cause a gentle fermentation to commence. Make the bed four feet wide, four feet high at the back next the wall, and sloping to two feet in the front. It should be in a condition of equable moisture throughout—neither wet nor dry—and in the process of making it must be well beaten down to render it quite firm. When at between 70 and 80 deg. insert the spawn in pieces of the size of hens' eggs, about six inches apart and three inches deep.

FLOWER GARDEN AND PLEASURE GROUNDS.

Carnations and Picotees not yet rooted from layers must be taken off the stools and planted under hand-glasses; those with a few root fibres may be potted; having begun to root they will soon gain strength. Border cloves may be propagated to any extent from cuttings in spring.

Chrysanthemums to have less liquid manure as they show colour, and to be discontinued (using plain water only) as soon as a few of the first flowers are open. Large-flowering varieties out of doors are liable to suffer from high winds and drenching rains; therefore, give them some rough sort of shelter to prevent the spoiling of the best blooms. They should be taken indoors before being exposed to sharp frosts.

FRUIT GARDEN AND ORCHARD.

Strawberries.—Runners well rooted may be planted now in beds to bear next season. Plantations at this late period should be made with carefully sorted plants—the best only of the runners—and these to be taken up with good balls and planted in the beds directly.

Unfruitful Trees may be improved by commencing at once to root-prune, manure, or drain the soil. The nature of the cure must depend upon the cause of barrenness. If the trees have attained a bearing age, and are over-luxuriant, root-prune by this simple method:—Open the soil three parts round each tree, at a distance from the stem of from three to four feet, according to the size of the tree. The roots must be cut back to a general average of three or three and a half feet, except the part where the soil was not opened, where the roots will remain, of course, their original length. The roots cut back to be carefully laid out near the surface, and a little fresh soil used in filling in. Next season open the soil on the side left undisturbed the year before, and then cut the roots to three or three and a-half feet. Trees that are becoming exhausted to have a dressing of manure or rich compost.

KITCHEN GARDEN AND FRAME GROUND.

Routine Work.—Ground intended to be drained should be drained *now*, that benefit may be derived from the improvement at once. Wherever marsh weeds grow, the cultivator may be sure there is need for drainage, and that the work will soon pay for itself in increased production. Take up carrots, and store only the *sound roots*, and those to be stored *dry*. Potatos more particularly are not good when stored in a damp state, as the moisture renders them unpalatable and unwholesome. Plant chives, which never fail to furnish an onion flavouring for soups.

VILLA FARM.

Young Birds are now beginning to show their prominent characteristics, and some revision of the poultry yard should be effected shortly, and so far as can be determined the best of the pullets and cockerels of their respective breeds selected for breeding purposes. The others should be either marked for killing as required, or be disposed of as may be considered the most desirable. Those intended for the market ought not to be kept a day longer than is necessary, as they are now of an age and size at which they consume goodly quantities of food, and every bird will make a difference in the corn bill—not great, perhaps, but still a difference. If the advice that has been given in these pages in reference to the feeding of poultry has been acted upon the birds will require but little extra feeding to fat them for the table or the market. It will certainly be all the better if the birds are in sufficiently good condition to admit of their being caught and killed without undergoing any fattening process, but for various reasons it is not often practicable. The best age for table birds is from six to eight months, as they are then well developed without being old enough for the flesh to have become at all tough. A plentiful supply of Indian corn with a moderate quantity of chopped green food will soon bring the birds into proper condition for killing, but in a general way it will be better to feed them once a day with either buckwheat meal or barley meal, which should, if practicable, be mixed with skim milk. Poultry will fatten more quickly when placed in a somewhat confined place, but shutting the birds up in the dark, or in small coops, as is done in some districts, is not by any means advisable. The place in which they are shut up must be thoroughly dry, and a goodly supply of ashes or sand for dusting, and plenty of clean water, should be provided.

PREPARING FOR THE WINTER MOTH.

We have ventured to suggest to Mr. Joseph Masters that a few timely notes on preventive measures to be taken this autumn would be of service to growers. Mr. Masters, who regards nothing as a labour that can in any way advance the interests of fruit growers and gardeners, has kindly sent us the following practical remarks on grease banding:—

To the Editor of the *Evesham Standard*.

Sir,—As the season of the year is approaching when the winter moth will be making its appearance, a few hints by way of reminder to fruit growers may not be out of place.

1. The wingless female moth will be soon making its ascent of the tree to deposit its eggs for the future brood of caterpillars.

2. The best proved method of intercepting the moth is to band the trees with cart grease. Buy none unless guaranteed as free from tar. Numbers of young trees have been killed by injurious compounds sold as grease.

3. Do not use oil in the grease to make it thin. If the daub is stiff it will last the longer. It is important to have it sticky, and look after it and keep it so, otherwise the moth will creep over it.

4. If trees are young and the bark is smooth and tender, some grease proof paper should be tied next to the bark of the tree, and the daub placed on the paper. If trees are matured and the bark is rough *good* grease will not injure the tree.

5. Trees where grease proof paper is used will not require so much grease, as the paper prevents the bark from absorbing it. If all the trees were banded with paper it is probable that the saving of the cost of grease would be an equivalent for the cost of paper banding.

6. Grease may be applied with the hand, or a thin, flat piece of wood, or a small brush; in either case put on a thick layer of the grease.

7. Grease banding should not be delayed after the second week in October, and will require attention until the end of November.

8. The appearance of the moth may be known by taking out a light in the dusk of the evening, when the male moth, if any are present, may be seen. If no male moths are seen, you need not trouble to grease band the trees.

9. Do not be discouraged if, after all your pains, some caterpillars are found; when numerous they are not to be exterminated in one season.—Yours truly,

Evesham, September 16, 1890. —*Evesham Standard.* J. Masters.

REPORTS ON THE POTATO CROP IN ENGLAND AND WALES.

Sulhamstead Abbots, South Banister, Berkshire.

In speaking of the potato crop, I must first say that I seem to be out of the potato world, and, therefore, unable to claim to be of sufficient authority to offer an opinion upon its condition and prosperity. Well, there are potatos and potatos. I grow no other sorts but my own studied seedlings—sorts of the best of our old English varieties crossed and handed down consecutively for forty years. These possess a pedigree blood like a racehorse, so to speak; not a bloated thing rushed into cultivation in a season or two with no other recommendation but size and capability for filling a sack! My friend, Mr. Bell, of Strathfieldsaye, drove over to see me about a week ago, and as he has a touch of potato on the brain I hauled him amongst my ridges and trenches, and turned out some roots of Lady Truscott, Fiftyfold, Ringleader, Kate Fenn, and many others which my men were lifting. Mr. Bell can tell you what he thought of them; I am too modest! Mr. Bell fell in love with a sample of Fiftyfold. I will just tell you in passing that all my potatos grown in my garden are cultivated on my old ridge-and-trench plan, and it has never failed to secure for me an excellent crop. I have often wished that I was a born foreigner, and then, in the long ago, my ridge-and-trench might have claimed a furore which another recent, though very similar, plan is exercising at the R.H.S. Chiswick gardens, and now proclaim. I do not think the Jensonian method is quite so good as mine, but it will give you good potatos.

I cannot agree with the *toujours* market idea of the day in regard to big produce, so I have laid my arable land to grass, with the exception of about an acre which I keep for experimental purposes, and to grow Lady Truscott and Early Regent for my household, planted late after tares. My crops of them are excellent, and although their tops were smitten the tubers are very free from disease. This is a feature of them about this neighbourhood (in all soils), for they have won their way far afield. I drove over yesterday to see my neighbour, Mr. Ilott, of Wokefield Park Gardens, who is an authority on potatos. Unfortunately I missed him, but as I came away from the gardens I met a home farm cart laden with sacks of potatos. I begged of the driver to allow me to untie one of the sacks to examine the produce. It was filled with Lady Truscott, a beautiful medium-sized sample, grown in a field where the man told me they are turning out "a very good crop." I afterwards learnt that this variety is a great favourite at Wokefield House, and it is largely grown in the district. I learnt, during an extended drive, from those I saw lifting their crops, and from others likely to know, that "Roses," "Hebrons," and "Elephants" bear very unequal characters. On the gravels they are from one-third to half a crop unuseable; on low and damp soils they are a great disappointment. Fortunately they are gone much out of favour, people are becoming educated as to their potatos, and to find out the "stick-to-the-rib" qualities that our English sorts maintain over the squashy, bloated Americans. Magnum Bonum is largely grown about here, and comes very good and free from disease from off our soils. The seedlings of the late Mr. Clark, which the Messrs. Suttons are now distributing, are remarkably free from disease, and doubtless will soon oust the Elephant and its congeners altogether.

I finished my drive yesterday by calling on my neighbour Mr. Richard Webb, of Beenham. He of the Mangold Wurtzel renown. Mr. Webb is now growing potatos largely for the Messrs. Suttons, and his farm affords a fine study of the esculent, so of course the good people of the house were unable to get us in till "the tea was all gone cold," and then, to talk of fruit cultivation, why Mr. Webb is an association all alone, one must go "and see" to fully appreciate all Mr. Webb's work? As to myself, I have given you years ago carte blanche to "come and see me," and I can show you how I have beautified a little spot. You know how I have been pegging away to help the community to lay on good sustenance in regard to their daily potato, and I know how many years you have been urging the very same thing. You may still guarantee the British (or any other public) against the fear of a potato famine either for this, or future years. I was told at the Temple Show a short time ago, that I had "lost touch" with the R.H.S. at which I smiled, so you may be sure.

I have driven over to the beautiful gardens of Englefield to-day, but unfortunately to find Mr. Coombes gone to Sussex; the information I gained, however, is similar to what I have written, and quite sufficient to reassure your readers in what you are striving to let them know.—Robert Fenn.

Lockinge Park, Wantage, Berkshire.

Potatos promised a heavy crop until the haulm was smitten by the disease. This has been checked by the recent fine weather, and there will be good supplies. Ashleaf, Myatt's Ashleaf, and Henderson's Prolific, are our early sorts, Beauty of Hebron, Chiswick Favourite, and Magnum Bonum, our late varieties; the last named being our mainstay for winter use. There is none other to beat it.—J. Rose.

Wokefield Park, Berkshire.

With reference to the potato crop in this district, I am pleased to be able to say that I consider it collectively to be very good and above the average. Some time ago I had serious doubts respecting this matter; what with so much rain and low temperature, and the haulm going spotty, I thought the crop would be seriously damaged, but the warmer weather setting in, with corresponding decrease in the rain fall, the potato crop in this neighbourhood is quite an average. I have judged at most of the village shows about this part and never saw finer examples than I have seen this year.

I have about fifty varieties growing here and cannot complain of any going very bad, the exceptions being "Reading Russet," and "Ruby" (twin brothers), which are, as a rule, liable to the disease.

I have a large batch of seedlings, one from intercrossing Chiswick Favourite and Woodstock Kidney, the latter being the pollen parent. They are not yet lifted but still look healthy; the other kind was raised from a cross between Sutton's Seedling and Woodstock Kidney. The last named being again the pollen parent; these are apparently free from disease, and a very grand crop we have. I must say these are two years from the seed, and they kept their foliage better than any I have. Our land here is heavy, but the neighbouring soil is light, and where very light the crops are good. I certainly expected the crop to be bad and similar to 1879, but it is altogether better. One important remark I must make: We are very free from thunderstorms and do not get such floods as in many parts, but I have seen a large quantity of potatos this year and never saw better. The sorts in favour in Berkshire are Magnum Bonum, Beauty of Hebron, Sutton's Best of All, Windsor Castle (these two are perfect gems and excellent croppers escaping the disease to a marvellous degree). Ringleader, and Lady Truscott (the latter almost identical with Early Regent), are in good report here. Snowdrop is also a potato of highest quality, but not sufficiently known. Fillbasket is another excellent kind and with many a great favourite. One of the heaviest croppers, combined with quality and freedom of disease, is Sutton's Matchless, and I am convinced that Messrs. Suttons have the last three years sent out a strain of potatos that has surpassed all previous productions, both as croppers and quality with a great freedom from disease.—Charles Ilott.

Highclere Castle, Newbury, Berkshire.

The potato disease is not with me, or in this neighbourhood, so destructive as I at one time feared it might be. Of course, some sorts are worse than others, notably Prizetaker, Beauty of Eydon, and Reading Russet, but as neither of these are grown in quantity the loss is not great.

I grow about eighty varieties, and the majority of these have given good results, perhaps eight per cent. diseased on the whole, such varieties as Carter's King of the Russets, Clipper, Sutton's Fiftyfold, and Windsor Castle being absolutely free at the time of lifting, though a few of Clipper and Windsor Castle have gone since. Also Chancellor, Reading Giant, Sutton's Satisfaction, and Abundance had scarcely any of the tubers touched. All crop heavily, and in quality are fairly good. Sutton's Satisfaction has been especially fine this season, and is rapidly rising in favour as a show variety. It is, however, rather too large for the table. Amongst cottagers in this neighbourhood White Elephant and Beauty of Hebron are largely grown, and, I believe, as a rule give good results. For field culture I have not as yet found any variety equal at all points to Magnum Bonum. Chancellor runs it hard, but many of the larger tubers have a split centre. I am this year trying Reading Giant in the field culture, but cannot yet give an opinion on its merits for that purpose. It is much too large and coarse for garden culture here.

For early supplies, or to succeed the earliest Ashleaves, Sutton's Seedling is an exceedingly valuable variety—large in size, a heavy cropper, and the quality is first-rate. It is also excellent for culture in frames, the tops being very short under glass, but is very susceptible to disease. I prefer Beauty of Hebron to Early Puritan or Webb's White Beauty (which are much alike); it is quite as heavy a cropper, but not so coarse, whilst the quality is equal, if not superior. As a good main crop variety Sutton's Windsor Castle is worthy of note.—William Pope.

Mentmore, Leighton Buzzard, Bucks.

Fine regular crops, and disease not very prevalent. Early Puritan was our first early, having commenced digging it on June 14. Clark's Main Crop is one of our best late sorts, and for quality none is better than Snowdrop.—J. Smith.

Histon Road Gardens, Cambridge.

In reporting on the potato crop hereabouts I am compelled to say that I find a good deal of disease on all sides, especially among the mid-season varieties. Later kinds, such as Magnum Bonum, Imperator, and Fidler's Reading Giant have very few diseased tubers, except in low lands. But the haulm was smitten with the disease, which so far arrested growth as to tell badly against the crop. The varieties that find favour here are Snowdrop, Beauty of Hebron, Fidler's Clipper, Reading Russet, Vicar of Laleham, with Sutton's improved varieties for garden culture. Snowdrop is also coming to the front for field culture, on account of its splendid quality. With Imperator, Magnum Bonum, and Fidler's Reading Giant, which seems to me to be the best late kidney, and certainly the heaviest cropper, with very few diseased tubers.—Henry Ridgewell.

Llanina New Quay, Cardiganshire.

I find Sutton's Ringleader the earliest here, as the tubers are of good quality as soon as they are large enough for use; grown side by side with Sharpe's Victor it was ready for table from ten days to a fortnight before that variety. Sutton's Seedling is the best second early we have here.—L. Hopkins.

Crosswood Park, Cardiganshire.

The crop is about an average and quality is very good. Woodstock Kidney, Cosmopolitan, The Puritan, and Sutton's Satisfaction are perhaps the best sorts. Beauty of Hebron and Early Rose are heavy croppers, but do not cook so well being too close in texture.—R. C. Williams.

The Quinta, Chirk, Denbighshire.

On strong damp land in this district there is a very severe attack of disease, but on lighter soils there is nothing very serious at present. I took up three or four measures of Snowdrop potato from strong soil three weeks ago and they seemed fairly good at that time. I put them into an open shed with some loose straw over them; I turned them over yesterday and half of them were quite rotten. I also took up a quantity of Sutton's Ringleader, and Myatt's Prolific at the same time, and they under the same treatment are fairly good. For early supplies here Myatt's is the one most generally grown. Of the second earlies there is no end to the varieties grown, and of course different soils suit different kinds. For field culture Magnum Bonum is the principal. A few grow some of the newer sorts, but the great bulk is the Magnum. I think a fair summary would be on strong land the finer sorts are seriously diseased, while later and field crops so far, are fairly free, and with fine weather I think late and field crops will turn out fairly well. Some of the tops of Magnum Bonum seem slightly touched. I examined some roots and found the tubers all sound.—James Louden.

North Devon.

All the poor lands of North Devon show clean crops of rather poor quality. There is but little disease, but returns will be light. On the best lands the crops of Magnum Bonum are quite satisfactory, and some good breadths have been well lifted.—W. Barham.

Membland, Plymouth, Devonshire.

I am sorry to say the disease appeared early in the season and spread at a greater rate than I have known it for some years. Those in gardens, allotments, and in the fields are alike stricken, especially the Beauty of Hebron, the haulm of that rotting right away. The first I saw of the disease was in an allotment on the 26th of June.—George Baker.

Sherborne Castle, Dorsetshire.

Early varieties were all that could be desired, both in bulk and quality. Both mid-season and late varieties were looking remarkably well when disease made its appearance, and imposed a severe check upon the growths, and greatly reduced the bulk of the crop. Here the Early Regent was the first to suffer from the ravages of the disease.—W. G. Pragnell.

Badminton, Gloucestershire.

The early kinds were very good. The late and second early varieties made much haulm, and have suffered somewhat from disease.—William Nash.

Swanmore Park, Bishop's Waltham, Hampshire.

Potatos have so far yielded very well. The cooking qualities are not quite so high as in some seasons, owing to such a continuation of showery weather. Sutton's Seedling is by far the best potato we have used. White Beauty of Hebron and White Elephant are highly thought of in this part for winter use. —Edwin Molyneux.

Danesbury Park, Welwyn, Hertfordshire.

Early sorts were very good, but disease showed itself in many places at a very early period in the season and did considerable damage, more especially where the rows were near together and on heavy retentive soils. We had rain on every day from the 25th of June to the 13th of July, and scarcely any sun at all.—Robert Sawford.

Sevenoaks, Kent.

I have been digging up White Elephant and out of a crop of five tons to the acre, I get 30 per cent. blighty potatos; this applies to the neighbourhood. The Beauty of Hebron I dug up early, they escaped the blight. Farmers are now pitting them and they are free from disease. These potatos are grown and approved of, also Imperator and Magnum Bonum. The crop of Imperator is good, about 15 per cent. diseased. Very little disease in Magnum Bonum.—Albert Bath.

Bridge, Canterbury.

In this locality the potato crop has suffered far more than for several years. On the clay soils which were closely surface caked by the heavy rains of June and July there is scarcely half the usual produce, of which a fourth is diseased. In our valley from Elham to Bridge and Wickham—with black loam on gravel—the drainage is good and the crop much better, with less disease. Early planted crops gave an average and were of good quality, but the mid-season kinds died off prematurely. A fact regarding my own. I had them all up and stored in the third week in August, being a month earlier than usual. I fear there will not be more than half a crop generally to store for the winter. The sorts mostly grown about here in gardens are Ashleaf, Beauty of Hebron, Snowdrop, Schoolmaster, Sutton's Seedling, Abundance, Best of All, and Satisfaction. For field crops Early Rose, Beauty of Hebron, White Elephant, Magnum Bonum, Imperator, and Abundance. The only sorts entirely free from disease in my gardens are Windsor Castle, Chancellor, and Robert Fenn, the last named a seedling. —C. W. Howard.

Whittlesey, Huntingdon.

Potatos in this district are a very good crop, scarcely any disease. The varieties chiefly grown are Beauty of Hebron, Magnum Bonum, and Imperator. The last few days of real hot weather has ripened up the crop out of the reach of disease. I may add that there are quite 2,000 acres of the varieties above mentioned grown in this locality.—S. Rogers.

Cole Orton Hall, Leicestershire.

Early sorts produced fair crops and very clean; late sorts have suffered from disease. I find Sharpe's Victor an excellent early kind, being a good cropper and of high quality. Commenced digging from open border here the first week in June.—G. C. Maynard.

Belvoir Castle, Lincolnshire.

A very satisfactory crop of Belvoir Prolific Ashleaf may be partly attributed to our system of surface planting, dressing with burnt earth and charred vegetable matter (potash), and earthing at the time of setting. Myatt's Prolific, treated in the same way, produced an abundant crop. We have found Sutton's 255 exempt from disease, and a good potato. Imperator is also a valuable sort. For farm cultivation we shall grow the Scotch Regent.—William Ingram.

Laleham House, Staines, Middlesex.

Early sorts turned out well. Later sorts produced too much haulm, and have suffered from the disease, which first made its appearance on Snowdrop, Early Puritan, and Reading Russet. Our sheet-anchor for winter and spring use is Magnum Bonum. We try new sorts, but generally discard them for that variety, being unsurpassed so far as disease resisting, good crop, and quality is concerned.—Thomas Anderson.

Eydon Hall, Byfield, Northamptonshire.

The potato crop in this neighbourhood is not affected by disease to any serious extent, but tubers are not quite so large as usual. From July 19th the disease spread very fast, the weather being so favourable to its development. The varieties generally grown in field and allotments are Beauty of Hebron, White Elephant—which are rather badly diseased—Magnum Bonum, Sutton's Abundance, Chancellor, and Reading Giant, which are free from blight. Imperator is also becoming popular for field culture: this is slightly affected. The Scotch Champion is not now grown about here. In these gardens Duchess of Fife produced a very heavy crop of fine table quality, and quite free from disease. London Hero, Snowdrop, Windsor Castle, Satisfaction, Abundance, The Colonel, Reading Giant, Chancellor, and Fidler's Success also had clean and sound crops. The following kinds were badly diseased:—Reading Ruby, Reading Russet, Prizetaker, Queen of the Valley, Delight, and Iris.—J. Hughes.

Edgcote Park, Banbury, Oxfordshire.

Around here the potato crops are very badly affected with the disease, the soil being heavy and the locality very low. I am afraid the crops will be light and very unshapely, as we had six degrees of frost on the last night of May, which cut everything off, and the disease made its appearance very early. The varieties grown for garden are Myatt's Ashleaf, Beauty of Eydon, Fidler's Prolific, Snowdrop, Edgcote Seedling, Edgcote Purple, Sutton's Seedling, and Sutton's Satisfaction; varieties grown in the field: Magnum Bonum, Chancellor, Reading Giant, Beauty of Hebron, White Elephant, Sutton's Abundance, and Early Oxford.—E. S. Wiles.

Stow Hall, Downham Market, Norfolk.

Early kidneys were fairly good, but the crop not so heavy as in some years. Veitch's Ash Top and Carter's First Crop are good sorts. White Hebron and Early Puritan (early round) are much more profitable where quality is a secondary consideration, they so soon reach a large size and crop well, but they eat soft and watery.—William Orr.

Banbury, Oxfordshire.

Potato disease has been general all over this neighbourhood, but only to a small extent, and breadths under good cultivation suffering in the last degree. The varieties grown around here are very numerous, there being so many village shows. Coloured varieties with American blood in them fall easy victims to the disease. Beauty of Hebron, Adirondack, Trophy, Queen of the Valley, and Sutton's Satisfaction and Seedling have stood here well, remarkably few bad or small tubers. Fidler's Reading Giant has escaped, for I cannot find disease anywhere. I venture to state that this potato has a good future before it. It is a grand lifter of first-class quality, with good all-round habit, and as a show tuber very few equal it. Snowdrop has lifted well, being above the average, with tubers more of table size than in past seasons. London Hero (white round) finds favour here, but requires great care in the culture. Magnum Bonum (field) is grown to the extent of some hundreds of acres in this district, and everywhere a favourable report is given. Sutton's Reading Russet, Mr. Bresee, Prizetaker, Wiles' Edgcote Purple, Hughes' Purple Perfection, and a host of other are grown with more or less success, and disease has claimed about an equal number of them all round.—Tom Tooley.

Tresco Abbey, Isle of Scilly.

Early varieties produced a good crop, but late kinds are badly diseased, owing to the long continuance of wet, foggy weather.—James Jenkins.

Marston House, Frome, Somerset.

With reference to the condition and prospects of the potato crop in this district, I am pleased to be able to state that, on the whole, we have every reason to be very well pleased with them. Bad cases of disease there certainly are, but these are more the exception than the rule, and there will be more than enough sound tubers lifted to meet all the requirements of the neighbourhood. The worst failures are on badly-drained land, the growth in this case being very weak from the first, and was early overrun by disease. Late planting was also attended by rather bad results. The true Old Ashleaf has suffered the most, especially the breadths grown for seed, but the other Ashleafs have come through the ordeal surprisingly well—thanks, probably, to the well-pulverised state of the ground at planting time, and subsequent vigorous top growth. In our case we shall have sufficient Ashleafs to keep up the supply till December, and in numerous small gardens they have done equally as well. American early varieties are not much grown, these having frequently disappointed cottagers of late years, but those that planted them last spring are well pleased with the crops lifted. They matured early, the most critical time being past before disease was very prevalent. Coles's Favourite has long been a favourite here, and this season we have a grand crop of perfectly-formed sound tubers. It is early in maturing, and so also is Sutton's Seedling, and this also cropped well and escaped disease accordingly. As far as I can learn, the later kinds of moderately strong growth have suffered most from disease, fully one-half of the tubers being unsound. Even in this case the crops were heavy, and a useful lot of "ware" and seed potatos have been stored. Fairly heavy crops were found under the rows of Chiswick Favourite, Chancellor, Prime Minister, Abundance, and Satisfaction, only about 25 per cent. being diseased. We depend largely upon Laxton's Reward —an improved Champion—Magnum Bonum, and Scotch Champion, and the two last-named are those principally grown in the open fields. The haulm of the two former being early stopped by disease, the tubers are smaller than usual, and rather more of them are diseased than is often the case. Magnum Bonum seems to have escaped disease surprisingly well, and there will be heavy crops of large, well-formed tubers lifted. Hereabouts the quality is always satisfactory, and, on the whole, it is yet the most reliable and satisfactory variety that can be grown.—W. Iggulden.

West Row, Mildenhall, Suffolk.

Within the past few days I have seen several growers. They all say they have not known potatos to be so bad for thirty years, both in garden and field, as they are this season. As for my own, growing about forty kinds, the best among them are Sutton's Satisfaction, Ellington's Prolific, Peach Bloom, Snowdrop, Early Regent, Prime Minister, and Suffolk Favourite. The old Magnum Bonum is fair, but the tubers are a bad shape.—William Ellington.

Lythe Hill, Haslemere, Surrey.

The potato crop in this district has suffered very much from the disease. The earliest kidneys were very fine and of excellent quality, in fact I never found them so highly flavoured. The earliest varieties I grow are Veitch's Improved Early Ashleaf, Myatt's Prolific, and Rivers' Royal Ashleaf. Then, as an early round, Sharpe's Victor is one of the earliest and was free from disease. Other sorts grown in these gardens, and in many of the cottagers' gardens as well, are Beauty of Hebron, International Kidney, White and Pink Elephant, Yorkshire Hero, M.P., Schoolmaster, Vicar of Laleham, Village Blacksmith (very bad), Abundance, Magnum Bonum. I may remark that the cottagers take much interest in their gardens and put up some excellent collections and dishes at our annual show. Many exhibits would compare well, if not make some of the gardeners blush. The field produce is on an average about one third diseased; the sorts generally grown are Scotch Champion, Magnum Bonum, some Chiswick Favourite (one of the best late potatos grown), White Elephant, and York Regent, also a few of the newer varieties. I feel convinced that if all the haulm was cut off at the first appearance of spot on the leaves, and the tubers lifted a few days afterwards, a large percentage would be saved, although a great many persons think that when tubers are lifted before they are ripe and before the skins are set they will not keep; but that is a mistake, the great thing is to lift and store them dry, and there is no perceptible difference in their keeping. —A. Evans.

Glenhurst Gardens, Esher, Surrey.

In this locality the potato crop is very good, a few diseased but nothing to complain of. Our crop is very good indeed. Magnum Bonum, Chancellor, Satisfaction, Imperator, Queen of the Valley, Fidler's Reading Giant are excellent here; Sutton's Seedling and Snowdrop are suffering the most severely from disease of the several varieties grown. I have heard but little complaint in this neighbourhood about the disease. There are excellent crops here, the soil of the district being rather light and sandy.—C. J. Waite.

South Metropolitan District School, Sutton, Surrey.

The potato crops in this neighbourhood have suffered most on the heavy soil; those grown on the light soil do not take the disease so badly. We grow about sixteen acres for our own supply; our soil is very shallow and light on chalk. I have very good crops and a very few diseased tubers. The sorts I grow in the field are Beauty of Hebron, Imperator, Reading Giant, Reading

Hero, White Elephant, Schoolmaster, Magnum Bonum, and Red Skin Flourball. Besides these I grow about fifty other sorts. International Kidney is bad, and a few tubers of the Ashleaf are diseased. The other sorts are not lifted yet. I am troubled very much with the rooks at my potatos, so I have them earthed up with the plough as close to the top as I can. I think this earthing helps to save the crops from disease, and after they are lifted I have them put in narrow clamps as pointed as they can be made. As the result, they always come out clean and dry.—C. Osman.

Eridge Castle, Tunbridge Wells, Sussex.

Excellent flavour and very early owing to their not being cut off by frost during April or May. I am sorry to say the disease has done considerable damage to the crop.—Joseph Rust.

Longford Castle, South Wilts.

The potato crop in South Wilts, making due allowance for diseased tubers, is a good one. In some of the allotments hereabouts, the soil of which is light, and rests upon a gravelly subsoil several feet above the water-line, there are scarcely any diseased potatos to be found in the crops now being taken up and pitted. This is not to be wondered at, seeing that the soil is light, and from nine to fifteen inches deep, with good drainage underneath to prevent the soil getting unduly wet at any time. Consequently the heavy rains, which injuriously affected roots growing in heavy soils on high situations, as well as those on light soils in low-lying districts during the later weeks of July and early part of August, tended to produce better results in these allotments than would otherwise have been secured. The varieties of potatos grown are Sutton's Satisfaction, Sutton's Seedling, Daniels' White Elephant, Reading Russet, Vicar of Laleham, Blacksmith, Champion, Rocks, American Rose, Magnum Bonum, and Myatt's Prolific; the last-named variety being planted for early crops. The cottage garden and allotment holders' crops are satisfactory all round. Taking one district with another, I think the potato crop of this year may be pronounced a fairly good one—always, of course, excepting the vast boggy marshes cropped with potatos in some parts of Ireland. To crops so situated a wet season means absolute ruin —H. W. Ward.

Clyffe Hall, Market Lavington, Wiltshire.

Potatos in this district are very good, but in low-lying lands they are very much diseased. In the fields where the land is properly drained there is not much disease, and the quality is all that can be desired. The varieties that have taken the disease worst are as follows: Little diseased—Sutton's Seedling, Satisfaction, Fidler's Conqueror, King of Russets, Imperator, The Bruce, Magnum Bonum, The Dean, Beauty of Hebron, Victory, Reading Giant, and Carter s Holborn Abundance. The above are well suited for field culture. Much diseased—Ringleader, Prizetaker, Snowdrop, Mona's Pride, Reading Russet, Woodstock Kidney, Hughes's M.P., Purple Clipper, Elephant, Queen of the Valley, and Victor. I find the following best suited for garden culture: Carter's Earliest of All, Covent Garden Perfection, Beauty of Hebron, Schoolmaster, and Victory.

The best crop of patatos I have lifted this season was that of a seedling of my own introduction. I sent it to Chiswick for trial, and named it White Perfection. It is without doubt the finest and handsomest white kidney ever grown, and of first-rate quality. I showed it at the Bath Floral Fête, and was awarded first prize for it. I was also awarded a first-class certificate.—James Lye.

Colehatch Farm, Penn, Bucks.

During the past few days I have been busily engaged in lifting my crop of potatos, and I am much gratified in being able to state that this season the potatos are a grand lot. The disease has hurt our potatos but little this season, and the reports as to other crops in this district are extra good. I believe the crop will prove the best one we have had for several years past. At all events I have an exceptionally fine sample and my friends are able to say that they also have heavy and otherwise excellent crops.—T. A. Beckett.

Grimston Park, Tadcaster, Yorkshire.

All the early varieties that were allowed to ripen were much affected by the disease, fully two-thirds of the crops being damaged thereby. Those lifted before the middle of August were not injured to any serious extent. Within a few miles of us there are collectively many hundreds of acres of potatos grown, the product being sent to the large manufacturing towns in this county. Myatt's Ashleaf is the kind mostly grown for the early crops, though I have known one or two growers who have planted early-ripened seed of Magnum Bonums and marketed them as early potatos. The venture was not a success, for although the crop was a good one, the quality was indifferent. All the "sets" of the early kinds are sprouted well before planting. The growers have large quantities of shallow boxes, in which the sets are placed upright during January and February, the boxes being stored in barns or other outhouses which are frost-proof. The boxes are taken to the fields when planting, and the sets are put direct into the drills prepared for them. Some of the growers who have not large plots take the trouble to protect the young haulm from late spring frosts by inserting cleft sticks, about two feet in length, along the ridges, and run loosely-twined straw bands down each row every night. Previous to the great breadths of Cornish potatos being grown, excellent prices were obtained by the growers who took this extra expense and trouble with their early potatos; even yet many growers at the village of Kelfield and thereabouts adopt the practice. The soil in that locality is a warm sandy loam, and not far distant from the river Ouse, about four miles above Selby.

For general field crops Scotch Regents and Magnum Bonums are the principal kinds planted. One large grower I know tells me he finds "Excel All" a profitable kind. Those late potatos grown on the loamy soils overlying the magnesian limestone usually fetch the best price in the markets, and up to now the tubers are not much affected by disease. The haulm is evidently injured by it, and it is feared before the time for lifting the crops for storing the tubers will be affected. As a rule those grown on the higher lands of the limestone formations are not so badly affected with disease as are those grown on the more moist alluvial soils. In dry seasons the latter soils produce the heavier crops. Most growers use some mixture of artificial manure when planting, beside giving the land a fairly good dressing of farmyard manure. Most of the leading manure merchants in the district make up a special mixture for this purpose. Scotch seed is obtained—mostly from the loamy red sandstone soils in Perthshire—every second year by all the most successful growers; this extra expense being well repaid by the heavier resultant crops.

In our own case, for garden culture, we find Veitch's Ashleaf and another selection of the Ashleaf called Sandringham Kidney to be the best croppers for early supplies. We have grown these two early varieties alongside several other early kinds, and having weighed the produce have decided, for the present at any rate, to grow no others.—Henry J. Clayton.

AMERICAN NOTES.

Cranberry Crop.

The crop of cranberries in the United States appears to be very poor this year. The *Boston Herald* says: The weather of the last few weeks has nearly ruined the cranberry crop at Harwich, Chatham, and Brewster. At Harwich the outlook in the early season was for a 2,000 barrel crop, but today the prospects are that it will not be over 500 barrels. At the recent annual convention of the Wisconsin State Cranberry Growers' Association, the aggregate estimate of the growing crops in the state was reported at 4,300 barrels. Reports of the Cape Cod and New Jersey crops were not definite, but the feeling was that the crop would be generally lighter than in 1889.

Chopped Apples.

Chopped apples is an exported product of America, of which little has been heard. They are made, says the *Prairie Farmer*, from inferior, unmarketable fruit, which is chopped into small pieces and then dried. They are shipped largely to France, where they are used for conversion into cider, and are preferred to their home-grown apples on account of being better preserved and of finer flavour. The export trade of this product in 1888 reached 11,000,000 lbs., and this amount could have been doubled in 1889 if there had been sufficient of the product to sell.

Nursery Trade of San Francisco.

A correspondent of the *American Florist* says that while in 1874 there were but thirty-three florists in San Francisco there are now seventy-two, and that "all over the state the same proportionate development is manifest. The improvement in public taste," he adds, "during the past five years is still more clearly marked; quality is more desired and better prices are paid. The Daffodil, for instance, then very rare, has become the prime favourite for a spring flower, and the Californian wild flowers, which no florist kept for sale five years ago, now fill large windows on the principal streets."

Meeting of Cemetery Superintendents.

The American Association of Cemetery Superintendents recently held its annual meeting in Boston. More than sixty members were present from all parts of the country, and the papers and discussions, which related to all parts of the management of cemeteries, were highly interesting. The discussions seemed to show that public taste is in America tending toward a limitation of stone work, and a stronger reliance upon planting, for general effect. The use of hedges, coping, and other conspicuous separations between lots was pretty generally discountenanced, and opinion favoured an open, natural treatment of burial grounds rather than the more rigid and architectural method which once prevailed in cemeteries, and which has its most conspicuous representative now in Greenwood. Mr. John G. Barker, Superintendent of Forest Hills Cemetery, was elected president for next year; Mr. R. D. Cleveland, of Lakewood Cemetery, Minneapolis, vice-president; and Mr. Frank Higgins, of Woodmere Cemetery, Detroit, was made secretary and treasurer. Mr. O. C. Simonds, of Chicago, was elected chairman of the executive committee. Papers were read by Mr. William Solway, of Cincinnati, on "What Trees to Plant and When to Plant Them;" by Mr. O. C. Simonds, of Chicago, on "Shrubs and Trees;" Mr. A. W. Blaine, of Detroit, on "Mistakes in Cemetery Management;" Mr. George Troup, of Buffalo, on "Cemetery Roadways;" and Mr. Frank Eurich, of Toledo, on the "Life and Service of Adolph Strauch," the originator of the so-called Lawn System in cemetery design and management.

Spraying Peach Trees.

Experiments in spraying peach trees for the curculio with London purple resulted last year, especially in the peach region of Michigan, in great injury to the foliage, so that Professor Cook in a station bulletin declared that the foliage of the peach tree is especially susceptible to injury, and that London purple is more injurious than Paris green, owing to the fact, no doubt, that the soluble arsenic is abundant in London purple and almost absent in Paris green. Experiments at Cornell made for two seasons seem to corroborate this view, and from a recent bulletin by Professor Bailey it appears that trees sprayed by London purple were found to contain arsenic in the texture of their leaves, while those injured by Paris green showed none. The poison in the latter case simply affected the surface of the leaf. The injury is caused by the fact that over 50 per cent. of the arsenite of calcium in London purple is soluble in water, and is thus carried into the tissues of the foliage. Young leaves are proved to be less liable to injury than full grown ones, which is due, it is supposed, to the waxy covering so abundant on recent leaves and shoots. Microscopic examination shows that the peach leaf has a very delicate structure, the epidermis being remarkably narrow and the cell walls thin. This delicacy of structure seems to account for the greater susceptibility of the peach leaf to injury than the leaves of the plum and other trees. A mixture of one pound of Paris green to 300 gallons of water, when applied in a fine spray, did not injure the peach trees, and it is suggested that one pound to 350 gallons would be perfectly safe.

A Beautiful Shrub.

We have received from Mr. P. J. Berckmans, of Augusta, Georgia, says the *Garden and Forest*, a flowering branch of Leucophyllum Texanum, a shrub which has rarely, if ever, been seen here in cultivation. Mr. Berckmans writes that he tried for years to propagate this species with living plants, cuttings and seeds; but he never succeeded until some five years ago, when two plants were started. These are now four feet high, and with their ashy white foliage and abundant purple flowers, they are very conspicuous. They endure the warmest and driest weather well, since their large roots penetrate the soil to a great depth. The foliage, which is evergreen in its native habitat, stands without injury a temperature which does not fall below fifteen degrees Fahrenheit, and these plants have lived through a frost of five degrees above zero. In writing of the forest-vegetation of the Lower Rio Grande Valley, Mr. C. G. Pringle speaks of this plant as the most striking shrub of the region, and calls it "surpassingly lovely, with a profusion of purplish bloom surmounting the velvety white foliage." No doubt it will prove a great addition to our list of shrubs for latitudes south of Washington, and it may survive winters much farther north if slight protection is given to it.

Sophora Japonica is flowering freely at Kew, and presents a more than usually beautiful appearance at the present time, the finest example being the tree near the succulent house. This sophora is often so shaken by wind and rain when in flower that its beauty is but rarely declared. During the past fortnight, however, the trees at Kew have been quite showy with their profusion of white flowers on a groundwork of rich deep green foliage. We figured the best of the Kew trees in our issue for April 10, 1886.

Replies to Queries.

Rose Sports.—A. R.: You have been wrongly informed as to the origin of the two white tea-scented varieties. Souvenir de S. A. Prince originated with Mr. G. Prince as a sport from Souvenir d'un Ami, and White Perle was obtained as a sport from Perle des Jardins, and was first distributed by Messrs. W. Paul and Son.

Pear Trees.—Subscriber: The productiveness of pear trees in the condition described in your letter may be greatly increased by lifting at intervals of two or three years as may be found necessary. As your trees have probably not been disturbed at the roots for several years, the best course will be to root prune them in the course of the autumn, and to lift and replant either next year or the year following.

Books.—R.: Hibberd's "Rose Book," published by Groombridge, price 6s., will teach you all that can be learned from books.—R. H. Green: Nicholson's "Dictionary of Gardening," in four volumes, published by Upcott Gill, is the best book extant of its class. Stephen Deakin's "Florigraphia Britannica" will suit your purpose best of any. It is a better book for your purpose than Bentham's.

Portraits of Chrysanthemum Worthies.—Alpha: There is no gallery and no public collection. We presented a number of portraits in our "Chrysanthemum Number" last year. If you wish to secure a few portraits, we can advise you to apply to Mr. W. Chitty, Nurseryman, Stamford Hill, London, N. He has original photos of George Taylor, Mr. James, Mr. Merry, Mr. Samuel Broome, the late William Holmes, and (perhaps) others that he will part with for a consideration.

Annuals.—J. R.: As you do not say in what part of the world you write from it is difficult to advise. It is certainly too late to sow annuals to remain out all winter, except in some specially favoured districts. They might indeed make a fair growth, but about the turn of the year they would be too severely thinned by assaults of weather to be worth much for the enrichment of the garden. It will be better now to postpone the sowing until spring, and if you are anxious for an early display sow in pans in February, and push them on in a gentle heat, and get them forward for planting out in April.

Names of Plants.—A. W.: 1, Tradescantia virginica; 2, Achillea millefolium roseum; 3, Campanula glomerata; 4, Megasea cordifolia; 3, Campanula carpatica; 6, Malva moschata alba.—A. V. M.: 1, Phlebodium aureum; 2, Cyathea dealbata; 3, Adiantum hispidulum; 4, Adiantum cultratum; 5, Dicksonia squarrosa; 6, Adiantum concinnum; 7, Adiantum trapeziforme. R. D.: Weigela or Diervilla Abel Carriere; 2, Physianthus albens.—R. Monk: 1, Boussingaultia baselloides; 2, Diplacus glutinosus; 3, Gerardia quercifolia; 4, Quisqualis Indica. Plant in long wood box is Clarkia elegans.

Lifting Chrysanthemums.—C. W.: The chrysanthemums may be lifted at once without reference to the stage reached by the buds. They should be lifted at once unless the means are at command for protecting them in their quarters, for according to the experience of the past few years it is not safe to leave them fully exposed after the end of September. In lifting, take them up carefully with a moderate quantity of soil about the roots, and put them in pots proportionate to their size, Many of the most successful cultivators replant them in a bed of soil made up in the house in which they are to bloom. By adopting this plan a considerable saving of labour is effected. The plants must be carried to the house on a hand barrow and be planted rather close together.

Wall Fruits.—Vitis: In your districts both peaches and nectarines would succeed against walls having east and west aspects, but to give you sufficient space for other fruits it will be advisable to plant them against the south wall only. The east wall should be devoted to apricots and choice plums, the west wall to peaches, and the north wall to hardy free-bearing plums and morello cherries. Dessert cherries may be planted against the south-east and west walls as space can be found for them, and if one or two trees are planted against each of the ashpits a supply will be obtained for a considerable period. If the walls are low the pears should be on the quince, otherwise it will be preferable to have them on the pear stock. If you let us know the extent of the wall space we shall be glad to assist you in the selection of the varieties of the several fruits.

Names of Fruits.—W. L.: 1, Claygate Pearmain; 2, White Nonpareil; 3, Braddick's Nonpareil; 4, Royal Russet; 5, Kerry Pippin.—Haverford: 1, Gloucestershire Costurd; 2, Cole; 3, Martin Nonpareil: 4, White Whorl; 5, Summer Broadend; 6, Pigeon.—R. B. P. Q.: 1, Probably Reine Claude de Bavay, but too far gone for mortal powers to identify it; 2, Josephine de Malines; 3, Beurré Rance; 4, Bellesime d'Hiver; 5, Calebasse. As you ask for an opinion, we must tell you that we consider No. 4 not worth a place in any garden.—Forfar: 1, Tibbett's Pearmain, an excellent culinary apple; 2, Reinette du Canada; 3, Melrose; 4, Hodge's Seedling (it is a codlin, though not so called); 5, Flanders Pippin (in a general way, not to be desired, but as you find it profitable by all means keep it); 6, Flat Nonpareil; this, in our opinion, requires a flat to appreciate it; there are too many good apples to leave room for third-rate varieties.

Herbaceous Pæonies.—T. J.: A deep holding loam is undoubtedly the most suitable for herbaceous pæonies, but they are less particular as to the character of the soil in which they are grown than is commonly supposed to be the case, and there is no good reason why you should not grow them successfully. Thorough preparation of the soil is necessary, and it is advisable to trench the ground previous to planting to a depth of about two feet, but as it will be necessary to proceed with the planting immediately the ground has been prepared, the bottom spit should not be brought to the surface. In the process of being turned over, the soil should be enriched with a liberal addition of manure, and after they are established it will be advisable to give them an annual top dressing of manure. This is best applied just before they commence to make new growth, as it is then quickly hidden by the leaves. September is perhaps the best time to make new plantations, but they may be bedded out at almost any time between the month mentioned and the beginning of March, provided the soil is in suitable condition, but when the planting cannot be done in September, it should be done early in the month when possible. Bold clumps along the third row of the herbaceous border are the most effective, and unless you are able to obtain strong undivided clumps plant two crowns at each station. The following comprise some of the best kind obtainable at a comparatively cheap rate: Alba sulphurea, Carnea elegans, Duchesse de Theba, Isabella Karlitzky, Madame Calot, Madame Furtado, Madame Mechin, Modeste, Officinalis rubra plena, Philomele, Rosea superba, Whitleyi.

J. T. Riley.—The plant is a clematis that cannot be named without flowers. It is quite hardy, and will thrive in any good soil, and will require the support of a trellis or wall.

Planting Clematis.—Amateur: Clematis now growing in the open ground should not be replanted until quite the end of the present month or early in November, but examples that have been prepared in pots may be purchased and planted at once. If obtained within the next two or three weeks and at once bedded out they will produce new roots in the course of the autumn, and be in capital condition in the spring for making new growth. For covering trellises and large wall spaces, Clematis Jackmanni is still unsurpassed, and for your purpose is undoubtedly the best. For the pleasing contrast it affords, the white form of Jackmanni may be associated with it. Clematis flammula is not, as you suppose, a showy species. It is vigorous in growth, and free in blooming, but the flowers are very similar in character and colour to the common clematis of the hedgerows. In preparing the stations it will suffice to stir the soil to a depth of about eighteen inches and incorporate a moderate quantity of manure from the farm or stable yard. A rich soil is not so much a necessity when the plants are young as when they are well established and producing large quantities annually. On reaching this stage they can be readily assisted by top dressings of some suitable fertilizers.

Ivy-leaved Pelargoniums.—F. Bristow: Standard specimens of the finest ivy-leaved pelargoniums would undoubtedly be of much value in the conservatory during the summer and the early part of the autumn. In the production of good specimens the exercise of skill and patience will be necessary, but the difficulties are not so great that you will not be able to readily surmount them. Two courses of procedure are open to you. One is to take up stems to the desired height and then top them to promote the production of lateral growth. The other is to bud the ivy-leaved varieties on stocks of the zonal varieties. The latter course is preferable, as the zonals form stems sufficiently strong to support the heads without the aid of stakes. To obtain the stocks sow the seed of one or more of the strong-growing zonals early in the year and place in the propagating pit. Pot off the seedlings as soon as of a suitable size, and grow them on vigorously during the summer, a light airy greenhouse being the best place for them after they are potted off. Keep them rather dry from November till the end of February to ensure their having a proper season of rest. They should then have the water supply increased and be otherwise encouraged to make new growth. About the middle of March the stocks will be in a suitable condition for being budded, which must be done in much the same manner as in the case of roses. In the preparation of the buds remove the wood, but allow the whole of the leaf to remain, as when the stalk only is left the bud invariably perishes. The bud must be made secure with a strip of bast, and it will be an advantage to place the stocks in a house in which a temperature rather above that of the greenhouse is maintained, but it is not absolutely necessary. The points of the stocks should be nipped out a few days before they are budded.

Obituary.

On the 25th ult., at Chapel Brampton, Northampton, aged 76, Mr. William Chapman, for twenty years gardener to H. P. Markham, Esq., of Sedgebrook House. Mr. Chapman was a successful cultivator and exhibitor of hardy fruits, and so successful was he at the Northampton shows that they designated him as "Pear Chapman."

On the evening of the 30th ult., at Seabeach House, Portobello, N.B., after a very short illness, George Frederick Paterson, of Castle Huntley, Perthshire, aged 33 years.

We have to record the death of Alphonse Karr, the distinguished French novelist, in his house near Nice, the Villa of St. Raphael. He was the son of a pianist, and was born in Paris in 1808. He commenced his literary career by sending verses to the editor of the *Figaro*. A disappointment in love supplied him with the materials for his "Sous les Tilleuls," which he published at the age of 22. In it he displayed that mixture of good sense and playful irony which give a peculiar stamp to all his books. A large number of novels followed. "Geneviève," one of his most poetical creations, had a great success. While writing these works he did not abandon his career as a journalist; he became editor of the *Figaro* in 1839. For many years he has lived at Nice, where he devoted himself passionately to the cultivation of flowers. He was named Chevalier of the Legion of Honour in 1845.

Markets.

COVENT GARDEN.

Fruit.

Apples	per ½-sieve	3s. 0d. to	7s. 0d.
Damsons	per ½-sieve	8s. 0d. ,,	10s. 0d.
Filberts, Kent, per 100 lb.		45s. 0d. ,,	55s. 0d.
Grapes	per lb.	0s. 9d. ,,	3s. 0d.
Lemons	per case	15s. 0d. ,,	30s. 0d.
Peaches	per doz.	1s. 6d. ,,	8s. 0d.
Pears	per ½-bushel	3s. 0d. ,,	12s. 6d.
Pine Apples, English, per lb.		1s. 6d. ,,	3s. 0d.
Pine-apples, St. Michael's each		2s. 6d. ,,	6s. 0d.
Plums	per ½-sieve	7s. 0d. ,,	10s. 0d.

Vegetables.

Artichokes, Globe, per doz.		4s. 0d. to	5s. 0d.
Beans, Kidney	per lb.	0s. 3d. ,,	0s. 4d.
Beet	per doz.	1s. 0d. ,,	2s. 0d.
Brussels Sprouts	per ½ sieve	1s. 6d. ,,	2s. 6d.
Cabbages	per doz.	1s. 0d. ,,	2s. 0d.
Carrots	per bun.	0s. 4d. ,,	0s. 6d.
Cauliflowers	per doz.	2s. 6d. ,,	3s. 6d.
Celery	per bun.	1s. 6d. ,,	2s. 0d.
Cucumbers	each	0s. 4d. ,,	0s. 8d.
Endive	per doz.	1s. 0d. ,,	2s. 0d.
Herbs	per bunch	0s. 3d. ,,	0s. 4d.
Horse-radish	per bun.	2s. 0d. ,,	3s. 0d.
Lettuces	per doz.	1s. 0d. ,,	1s. 6d.
Mushrooms	per basket	0s. 9d. ,,	1s. 6d.
Onions	per bushel	2s. 6d. ,,	4s. 0d.
Parsley	per bun.	0s. 4d. ,,	0s. 6d.
Scarlet Runners	per lb.	0s. 2d. ,,	0s. 3d.
Shallots	per bun.	0s. 4d. ,,	0s. 6d.
Small Salading	per pun.	0s. 3d. ,,	0s. 4d.
Spinach	per bushel	2s. 6d. ,,	3s. 6d.
Tomatos	per lb.	0s. 6d. ,,	0s. 9d.
Turnips	per bunch	0s. 3d. ,,	0s. 4d.

Cut Flowers.

Abutilons	per doz. bun.	2s. 0d. to	4s. 0d.
Asters	per doz. bun.	2s. 6d. ,,	5s. 0d.
Bouvardias	per bunch	0s. 6d. ,,	0s. 9d.
Callas		2s. 0d. ,,	5s. 0d.
Carnations, per doz. blms.		1s. 0d. ,,	2s. 0d.
Chrysanthemums, per doz. blooms		0s. 6d. ,,	1s. 6d.
Chrysanthemums, per doz. bun.		2s. 6d. ,,	5s. 0d.
Coreopsis	per doz. bun.	1s. 0d. ,,	3s. 0d.
Dahlias	per doz. bun.	2s. 0d. ,,	4s. 0d.
Eucharis	per doz. blms.	2s. 0d. ,,	4s. 0d.
Gardenias, per doz. blms.		2s. 0d. ,,	4s. 0d.
Gladioli	per doz. bun	5s. 0d. ,,	8s. 0d.
Heliotropes, pr doz. sprys		0s. 6d. ,,	1s. 0d.
Lapageria, per doz. blms.		1s. 0d. ,,	3s. 0d.
Liliums, various, per doz. blooms		0s. 6d. ,,	3s. 0d.
Maidenhair Fern, per doz. bun.		4s. 0d. ,,	8s. 0d.
Marguerites, per doz. bun.		2s. 0d. ,,	4s. 0d.
Mignonette, per doz. bun.		1s. 0d. ,,	3s. 0d.
Pelargoniums, Zonal, per doz. trusses		0s. 3d. ,,	0s. 4d.
Primulas, Double, per bunch		0d. 6d. ,,	1s. 0d.
Roses, Coloured, per doz.		1s. 0d. ,,	1s. 6d.
Roses, Tea, per doz. blms.		0s. 9d. ,,	1s. 6d.
Stephanotis, pr. dz. sprays		2s. 0d. ,,	3s. 0d.
Sunflowers, per doz. bun.		3s. 0d. ,,	6s. 0d.
Tuberoses, per doz. blms.		0s. 4d. ,,	0s. 6d.

BOROUGH AND SPITALFIELDS.

Potatos.

Regents	per ton	55s. to	70s.
Magnum Bonum	per ton	60s. ,,	75s.
Beauty of Hebron	per ton	60s. ,,	80s.
Early Rose	per ton	50s. ,,	60s.
Imperator	per ton	45s. ,,	65s
White Elephant	per ton	60s. ,,	65s

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Noon.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.		Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.			1890
12	S	**19th Sunday after Trinity.**	6 20	13 31	5 13	4 15	5 12	1 2	1 20	10 27	10 45	51·7	Cypripedium Sanderianum ...	India.	285
13	M	● New Mo n.	6 22	13 45	5 11	5 25	5 27	1 37	1 52	11 2	11 17	51·4	Grammatophyllum Ellisi	Madagascar.	286
14	Tu	Fire Insurance due.	6 24	13 59	5 8	6 38	5 42	2 6	2 20	11 31	11 45	51·3	Odontoglossum grande	Guatemala.	287
15	W	Murat executed, 1815.	6 25	14 12	5 6	7 52	5 59	2 35	2 51	—	0 0	51·0	Odontoglossum Roezli.....	Colombia.	288
16	Th	Lord Palmerston died, 1865.	6 27	14 25	5 4	9 9	6 22	3 6	3 22	0 16	0 31	50·7	Oncidium ornithorhynchum...	Guatemala.	289
17	F	Houses of Parliament destroyed, 1834.	6 28	14 37	5 2	10 26	6 50	3 39	3 56	0 47	1 4	50·5	Pleione humilis.....	East Indies.	290
18	S	*St. Luke, Evangelist.*	6 30	14 48	5 0	11 44	7 26	4 13	4 30	1 21	1 38	50·1	Vanda cærulea	Khasya.	291

THE ROYAL AQUARIUM, WESTMINSTER.
GREAT AUTUMN FRUIT SHOW.
OCTOBER FLOWERING CHRYSANTHEMUMS, VEGETABLES, &c.,
WEDNESDAY, THURSDAY, AND FRIDAY, October 15th, 16th, and 17th.
Owing to the lamented death of Mr. William Holmes this Show will be under the Superintendence of Mr. Richard Dean.
Schedules, &c., to be had from
Miss Holmes, Frampton Park Nurseries, Hackney, London.
To whom all entries should be forwarded.

PORTSMOUTH FLORICULTURAL SOCIETY.—The SIXTH ANNUAL CHRYSANTHEMUM, FLOWER, FRUIT, and VEGETABLE SHOW will be held in the Drill Hall, Albert Road, on November 5th, 6th, and 7th, 1890. Entries close October 29th. Schedules and entry forms can be obtained gratis of Mr. F. Power, 26, Queen Street, Portsea, Hon. Sec.

Exhibitions and Meetings for the Ensuing Week.

Tuesday, Oct. 14.—Royal Horticultural Society.—Meetings of Floral, Fruit and Scientific Committees.
Wednesday, October 15.—British Fruit Growers' Association.—Conference at Royal Aquarium.
Wednesday, Oct. 15, and Thursday, Oct. 16.—National Chrysanthemum Society.—Exhibition of Cut Blooms. Meeting of Floral Committee first day.
Wednesday, Oct. 15, and Thursday, Oct. 16.—Royal Aquarium.—Exhibition of Fruit, &c.

Auction Sales for the Ensuing Week.

Monday, Wednesday, and Saturday, Oct. 13, 15, and 18.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs, Azalea Indica from Ghent, &c.
Monday, Thursday, and Saturday, Oct. 13, 16, and 18.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.
Monday, Oct. 13.—Messrs. Protheroe and Morris, at the Cart House Lane Nursery, Woking; Nursery Stock. (Three days.)
Monday, Oct. 13.—Messrs. Protheroe and Morris, at the Plumstead Nursery, Plumstead, Kent; Plants, Greenhouses, &c. (Two days.)
Tuesday, Oct. 14.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies.
Tuesday, Oct. 14.—Messrs. Protheroe and Morris, at Hollamby's Nursery, Groombridge; Nursery Stock. (Two days.)
Wednesday. Oct. 15.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Plants and Bulbs.
Thursday, Oct. 16.—Messrs. Protheroe and Morris, at the Loughborough Park Nursery, Brixton; Nursery Stock.
Thursday, Oct. 16.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Orchids, Lilium auratum and L. longiflorum, from Japan, &c.
Friday, Oct. 17.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.
Displayed Advertisements are charged according to the space occupied.
ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.
ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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The Gardeners' Magazine.

SATURDAY, OCTOBER 11, 1890.

THE FRUIT SHOW IN THE GUILDHALL OF THE CITY OF LONDON has been freely spoken of as the first instance on record of the occupation of that famous interior with an organized display of the products of horticulture. That mistake is easily corrected. On the 14th and 15th November, 1865, an exhibition of flowers and fruits was held there in the interest of the then newly-formed United Horticultural Benefit and Provident Society, and was opened by the Lord Mayor on the first day in the presence of a considerable assemblage of influential persons. A report of the exhibition will be found in the issue of the G. M. for November 18, 1865. The report begins with the declaration that the exhibition "was gloriously successful, and its many delightful features will remain for a long season deeply impressed on the memories of those who witnessed it." The self same words might with propriety be used as introductory to the report of the fruit show in the Guildhall that was opened by the Lord Mayor on Monday last. But the truth must be confessed that the endeavour of 1890 is as much in advance of that of 1865 as the later year is in all that concerns science generally, and horticulture in particular. In fruit culture we have certainly made great strides in the course of the quarter of a century that stands between the two years that are thus brought into comparison. Not many who saw the exhibition of the past week would desire to forget it, and the few who might so desire would experience a difficulty in pushing it from their remembrance. A total of four thousand five hundred dishes, many as high in quality in their several classes as have ever been seen, made an impressive display, and the Worshipful Company of Fruiterers may be congratulated on the result, which, perhaps, is the more gratifying from the fact that the difficulties of the task of producing this show appeared in the initiatory stage to be well nigh insurmountable. The company took the prudent course of seeking the assistance of men experienced in the business, and it is well rewarded for its worldly wisdom.

Leaving the Company of Fruiterers to its own designs, and wishing it all happiness in its laudable ambition to promote the cultivation of fruit in these happy British islands, we turn aside from the civic to the horticultural aspects of the affair. In the general result it will be observed that two classes of exhibitors were more especially catered for, the cottagers and the tenant farmers, those of the last-named class being admissible only when cultivating not more than one acre of fruit. These were experimental classes, and both were in the result but poorly represented. But for all that the experiment was an honest one and one that may be most properly repeated with some modification of the conditions. The practical aim is to encourage small farmers to grow fruit as an aid in all seasons to the home exchequer, and an especial aid in seasons when other crops fail, for it does happen and often happen that when one crop fails another succeeds, and the fact is the practical basis of the philosophy which finds expression in the adage, "put not all your eggs in one basket."

In the definition of the idea for schedule purposes, terms and conditions are of primary importance. It appears that in this case the expression "tenant farmers" was not a wise one, for willing exhibitors appeared who said "we cultivate our own land, and therefore are not in any sense of the term, tenant farmers." Now, the man who cultivates his own land is as much to be desired in an exhibition as a man who rents his land; and of the two, the first is likely to be the surest friend to fruit culture. Then comes the difficulty of the restriction to one acre. The object of the restriction declares itself. It is to enable the small growers to compete on terms as nearly equal as may be, for if all large growers are admitted in the same class, the smaller men will be simply swallowed up, and the exhibition will rather mar than make them. The terms of definition and the measure of the land cultivated are subjects for reconsideration. The endeavour was a good one and the results are good, although in some respects negative. They touch that tender point in the general economy of fruit culture where prudence draws the line between planting trees on one's own land and planting trees on the land of another. Whether the Legislature could promote the interests of owners and renters as regards the management of any particular plot of land is a question of the greatest importance, not simply to the parties, but to the welfare of the country, for every impediment to the distribution of useful industries is an impediment to national progress.

Another and interesting point for consideration is suggested by the report. The life of this thing was in the competitions, and the principal competitors were the amateurs and gardeners. We will ask the men who are familiar with the customary aspects of a horticultural exhibition, to sweep out of the report and to imagine they have also swept out of the hall, the whole of the competing contributions, and then ask, what is there left? Well, in a certain sense there will remain an exhibition, for the commercial cultivators contributed magnificently to the classes in which there were no prizes offered, but only the polite

acknowledgment of certificates, which may or may not be valued by the parties receiving them. The exhibition, being reduced to trade exhibitors content to make known the merits of the articles they produce and trade in, becomes, it must be confessed, a very different affair to the exhibition as it stood before the imagination went on its sweeping expedtion; and, to put the case in a nutshell, the sweeping swept the very life out of it. The trade exhibitors have done wonders for horticulture as apart from their own special or personal interests; and it would be a sheer calamity were the more spirited of their number to hold aloof from such a meeting as that of last week. But were they consulted on the subject, they would go so far in promoting a genuine competition as to efface themselves rather than serve as substitutes for the competing exhibitors, who bring not only horticultural products, but the interest of human life into an exhibition. For long years we have seen in quarters where a higher wisdom should prevail, the practice of systematic dependence on trade contributions on the ground of small cost and large results, the promoters of this system being victims of the delusion that to cover space is everything, and that to interest mankind is nothing! The result is known to all, because it cannot be concealed from any, and it was all foreseen, and ample warning given of the mischief that would result, not by mere babblers of the street, but by men of observation and experience, learned alike in horticulture and in the ways of the world. The trade exhibitors who have played so conspicuous a part in promoting and sustaining exhibitions from which, practically, the amateur and private gardener are excluded, are in no respect tied to the policy of exclusion. They would gladly see the buyers of plants encouraged at exhibitions; and there is in their relation to the case only one thing that surprises us, and it is that they appear to be less concerned than they should be in cases where their customers are excluded by the negative method of offering them no encouragement whatever.

Imagination may now be allowed to reverse the sweeping process, and restore those classes in which amateurs and gardeners competed for medals and money prizes. Such a competition has but rarely been seen, and although the conditions were in many instances manifestly unequal the framers of the schedule had made a great move towards the establishment of conditions of equality. The parcelling of the exhibitors geographically, although on so large a scale as to include the whole of England and Wales in three districts or zones, proved in a certain rough way a considerable instalment of practical justice. Perfect justice, it needs not to be said, in such a case is absolutely impossible. A single parish will afford instances of districts suitable for fruit, and districts in which fruit growing is well nigh impossible. To map out areas of thousands or even hundreds of square miles, therefore, is but a first step towards an end much to be desired, and to which nearer approaches will be made as the subject obtains increased attention, and actual experience enlarges the geographical or geological theory of division. The zones made an immensity of work for those who had the arranging of the show no less than for the judges, but from first to last there were so few hitches that it may now be declared possible to group exhibitors more nearly on an equality than has hitherto been done, and we shall look for expansions of the plan as time flows on.

The classes for the metropolis were representative of the same idea of theoretical equality, and were certainly not wanting in importance. The great city is now, as it has ever been, embedded in gardens. They recede and recede as the houses expand and cover them, but as in the days when strawberries were grown in Ely Place, so now strawberries are grown in corresponding proximity, for while the actual facts have altered the arrangement and proportions have not greatly altered; and as we quit the busy scenes of commerce we come at last upon a world of beauty in the region of the suburban gardens. London is happily environed with rural towns and villages that reckon themselves integral parts of the great metropolis and declare their urban relationships by their admirable gardening. It was a happy thought of the Fruiterers' Company to offer special encouragements to cultivators of fruit within seven miles of the civic centre, and the result proves that fruit of high quality may be grown in plenty almost within the sound of Bow Bells.

In the Fruit Show a much respected gentleman who is deeply interested in the affairs of the R.H.S. remarked to us that big shows are possible where there is sufficient money available. The remark reminded us that the exhibition in the Guildhall in November, 1865, the financing of which on behalf of the United Horticultural Society was managed by Messrs. Marshall, Crute, and Hibberd, was actually commenced without any fund whatever; there was not one shilling at command for the purpose. The first step taken when the show was determined on and the hall had been secured, was to form a guarantee fund, and the three persons named soon obtained the needful guarantees, and advances of cash followed upon that basis. The point of special interest in this connection is that there was no fund, the thing was commenced without one, and a fund was formed on the credit of the amount that might be secured as the result of the exhibition. It is gratifying to be enabled to conclude this note by saying that the end justified the means, and the guarantors were not called upon to provide so much as one penny.

The Finest Dish of Apples in the exhibition was in the collection of Samuel Barlow, Esq., in the medal class for fifty dishes. It was a dish of five fruits of Peasgood's Nonsuch weighing nine pounds two ounces. This we believe to be the grandest dish of apples ever exhibited in this country, for they were finely proportioned, of quite typical form, smooth, fairly well coloured, and without a trace of coarseness. Mr. Barlow will probably present them to the Queen, who is the patron of the exhibition.

Certain Varieties that interest cultivators were carefully sought out for critical comparison by the eagle-eyeish fruitists in forenoon hours, before the pressure of the company became too great to permit of connoisseuring. There were many dishes of Gravenstein apple in fine order as to size and colour. Blenheims were scarce, and often coarse; probably not a dozen really fine dishes were to be found in the entire exhibition. Ribston Pippin was better represented than might have been expected; most of the samples were of good size and respectable colour, though we did not note any that were better than a good average. Peasgood's Nonsuch was in many instances remarkably fine both in size and colour, and The Queen made a good show both in numbers and quality. Lemon Pippin was so scarce that we noted only two good dishes of it. Tyler's Kernel appeared in several places in fine form. Amongst the pears, several of the most famous varieties, such as Beurré Diel, Emily d'Heyst, Urbaniste, Louise Bonne, Glou Morçeau, Marie Louise, Fondante d'Automne, Noveau Poiteau, Beurré Superfin, &c., were admirably shown; in fact, poor samples were scarce, good ones plentiful. Pitmaston Duchess was generally large, well proportioned, and in good colour, but the other Duchess, of Angoulême, was not largely shown, and was, generally speaking, somewhat coarse.

The Lord Mayor has had a trying time in the past week, and is entitled to our sympathy. He does not believe in British fruit culture, and at the last dinner of the Fruiterers' Company remarked that while foreign fruit could be so easily obtained, it was a folly to attempt to grow eatable fruit in the miserable climate of these islands. Sir James Whitehead gave him on that occasion a Roland for his Oliver. In opening the exhibition on Monday, with tables running the whole length of the hall loaded with apples and pears equal to any produced in any part of the world, he wisely moderated his tone, and having patted the livery companies on the back, said his father was the first man to introduce into this country foreign fruit, the sale of which was now such a large industry amongst us. He felt the Fruiterers' Company was doing a great work in promoting the object they now had in view. He began to think there was room for both English and foreign fruit in this country. On Wednesday his Lordship had to endure the presentation to him of a magnificent selection of sample dishes of British-grown fruit, much of it selected from the exhibition and generously given for the purpose by the several exhibitors. And, to conclude the ordeal, he had to entertain the court of the Fruiterers' Company and members of the Executive Committee of the exhibition at dinner at the Mansion House. Surely he is entitled to our sympathy, and we will prayerfully hope he may yet be convinced that to produce fruit in Britain is possible, while to eat it is, or may be, at once agreeable and advantageous.

Honour to Whom, &c.—Various parties will be entitled to credit for well-directed labours in the establishment of the first great fruit show in the City of London on the basis of a general competition. The Fruiterers' Company will in the end enjoy a monopoly of the fame secured to them by the co-operation of many earnest and able workers, and none will grudge them the triumph they sought, or the opportunity now opened to them for further usefulness. But while we keep in mind what Sir James Whitehead has accomplished as a leader, with the aid of a committee that worked with exemplary harmony and devotion until the thing was happily concluded, there are others who should have honourable mention in the record of this affair. In the front of these is Mr. Richard Dean, who, at short notice, took charge of the whole of the mechanical and clerical work, and gave attention to the minutest detail as the master of a business understood by few. With him was associated Mr. G. W. Cummings, gardener to A. H. Smee, Esq., Carshalton, who indeed represented Mr. Smee in the affair, that gentleman having taken a heavy charge in respect of the general superintendence of the exhibition. On the part of the Fruiterers' Company Dr. Fotherby, H. R. Williams, Esq., J.P., and R. S. Mason, Esq., were assiduous as intermediaries between the horticulturists and the Corporation, and in those duties of hospitality that representatives of the Company could alone discharge.

We know not of one mishap or error in any part of this great experiment from the first stage to the last, and we shall remember with unalloyed pleasure this the first triumph of the Worshipful Company of Fruiterers.

Twickenham Chrysanthemum Show will be held November 18 and 19.

Horticulture was represented at the dinner on Wednesday by Rev. W. Wilks, Dr. Robert Hogg, and Mr. Shirley Hibberd.

Finsbury Park Chrysanthemum Show will be opened to the public to-day (Saturday), at 10 a.m.

Exhibition of Chrysanthemums in Battersea Park will be opened to the public on Thursday next.

Pictures of Flowers by Mdlle. Marguerite Rosenboom, now on view in the Fine Art Galleries, 148, New Bond Street, merit the attention of persons who take an interest in such matters.

Visitors to the Fruit Show are estimated by the daily papers at 50,000. From Mr. H. R. Williams, of the Court of the Fruiterers' Company, we learn that the number of visitors amounted to nearly 36,000, and this number is given on the authority of the City police.

Chiswick Gardeners' Association held its annual meeting on the 3rd inst., when a satisfactory report was presented to the members. Mr. George Gordon and Mr. J. Barry were re-elected chairman and secretary respectively, and Mr. J. Fraser was elected treasurer.

Horticultural Club will open its winter term with the usual dinner at the club room on Tuesday next, October 14, at six p.m. The subject for discussion will be "The Gladiolus," to be opened by the Rev. H. H. D'Ombrain.

National Rose Society.—The Executive Committee will meet in the rooms of the Horticultural Club on Tuesday next, October 14, at three p.m. The business will include arrangements for 1891, revision of bye-laws, &c.

Crystal Palace Fruit Show on Thursday, Friday, and Saturday was in no way prejudiced by the Guildhall Show, for we noted a few good things as transfers, and although the Palace might have had any of them without being in the second place, it is still highly probable that, on the whole, the Palace show was advantaged by its predecessor.

Moths on Fruit Trees.—The Board of Agriculture are advised that the season is approaching when the winter moth and other dangerous moths will commence laying their eggs. It has been deemed expedient to warn fruit-growers on this subject. There has, therefore, been issued by the Intelligence Department of the Board an illustrated leaflet giving suggestions as to the best methods of diminishing the danger.

The New Fruit and Vegetable Market in the City of London is in a progressive state, and will probably become a fact in due time. But there is "many a slip," and we are not disposed to forget the slip the Corporation made in the establishment of the futile fish market. But as regards matters of fact the Lord Mayor is booked to lay the foundation stone of the new market on Wednesday, October 22, at 12 noon.

A Presentation of Bouquets made an elegant episode of the civic ceremony that resulted in the "opening" of the Guildhall Show by the Lord Mayor. Three beautiful bouquets were noted by us on the dais previous to the commencement of proceedings. These were, at the right moment severally presented to the Lady Mayoress, the Baroness Burdett Coutts, and Lady Whitehead, by Miss Dora and Miss Olive Mason, daughters of R. S. Mason, Esq., past master of the Fruiterers' Company.

Tuesday next will be crowded with business for the active horticulturists. R.H.S. Committees will meet at Westminster, and jams and jellies will have a place in the programme, and should weather favour the tender plants there will be a good show of dahlias and other late flowers at Westminster. As the day wears on, the members of the Horticultural Club will be in the fortunate case of possessing healthy appetites, and will, at the hour of six, find dinner prepared for them at the liberal table of the Hotel Windsor, where the Rev. H. H. D'Ombrain will receive them in his own agreeable manner.

Strawberries in the Autumn.—At a meeting of the East Anglian Horticultural Club, held at the City Arms, Norwich, on October 1, Mr. Baker, gardener to B. Fletcher, Esq., Marlingford Hall, placed on the table some splendid fruit of the Noble Strawberry, fruit that would not have disgraced any exhibition table in July. Mr. Baker's crop is not, I believe, just a chance fruit or two as is often usual in the autumn, but a crop such as he expects to have regular gatherings from for a month or five weeks. I may say the plants are in pots.—J. Green.

The Fruiterers' Company was largely represented at the dinner at the Mansion House on Wednesday, and, as a matter of course, Sir James Whitehead, the Master of the Company, responded to the toast of which it was the subject. He spoke of the eminent services to British fruit culture of the Royal Horticultural Society, more especially in the Conferences dating from 1883, and of the admirable endeavours in later years of the British Fruit Growers' Association. Referring to the Guildhall exhibition, he said Mr. Hibberd had spoken of the fifth-rate fruit then shown as equal to first-rate fruit of five years ago. This is an error on the part of Sir James. Mr. Hibberd said nothing about the qualities of fruit, or of events five years ago; he had spoken only of practices prevalent in fruit culture twenty-five years ago that are now becoming obsolete. Our readers will understand, of course, that the remark referred to such matters as stocks, pruning, pinching, &c.

Reports on the Harvest of 1890 differ but little in their estimates of results, and are singularly unanimous in pronouncing the potato crop one of considerable magnitude, and much less affected by disease than prevailing rumours have represented. Thus, in the *Times* of October 6, we read "the lifting of potatos in Great Britain shows a fairly good weight, notwithstanding the disease, and roots are yielding well." The potato crop on the Continent of Europe is generally satisfactory, but disease has made large and dark marks in districts where humidity has more especially prevailed. It will be seen that our recent special reports encourage the belief that as regards potatos, we probably have enough to carry us through the year without importing any.

The Weather appears to have satisfied everybody for some weeks past, and now is likely to gratify those who desire to see the leaves fall, for frost is in the catalogue of probabilities. We make no profession of a desire to see the leaves fall, but as we have had a good rain planters are in haste to commence operations, and only wait for the fall of the leaves to be free to lift *ad lib.* The weathercock turned its face to the north on Wednesday, with a rising barometer, after a smart fall of both the mercury and the rain. From that time there was nothing safe that frost would harm, and all who had occasion for unmistakable warnings were warned by the heavens and the earth and their own feelings to be up and doing to save things that were worth saving. We are not looking for bad weather, but a decided drop in the temperature is the likeliest event, and generally the promise is for weather of a mixed character.

Honours follow upon great events, and the first "decoration" consequent on the fruit show is bestowed upon Samuel Barlow, Esq., J.P., who has been placed on the list of honorary freemen of the Company of Fruiterers. By this time probably Mr. Barlow's dish of Peasgood's Nonsuch apples is in the possession of Her Majesty the Queen, who is herself the Absolute Nonsuch of the British empire. Considering how many exhibitors staged collections both extensive and highly meritorious, the distribution of cheap compliments appears to have been needlessly meagre. On the great table, for example, where trade collections competed for the "framed certificate" of the Company, several magnificent collections were simply passed in accordance with the terms of the schedule. But the policy of too close adherence to red tape where money had no place was not a policy tending to permanent prosperity.

Plane Trees in London Thoroughfares.—The Metropolitan Public Gardens Association, 83, Lancaster-gate, W., has offered £100 each to twenty metropolitan vestries and district boards, to be expended in planting plane trees in suitable public thoroughfares in each district, on condition that the local authorities agree to maintain the trees when planted, replacing such as may die. The association is willing to do the planting itself should any vestry so prefer. The chief requisites for success are thoroughfares of sufficient width, say not less than forty feet, plenty of good soil to each tree, and the avoidance of gas mains as far as possible. The plane tree is the only variety chosen, because it renews its bark. Its stem, therefore, always presents a fairly clean appearance, the pores of which do not have time to become injuriously choked up with smoke and dirt. Thus it is especially suitable for London atmosphere. The object of the association in making the present offer is to encourage local authorities to take up the work for themselves.

B. S. Williams Memorial makes fair progress, as might be seen by the list of donations received that appeared in our advertising columns last week. Means have been taken for communicating with all who are deemed likely to be interested in the proposal, and more especially those who knew the late Mr. B. S. Williams, and would be likely to co-operate for the perpetuation of his memory. The list of donations promised is encouraging, but the total amount is at present far below what will be required to carry out the resolution on which the proceedings are founded; and it is necessary, therefore, to request the friends of the movement to make a further effort to enlarge the fund. Being intended for the maintenance of orphans, and the encouragement of excellence in the cultivation of plants, should commend it to the generous consideration of many who might not be attracted by personal considerations. It is of importance now that those who have promised contributions and have not paid them in should do so without delay, as it is intended to advertise them in the order in which they are received by the treasurer, Mr. H. J. Veitch, of 544, King's Road, Chelsea, S.W.

Hyde Park Dell.—No portion of Hyde Park more laudably or popularly attracts spectators than its small zoological domain, called the Dell; to the fauna of which a squirrel is the latest addition. But much might be done to improve the spot. For one thing, the waterfall from the Serpentine might be turned on, both to the pleasure of the visitor and the salubriousness of the stream below, if a stream it may be called. Besides, it would be an advantage, from a picturesque point of view, if the sparrows which invade the precincts of the Dell could be sensibly diminished. We have far too many sparrows in town already. But their presence is a slight matter compared with the sewer-rats, which have established themselves in this sylvan retreat. These pests—I noticed, by the way, a white rat there on Saturday last—are a serious peril to the safety of the water-fowl that haunt the spot. All who are familiar with the place know that in June and July young moorchicks are seen running about the grassy bank. But by August or, at latest September, these interesting creatures have invariably disappeared. The cause is self-evident; they have been devoured by the rats. Can nothing be done to destroy them and prevent their further invasion of the Dell? I am told that about twenty ferrets and a few capable dogs could effect the object desired.—F. King.

HEATING SMALL PLANT HOUSES.

One of the greatest of the difficulties that have to be contended with in gardens of limited dimensions is, according to my experience, the heating of the glass structures that have a place in them. The conservatory and greenhouse being of small size, the cost of providing them with a hot-water apparatus is necessarily rather heavy in proportion to the accommodation afforded, and the numerous portable appliances that have been introduced for the exclusion of frost and damp are not all equally satisfactory. Great as the difficulty unquestionably is as compared with other details, it has been materially diminished by some of the more recent inventions. Not only are these apparatus less costly in the first instance, but they have the great advantage of being more simple in construction and economical in working. In determining what system of heating to adopt it is necessary to take into consideration the size of the structure and the purpose to which it is to be put. It is not less essential to take advantage of the best form of the system determined upon, for the question of a few shillings, or even several pounds, is a trifling matter as compared with efficiency and economy of working. Upon this point I am able to speak with some degree of confidence, for in the course of an experience extending over fifteen years I have wasted a goodly sum upon worthless contrivances in consequence of my great desire for cheapness. The three systems of heating to which the owners of small plant houses must give their attention are hot-water, oil stoves, and gas, and to these I will briefly refer, and give the results of my experience with them.

Plant and fruit houses of all sizes may be heated with an ordinary hot-water apparatus, and for all but those of the smallest size, an apparatus of this description should be employed. The smallest sized house in which a boiler and hot-water pipes, heated by coal, coke, or similar fuel can be employed with advantage is one of which the dimensions are equivalent to twelve feet square. For houses of a smaller size either an oil stove, or a gas heated apparatus should be brought into requisition, for owners of glass structures of moderate dimensions are now placed at an immense advantage as compared with those who, like myself, turned their attention, fifteen years ago, to the garden. Boilers could then, as now, be had in a great diversity of forms, but with few exceptions they were too large for the requirements of the amateur and had to be set. This latter point is of much importance, for the cost of labour in setting any of the boilers requiring to be encased in brick forms a considerable item. The first house I had erected was a span roof, ten feet by twenty feet, and I was very properly advised to heat it by hot water, and a saddle boiler was recommended. I obtained the price of the boiler and the required quantity of piping, and the estimate did not appear to be extravagant. When I gave the order for them I discovered that I should have to pay a further sum for the fittings of the furnace, and this was sufficient to add considerably to the prime cost. The fixing I was well aware would have to be paid for as an extra, but at that time I had little idea how long two men can well keep themselves employed in "setting" a saddle boiler, or how large an item the payment for their labour would form. Now, we can obtain boilers specially adapted for structures of moderate size, which are not only moderate in price, but do not involve any further outlay for either fittings or setting. The boilers to which I refer are known under various names, and have much the appearance of half a cylinder, having a diameter between two feet and thirty inches, with the ash and furnace doors and the smoke stack on one side and the flow and return pipes on the other. As they are complete in themselves, and therefore require no setting, it is a very simple matter to fix them ready for work. The best course is to select a convenient position at one end of the house, and build the boiler in the brickwork, with, as a matter of course, the flat side outwards and level with the line of the wall. By this arrangement very little heat will be lost, as the largest surface will be inside the house. I have the saddle boiler to which reference has been made still in use, and also a good conical, but, taking into consideration the cost and efficiency, they cannot be compared with the newer form for houses up to thirty feet in length, and of a proportionate width.

Whatever form of boiler is selected I would strongly advise my readers, whether amateurs or practical men, to have the apparatus fully equal to the work that has to be done. For a span or lean-to, up to eight feet in width, a four-inch flow and return pipe on one side will suffice, but when that width is exceeded the flow and return should be taken along both sides and one end of the house. If that arrangement is inconvenient in consequence of there being a door at either end, three rows of piping should be provided on one side. In the purchase of a boiler it is advisable to select one that is described as equal to 25 per cent. more work than will be required of it, that there may be no occasion at any time for severe stoking. It will thus be possible to keep out all but the most severe frosts without driving the fires; to drive the fires during periods of severe weather, owing to the apparatus not being equal to its work, not only entails much labour, but it involves additional expenditure in consequence of much of the heat passing away up the chimney.

For these boilers we use coke broken rather small, the medium-sized coals, known as "nuts," and cinders from the house. The coals are used chiefly for starting the fire, and for stoking when a brisk fire is required quickly, the coke and cinders being preferred for general use because of their not producing so much smoke, a point of no small importance when the garden is near the house. The temperature of houses devoted to plants requiring more warmth than the ordinary greenhouse affords must, of course, be regulated by the requirements of the occupants, but it is important to avoid its being too high. Especially is it necessary to avoid too high a temperature in the case of the odontoglossums, and other cool orchids. For the ordinary stock of greenhouse plants, artificial heat will only be required for keeping out frost and drying up superfluous moisture, and should not at any time be more than is really necessary, or it will do more harm than good. From the end of September to beginning of March the weather must be closely watched during the latter part of the day. When frost is apprehended the fire should be started, and allowed to burn steadily until the water is warmed in the pipes, and if in the evening there is no frost the fire can be allowed to burn itself out. This is a much better course than to allow, as is so frequently done, the thermometer to fall within one or two degrees of the freezing point, and then start the fire.

Oil stoves are only suitable for the exclusion of frost, and should not as a rule be employed for houses exceeding ten feet square. It is important to have a stove that is thoroughly well made and sufficiently powerful. For a house of the maximum size mentioned a stove having a double three-inch wick will be the most suitable, as it will be sufficient to keep out a moderately severe frost. Unlike an ordinary fire or gas, the oil stoves have not a wide range of heating power. Therefore it is in all cases advisable to have a second stove about equal to one-half the power of the first for use in very severe weather. Ordinary paraffin lamps may be used when additional heat is required, but the preferable course is to have a second stove. In the use of the stoves it is essential to have paraffin of good quality and to keep the reservoirs well filled. Careful trimming of the wicks is also important. When the oil is allowed to become low or the wick to be encrusted with carbon a highly objectionable odour is given off. On no occasion do I allow my stoves to burn longer than twelve hours without attention. When the weather is so severe as to necessitate their being in use both night and day, I replenish the oil and trim the wicks in the morning and again in the evening.

With reference to heating by gas it is not necessary to say much. Gas should render the amateur considerable service in keeping his plants safe from frost, and be of special value to those from home during the day. But under the conditions that at present obtain, it is of but little use for heating plant houses. It is very costly as compared with petroleum or ordinary fuel, and it is so fluctuating as to require close attention. During the daytime the pressure is frequently so low that hardly sufficient gas can be had to heat the water, and especially is this the case in foggy weather. In the evening the pressure is in excess of requirements, and from midnight until the morning it is much reduced. By the use of a "governor" the pressure may be kept fairly steady, but its cost is so great as to practically prevent one being fitted to a service intended simply for heating a small greenhouse or conservatory. In heating by gas it will be necessary to provide a small gas-boiler and a service of hot-water pipes, those three inches in diameter being preferable. As in the case of the ordinary hot-water apparatus, it will he necessary to have a sufficiently powerful boiler and enough piping. The boiler must be fixed outside the house because of the highly injurious effect of the products that arise from the combustion of coal-gas upon vegetation of all descriptions. It will be an advantage if it is placed in a shed where it will not be exposed to draughts which may extinguish the gas, and probably at a critical moment.

Enterprising Amateur.

ANNUAL PRESENTATION OF FRUIT TO THE LORD MAYOR.

Every year at this season the newspapers report that the Fruiterers' Company has presented to the Lord Mayor a collection of beautiful fruit. In 1889 the presentation to Lord Mayor Whitehead was enhanced in interest by the new action of the company in aid of British fruit culture as represented by the publication of Mr. Wright's prize essay. This year the interest is sustained by the selection from the exhibition in the Guildhall of many of the samples included in the present. It may be properly asked what this presentation means, and we find a ready reply in the columns of the *City Press* of October 4, from which we cut the following:—

The Fruiterers' Company is the forty-fifth in order of precedence, and has existed from very early times. It remained without incorporation, although governed by ordinances framed by the Court of Aldermen, until the third year of King James I., when they obtained a charter confirming their privileges and giving them control over their trade within the City of London and three miles around. In the same year the Corporation also obtained an important charter granting them the conservancy of the river Thames, and confirming their ancient right of metage of fruit and "all kinds of roots eatable." The hall of the company was appropriately situated in Thames Street, where they occupied a portion of Worcester House and the Old Swan brewhouse.

Many were the disputes between the meters of the Corporation and those of the company in carrying out their duties at Billingsgate, Queenhithe, and the docks and quays at the riverside. The fruit brought by water chiefly consisted of apples, pears, nuts, and cherries, for the metage of which the Fruiterers had to pay the Corporation onion meter one farthing per bushel. The regulations made by the City for carrying on the trade were both numerous and stringent. False dealing was punished by the stocks, and unsound figs were ordered to be burnt at the market place in Cheapside. Itinerant dealers were forbidden to sell their fruit by day or night in the streets; they were removed from their favourite stations about the City gates, and every endeavour was made to confine the sale of fruit within the public markets. The origin of the annual present of fruit which is made by the company to the Lord Mayor is to be found in the "samples" of fruit which they were bound to furnish to the Chief Magistrate. The laxity of the company with respect to this obligation in former times was the occasion of frequent admonitions on the part of the civic authorities. By the lapse of time a great change of relationship has been brought about, and what was once demanded as a right is now offered and accepted as a graceful gift, the Lord Mayor entertaining the company at dinner on the evening of the presentation.

Mr. H. G. Bull, late gardener to J. Compton Merryweather, Esq., The Hollies, Lewisham, has taken charge of the gardens of A. H. Tarleton, Esq., Breakspears, Harfield, Middlesex.

PROFITABLE APPLES, PEARS, AND PLUMS.

By Shirley Hibberd.

Profitable fruits may not always be such as are in high demand in the markets. Things wanted for our own use, irrespective of all markets, may be profitable when produced, even if when produced there is no market for them and absolutely no demand for them anywhere beyond the household in which they are required. Consequently, great latitude of meaning must be allowed to the term "profitable," in this connection. But, for all this, our intention is to discourse for the most part on things that are constantly in demand, and that usually command in the market a price far beyond the cost of their production, and are therefore profitable in the strictly commercial sense of the term.

The different significations implied in the above remarks may be profitably illustrated by a comparison of two gardens. In the first of these the whole of the business is directed to the end that the household shall be supplied with the greatest possible variety, and up to a certain point, the greatest possible quantity of flowers, fruits, roots, vegetables, &c., commonly or even peculiarly needed for domestic use. In this, which we call the "Domestic" garden, it is of the first importance to secure what is called, a "little of everything," and very much of some things that are of special importance. The ground may not be well adapted for potatos or asparagus or plums—to mention only three subjects for the purpose of the argument—but it will be the gardener's business to overcome the difficulty, or, at all events, proceed some distance in that direction in order to supply his employers with potatos, asparagus, and plums. It is in the endeavour to overcome local difficulties resulting from unsuitable soil, unfavourable climate, and the like, that the skill of the gardener and the immense possibilities of horticulture are most usefully exhibited. Were the gardener to restrict his operations to those subjects that the soil and climate of the place are best of all adapted for, the productions of the garden would often be so limited in respect of variety that the garden itself would in the end prove unprofitable, through its "profitable" production of many things for which there would be no use, and the sale of which would be equally difficult and disagreeable. We see in well-managed gardens all the fruits, vegetables, and flowers commonly required in domestic life produced in sufficiency, and many things for which the position is eminently unsuitable appear all the same for that, the skill of the gardener making amends for the deficiencies of nature.

These points are of vital importance as marking distinctions between domestic and commercial operations in horticulture, and as illustrating the term "profitable" as applied to either. Where a man must live by the sale of his produce, the domestic theory would in most cases be the very one to avoid. He must give attention to such crops as best suit the circumstances that will govern their production, and that will also suit the markets accessible to him for the sale of his produce. It may not be well to put "all the eggs in one basket," but, as a rule, it will not be well to grow a great variety of subjects when the market and not the household is to be their destination. Allowance must always be made for the domestic gardener if some of his productions are less perfect than the best market samples, because the market grower will give his attention chiefly to subjects that are the best suited to the circumstances of his industry, and that, by concentrating his attention upon them, he may bring to a higher perfection than is possible for any gardener who has to think of a hundred things while the market gardener has, perhaps, but half a dozen at most, or even less than that.



UNPRUNED APPLE TREE (*Blenheim Pippin*), at Barton, Headington, Oxon. Total measure of crop 42½ bushels.

Soils and Situations for Hardy Fruit.

In selecting apples, pears, and plums for a discourse at this time it is with the view of promoting the profitable production of three of the most profitable fruits. There are other profitable fruits, and as a matter of fact, all fruits are profitable in particular cases. But the three named are adapted to a great variety of soils and climates; they are commonly productive, though in common with all other fruits, they are to a certain extent uncertain, and, generally speaking, are more directly influenced as regards their annual produce by the weather that prevails when the trees are in flower than by any other circumstance whatever. The cherry is a profitable fruit, and one that occasions the least imaginable difficulty in places for which it is well



CORDON PEAR, *Colmar d'Eté.* (Winter aspect.)



CORDON PEAR, *Colmar d'Eté.* (Summer aspect.)

adapted. But the cherry is of less general use than either apples, pears, or plums, and when profitable cultivation is in view, should be considered apart from the more universal favourites that appear to be "at home" on almost any soil that is of average fertility. The fig is a more profitable fruit than the cherry, but is still more restricted in its range of usefulness. Peaches and nectarines are profitable, but they need the aid of walls and glass, and a higher degree of skill than apples, pears, and plums.

It will be necessary to enter into particulars presently, but a few generalities must, for the present, detain us. For all our hardy fruits we require a deep, fertile, loamy soil, and a climate of a kindly nature. A starving soil and an exposed position can never be made suitable for profitable fruit production. Soils that suit the apple will not always suit the pear, and soils that suit both these will not necessarily suit the plum. Of the three the pear is the least accommodating as regards climate, and should have the most sheltered position; and although a cold exposure is fatal to profitable cultivation of the apple it may often be planted on the colder side to give shelter to the pears, for the pears flower early, and the risk of loss from frost is consequently greater than the risk from the same contingency in the case of apples, which flower late.

Best Forms and Kinds of Trees.

As regards the form of trees and the kind of trees to plant, circumstances govern cases, and no rule can be given. But a few general advices may be hazarded, and they shall be conveyed in the fewest possible words. Where a quick return is hoped for, trees on dwarfing stocks are to be preferred. They will, perhaps, not live so long as trees on free stocks, but usually we have to wait many years for fruit from free stocks, while dwarfing stocks hasten fruit production. Apples on crab stocks make handsome fruit, and long lived trees, but while we are waiting for them to bear a little fortune may be made from a plantation of trees on the paradise stock, for many sorts on this stock bear fruit in the second year of their lifetime; that is, in the second year from the graft or bud. The patient waiting required by those who look for fruit on pear trees on the pear stock is illustrated by a well-known adage—

"He who plants pears, plants for his heirs,"

which we would balance with one applicable to the improved system now in favour, thus—

"Pears on the quince, will the sceptic convince."

for many kinds of pears on the quince stock are nearly as precocious as certain apples on the paradise stock, especially when in the form commonly understood as "bush" trees. Apples and plums are, however, better adapted to make early returns than pears, and they are more accommodating in habit, and, in a general way, some degrees hardier.

Another remark has reference to the kinds and the forms of the trees to be planted. The domestic and the commercial garden will need certain useful kinds, but where fruits are grown for household use only, a larger variety may be allowed than in a garden chiefly intended for the production of fruit for sale. Up to a certain point the interests of all parties are identical. For example, the Victoria plum is as much needed in the private garden as in the market garden. That useful and "sure bearing" apple, King of the Pippins, is equally adapted for both, for, like the Victoria plum, it makes amends for being of second quality by its constant and abundant production. So, again, the handsome late autumnal pear, Louise Bonne of Jersey, must be planted wherever pears are to have a place. Bon Chretien, Jargonelle, and others might be named as pre-eminently useful in any garden; but these matters will have to be dealt with in detail further on, and all that is needed now is to set forth a few generalities.

Another matter of importance is the form of the tree. The entering the bud low down, close over the roots, is a practice growing in favour as tending to the formation of the most manageable form of trees, and even when standards are required, the same mode of propagating is acquiring favour, as the stem may be allowed to retain a certain amount of "furniture," that is, of useful growth, not of the stock, for on this system, that supplies roots only, all these are what may be termed "proper tree," and the head is formed over this furnished stem of proper tree instead of over the bare pole formed of the stock. Whatever form of tree is to be planted, whether standards, dwarfs, pyramids, or espaliers, our advice to all except the experienced fruitist, who can judge for himself, is that *well made* trees be selected, even though they will cost more than trees that have yet to be made, and that will require time as well as skill. For time is money, and nothing tends so directly to prosperity in business as a quick return, even if it be but a small one; for waiting deadens the spirit and compels



PYRAMIDAL PEAR, *Louise Bonne.* (Winter aspect.)



PYRAMIDAL PEAR, *Louise Bonne.* (Summer aspect.)

the waiter to resort to shifts that are prejudicial to the final success of the undertaking. Much may be done to augment returns from a young plantation. The crops obtainable from the intervening spaces often prove sufficient to make all ends meet, and every year adds to the value of the trees, for *time* is a great element in fruit culture. A man who thoroughly understands the formation of trees may cover a piece of ground for a small outlay by planting "maidens," which are trees one year from the graft or bud, with the rod from the graft complete and untouched. This has to be pruned back to promote a growth of side shoots, or it may be allowed to run up and make itself in its own way, or be formed to a head in the fashion of a standard. But

all this requires time, and if the tree maker is not well practised in the business he may consume more time than necessary in securing the form of tree required, and in the end fail to secure that nice balance of growth in which all the parts of the tree tend to profitable uses. In the nurseries this kind of growth is so well done that well made trees are, as a rule, the cheapest in the end, and it is our duty to recommend them as alike best for the beginner and the experienced cultivator. Nursery work can be done in nurseries at less cost and in a better way than in gardens of any kind.

There are no more useful trees than free bushes on dwarfing stocks. This could not have been said with safety until quite recent years, for some quite unsuitable stocks were in use, and trees were produced upon them that had the peculiarity that no one could persuade them to grow. But this is no longer the case. The paradise stock, now so highly valued for apples, has been purged of its objectionable forms, and there are now established in use a few distinct varieties that differ in the size of the leaves and in certain peculiarities of rooting, and these are severally selected for certain kinds of apples, some being placed on a large leaved stock and some on a small leaved stock as reasonable return for the ground they cover. It is quite a common occurrence to see plantations of pyramid pears that through long years of the closest care have produced nothing, become wonderfully fruitful after a few years of neglect, in which, escaping from the thraldom of the pincher, they have made free rods, stretching forth into the light away from the suffocating leafage of the useless growth produced by systematic pinching. This practice is now entirely abandoned by prudent cultivators, and the few who still cling to it do so apparently that the unproductive nature of their trees may teach the observant to avoid the folly. Apples, plums, and cherries need less pruning than pears, and as a rule pears will bear pruning better than any other fruit trees; in fact, the finest pears are always obtained from pruned trees, while, on the other hand, enormous crops of Hessle, Bishop's Thumb, and Lammas pears are obtained from trees that are never touched with the pruning knife, and that would be only moderately fruitful if pruned, because that process would cause them to produce excess of wood, whereas unpruned trees make no more wood than they can ripen properly, and this soon becomes fruitful like the rest. It is very easy work to prune all the



UNPRUNED APPLE TREE (*Cox's Orange*), in Royal Horticultural Gardens, Chiswick.

observation and experience have determined to be advisable, while those forms of the paradise stock that are of a too dwarfing nature have been discarded, and, in fact, are now scarcely known.

Pruning.

The subject of pruning is of great importance, for unskilful pruning is of all things likely to render a fruit garden unprofitable. Well-made nursery trees that are planted in suitable soil and taken reasonable care of need not be pruned at all. And it is far better to leave them unpruned than to prune them unskilfully. In the days when injurious stocks were used injurious practices were in favour, for the trees were pinched two or three times in the course of the summer, and the practice caused them to produce a multitude of secondary shoots that were absolutely useless, and actually tended to crowd the trees and render them completely barren. The pinched-in pyramid pears that may be seen in many gardens are often as regular as if cast in a mould. And they are regular in another sense, in the fact that they regularly produce nothing, or bear so few fruits as to make no fruit out of a tree, and there are a few practitioners who persist in doing it, though happily their number is fast diminishing. Since we have practised, preached, and persisted in advocating the non-pruning system, the fruit production of the country has enormously increased, and apple, and pear, and plum congresses have been possible. Prior to the year 1876, when we discoursed on the subject at the Society of Arts, and raised a storm of opposition that in several directions went beyond the bounds of decent discussion, such a thing as a fruit congress, aided by a great exhibition, was unheard of. We do not say it was not possible, but there was wanting a certain ripening of public interest in the subject, and that is a condition of recent growth, and one that is likely to progress for years to come. Young trees need careful pruning to ensure an even distribution of useful wood, but every year as the trees advance the pruning should be less and less, and as soon as possible it should be wholly discontinued, or resorted to only for the removal of objectionable growths, such as shoots that take a cross or inward direction, and such as have suffered injury and are likely to become diseased. Pruning to check exuberant

growth is sheer folly, for a vigorous tree will have revenge by producing a forest of green spray, much of which will never ripen. Better is it to lift over luxuriant trees and replant them. This will generally put them in another frame of mind. Pears that in their early stages make a rampant growth may be moderately root pruned, but generally speaking careful lifting and replanting is preferable to root pruning, and the work should be carried through with care, for mutilation is mischievous, and every leaf and every root fibre of a tree is entitled to consideration as a thing that may be useful under kindly



BUSH APPLE, *Lord Suffield.*

guidance, and the check of mere lifting will generally prove sufficient. Pears will, as above remarked, bear pruning well, and to ensure fine fruit annual pruning is necessary, but summer pinching is merely mischievous, and should everywhere be given up. As for plums, they may be more easily ruined than benefited by pruning, for the operation is apt to cause gumming, and that prepares the way for other evils. Young plum trees usually grow with rampant vigour, and this must be allowed, but a certain amount of regulation may be obtained by judicious use of the knife. and for a check to over luxuriance there is no treatment so safe and certain as lifting and replanting. As for cherries, none but the most experienced pruners should allow the trees to see the knife ; of all our hardy fruits cherries need pruning the least of any.

Espalier and wall trees are to be systematically pruned as a matter of course. The foregoing remarks apply solely to trees and bushes in open quarters, the free unrestricted growth of which is much to be desired; for it is the surplus vigour of the tree, accumulated by the joint action of roots and leaves, that comes forth finally as fruit. But as espalier and wall trees must have mention, we will take occasion to say that these are often too severely restricted, and the consequence is disease and often death, for the wall itself robs the tree of all its life on that side. The bark and the buds on the wall side are excluded from light and air, and the knife suppresses much of the leaf surface that is so essential to sustain the vigour of the tree. Wall trees must be kept sufficiently thin to allow of perfect maturation of the growth, and the wall should be as evenly covered as possible to obtain a maximum of bearing surface, while *extension* should be allowed to the utmost possible. The word "extension" should be kept in mind by the pruner as of vital importance. Let the leading rods or branches of every tree push out as far as they will, whether it be a bush, standard, or wall tree. But judiciously thin the side growths to ensure full exposure of the growth that is retained, that sun and air may play their part in maturing fruit spurs for the production of a crop.

A Fresh Soil Desirable.

A good soil is of the greatest importance, for there is little in the way of fruit to be got out of a poor soil. But a *fresh* soil is a matter of some importance also. To plant fruit trees again and again on the same ground is a grave folly. We hear people say of the possessors of old worn-out orchards "why do not the owners grub out the trees and plant young trees in their place ? " It is the question of a person uninformed on the subject. A worn out orchard should be thrown into grass or arable and the new orchard should be on a new site on fresh soil, on which for many ages there have been no trees of any kind whatever. Experienced frui ists do indeed stub up woodlands, to form fruit plantations, but they are careful only to take for such purposes woodlands on deep-holding loams that may be spoken of as of inexhaustible fertility; and when the work is done it is so well done, the staple is so deeply torn up, that the characters of a fresh soil are secured and the young fruit trees thrive satisfactorily. We have seen many tracts of woodland in Kent converted into fruit gardens with the best results. But this is very different to "sticking in" new trees on exhausted land that has sustained a lot of fruit trees for a century or so, and now exhibits for our edification a lot of scrubby, decrepit, lichen-laden trees that are only capable of one more service to man, and that is to give warmth to the house on a winter's night.

Profitable Culinary Apples.

For early production, the most constant bearing, and convenience of management, bush trees on the paradise stock are to be preferred before all else. They may be planted six feet apart, and when they begin to want more room may be thinned out to one-half the number at twelve feet apart, which will necessitate the formation of another plantation or the sale of one half of the trees. There is so little to be gained by forming the trees to this or that model that it is waste of time to prune for any purpose except to help the trees to distribute their useful wood in a regular manner, and the nature of the variety must be considered in connection with this matter. Take Small's Admirable for example and regularly cut off the ends of the shoots, and you will scarcely see an apple. But leave the ends of the shoots untouched to extend as they please and you will have plenty. The late Mr. Dancer, of Chiswick, one of the wisest of orchardists of recent years, once remarked that Dutch Codlin is the only apple that will bear pruning, and that Stirling Castle with a good market at hand will pay better than any apple known. The apple requires a deep loamy soil, but will often thrive in a sandy soil and is not quite at sea on a well drained clay. For an orchard on heavy land standards on crab stocks are likely to prove most serviceable, but on any kindly soil for quick returns and for regular bearing dwarf trees on the paradise are alone to be trusted, and if the sorts are wisely selected and the trees left pretty free to manage their own affairs, profit will follow unless the management is gravely at fault somewhere.

Stirling Castle, a kitchen apple of fair size and good appearance, ripening in August and September, is of the first importance for profit. The tree makes a free and fruitful bush, the fruit is round, when ripe pale yellow, with a few streaks and dots of crimson on the side next the sun. It is of excellent quality, and in general character comes near to the Hawthornden.

Lane's Prince Albert was selected by us not long since as the best of all apples. In the past season it bore abundantly, and from the time of its first appearing it has been one of the most constant. As an orchard standard it bears most profusely, but this is said to be one of its faults because the weight of the fruit brings the branches down and the cattle make too free with it. The objection cannot be of universal application, but as it makes a fine bush or cordon when worked on the paradise, "the bane and antidote are both before us." The fruit is large, ovate, when ripe pale yellow, with a little light crimson. Its fine appearance tends in the direction of profit. It is a prodigious bearer of the most excellent quality, and is in use from October to March.

Bramley's Seedling may be said to run a race with Lane's, but does not beat it. This fine variety is equally useful as a dwarf or a standard; it bears abundantly, and has the merit of keeping well. The fruit is large, oblate, and somewhat resembles the Blenheim. The colour when ripe is green with much pale red and a full red cheek. The flesh is yellowish, tender, with a lively flavour. It is good from November to April.

Grenadier is a large early apple of great beauty, and full of profit. Trees on the paradise bear in the second year, and thereafter increase in fruitfulness every year for fifteen years or so, after which the productiveness declines. The fruit is large, ovate, being broadish at the base; when unripe of a brilliant apple green, ripening to a yellowish green without any other colour. The season is September to November.

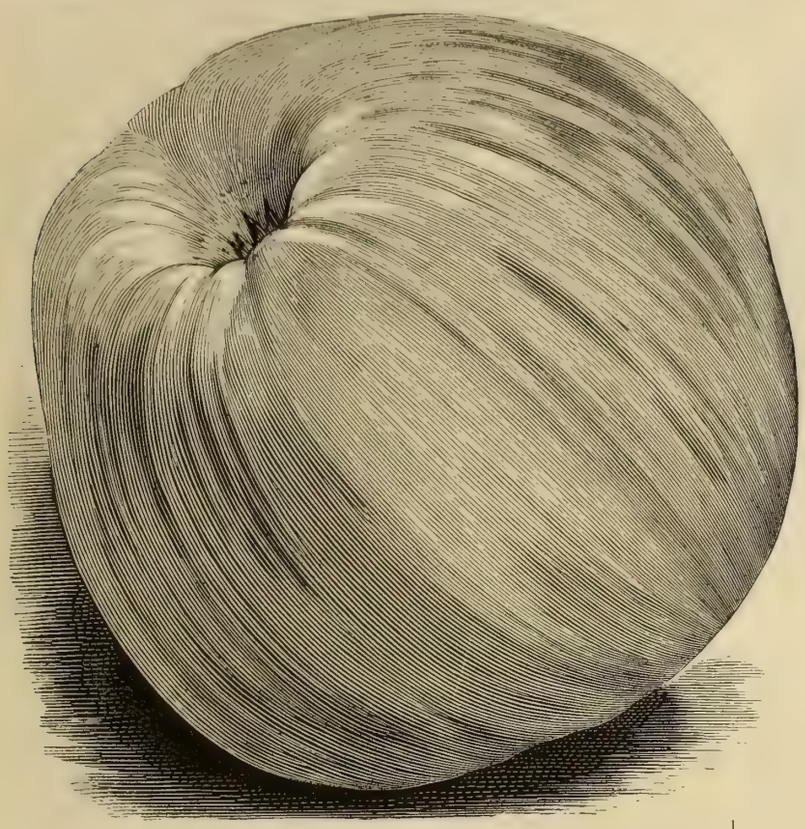
Wellington or *Dumelow's Seedling*, also known as *Normanton Wonder*, is a grand apple for the villa garden or for the orchard. The tree is immensely vigorous, and should be but little pruned. The fruit is large, roundish, pale yellow with a tinge of red, and when grown on grass has a bright red cheek. The hardiness and fruitfulness of this variety have long rendered it famous, but it has the additional merits of good quality and keeping well until March. The tree may be known by the grey dots on the young shoots, which are long and stout.

Lord Grosvenor is not widely known, but is destined to become famous as an early market apple, turning in the money early, and bearing well in all soils and climates that are capable of producing apples. It is many times better than the more famous Lord Suffield, which is tender, subject to mildew, and adapted only for peculiarly favourable situations. Lord Grosvenor thrives on the paradise, makes enormous leaves and large codlin fruit, that ripen a clear pale yellow, and have a very taking appearance. It is in use until November, being, in common with the codlin race, serviceable long before it is fully grown, so that for some purposes its season may be said to begin in July or August.

Bismarck illustrates the necessity of occasional revision of lists of fruits. It is less known than Lord Grosvenor, having been introduced from Australia within four or five years past

It is a peculiarly grand fruit, like a gigantic Blenheim, but more solid and decidedly showy. It is not suitable for a standard, the fruit being heavy and too freely produced. But as a free bush or cordon it is of the first importance. The handsome fruit is in use from September to the close of the year.

Ecklinville is of Irish origin, and was "discovered" by Mr. A. F. Barron. The tree thrives on the paradise, forming a free bush, and



CULINARY APPLE, *Cellini*.

bearing in the second year. The fruit is of full size for culinary purposes, roundish and flattened; when ripe lemon-yellow, with a little crimson on the sunny side. The flesh is tender and briskly flavoured. The season is September to the close of the year.

Winter Queening, also known as *Winter Pearmain* and *Duck's Bill* of Sussex, is much grown in the Sussex Weald, and also in Kent. It is a moderate grower, and well adapted for villa gardens, and has the merit of thriving on a cold soil. As an orchard tree it is worthy of attention, for the great mass of buyers like an apple that is equally useful in the kitchen or on the table, and in this list of culinary apples Lane's Prince Albert, Bramley's Seedling, and Winter Queening, are held in some esteem as dessert fruits. This apple is of medium size, and quite a beauty, the form somewhat conical, the colour when ripe pleasing, with streaks of red on the shaded side, and deep red in the sun, with a sprinkling of russet. The flesh is crisp, juicy, agreeable, and the season of use from December to the end of March. It is not one of the greatest bearers, but is a truly profitable apple.

Duchess of Oldenburgh is another of the apples that is valued both for the kitchen and the table, and it is one of the beautiful apples that attract attention in the market. Being as well adapted for villa gardens as for market purposes, it should have before it an improving future, especially as it proved one of the freest bearers in the scarce fruit year of 1890. The fruit is medium to large, round, with much rich red colour, and altogether handsome. The flesh is yellowish, crisp, juicy, with excellent flavour, and the season is during August and September.

New Hawthornden is an improvement on the Old Hawthornden, and fully as sure and prolific a bearer. It is equally useful for market and for the villa garden; the tree a moderate grower, wonderfully fertile, the fruit large, handsome, ripening yellow with a flush of crimson. In quality excellent, but not keeping well beyond the middle of October.

Winter Hawthornden is distinct from the New Hawthornden, being heavier and of firmer texture, and keeping until after Christmas. It does not bear so freely as the other, but is, in any case, one of the profitable apples.

Warner's King is one of the great apples, samples having turned the scale at 27 ounces. But it is of such good quality that it is known in Kent and Sussex as the *Poor Man's Friend*. The tree grows freely, forms a serviceable bush on the paradise, and bears profusely. The fruit is roundish, ripening a clear deep yellow with a little brown russet, the flesh is white, with lively flavour. The season is November to March.

Lord Derby must be in the group where profit is most forcibly foreshadowed; it is like Grenadier, but distinct. The fruit is large, roundish, with prominent ribs, dark or full grass green with russet dots; flesh mildly acid, good until Christmas. One of the best on the paradise stock, and a most productive variety.

Other useful Culinary Apples, in addition to the foregoing are *Alfriston*, November to February; *Catshead*, October and November; *Mank's Codlin*, excellent for small gardens, September to November; *Golden Noble*, excellent for gardens, November to December; *Herefordshire Beefing*, showy and prolific, November to March; *Norfolk Beefing*, large, late keeper, January to May; *Galloway Pippin*, hardy and prolific, October and November; *Tom Putt*, a great favourite in the west, October to Christmas; *Pott's Seedling*, excellent for town gardens, August and September.

Interesting Culinary Apples for Speculative Planters.

Red Astrachan, a beautiful fruit. It needs a warm situation, and should be severely thinned; August and September. *Betingheimer*, a conical German apple with high colour; October to Christmas. *Calville Blanc*, useful for kitchen or table, and needs a warm situation or the aid of glass; a fine thing. *Cellini*, a beauty, useful in kitchen or for dessert, suitable only for paradise stock, superb for small gardens; August to October. *Scarlet Costard*, large, very showy; October and November. *Early Julien*, valuable for its earliness, and suitable for gardens. It may be regarded as a kind of early Hawthornden; July to September. *King of Tomkins County* is a famous American apple of enormous size and high quality. In warm places it often succeeds, and is well adapted for orchard house culture; November to January. *Lady Henniker* is adapted for kitchen and table, and being extra hardy has general usefulness; December to February. *Lord Suffield* is an established favourite, but for all that it is only suited for the speculative, for the simple reason that it cannot be depended on; September and October. *Newton Wonder* is a large fruit, between Wellington and Blenheim; November to May. *Peasgood's Nonsuch*, adapted for kitchen or table, extra large and handsome; it bears well, and is generally treated with extra care because of its exhibition splendours. *Queen Caroline*, quite a treasure for small gardens; October to December. *Royal Jubilee* came into notice in 1887. It is like Golden Noble, bears abundantly, and in windy weather does not let many fall. Is likely to cause many a one to say, as Mr. Dancer said of Stirling Castle, "Oh, that I had known it earlier!" October to March. *Small's Admirable* is a late keeping member of the Hawthornden group; November to January. *Smart's Prince Arthur*, large and handsome, constantly fruitful, keeps until June. *Stone's Apple* or *Loddington* has been found serviceable to graft upon old trees, both to renew their youth and to render them profitable. It is best grown on the paradise; it is large and handsome, and good to the end of the year. *Tower of Glamis* is one of the best for cordons and espaliers; October to December, *Yorkshire Beauty*, medium size, one of the best for gardens if very little pruned. December to January.

Profitable Dessert Apples.

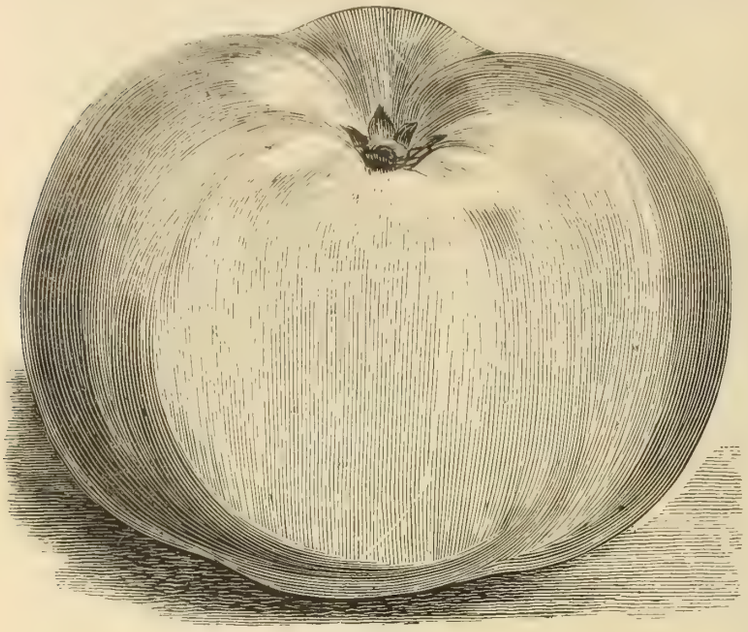
King of the Pippins, known also as *Golden Winter Pearmain* and *Seek no Further* is probably the most profitable of table fruit, although in quality far below the Ribston or Cox's Orange. It is a conical fruit



CULINARY APPLE, *Tom Putt*.

of medium size, bright golden colour, neatly finished, and altogether inviting in its appearance. It is, moreover, tender fleshed, sweet, and agreeable, and equally useful for the kitchen or the table. Its hardiness, constancy, fruitfulness, and accommodating nature render it first favourite with many market gardeners, and it comes into market when

prices usually have recovered from the competition of the "glut" of early fruit, and is good until the turn of the year to share in the higher rates that prevail at Christmas—that is, if any at that time are left, which is rarely the case. As an orchard standard the growth is vigorous, and the tree attains a great size, and bears a great crop annually;



CULINARY APPLE, *Small's Admirable*.

as a bush on the paradise it soon comes into bearing, and should never be pruned except to thin out occasionally to let in light and air.

Cox's Orange Pippin is a beautiful fruit of medium size, very neat in form, with much grey russet, and a fine glow of red on the sunny side. The flesh is crisp, but tender, rich, juicy, and perfumed, and comes near to Ribston in flavour. Its season is October to February. This is one of the apples that should have a place in every garden, for as a low bush on the paradise it produces first-class fruit in plenty, and the crop should be allowed to hang until there is probability of frost, as it ripens of finer quality when gathered late. As an orchard tree it is a good grower, but needs a warm, rich soil. The finest tree known to us is a half standard, with a large head that has never been pruned. It is in a warm, western suburb of London on a deep, sandy soil, and it bears annually a great crop of the handsomest samples we have seen.

Beauty of Bath is a new variety of the finest character for early supplies, the fruit being of medium size, round, with much brilliant red colour; flesh tender and sweet. It ripens in July and August, and it is the best dessert apple of its season. As a regular and liberal cropper it merits special attention, where early apples are in any degree of demand.

Duchess's Favourite or *Duchess of Gloucester* is a brilliant little apple of second quality, ripening in September and October. It is not good enough for an amateur of apples, but as it looks well, eats well, and bears prodigiously, it must be in a foremost part of this list of profitable apples.

Early Strawberry is another pretty little early apple of great beauty, and second in merit, that is entitled to a place here because of its hardiness in northern gardens, its fruitfulness everywhere, its free bearing, and the happy way in which it sells in market. For the amateur it is not of much account.

Gascoyne's Scarlet is of medium size, extremely beautiful, and of excellent quality for either kitchen or table. It is not an early bearer, but, given a few years to become established as an orchard tree, and it makes a constant and abundant return. Its season is November to February, which enhances its value, and it is not only a first-rate market apple, but will suit the amateur for its beauty and good quality.

Joanetting or *Margaret* is a capital early, of medium size, adapted for orchard or garden, as it makes a fruitful standard or a free and profitable bush. The tree is but a moderate grower, but bears well, and is as hardy as any. It is so well adapted for the paradise stock that it is often grown in pots in the orchard-house, where it ripens early, and is eaten fresh from the tree; its season being July and August.

Lady Sudeley, also known as *Jacob's Strawberry*, has the merit of extra size for a dessert fruit, and with size it has beauty and high quality. The fruit is round, flattened at both ends, and richly mottled and striped with crimson. The flesh is tender, fragrant, and delicious. It grows equally well on crab or paradise, and is one of the best for cordons; moreover, it is extra hardy, and especially valuable for cultivation in the north. August and September.

Worcester Pearmain is a model market apple, and as profitable as any. The fruit is of medium size, conical, and somewhat angular, smooth and brilliant red, with fawn-coloured freckles. The flesh is tender, juicy, sweet, and sprightly, adapted both for the kitchen and the table, but of second quality as a dessert fruit. On the paradise it bears profusely, the growth upright, and forming a neat manageable tree that is full of beauty in the autumn. August to October.

Kerry Pippin, also known as *Aromatic Pippin*, is of high renown for rich flavour, and exceeding tenderness of flesh. The fruit is smallish, oval; the colour clear lemon-yellow, with crimson streaks. The tree is hardy, grows freely, bears abundantly, and is one of the best for bush and espalier culture in the garden. September and October.

Other Profitable Dessert Apples.—*Beauty of Kent*, a fine kitchen apple suitable for dessert when well ripened; excellent on paradise; December to February. *Cornish Aromatic*, a pretty fruit of fine quality, well adapted for garden culture; December to March. *Devonshire Quarrenden*, a brilliant little fruit, of excellent quality for those who have good teeth; August. *Irish Peach*, smallish, tender, well-flavoured if eaten from the tree; August. *Scarlet Nonpareil*, a little beauty, with delicious, tender flesh; excellent on paradise; January to March. *Reinette du Canada* is a grand apple, with soft flesh of fine flavour; the tree best as a dwarf or cordon. A warm soil requisite; November to April. *Royal Russet*, a large fruit, not of the highest quality, but generally considered first-rate. On the paradise it is a profitable apple. October to December.

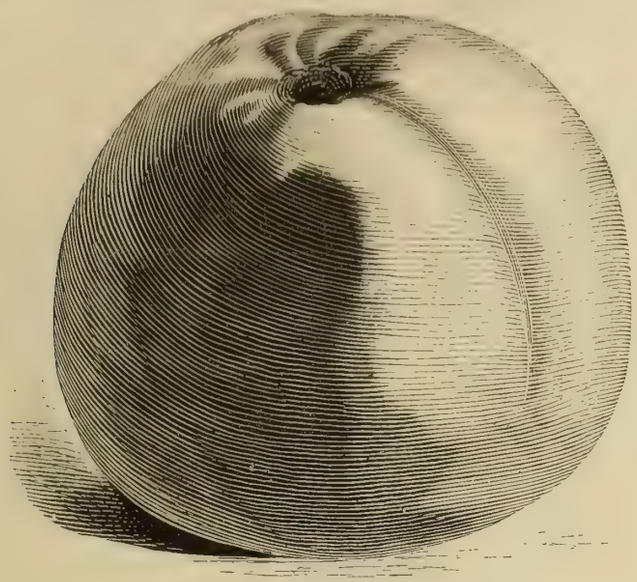
Interesting Dessert Apples for Speculative Planters.—*Blenheim Pippin* must have first place in this list, for it is one of the noblest apples grown, great in size, beauty, and quality, tender fleshed for the table, and excellent when cooked. It is a vigorous grower, and late in bearing, and should not be placed in a list of profitable apples for universal planting; November to February. *Ribston Pippin* is also a superb fruit, too well known to need our praises. But it gives trouble in many places, and where it does not succeed as a standard it may be tried as a bush or espalier. *Cornish Gilliflower* is a conical apple of good size and pleasing appearance, greatly prized for its delicious flavour. It is shy, and fruits at the points, therefore should be cautiously



CULINARY APPLE, *Grenadier*.

pruned; November and December. *Gravenstein* is said not to ripen in this country, but it does ripen well, and is first-class for kitchen or table. On the paradise it produces superb fruit; September and October. *Lady Apple* is a kind of toy, but when seen in the markets at Christmas it will be found to have some money in it. As a cordon

or bush it is quite an apple for an amateur; December. *American Mother*, a delicious fruit, requiring wall or orchard house culture; October to January. *Claygate Pearmain* comes near to Ribston in flavour, and is well adapted for the paradise stock; November to March. *Washington* is renowned for beauty, and comparable to a peach, the flesh melting and well flavoured. Requires wall or orchard house.



CULINARY APPLE, *Galloway Pippin*.

A Special Note on Pruning.

As illustrating the mischief that may be done (and is often done) by indiscriminate pruning and more especially by shortening leading rods, the following excellent apples produce fruit at the points of the shoots: Ashmead's Kernel. Cornish Gilliflower, Gascoyne's Scarlet, Golden Noble, Irish Peach, Small's Admirable, Smart's Prince Arthur, Yorkshire Beauty. Many others have the like habit, but these are conspicuously "terminal bearers."

Profitable Pears.

Pears are more fastidious than apples in respect to soil and climate. Amongst them are some hardy profitable kinds that thrive on almost any soil that will grow a potato or a cabbage, but pear culture, in the proper sense of the term, is one of the fine arts in horticulture, and admits of endless expansion where the first requirements of a suitable soil and climate exist to furnish a foundation for a fair beginning. The grand old standards of Windsor, Hessle, Lammas, Swan's Egg, and Williams, on pear stocks that we often meet with, surprise us by their productiveness and apparent indifference both to soil and climate, for we find them on deep loams and on sand and chalk, equally healthy and productive, but taking a rest occasionally as if to remind us that pears are not apples, and that the pear, after all, is a fastidious fruit, that may be persuaded but cannot be commanded. From the standards, with their great heads and usually drooping branches beautifully brought down by the many heavy crops they have produced, we pass to the free bushes and pyramids on the quince stock as at once the more useful and manageable form and the best adapted to supply us with first class fruit. To form any of these into "perfect pyramids" by pinching and pruning is great folly, for it must be done at the expense of fruitfulness. We do not wish to see our philosophers modelled to the pattern of fashionable dandies, nor is a cactus dahlia improved when its petals are rounded and regularly arranged as in the form of the exhibition varieties. The pear deserves to have its own way in some degree, not only because it is by that way more healthy and fruitful than when regulated over much, but it is so accommodating that as it can be formed to any pattern, caution should be exercised to avoid carrying this modelling to an unprofitable extreme.

Free bushes will have their several forms characteristic of the varieties, and if never pruned at all will bear abundantly and not grow beyond reasonable proportions. But an annual cutting back of the growth of the season to two or three buds is consistent with a serviceable form of tree, and this pruning should never take place till August, as there is then no probability of injurious second growth, and there is still time for ripening up the fruit spurs that have been formed at the base of those shoots on the same or older wood.

For walls, fan-trained trees are the best. It is a mistake to train in fanciful forms, and it will be found that men who make trees spell out words by training them this way and that, do not reap any great degree of profit from the operation. As cordons on walls the pear is productive, and an amateur having a fancy for pears may fruit a lot of choice sorts in a small space, as they may be planted close, and each trained to one rod and kept closely spurred in. Pears are not well adapted for horizontal cordons; indeed, no fruit suits for this form so well as the apple, and to form a green and (sometimes) fruitful palisade to a plantation cordon apples answer well, and Calville Blanc is a favourite for the purpose. The pear grows so freely when in a deep, fertile, loamy soil that when over pruned it soon recovers, but every act of over pruning means the loss of a season's fruit, or the reduction of the crop far below the point that might be secured by allowing the trees a reasonable degree of freedom.

Pears on the quince form a great mass of surface roots, and may be lifted and replanted with little danger after they have attained to a considerable size, and there is no better way of checking a too free growth than careful lifting. On the pear stock the trees are slow to bear; on the quince they bear early, and a few of the more productive kinds bear abundantly even on quite small trees, and the fruit of these small trees is of excellent quality.

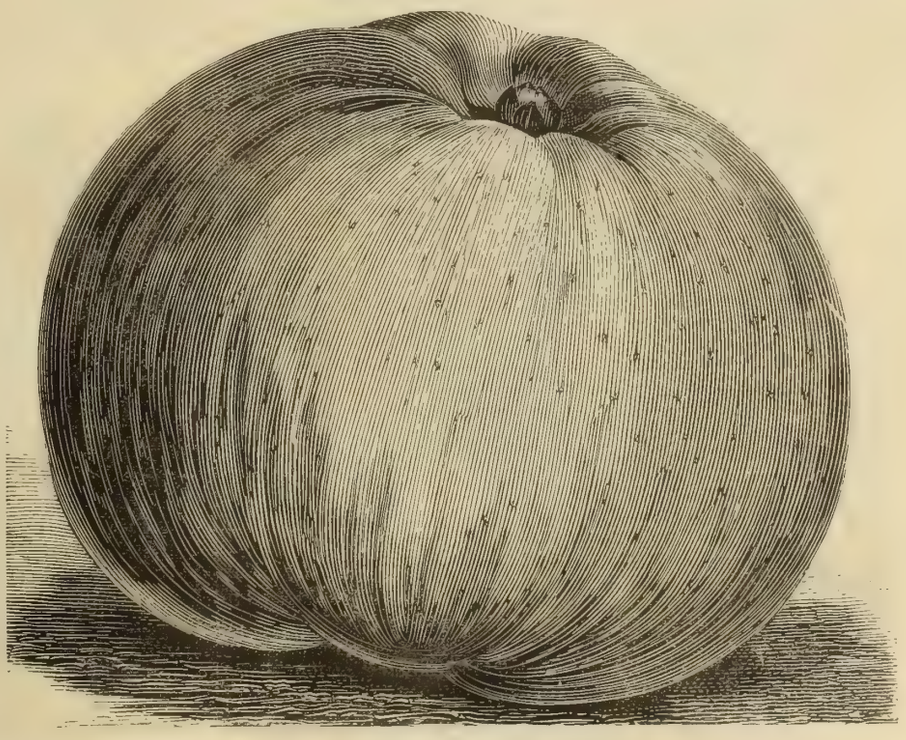
A poor soil is inimical to the well-doing of pears, and they endure drought but sadly. In a dry summer, when water can be spared, the wall trees of all kinds should have liberal supplies, and next the pears in open quarters should be aided. Apples and plums endure the drought with less harm than pears, but these must live, and exhaustion at the roots means impoverishment of the crop, and may mean the death of the trees. But pears on quince stocks should have early attention in respect of watering in a dry summer, and after a heavy drenching of the roots to help the crop along, a mulch of the littery part of stable manure should be put on to check evaporation and preserve a salutary moisture to the roots. Established trees that are shy to fruit and grow too freely, and cannot well be lifted, should be root-pruned in October, and if this is done with care improvement may be looked for.

Profitable Dessert Pears.

In a selection of profitable pears it appears advisable to place in a group apart from all others a few celebrated varieties that are of local rather than universal fame, and scarcely worthy of attention except for the supply of markets in which they are well known and appreciated. Generally speaking, it is a mistake to plant these in gardens, first, because better varieties are at command, and in the next place because a great glut of one kind, and that of a character far below first quality, may often prove more of a bane than a blessing. The market grower who lays out his plans in a suitable manner to include such varieties in his collection will know how to dispose of the produce, and, generally speaking, will not give attention to choicer kinds, because the ultimate bulk will be less, and will require a quite other kind of handling.

Pears for Farm Orchards.

Hessle or *Hazle* takes its name from Hessle, or Hessele, near Hull, where it was first noticed. It is a small fruit of turbinate form freckled with russet, thick skinned; the flesh tender, juicy, and aromatic. It is usually grown in standard form, entirely unpruned, and it forms a handsome, half-weeping, and most productive tree. As a market pear it is of the first importance to growers who can dispose of the produce. Its season is October.

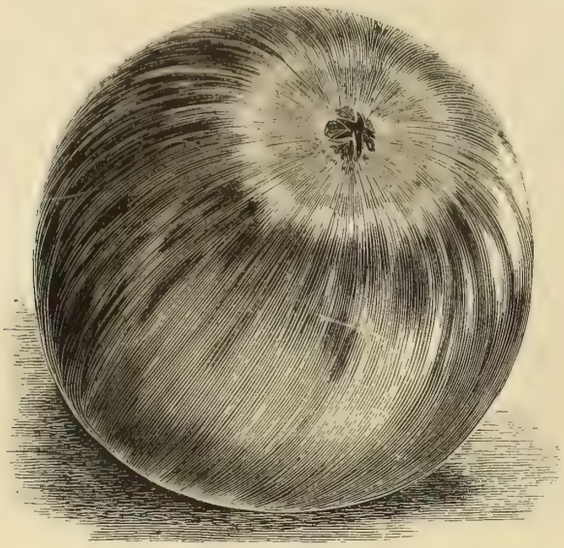


CULINARY APPLE, *Bramley's Seedling*.

Eyewood was raised at a place of that name in Herefordshire. It is a small pear of bergamot shape, greenish-yellow with much brown

russet; the flesh melting, juicy, with an agreeable aroma. It is not everywhere good, but where it succeeds it bears profusely. Though scarcely wanted where there is anything like a collection of first-class pears, it makes a good garden tree, and will prove serviceable where schools, hotel tables, and large families are at command to consume the crop. The season is October.

Autumn Bergamot is a good old dessert pear, small, roundish, green with much brown and russet; flesh tender, juicy, rich, but gritty at the core. Forms a handsome and prolific tree on the pear, and also thrives on the quince. October.



DESSERT APPLE, *Cox's Orange*.

King Pear, or *Caillot Rosat*, is a fair-sized fruit, pear-shaped, greenish-yellow and brownish-red; flesh tender, juicy, and perfumed. A fruitful tree on the pear, and an early crop, being ripe in August.

Croft Castle is of medium size, oval, greenish-yellow with brown dots; flesh juicy and sweet. Makes a fruitful standard. October.

Beurre Clairgeau is of large size and eminently handsome. It is pear-shaped, of a fine lemon-yellow with orange shading into red on the sunny side; the flesh coarse, juicy, and sweet, but, in any case, quite second-rate. It is better if gathered before it is quite ripe. The tree bears abundantly, and the produce sells readily, and by thousands it is eaten with complete satisfaction. November.

Fertility is of medium size, ovate, the colour rich cinnamon with tinge of deep orange next the sun. The flesh is crackling, juicy, sweet, and agreeable, but far from first quality. This variety, raised by Mr. Rivers in 1875, has abundantly justified its name, for it is immensely fruitful, and one of the best of market pears. In the poor pear season of 1890 Fertility produced an enormous crop. October.

Seckle combines the characters of an orchard and garden pear. It is small, obovate, yellowish brown, with a little red on the sunny side; flesh melting, juicy, rich, and aromatic. As a standard it is hardy, vigorous, and free bearing.

Windsor demands a place in this first list. As a market pear it needs no praise. The fruit is large, pyriform, yellow and green, with streaks of red; flesh white, buttery, melting, brisk, and refreshing, but sometimes slightly styptic. It grows like a forest tree, and produces pears as freely as an oak produces acorns. The habit of the tree is upright and handsome, and it is not particular as to soil, provided the subsoil is neither cold nor sour. Its habit of occasionally flowering a second time is a nuisance, and is usually detrimental to the crop of the next season. August.

Lammas is a smallish pear, pyramidal, pale yellow, streaked with red; flesh tender and well flavoured. The tree is hardy and fruitful. August.

Beurre de Capiaumont appears in great bulk in the markets in October, and the supply is soon exhausted. It is of medium size, pear-shaped, deeply coloured cinnamon russet and reddish orange; flesh white, buttery. The tree makes a hardy and prolific standard, and succeeds on the quince. It is a good northern pear. This is the only member of this group for which we would allot space in a garden to be planted with first-class pears, and we place it last on the list that it may be near the second group, which we shall designate

Pears for Garden Orchards.

Jargonelle is somewhat out of fashion; but as there is nothing better in its season, and few at that season half so good, it must have a place in this select list, for it is a profitable pear, and adapted for universal planting. The climate of Perth is not too cold for it, nor is the climate of Southampton too warm. The fruit is not often large, but it is never small; it is pearshaped, greenish yellow, with sometimes a cheek of brownish red; the flesh yellowish, melting, juicy, vinous, and musky; a delicious pear, ripe in August and September, and best when gathered just before it parts readily from the tree. The tree is a moderate grower; and as it becomes fruitful the branches bend down and give it a distinct "Jargonelle" character. It may be advantageously grown as a standard or wall tree, and prospers on the quince, but will not make a respectable pyramid.

Louise Bonne of Jersey has become famous by its merits as a pear for all climates, bearing abundantly, and combining a fine appearance with high quality. It is of medium size, pear-shape, yellowish, with a bronzy or brownish crimson cheek; the flesh white, buttery, melting, rich and vinous in flavour. It forms a fertile pyramid or bush tree on the quince, and is one of the best for espaliers and for pot culture. October.

Williams's Bon Chretien is one of the best known of all pears; the fruit is large, pyriform, and bossed, the colour when ripe a clear yellow, with streaks of red next the sun; flesh melting, sweet, altogether delicious, and without any trace of a styptic flavour. The tree is hardy, and bears abundantly, but occasionally "misses," and this throws it out of favour with the market growers. On the quince it makes a good garden tree. August and September.

Winter Nelis is a true garden pear, but is quite in the category of the "profitable." The fruit is smallish, obovate, yellowish green, with patches of brown russet; flesh fine-grained, melting, rich, and aromatic. Bears well on the quince, but requires a warm soil, and in places not highly favourable to pears, requires the aid of a wall. November to February.

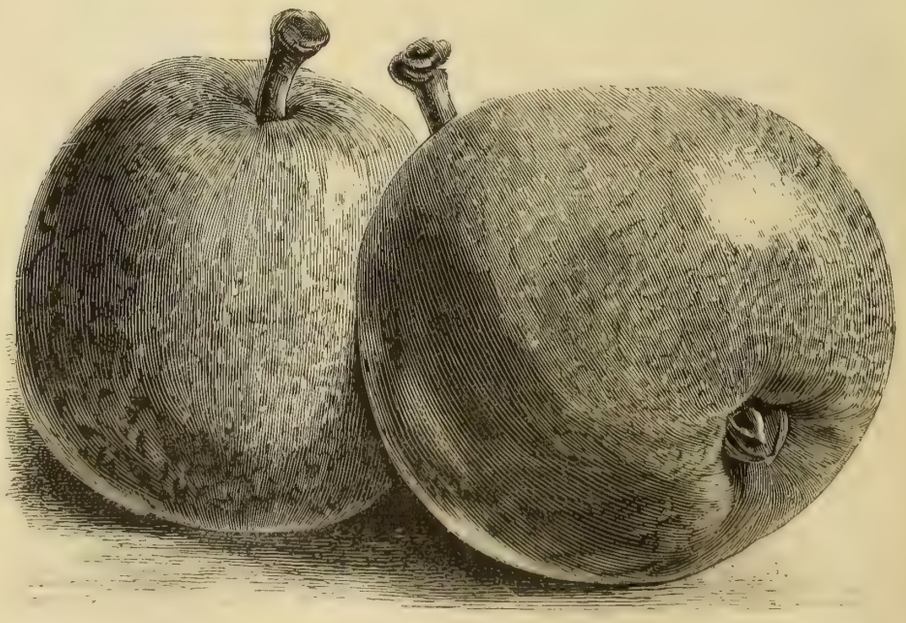
Josephine de Malines is a perfect garden pear of fair size, greenish yellow, with tinge of red; the flesh yellowish, sometimes slightly red, juicy, sugary, delicately perfumed, altogether delicious. The tree thrives in any form, and bears fairly well, but is of rather straggling habit. It is one of the first that should be planted in the formation of a proper pear garden. January to May.

Marie Louise, a well known oblong pear, has every quality to recommend it in a good pear climate, but it is uncertain in places that are not adapted for the more fastidious kinds of pears. The flesh is yellowish white, melting, sweet, slightly acidulous, and suits all palates. Though often grown on a wall, fruit from open quarters is better in places favourable to precarious pears. February to March.

Passe Colmar is one of the hardiest of the first-class pears, as we know from the excellent crops it has given us when grown on an east wall in an exposed situation on a cold and heavy soil in a northern suburb of London. The fruit is of medium size, obtuse pyriform, lemon yellow, tinged with brown; the flesh fine-grained, juicy, melting, and rich. It thrives on pear or quince, and on a warm soil makes a fruitful pyramid or standard.

Nouvelle Fulvie is reported to be an improvement on Passe Colmar, but we have not found it so hardy. November and December.

Pitmaston Duchess may be characterized as the grandest of profitable pears, and well adapted for every style of growth, including the orchard house, where it attains to magnificent proportions, and is of the most delicious quality. In form it is as large and handsomer than Duchess d'Angoulême, and the tree is vastly more accommodating. It is pyramidal, often boldly bossed, ripening a fine golden yellow; the flesh tender and melting, juicy, rich, vinous, and perfumed. As a standard it is surprisingly productive considering its high quality, but it requires a pear soil and a kindly clime, for it cannot compete with the little sweet early pears, that appear capable of thriving anywhere. October and November.



DESSERT PEAR, *Easter Beurré*.

Souvenir du Congrès is in the way of Bon Chretien, but ripens earlier and is more showy. The flesh is tender, juicy, and melting, with a musky aroma. Thrives on pear or quince, and is fairly but not prodigiously fruitful. August and September.

Doyenné du Comice is large, pyramidal, lemon yellow, the flesh tender, buttery, very rich and sweet perfumed and spicy. The

tree grows freely and bears well: it is a grand pear. October and November.

Other Pears of high merit, adapted for large collections, but of less merit as profitable pears than the foregoing, are: *Bergamot Esperen*, January to April; *Belle Julie*, small, good, October, November; *Beurré d'Amanlis*, large, fine on quince, and good as standard,



DESSERT PEAR, *Josephine de Malines.*

September; *Easter Beurré*, large, fine flavour, thrives on quince, January to March; *Beurré Superfin*, large, russetty, fine quality, succeeds on quince, and makes a good cordon, October, November; *Colmar d'Eté*, a sweet little attractive pear, quite a "children's friend," capital on quince, September; *Summer Doyenné*, small, roundish, top-shaped, rich yellow with red blush, flesh half melting, agreeable, a popular "barrow pear," July; *Durondeau*, large, handsome, fine quality, thrives on pear or quince, prolific in a good season, October and November; *Madame Treyve*, large, handsome, high coloured, hardy; free bearer on pear or quince, and first rate for a wall, September.

Profitable Culinary Pears.

The best are *Bellisime d'Hiver*, large, roundish, of the best quality, tree vigorous on pear or quince. *Catillac*, large, turbinate, a good pear, but a little gritty; requires a sheltered situation. *Black Worcester* is the real old "Warden," a good stewing pear, the tree forming an excellent standard. *Verulam* is our own special favourite; the fruit is large, obovate, with much russet and reddish brown on the sunny side. When stewed the colour is beautiful. Should be grown as a standard.

Profitable Culinary Plums.

It is advisable to place the culinary plums first because of their importance, for even the Green Gage, most delicious of dessert plums, is much more grown for cookery and preserving than for eating at the table. Plums thrive in any loamy soil, and are better adapted for a sandy soil than either apples or pears. Plums grow vigorously on any of the stocks commonly employed to carry them, but as the stocks differ, and the differences have not been scientifically studied, it is impossible in this place to make any wise remarks upon the subject. For profitable cultivation, trees worked low are certainly the best, and at seven feet apart they will do well for a few years; but when they begin to touch one another one-half should be removed to make another plantation, a distance of fourteen feet being the final arrangement. Many plantations of plums have been destroyed by pruning, for this operation may be followed by gumming, and thereupon other disasters ensue. We have never had the misfortune to lose trees by gumming, but we have never pinched or summer pruned plums, and only trained trees have been, with us, pruned at all, and that not until the end of July or early in August, when there is no danger of second growth and still time for ripening the little spurs on which the fruit is produced. Why people should prune plums that are not trained, and that cannot be improved, but may be much injured, by pruning, is to us a mystery that we can only explain by connecting it in some way with the doctrine of original sin, and accounting it one of the abuses of nature incident to depraved humanity. Lifting and replanting is another matter. When a check is needed this supplies it most effectually, and the work should be done with care and in a religious spirit of veneration for a living thing that the Lord has fashioned much more completely than any theory of pruning can possibly allow. As for varieties, plums are like other fruits, good, bad, and indifferent. The good are few, the indifferent many; the really bad, perhaps, fewer in number than the best; but as the best alone are wanted we proceed to name them.

Rivers' Early Prolific is an early market plum of medium size, roundish oval, deep purple, good enough for dessert, but properly a culinary plum. The tree is hardy, very prolific, and forms a moderate free bush of most manageable form. July.

Victoria is the most popular of all plums, and is admissible to the dessert. The fruit is large, roundish oval, bright red, with thin bloom, juicy, sweet, and pleasant. It may be grown in any form, but best as a free bush, for as a standard the fruits are often too freely distributed by gales of wind. It is immensely prolific, and in a cool climate worthy of a wall. August.

Pond's Seedling is a grand plum of large size, oval, dark red, the flesh juicy, brisk in flavour, adhering to the stone. The tree is a strong grower and bears well; in many places it is best as a wall fruit, but is not well adapted for a standard. September.

The Czar, raised by Mr. Rivers, is a truly profitable plum, the fruit large, oval, with a deep suture, ripening quite black, but usually seen of a deep dull red. It is an upright grower, and is best as a pyramid or wall tree, as the fruit is produced in clusters. The quality is excellent. Ripe early in August, and a better plum for profit than the famous Early Orleans.

Prince Englebert is of the largest size, with shallow suture, deep purple, equally good for any purpose. The tree forms a prolific pyramid, and is one of the best for a cold climate. September.

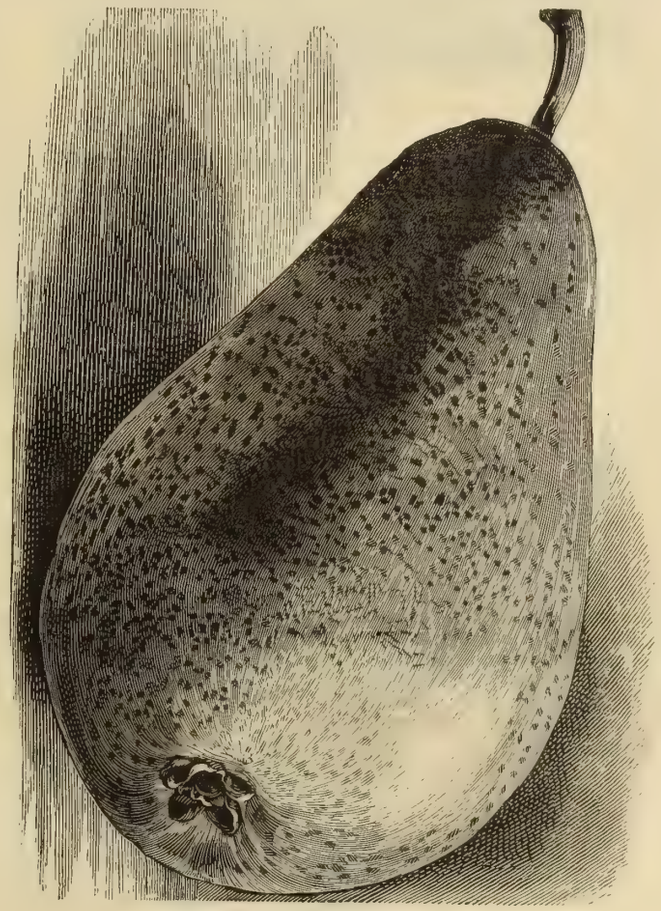
Mitchelson's is one of the best of preserving plums; the fruit large, oval, black, with blue bloom, quality excellent, but not good enough for the table. The tree is a great bearer, producing its fruit in clusters. As a market plum it is one of the best. September.

Sultan is one of the best of the many excellent plums raised by Mr. Rivers. The fruit is above medium size, roundish, dark purple, the flesh greenish yellow, sweet and pleasant in flavour. The tree is a vigorous grower, bearing freely and most properly superseding Orleans, which is uncertain, and Prince of Wales, a provokingly capricious variety. August.

Pershore is largely grown in the fertile vale of Evesham, and the surrounding markets consume all that can be produced. The fruit is a fair size, pinched at the stalk, fine apricot yellow colour; the flesh tender and adhering to the stone. It is not good enough for the table but for culinary purposes excellent. September.

Poupart's Plum is of medium size, roundish, light purple; the flesh reddish, sweet with a slight astringency, separating from the stone. The tree grows freely and bears abundantly, and the market gardeners favour it because in addition to being a good cropper, the fruit is firm and carries well. It is much grown in Surrey and West Middlesex. September.

Farleigh Damson.—The damsons are useful to plant as shelters to better plums, and where the position is exposed, bush trees are to be



DESSERT PEAR, *Louise Bonne of Jersey.*

preferred or at the most, half standards. It is important to prune damsons for a few years, with a view to form the head in a compact form, for if allowed to bear early the weight of the crop damages the tree; but when the main branches are more matured

this does not happen, or on quite rare occasions. Damsons are sold by the ton or by the thousand bushels, and whether the season be good or bad they invariably pay their way and leave a margin over.

Other Profitable Culinary Plums are *Blue Prolific, Goliath, Diamond, Belgian Purple, White Magnum, Archduke, Gisborne's*; all good, but, from our point of view, of less importance than those described above.

Profitable Dessert Plums.

Boddaert's Green Gage is larger than common Green Gage, as certain and as uncertain, of equal quality, and ripens in the end of



DESSERT PEAR, *Glou Morceau.*

August. It is essentially a garden plum, and is well adapted for pot culture.

Bryanston Gage, like the Green Gage, but larger, and ripens a fortnight later. It is one of the best for wall and orchard house.

Purple Gage is of medium size, round, light purple dotted with yellow; the flesh firm, rich, and delicious, separating from the stone. Tree hardy, prolific, useful for standard or wall, and worthy of pot culture for its beauty and quality. It is a perfect sweetmeat when allowed to hang until it shrivels. September.

Coe's Golden Drop is a large and handsome oval fruit of a pale yellow colour marked with red spots; the flesh deliciously flavoured, adhering to the stone. It is not adapted for a standard tree, but for a wall is first-rate, and the fruit hangs well if protected. October.

Denniston's Superb is another of the good gages. The fruit is above medium size, oval, a little flattened, yellowish green, with purple dots. Flesh yellow, juicy, exceedingly rich. Probably the finest-flavoured of all early plums. Thrives as standard, pyramid, wall tree, or for pot culture in the orchard house. August.

Green Gage seems to be scarcely wanted now that there are so many that come near to it, and are indebted to it for all that they are or pretend to be. It would be waste of words to describe it, but it will not be waste of words to say that we do not approve of its cultivation as a standard. It is better as a bush to be lifted occasionally, this being better than mere root pruning, which is often a cruel business that clowns are allowed to manage in a brutal way from which the trees never recover. The wisest course of cultivation is to give it a wall, and when needful a net, or to grow it in pots in the orchard house, for which purpose there is not a plum that can surpass it. August.

Jefferson is one of the best of plums for any purpose, and any mode of management that is reasonable. The knife it cannot endure, as the knifer may discover for himself, and we hope always at his own expense. The fruit is large and handsome. Yellow agreeably diversified with red dots and streaks. The flesh is yellow, juicy, sugary, superb; the tree a good grower, prolific, a good standard, a good pyramid, a good tree for a good wall, by which we mean a wall with sufficient height to allow of free, healthy growth, for restriction is deadly to this noble plum. As for aspect, it is not particular if the climate and soil are such as a plum may hope to thrive in. September.

Washington is a grand thing to make a happy end of this list. The fruit is large, roundish ovate, deep yellow with crimson dots; the flesh firm, rich, sugary, in every way first-class, and as good for the kitchen as for the table. Standard trees require time to come into bearing, and pruning will not promote productiveness. It is a grand tree for a west wall, and answers fairly well as a pot tree, but best as a standard on a wall with a west aspect. September.

Planters of plums may find a few good varieties to add to the selection we have made, but they will not find many. There are, indeed, many varieties of high quality, but we have had in view the surest for a crop as well as the best for use, and in this view of the case a considerable number of the plums that swell the catalogues are scarcely worthy of a place in any garden. A variety that produces a crop but rarely may be handed over to the curious who, because they are curious, find amusement in labouring for negative results.

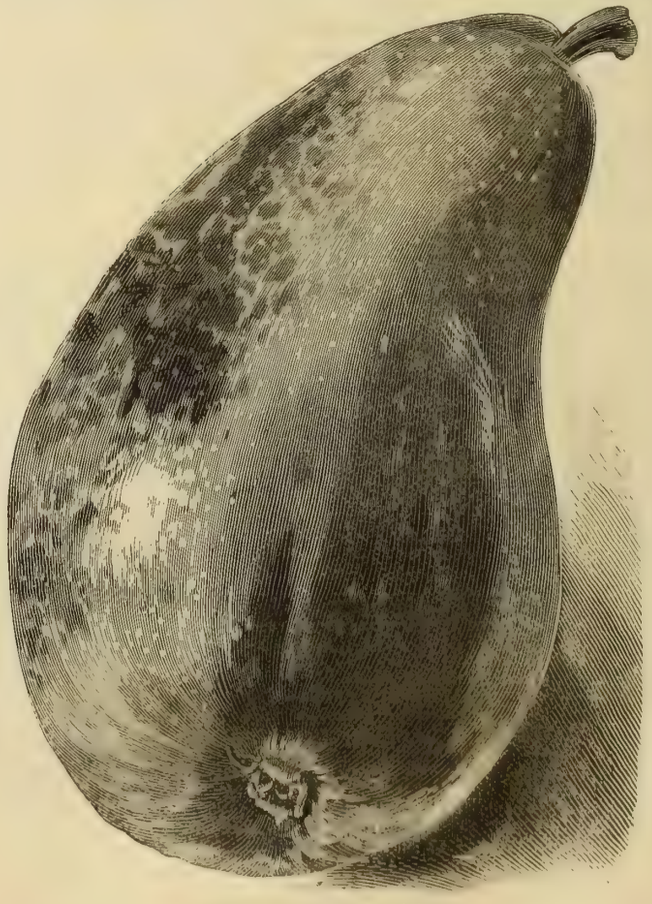
AMATEURS' FRUIT ROOM.

By J. C. Clarke.

There are many amateurs I feel sure who would construct a suitable fruit room if they knew how to set about it, and as it is not such a costly undertaking as many suppose, I intend to offer some remarks upon the subject. It is necessary to do so, because many who take an interest in their gardens, feel that that interest is suddenly removed when the fruit is gathered in and stored away, as it too often is in places inconveniently situated and quite unsuitable for the purpose. It is only reasonable to suppose that if a gentleman amateur has found interest in raising the fruit upon the trees, that he would be quite as much interested in watching the ripening process. If only a suitable structure can be provided at once, convenient of access and suitably arranged so that the contents of the store can be examined with comfort, the fruit will afford much interest.

For such a class of cultivators as those in view, I know that the possession of a fruit room would add immensely to the pleasures of the gardener, as it would prolong the time over which interest is to be obtained from its products. It must not be supposed that all the interesting features of fruit growing cease directly after the crop is gathered. To my mind there is much interest attached to it from the time the fruit is stored until it is placed on the table. Even if observers learn nothing else, he will find out something, for instance, about the vagaries of pears, how a certain sort will ripen one year in its reputed season, and in the next six weeks or two months in advance of it. A frequent visit to the fruit room will also reveal the sorts of pears that have more or less of a tendency to shrivel, and by making notes of the different behaviour of the various sorts, they will afford information that should help in subsequent years. The kinds of pears that shrivel most are those that should be left longer on the trees. The same remarks also apply to apples. They also shrivel if they are stored too soon.

The fruit room I have in view may be constructed for a few pounds,



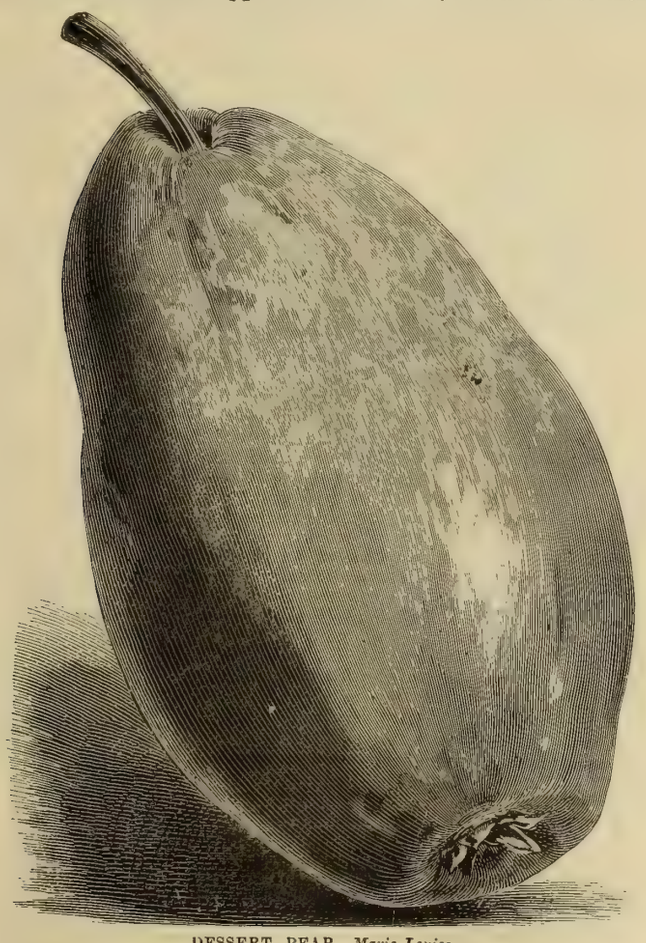
MARKET PEAR, *Beurré Clairgeau.*

and may have either a lean-to or span-roof. The latter would be the most expensive, although it would be perhaps rather more convenient and have a better appearance internally. The majority of my readers will, I have no doubt, be content with a lean-to; therefore, to that form I will first direct attention. I will assume that there is an existing

wall in some convenient place; the wall must be at least eight feet six inches high to afford sufficient headway in the interior. The sides and ends need not be formed with walls, although it would be preferable to enclose the whole with substantial brickwork. Oak posts let into the ground will last for many years, to be substantial, and the outside of the post should be nailed one-inch feather edge board, and the inside match boarding, the space between being filled with perfectly dry sawdust. If the posts are six inches by eight inches, the space between the boards, if properly filled as I have advised, will be the means of resisting the most severe frost. Light will of course be necessary, and it may be provided by placing a small window two feet by three feet either at one end or the front side. For a small garden, a structure ten feet long and eight feet wide—inside measure—will give ample space. This will allow space for one tier of shelves all along the back wall with space sufficient in the front to take out the drawers when examining or selecting the fruit. By increasing the width by another three feet six inches, a tier of shelves may be placed on the other side with a space between. The grower will then have a tier of shelves on each side. In that case the windows will be at the far end, with a shutter to exclude the frost and light. If it is not convenient to place the window in the end, a small one can be put in the side; this, with the top half of the door being of glass, will give all the light required.

The covering to form the roof may be slate or tiles, in any case a layer of clean straight wheat straw should be laid evenly on the rafters before the outside covering is put on. The straw will assist in keeping out the frost. It would still make the interior more secure from frost and comfortable, if the inside of the roof was covered with match board. The additional expense to do so would not be great, while it would secure a greater degree of cleanliness and security far outweighing the cost.

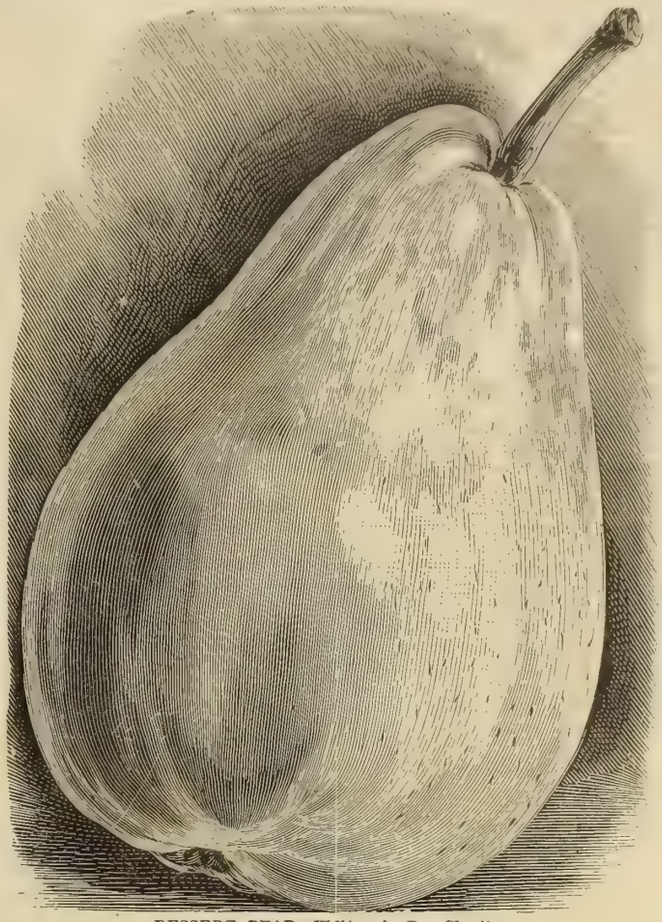
I will now turn my attention to the furnishing of the interior. As I have already incidentally remarked, there are to be tiers of shelves or drawers to receive the fruit. Now, I fancy someone will say, "what a costly affair," but I can assure the reader it is not so; all the work is so plain and straightforward that any handy man can do it with the aid of these instructions and suitable materials. In the first place the length of the structure should be divided into compartments, so as to have the drawers of a uniform width of about two feet four inches. At equal distances there must be an upright piece of timber two by three inches at both back and front to these. Strips of board must be nailed for the support of the drawers, as well as for them to



DESSERT PEAR, *Marie Louise.*

slide on in taking them in and out; the depth of the drawers nee not be more than two and a-half inches, so that in every seven inches in height there will be a drawer leaving ample space above the fruit, so that each one may hold, if desired, two or three layers of fruit. The drawers, or perhaps it will be more correct to call them trays, must be made quite independent of the frame work, so that they can be taken in and out as required. When the different compartments are arranged to suit the length, the depth must be decided upon before any part of the framework is fixed.

I am not in favour of having very large trays, as when filled with fruit they are inconvenient to move about—for the width I have mentioned the length ought not to exceed two feet nine inches. If they are longer than that the width ought to be proportionately reduced. The trays should be made of strips of board. If the sides and ends are made of three-quarter inch deals, the bottom slips may be of a quarter



DESSERT PEAR, *Williams's Bon Chretien.*

of an inch less in thickness, and two inches wide. Between each strip a space of one inch in width should be left for the air to circulate about the fruit. The side and end pieces of the trays should be two and a-half inches wide to prevent the fruit from rolling out as the trays are taken out for inspection.

It has now been made sufficiently clear, and as any merchant will supply the timber cut to the required sizes, anyone who can handle a hammer and a saw ought to be able to do the work. With regard to the after-management of the fruit store, it will be necessary to provide the means of admitting air to the structure. This of course can when necessary be done by opening the windows, but that is not sufficien for a large house. It is very desirable to have a circulation passing through the room, to accomplish this, a ventilator should be placed in the bottom panel of the door, to be opened when necessary. To keep the air pure and sweet, air should be admitted for a few hours on fine days two or three times a week. I have said nothing about the aspect for the fruit room; I, however, think it necessary to say, that any point except due north is suitable. I do not advise the placing of such a structure in a position direct north, as there is then more risk of frost finding its way to the fruit in severe winters; besides this it is desirable to have a store situated where a more equal temperature can be maintained. If it is a lean-to, a west aspect is no doubt the best.

BUTTONHOLE ROSES.

Good hardy perpetual roses that flower freely in the open air in the autumn are not numerous, but there are sufficient to supply the wants of many where only a reasonable number is required. The following half dozen can be relied upon to produce a good number of flowers both in summer and autumn. The names are General Jacqueminot, Jules Margottin, Gloire Lyonnaise, and Emperor; these four are hybrid perpetuals. Two good hardy teas will be found in Homere and Madame Falcot. These are all sufficiently distinct in colour to please any one. The General is as charming in the bud state in the autumn as it is in summer, the colour being particularly bright, while those who like roses of a much darker shade of colour will find it in Emperor. As regards its perpetual character, the good old Jules Margottin, without doubt, surpasses the two last named, as it is particularly free in autumn, while the form of the half open flower leaves nothing to be desired. In Homere we have a delicately tinted rose that is very beautiful, while Madame Falcot furnishes a distinct shade of buff or yellow. For furnishing cut flowers these are all best grown as dwarf bushes. They should be planted in deep well prepared soil and only moderately pruned. J. C. C.

GREAT EXHIBITION OF BRITISH GROWN FRUIT

In the Guildhall of the City of London, 6th, 7th, and 8th of October, by the Worshipful Company of Fruiterers.

This exhibition, characterized by many new and interesting features, must be pronounced a complete and a great success, and should result in widening interest now felt in all that relates to the advancement of our rural industries, and more especially that of fruit culture. The exhibition was initiated by the Company of Fruiterers of the City of London, with a view to promote and extend the culture of useful fruit in the homesteads and cottage gardens of the United Kingdom. It may be regarded therefore, as an episode—and a grand one—in the pursuance of operations entered upon by the company some four or five years since, agreeably to their charter of incorporation, and their sense of the duties it imposes upon them. This worshipful company was incorporated under letters patent granted by King James I., in the third year of his reign, and the charter bears date January 9th, 1606. The general business of the company acquired its final form when the bye-laws were allowed by the Lord Keeper and Chief Justices, April 7th, 1759. The arms are the tree of paradise, environed with the serpent between Adam and Eve; the motto *Deus dat incrementum*. The operations of the company in its early days do not now concern us; it is more important to note that in recent years it has often appeared amongst the active agents in promotion of fruit culture, having given prizes for fruits exhibited in the metropolis, and quite lately prizes for essays on the subject of fruit growing in cottage gardens, one prize essay in particular—that by Mr. J. Wright—proving of more than average importance by reason of its merit and perfect suitability to the particular object in view.

The present master of the company, Sir James Whitehead, Bart., is known to be an enthusiast on the subject of fruit culture. When occupying the mayoralty chair, he arranged that the customary present of fruit to the Lord Mayor should consist solely of home-grown fruit, and it was our pleasure to report at this time last year that the presentation consisted of a collection of magnificent samples, and was followed by a grand banquet in the Mansion House, to which a number of eminent practical fruitists were invited. We shall probably be right in attributing to Sir James the inspiration of which this exhibition is the outcome. The company having determined to hold an exhibition of hardy fruit in the Guildhall in a year when (at the time the movement was initiated) it was commonly reported that there would be no fruit, the prudent course was taken of inviting the aid of a number of practical experts. A meeting was called, and the whole case was discussed. Thereupon an executive committee for organizing the show, and in a general way shaping out the entire programme of operations, was duly appointed, and entered upon the work *con amore*, with the results that are now known to all men. The Executive Committee consisted of, as representing the company, Dr. Fotherby, H. R. Williams, Esq., and R. S. Mason, Esq.; and for the pomological or practical part of the business, Messrs. A. H. Smee, Shirley Hibberd, T. F. Rivers, J. Cheal, G. Bunyard, and J. Wright. Sir James Whitehead was chairman of this committee, and Mr. O. C. T. Eagleton secretary. It matters not how many meetings were held, but it does matter that the work is done, and the later duties on the eve of the exhibition and during its continuance, have been simply enormous, and its final completion with scarcely a hitch a matter for wonder. With a less courteous, quickwitted, constant, and painstaking chairman than Sir James Whitehead, we believe impossibility would have been reached at some stage in the proceedings, and a collapse would have ensued, for the difficulties were such as are not often encountered in undertakings of this kind.

The first ruling principle the acting committee sought to illustrate by their plan of operations was to establish equality of conditions for all competitors. It cannot be pretended that this has been accomplished, or even that it is possible. But our readers know full well that the nearer we can approximate equality of conditions, the more instructive is the competition and the more satisfactory to those who compete. It was determined, for example, that a cultivator in Northumberland could not compete on equal terms with a cultivator in Hampshire, and, not to multiply instances, the one case hypothecated gives the key to the policy to be pursued. Agreeably therewith, the principal sections of the show were arranged geographically in three great divisions for England and Wales, while other sections were left open for the United Kingdom. Cottagers, tenant farmers, amateurs and gardeners, and nurserymen and trade growers in sections 1, 2, 3, 4 were grouped in three geographical districts or zones, thus:—

(1) Northern Zone.—The Counties of Northumberland, Cumberland, Westmoreland, Durham, Yorkshire, Lancashire, Cheshire, Derbyshire, Nottinghamshire, Lincolnshire, Staffordshire, Shropshire, Leicestershire, Rutland, Flint, Denbighshire, Carnarvonshire, Anglesea, Merionethshire, Montgomeryshire, Cardiganshire, and Radnorshire.

(2) South-Western Zone.—The Counties of Cornwall (and Scilly Islands), Devon, Somerset, Dorset, Wilts, Gloucestershire, Monmouthshire, Herefordshire, Worcestershire, Warwickshire, Pembrokeshire, Carmarthenshire, Glamorganshire, and Brecknockshire.

(3) South-Eastern Zone.—The Counties of Hants (and the Isle of Wight), Sussex, Kent, Surrey, Berkshire, Middlesex, London, Essex, Norfolk, Suffolk, Cambridgeshire, Huntingdonshire, Northamptonshire, Bedfordshire, Buckinghamshire, Oxfordshire, and Hertfordshire.

The exhibition filled the Guildhall, the Council Room, and the Picture Galleries, consisting of 4,500 dishes supplied by 211 exhibitors, a splendid collection of British-grown fruit being the result. The two most important classes in the schedule were those for trade collections of hardy fruits of all kinds and collections of apples and pears grown by amateurs or gardeners. In the first of the two there were eighteen entries, and in the other there were fourteen, the several collections being sufficient to fill nearly the whole of the available space in the Guildhall and to produce a display of apples and pears not less remarkable for its attractiveness than for its importance.

The exhibition was formally opened by the Lord Mayor on Monday afternoon, in the presence of a large number of visitors. His Lordship, attended by the Sheriffs, arrived shortly before three, and, accompanied by Alderman Sir James Whitehead and other members of the Corporation, proceeded to make an inspection of the fruit. On the return of the civic party to the daïs in the Common Hall,

Sir James Whitehead said there had been for some time past a considerable awakening in connexion with the livery companies of the City, for they had risen to a sense of their responsibility, and had shown a very strong desire to do what they could to promote the happiness of the people. In this way the Fruiterers' Company had not neglected the opportunities given it, for in a manner peculiarly its own, it had started a movement which he hoped would have a good effect upon the trade; it was a movement which was associated with the name of the company, and he ventured to believe the Fruiterers' Company would be much improved in the near future. They had seen that a very large amount of money was sent from England annually for the purpose of buying fruit which they were advised they were competent to grow at home. They had noticed that the orchards on the homesteads had been allowed to decay, or to die out, and this, they believed, was due very largely to a want of knowledge, and more especially to a want of technical knowledge, first in regard to the right varieties to plant, the quality of the soil, and how to cultivate the trees. And it was to remove ignorance on these points that the Fruiterers' Company was giving its earnest attention to the subject of fruit growing, and he ventured to say on its behalf that if its members were supported, as they hoped they would be, by the rich and generous City Companies and by the general public, that they would be able to make a determined effort to induce the people of this country to take up more extensively the growing of fruit for home consumption. Any person looking at the magnificent collection before them could not go away without feeling satisfied that they had at least the power to grow fine fruit in this country, especially if they remembered that the present season had been an exceptionally bad one for fruit growing. He felt sure they could trust the great livery companies of the City, the great landlords, and the public also to come forward in this movement to give the Fruiterers' Company a helping hand in the excellent work they had undertaken for the public good. They believed that the growth of fruit throughout the land was calculated to add to the health and prosperity and the happiness of the community. He wished the Lord Mayor and Lady Mayoress a hearty welcome on behalf of the Fruiterers' Company, and he would conclude by asking his Lordship to declare the exhibition open.

The Lord Mayor said it gave him the greatest possible pleasure to attend there that day in that historic hall which had been so closely associated with the best interests of the people to open an exhibition which, from many points of view, might be regarded as perfectly unique. There was something thoroughly unique in the number, the character, and the variety of the exhibits, and he heartily endorsed what Sir James Whitehead had said respecting the ancient guilds of the City. The ancient guilds of the City must not be content with doing good in private, but must be useful in public, and let their usefulness be patent to the public. The Fruiterers' Company, for instance, must be known to the fruity by the fruit they were prepared to exhibit. He would venture to say he had a particular interest in the item of fruit; he had been reared on fruit, and he had been educated—what education he possessed—on fruit, and because his father was the first to introduce foreign fruit into that country. The Fruiterers' Company was doing a good thing in what they had in hand, and with regard to the importation of foreign fruit he might venture to say there was room enough in England for both foreign and English grown fruit side by side.

Amateurs and Gardeners' Class for Fifty Dishes of apples and pears was of special interest both because of the number of entries and the excellence of the fruit. The rules governing the competition in the class stipulated that the collection should consist of fifty dishes to comprise thirty varieties of apples and twenty varieties of pears, each variety to be represented by five fruits. The whole of the fourteen collections were more or less good, and the gold medal of the Fruiterers' Company, offered as the first prize, was awarded to Mr. G. Woodward, gardener to Roger Leigh, Esq., Barham Court, Maidstone, Kent, for one of the finest collections that has been placed upon the exhibition stage, apples and pears being alike remarkable for their large size and high finish. The apples represented in the collection consisted of Claygate Pearmain, Emperor Alexander, Warner's King, Yorkshire Beauty, Royal Russet, Belle Dubois, Cox's Orange Pippin, Golden Spire, Loddington, The Queen, New Hawthornden, Brabant Bellefleur, Ribston Pippin, Bismarck, Flower of Kent, Gascoyne's Scarlet, Minchall Crab, Northern Dumpling, Peasgood's Nonsuch, Lady Henniker, Alfriston, Reinette du Canada, Mere de Menage, Lord Derby, Washington, Grenadier, Cox's Pomona, Calville Malingre, Bedfordshire Foundling, and Tower of Glamis. The pears included Marie Louise, Emilie d'Heyst, General Todleben, Brown Beurre, Easter Beurre, Doyenne de Merode, Hacon's Incomparable, Louise Bonne of Jersey, Doyenne du Comice, Pitmaston Duchess, Vineuse, Doyenne d'Alencon, Beurre Hardy, Catillac, Beurre Superfin, Beurre Diel, Nouveau Poiteau, Conseiller de la Cour, and Marie Benoist. The second prize, a silver gilt medal, was awarded to Mr. Charles Davis, The Mote, Maidstone, for an excellent collection, the pears being particularly good. The apples comprised Queen Caroline, Peasgood's Nonsuch, American Mother, Gascoyne's Scarlet, Gloria Mundi, Dumelow's Seedling, Loddington, Cox's Orange Pippin, Melon, Bismarck, Fearn's Pippin, Cox's Pomona, Warner's King, Adam's Pearmain, Blenheim Pippin, Mere de Menage, Summer Thorle, Belle Pontois, Lord Derby, Ribston Pippin, Ecklinville, Emperor Alexander, King of the Pippin, Bauman's Red Reinette, Alfriston, Lemon Pippin, The Queen, and Lord Suffield. The pears were Comte de Flandre, Emilie d'Heyst, Doyenne du Comice, Brown Beurre, Beurre Hardy, Durondeau, Beurre Clairgeau, Duchesse d'Orleans, General Todleben, Hacon's Incomparable, Colmar d'Ete, Beurre Diel, Pitmaston Duchess, Glou Morceau, Doyenne Boussoch, Beurre Bachelier, Urbaniste, Marie Louise d'Uccle, Chaumontel, and Marie Louise.

Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, was a close third, and received the award of the silver medal. The apples represented were Hoary Morning, Round Winter Nonsuch, Golden Noble, Beauty of Kent, Mere de Menage, Ribston Pippin, Cellini, Lord Suffield, Lord Lennox, Kentish Fillbasket, Catshead, Adams's Pearmain, Lane's Prince Albert, Warner's King, King of the Pippins, Red-ribbed Greening, Greenup's Pippin, Worcester Pearmain, Norfolk Beaufin, Peasgood's Nonsuch, Gravenstein, Hanwell Souring, Brabant Bellefleur, Bauman's Reinette, Blenheim Pippin, Lady Henniker, Gascoyne's Scarlet, Annie Elizabeth, and Tower of Glamis. The pears represented were Suffolk Thorn, Marie Louise, General Todleben, British Queen, Glou Morceau, Beurre Diel, Hacon's Incomparable, Chaumontel, Beurre Bachelier, Beurre Superfin, Gansel's Bergamot, Duchesse d'Angoulême, Doyenne du Comice, Beurre Hardy, Doyenne Boussoch, Beurre Clairgeau, Van Mons. Leon le Clerc, Beurre Rance, Louise Bonne of Jersey, and Pitmaston Duchess. Samuel Barlow, Esq., Stakehill House, Castleton, near Manchester, sent from his garden at Llandudno a collection of great excellence, and was very deservedly awarded an extra prize. The collection contained some of the finest apples in the exhibition, and had not two or three dishes of pears been a trifle weak there can be no doubt that Mr. Barlow would have been successful in taking one of the medals. The apples staged in the Stakehill House collection were

Peasgood's Nonsuch, exceptionally good, the five fruits weighing nine pounds two ounces, Washington Wormesley Pippin, Frogmore Prolific, Cox's Pomona, Devonshire Quarrenden, Gloria Mundi, Blenheim Pippin, Cox's Orange, Gravenstein, Adams's Pearmain, Fearn's Pippin, Hawthornden, Emperor Alexander, Herefordshire Beaufin, The Queen, Cornish Aromatic, Golden Reinette, Ribston Pippin, large and well coloured, Golden Noble, Catshead, Pott's Seedling, Mere de Menage, Margil, Stirling Castle, Cellini, Court Pendu Plat, King of the Pippins, exceptionally large and otherwise good, Duchess of Oldenburgh, and Warner's King. The pears shown by Mr. Barlow were Bergamotte d'Esperen, Beurre Clairgeau, Marie Louise, Marie Louise d'Uccle, Beurre Superfin, Nouvelle Fulvie, Josephine de Malines, Doyenne du Comice, Beurre d'Amanlis, Magnate, Beurre de Capiaumont, Alexandre Lambre, Glou Morceau, Beurre Bachelier, Pitmaston Duchess, Durondeau, Brockworth Park, Beurre d'Amanlis, and Beurre Diel.

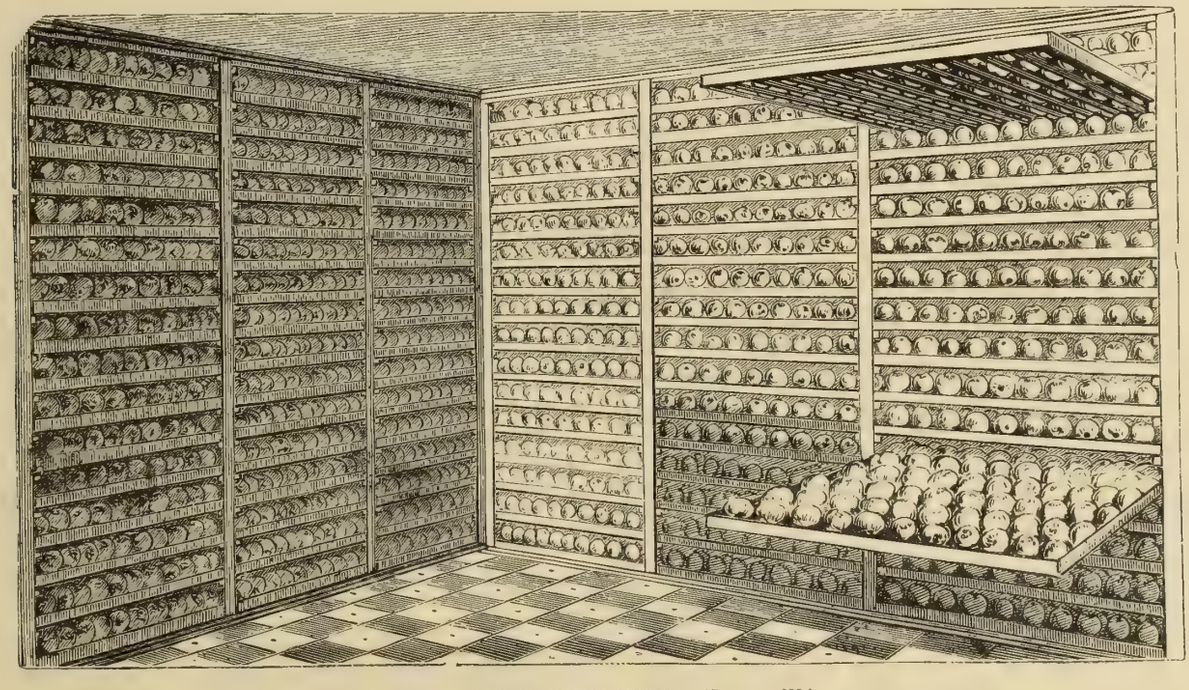
Trade Class for unlimited collections was not less important than that for private growers. The exhibitors in this class were free from restrictions as to the fruit shown, excepting that it was to be hardy, and to occupy a space not exceeding forty-five square feet. No medals or money prizes were offered, but the exhibitors were awarded framed certificates of the Fruiterers' Company, or awards of merit according to the character of the collections. The collections staged differed considerably in merit, but the majority were remarkably good and did credit to the public spirit and cultural skill of the several exhibitors. Messrs. T. Rivers and Sons, Sawbridgeworth, Herts, staged about sixty dishes, and chief amongst the apples were the examples of Blenheim Pippin, Nelson, Wadhurst Pippin, Ribston Pippin, Cox's Orange Pippin, Peck's Pleasant, Warner's King, The Queen, Washington, Hawthornden, Hollandbury, Betty Geeson, Peasgood's Nonsuch, Lord Derby, Dumelow's Seedling, Worcester Pearmain, Cox's Pomona, King of the Pippins, Emperor Alexander, Prince Albert, Golden Spire, Stirling Castle, King of Tomkins County. The pears included remarkably fine samples of Gratioli, Princess, Pitmaston Duchess, Conference, Magnate, Beurré Diel, Marie Benoist, Doyenne du Comice, Duchesse d'Angouleme, Autumn Bergamot, Louise Bonne of Jersey, Conseiller de la Cour, and Durondeau. The collection contributed by Messrs. J. Cheal and Sons, Crawley, was of similar extent, and the fruit of high quality. The most noteworthy apples were Galloway Pippin, Yorkshire Beauty, Frogmore Prolific, Lord Grosvenor, Pott's Seedling, The Queen, Blenheim Pippin, Herefordshire Pearmain, Warner's King, Peasgood's Nonsuch, Stirling Castle, Ecklinville, Loddington, Lord Suffield, Kentish Fillbasket, Hollandbury, Dumelow's Seedling, Dartmouth Crab, King of the Pippins, Warner's King, and Worcester Pearmain. Especially good were the examples of Doyenne Boussoch, Pitmaston Duchess, Beurre d'Anjou, Louise Bonne of Jersey, Doyenne du Comice, Conseiller de la Cour, Alexandre Lambre, Baltet Pere, Thompson's, and Beurre d'Amanlis.

From Messrs. J. Veitch and Sons, Chelsea, came a collection comprising between forty and fifty kinds, all of which were represented by fruit of high quality. The apples of special excellence included Melon, Loddington, Cox's Pomona, Wormsley Pippin, Tower of Glamis, Flower of Kent, Reinette du Canada, Mabbot's Pearmain, Gascoyne's Scarlet, Lady Henniker, Peasgood's Nonsuch, Warner's King, Jolly Beggar, The Queen, Belle de Boskoop, Seaton House, a handsome culinary variety, Cobbett's Fall Pippin, Barker's Seedling, Ringer, Bismarck, Northern Greening, Harvey's Wiltshire Defiance, and Pott's Seedling. A small but excellent collection, consisting chiefly of apples, was sent from the Chiswick Gardens of the Royal Horticultural Society. Of great excellence was the collection from Messrs. J. Laing and Sons, Forest Hill, in which were especially good fruit of Emperor Alexander, Blenheim Pippin, The Queen, Stirling Castle, Ecklinville, Bismarck, Loddington, Winter Hawthornden, Dumelow's Seedling, King of the Pippins, Warner's King, Gloria Mundi, Frogmore Prolific, and Ecklinville. Mr. J. Watkins, Pomona Farm, Withington, Hereford, staged a remarkably fine collection, in which both apples and pears were highly meritorious. The finest of the apples were Ecklinville, Hambledon deux Ans, Atkins's Seedling, Tyler's Kernel, Yorkshire Beauty, Golden Noble, Tom Putt, Annie Elizabeth, Minchall Crab, Blenheim Pippin, Cellini, and Flanders Pippin. Doyenne Boussoch and Louise Bonne of Jersey were conspicuous amongst the pears.

The collection from Messrs. G. Bunyard and Co., Maidstone, was thoroughly representative in character, and included apples, pears, peaches, and plums, all more or less good. Chief amongst the apples were Bismarck (especially well coloured), Ecklinville, Emperor Alexander, Cox's Orange Pippin, Queen Caroline, Wealthy, Lord Derby, King of the Pippins, Washington, Stirling Castle, Belle Pontoise, and Lady Henniker. Of large size and higher quality were the examples of Beurre Diel, Pitmaston Duchess, and Doyenne du Comice pears; and Mr. Gladstone, Late Admirable, and Princess of Wales peaches. Messrs. W. Paul and Son, Waltham Cross, contributed a collection representative in character and remarkable for the high quality of the fruit. Of great excellence were the examples of General Todleben, Doyenne Boussoch, Marie Louise d'Uccle, and Beurre Bachelier pears; and Lord Derby, Lady Henniker, Tom Putt, Yorkshire Beauty, Northern Spy, Cellini, Margil, Prince Albert, Scarlet Admirable, and Potts' Seedling. The English Fruit and Rose Company, Hereford, presented a remarkably good collection, in which were admirable examples of Hawthornden, Worcester Pearmain, Tom Putt, Prince Albert, Golden Noble, Lord Suffield, Annie Elizabeth, Peasgood's Nonsuch, Tyler's Kernel, King of the Pippins, Crimson Queening, Grenadier, and Potts' Seedling apples. From Messrs. Paul and Son, Cheshunt, came an extensive collection of apples, remarkably good, containing examples of the King of the Pippins, Mabbott's Pearmain, Ecklinville, Winter Hawthornden, Mere de Menage, Kentish Fillbasket, Loddington, Emperor Alexander, Blenheim Pippin, Stirling Castle, Duchess of Oldenburgh, Grenadier, Transparent Codlin, and Tower of Glamis. Exceptionally good was the collection from Mr. J. Thomas, Rodmersham, Sittingbourne, the fruit being throughout of large size and highly coloured. The apples deserving special mention were Lane's Prince Albert, Lord Derby, Peasgood's Nonsuch, Cox's Orange Pippin, Warner's King, Bramley's Seedling, Ecklinville, Wiltshire Defiance, Smart's Prince Arthur, and The Queen. The finest of the pears were Beurre Six, Doyenne Boussoch, Louise Bonne of Jersey, Royal Vendre, Beurre Diel, Beurre Superfin, Beurre de l'Assomption, Pitmaston Duchess, and Duchesse d'Angouléme. Messrs. Peed and Sons, Mr. W. Taylor, and other exhibitors also had meritorious collections.

Classes for Apples in which the competition was limited to amateurs and gardeners were all well filled, the competition in those set apart for cultivators resident in the south-eastern counties being very severe. The entries were very numerous in the class for twelve dishes, in which growers in the south-eastern counties could alone exhibit, and the fruit was, on the whole, of remarkably good quality. Mr. G. Woodward occupied the post of honour with a collection consisting of fruit distinguished by its splendid development. The varieties were Annie Elizabeth, Brabant Bellefleur, Flower of Kent, Lord Derby, Cox's Pomona, Peasgood's Nonsuch, Belle Dubois, Loddington, Warner's King, Golden Spire, Gascoyne's Scarlet, and Emperor Alexander. Mr. W. Skinner, Boughton, Winchelsea, was a very close second with a superb lot of fruit, the varieties being Cox's Pomona, Lady Henniker, Blenheim Pippin, Bedfordshire Foundling, Tower of Glamis, Loddington, Prince Albert, Warner's King, Lord Derby, Peasgood's Nonsuch, Emperor Alexander, and New Hawthornden. Mr. C. Ross, gardener to Lieut.-Colonel Eyre, Welford Park, Newbury, was a capital third, and Mr. F. Bridger, Penshurst Place, fourth. In the corresponding class for growers resident in the south-western counties, Mr. T. Parker, gardener to Mrs. Evans, Morton Court, was first with good examples of Striped Beefing, Golden Noble, Tyler's Kernel, Warner's King, Loddington, Mere de Menage, Potts' Seedling, Peasgood's Nonsuch, Blenheim Pippin, Tower of Glamis, New Hawthornden, and Stirling Castle. Mr. S. T. Wright, gardener to C. Lee Campbell, Esq., Glewston Court, Hereford, was second, and Mr. Kidley was third, both staging fine examples. In the list of the prizes in the class for twelve dishes of apples grown in the northern counties, Mr. Ingram, Belvoir Castle, was first, his fruit, although lacking the high colour of that grown in the south-eastern and south-western counties, was of high quality. The varieties, it may be interesting to mention, were: Golden Noble, Peasgood's Nonsuch, Yorkshire Greening, Stirling Castle, Prince Albert, Tower of Glamis, Bramley's Seedling, Warner's King, Frogmore Prolific, Malster, Blenheim Pippin, and Hanwell Souring. Mr. H. Prince Roberts, Oakfield, Upton, Chester, was a good third.

As in the class for twelve dishes of culinary apples so also in that for



A MODEL FRUIT ROOM. (See page 622.)

twelve dessert varieties, in which the competition was limited to growers resident in the south-eastern counties, Mr. G. Woodward occupied the post of honour. The collection evinced cultural skill of the highest class, and the varieties comprised Cox's Orange Pippin, Worcester Pearmain, Colonel Vaughan, Wealthy, Mabbott's Pearmain, Washington, Caville Rouge, Ribston Pippin, Mother Apple, and Braddick's Nonpareil; Mr. J. Turner, gardener to R. H. Coombs, Esq., Pierrepoint, Farnham, was second with fruit large in size, but hardly so highly-coloured as that forming the first prize collection. The varieties were Cellini, Worcester Pearmain, Claygate Pearmain, Cox's Pomona, King of the Pippins, Emperor Alexander, Bauman's Red Reinette, Kerry Pippin, Wykin Pippin, and Cox's Orange Pippin; Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, was third with fruit that did credit to his cultural skill, and Mr. Turton, Maiden Erleigh, Reading, was fourth. An extra prize was awarded to Mr. F. Miller, gardener to J. J. Friend, Northdown, Margate. In the corresponding class for cultivators in the south-western counties, Mr. S. T. Wright was first with admirable examples of Ashmead's Kernel, Worcester, Pearmain, Cox's Orange Pippin, Blenheim Pippin, Pennington's Seedling, Hormead's Pearmain, Cellini, Mother, Margil, King of the Pippins, and Stanley Pippin. Mr. T. Parker followed closely for second place, and Mr. S. Kidley was third. Mr. J. Crawford occupied the first place in the class for twelve dishes of dessert apples open to growers in the northern counties, with good fruit, although lacking the high colour of the southern fruits. The varieties included Scarlet Pearmain, King of the Pippins, Kerry Pearmain, Blenheim Pippin, Golden Pippin, Ribston Pippin, Cox's Orange Pippin, and Fearn's Pippin. For six dishes to comprise equal numbers of culinary and dessert varieties, Mr. Bridger was first in the south-eastern division, Mr. S. Barlow occupied the post of honour in the northern section, and Mr. T. Parker was at the head of the exhibitors from the south-western counties.

CLASSES FOR PEARS, in which the competition was limited to private collectors, were well filled, although the competition was less severe than for the prizes for apples. In the class for twelve dishes of pears, produced in the south-western counties, the post of honour was occupied by Mr. Iggulden for excellent fruit of Noveau Poiteau, Marie Louise, Doyenne du Comice, Beurre Diel, Louise Bonne of Jersey, Marechal de la Cour, Doyenne Boussoch, Duchesse d' Angoulème, Beurre Hardy, Gansel's Bergamot, Pitmaston Duchess, and Beurre Clairgeau. Mr. Iggulden was first also in the south-western class for six dishes of pears, staging Doyenne Boussoch, Doyenne du Comice, Van Mons. Leon le Clerc, Pitmaston Duchess, Marie Louise, and Gansel's Bergamot. Mr. T. Parker followed closely for second place. In each of the two classes for dessert pears, open to growers in the northern counties, Mr. J. Hunter, Lambton Castle, Durham, occupied the first place. The fruit was large and of good quality, and the varieties in collection of twelve were Duchesse d'Angoulème, Beurre Clairgeau, Marie Louise, Marie Louise d'Uccle, Pitmaston Duchess, Marie Benoist, Beurre Superfin, Brockworth Park, Beurre Diel, Glou Morceau, Doyenne du Comice, Durondeau. In the collection of six the varieties were Brown Beurre, Marie Louise, Marie Louise d'Uccle, Beurre Superfin, Beurre Diel, and Pitmaston Duchess. Mr. Ingram and Mr. J. Crawford were second and third in one class, and Mr. Barlow and Mr. Crawford occupied similar positions in the other. Mr. G. Woodward obtained premier in the class for twelve dishes in the south-eastern section with remarkably fine examples of Brockworth Park, Noveau Poiteau, Doyenne du Comice, General Todleben, Pitmaston Duchess, Beurre Diel, Beurre Superfin, Hacon's Incomparable, Beurre Hardy, Duchesse d'Angoulème, Conseiller de la Cour. For six dishes Mr. W. Allan, gardener to Lord Suffield, Gunton Park, was first with exceptionally fine fruit of Doyenne du Comice, Durondeau, Marie Louise, Glou Morceau, and Marie Louise d'Uccle. Mr. Blick, Hayes Common, Mr. Turton, and Mr. G. Trinder, Dogmersfield Park, were second, third, and fourth for twelve, and Lady Fletcher, Yalding, and Mr. R. Smith, Ware, were second and third for six dishes. Cooking pears were not numerous, but those staged were good, the best collection was that from Mr. G. Woodward who was first for six dishes in the south-eastern division. The varieties were Catillac, Vicar of Winkfield, Triomphe de Jodoigne, Bellisime d'Hiver, General Todleben, and Uvedale's St. Germain. Mr. W. Dance, Gosfield Hall, Halstead, and Mr. G. W. Cummins, gardener to A. H. Smee, The Grange, Wallington, were second and third.

METROPOLITAN FRUIT was not very plentiful, but it included some of the finest examples in the exhibition. W. Roupell, Esq., Harvey Lodge, Streatham, occupied the first place in the class for twelve dishes of fruit, grown within a radius of seven miles from the Royal Exchange, with a collection of apples of exceptionally high quality. The varieties were Cellini, Cox's Orange Pippin, Bramley's Seedling, Grenadier, Bismarck, Emperor Alexander, Lord Grosvenor, Potts' Seedling, Peasgood's Nonsuch and Lady Henniker. Lady Whitehead, Catford Bridge, was second with a fine collection.

GRAPES, although limited in quantity, were of so high a quality as to form an important feature. In competition for the prizes for six bunches of black grapes, distinct varieties, Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich, was first with large, splendidly-coloured and highly-finished clusters of Lady Downes, Black Morocco, Alicante, Alnwick Seedling, Gros Maroc, and Black Hamburgh; Mr. G. Reynolds, Gunnersbury Park, Acton, was second with medium-sized, well-finished bunches of Black Hamburgh, Gros Maroc, Alicante, Mrs. Pince, Alnwick Seedling, and Lady Downes; Mr. Iggulden, Marston House, Frome, was a close third with an admirable collection. Mr. Goodacre, evidently under a misapprehension as to the requirements of the schedule staged three bunches each of Gros Colmar and Barbarossa, the clusters of both varieties being remarkably good. The class for white grapes also required six bunches, and of these three had to be Muscats and three other white varieties. Here Mr. J. Crawford, gardener to Colonel J. Thorpe, Coddington House, Newark-on-Trent, was first with a collection comprising three bunches of Muscat of Alexandria, and one bunch each of Mrs. Pearson, Royal Vineyard, and Golden Queen, all of which were remarkable for their high finish; Mr. Iggulden was a capital second, staging good clusters of Foster's Seedling, Mrs. Pearson, and Golden Queen. Mr. J. H. Goodacre staged magnificent clusters, comprising three each of Muscat of Alexandria and White Tokay, but as the number of varieties was not in accordance with the requirements of the schedule he was necessarily unable to compete for the prizes.

Mr. J. Clarke, Albion Nursery, Farnham, Surrey, exhibited a collection of grapes, consisting of about thirty bunches, the produce of vines that had not received the assistance of fire-heat. The clusters were of average size, well coloured, and admirably finished, and the varieties represented were Lady Downes, Gros Colmar, Madresfield Court, Royal Ascot, and Alnwick Seedling. Mr. Clarke also had excellent clusters of Muscat of Alexandria, and was awarded the certificate of the company. The same exhibitor also submitted examples of packed grapes, and for these he received an award of merit.

TENANT FARMERS' CLASSES were not particularly well filled, and much of the fruit staged in them indicated how great is the room for improvement in orchard management. For six dishes the most successful exhibitors in the division were Mr. J. Davis, Bunhill, Bodenham, and Mr. J. Doncaster, Halloughton, Southwell. In the southern section of class seven, which was for six dishes of culinary apples, Mr. Davis was first with fairly good fruit of Blenheim Pippin, Warner's King, Lord Suffield, Mere de Menage, Ecklinville, and Stirling Castle. Mr. Doncaster was first in the northern section, with samples of Improved Northern Greening, Bramley's Seedling, Lane's Prince Albert, Lord Derby, and Peasgood's Nonsuch. Mr. Davis and Mr. Doncaster were also first in their respective sections for three dishes of culinary apples, the first-named staging Peasgood's Nonsuch, Loddington, and Warner's King; and the latter Golden Jubilee, Blenheim Pippin, and King of the Pippins. Mr. Davis obtained premier honours in the class for three dishes of dessert apples, with good fruit of Cox's Orange Pippin, Ribston Pippin, and Prince's Pippin; and in the class for triple dishes of pears the same exhibitor was first with excellent samples of Beurre Diel, Beurre Bosc, and Pitmaston Duchess. The most successful of the exhibitors in the classes open to tenant farmers in the south eastern division were Mr. R. Webb, Beenham, Reading, who was first for six and three dishes of cooking apples, and three dishes of dessert apples; Mr. Cowthon, who was second in two of the classes; and Mr. H. Manson, was second in the other.

TOMATOS were not particularly satisfactory in the competitive class which was for six distinct kinds. One entry was disqualified for non-compliance with the stipulation as to distinctness, and the other collections were not considered sufficiently meritorious to justify the award of the first prize. Messrs. J. Carter and Company, High Holborn, sent a collection not for competition. Mr. A. Rawlings, Old Church, Romford, sent a large quantity of very good fruit from plants growing in the open, and Messrs. Collins Brothers and Gabriel sent a basket of good fruit.

PRESERVED FRUITS constituted a very interesting feature, for all the classes were well filled, and jams, jellies, and bottled fruits were alike good. Mrs. Smee, The Grange, Wallington, was first for jam, bottled fruit, and jellies, and Mr. Buddon was first for whole fruit jam. Chief amongst the trade exhibitors were Messrs. T. W. Beach and Sons (Limited), Ealing and Toddington, who submitted a representative collection of whole fruit jams and bottled fruits, for which they have so high a reputation.

MISCELLANEOUS CONTRIBUTIONS included a representative collection of apples and pears, comprising nearly 300 dishes of excellent fruit from the members of the British Fruit Growers Association, this, arranged on a broad table extending the whole length of the raised platform at the eastern end of the Guildhall presented an attractive appearance and proved highly interesting. The contributors to the collection included R. C. Brownlow, Tower, Ellesmere, Salop; W. H. Divers, Ketton Hall, Stamford; Messrs. Dicksons, Chester; Mr. G. Harris, Alnwick Castle; Messrs. Jefferies and Sons, Cirencester; Mr. G. Cole, Evesham, Herefordshire; Mr. Ward, Longford Castle, Salisbury; English Fruit and Rose Company, Hereford; Mr. C. J. Goldsmith, gardener to W. B. Heywood, Esq., High Trees, Redhill; P. Crowley, Esq., Waddon House, Croydon; W. Roupell, Esq., Harvey Lodge, Streatham; Mr. R. Smith, Yalding; Mr. W. Gouring, gardener to J. H. Tower, Esq., Brentwood; Miss Flintoff, Mitcham; Mr. G. Hammond, Fairview, Pilgrims' Watch, Brentwood; Mr. C. Herrin, Dropmore; and Mr. W. Bates, Poulett Lodge, Twickenham.

THE JUDGES were: Sections 1 and 2, Dr. Fotherby, Mr. A. H. Smee, Mr. G. Paul, and Mr. Iggulden; Section 3, Mr. H. R. Williams, Mr. Shirley Hibberd, Mr. J. Hudson, Mr. J. Cheal, Mr. L. Castle, Mr. A. Turner, and Mr. J. Tegg; Section 4, Sir J. Whitehead, Bart., Dr. Hogg, Mr. G. Woodward, and Mr. S. T. Wright; Section 5, Mr C. J. Brocklesby, Mr. A. F. Barron, and Mr. G. Wythes; Sections 6 and 7, Mr. R. S. Mason, Rev. W. Wilks, Mr. S. Barlow, Mr. T. F. Rivers, and Mr. G. Bunyard; Section 8, Mr. H. Martin, Mr. J. Barber, and Mr. W. Warren; Section 9, Baroness Burdett-Coutts, Lady Whitehead, and Mr. T. W. Beach.

AWARDS OF THE JUDGES.

SECTION I.—COTTAGERS.—NORTHERN ZONE.

Class 1.—Three dishes of five cooking Apples, one variety in each dish.—First, 30s., J. Wilson, Latham, Ormskirk. Second, 20s., J. Cope, Rugeley. Third, 15s., R. Heard, Formby, Lancashire. Fourth, 10s., J. S. Baron, Leyland.

Class 2.—Single dish of five cooking Apples.—First, 15s., T. J. Pullett, 82, Russell St., Loughborough. Second, 10s., J. S. Baron, Leyland. Third, 7s., G. Berrington, Ludlow. Fourth, 5s., C. Leeson, Melton Road, Wrawby; R. Weatherell, Skelton, Penrith.

Class 3.—Three dishes of five dessert Apples, one variety in each dish.—First, 30s., T. J. Pullett, 82, Russell St., Loughborough. Second, 20s., J. S. Baron, Leyland. Third, 15s., J. Cope, Rugeley. Fourth, 10s., R. Weatherell, Skelton, Penrith.

Class 4.—Single dish of five dessert Apples.—First, 15s., T. J. Pullett, 82, Russell St., Loughborough. Second, 10s., J. S. Baron, Leyland. Third, 7s., J. Weatherell, Skelton, Penrith. Fourth, 5s., R. Weatherell, Skelton, Penrith.

Class 5.—Three dishes of other hardy fruit (which may include Pears, Medlars, Quinces, Nuts, Walnuts, Plums, Damsons, and any other hardy fruit not named above), one variety in each dish.—First, 15s., R. Weatherell, Skelton, Penrith.

Class 6.—Two dishes of five Tomatos, one variety in each dish.—First, 15s., withheld. Second, 10s., C. Leeson, Wrawby, Brigg, Lincolnshire.

SECTION I.—COTTAGERS, SOUTH-WESTERN ZONE.

Class 1.—Three dishes of five cooking Apples, one variety in each dish.—First, 30s., J. Copp, Brimley, Tainmouth. Second, 20s., A. Williams, Bodenham, Leominster. Third, 15s., H. J. Hooper, East Coker, Yeovil. Fourth, 10s., W. Yates, 15, Whitefriars St., Coventry.

Class 2.—Single dish of five cooking Apples.—First, 15s., A. Williams, Bodenham, Leominster. Second, 10s., S. French, Marstow, Herefordshire. Third, 7s., W. Yates, 15, Whitefriars St., Coventry. Fourth, 5s., H. J. Hooper, East Coker, Yeovil.

Class 3.—Three dishes of five dessert Apples, one variety in each dish.—First, 30s., S. French, Marstow, Herefordshire. Second, 20s., A. Williams, Bodenham, Leominster. Third, 15s., W. Yates, 15, Whitefriars St., Coventry. Fourth, 10s., H. J. Hooper, East Coker, Yeovil.

Class 4.—Single dish of five dessert Apples.—First, 15s., S. French, Marstow, Herefordshire. Second, 10s., A. Williams, Bodenham, Leominster. Third, 7s., H. J. Hooper, East Coker, Yeovil. Fourth, 5s., W. Yates, 15, Whitefriars St., Coventry.

Class 5.—Three dishes of other hardy fruit (which may include Pears), Medlars, Quinces, Nuts, Walnuts, Plums, Damsons, and any other hardy fruits not named above), one variety in each dish.—No competition.

Class 6.—Two dishes of five Tomatos, one variety in each dish.—First, 15s., W. Yates, 15, Whitefriars St., Coventry. One competitor only.

Section I.—Cottagers.—South-eastern Zone.

Class 1.—Three dishes of five cooking Apples, one variety in each dish.—First, 30s., W. Jacob, High St., Petworth. Second, 20s., W. Waghorn, Allington, Maidstone. Third, 15s., H. Newman, 2, Ocklinge Rd., Eastbourne. Fourth, 10s., J. Fasham, Northdown, Margate.

Class 2.—Single dish of five cooking Apples.—First, 15s., W. Jacob, High St., Petworth. Second, 10s., W. Pulling, Hill Top, Tillington, Petworth. Third, 7s., J. Ewer, Woolmer Green, Stevenage. Fourth, 5s., W. Waghorn, Allington, Maidstone; F. Marsh, Nettlestead, Maidstone.

Class 3.—Three dishes of five dessert Apples, one variety in each dish.—First, 30s., W. Pulling, Hill Top, Tillington, Petworth. Second, 20s., W. Waghorn, Allington, Maidstone. Third, 15s., W. Jacob, High St., Petworth.

Class 4.—Single dish of five dessert Apples.—First, 15s., G. Baynes, East St., Rochford. Second, 10s., W. Jacob, High St., Petworth. Third, 7s., J. Sheppard, Wolverstone Park, Ipswich. Fourth, 5s., G. Phillips, Brookham Green.

Class 5.—Three dishes of other hardy fruit (which may include Pears, Medlars, Quinces, Nuts, Walnuts, Plums, Damsons, and any other hardy fruits not named above), one variety in each dish.—No competition.

Class 6.—Two dishes of five Tomatos, one variety in each dish.—First, 15s., W. F. Breach, Gubert House, Eastbourne. Second, 10s., J. Mudge, 8, Kingswood Rd., Penge. Third, 7s., H. A. Grimrod, St. Stephen's, Tunbridge.

Section II.—Tenant Farmers, Northern Zone.

Class 7.—Six dishes of five cooking Apples, one variety in each dish.—First, 40s., J. Doncaster, Halloughton, Southwell.

Class 8.—Three dishes of five cooking Apples, one variety in each dish.—No award.

Class 9.—Three dishes of five table Apples, one variety in each dish.—First, 20s., J. Doncaster, Halloughton, Southwell.

Class 10.—Three dishes of five Pears, one variety in each dish.—No competition.

Class 11.—Three dishes of other hardy fruit (which may include Quinces, Medlars, Plums, Damsons, Nuts, or Walnuts, or any other hardy fruit not named above), one variety in each dish.—No competition.

Section II.—Tenant Farmers, South-western Zone.

Class 7.—Six dishes of five cooking Apples, one variety in each dish.—First, 40s., J. Davis, Bunhill, Bodenham, Leominster. Second, 30s., W. Morgan, Denmore, Hereford. Third, 20s., J. Hyde, Calderwell, Leominster.

Class 8.—Three dishes of five cooking Apples, one variety in each dish.—First, 20s., J. Davis, Bunhill, Leominster. Second, 15s., W. Morgan, Denmore, Hereford. Third, 10s., J. Hyde, Calderwell, Leominster.

Class 9.—Three dishes of five table Apples, one variety in each dish.—First, 20s., J. Davies, Bunhill, Leominster. Second, 15s., J. Hyde, Calderwell, Leominster. Third, 10s., W. Helyar, East Coker, Yeovil.

Class 10.—Three dishes of five Pears, one variety in each dish.—First, 20s., J. Davis, Bunhill, Leominster.

Class 11.—Three dishes of other hardy fruit (which may include Quinces, Medlars, Plums, Damsons, Nuts, or Walnuts, or any other hardy fruit not named above), one variety in each dish.—No competition.

Section II.—Tenant Farmers, South-eastern Zone.

Class 7.—Six dishes of five cooking Apples, one variety in each dish.—First, 40s., R. Webb, Beenham, Reading, Second, 30s., R. Cawthorn, Fordham, Soham.

Class 8.—Three dishes of five cooking Apples, one variety in each dish.—First, 20s., R. Webb, Beenham, Reading. Second, 15s., H. Manser, Northdown, Margate. Third, 10s., R. Cawthorn, Fordham, Soham. Extra, W. Bull, Bishops Ramsden, Billericay.

Class 9.—Three dishes of five table Apples, one variety in each dish.—First, 20s., R. Webb, Beenham, Reading. Second, 15s., R. Cawthorn, Fordham, Soham. Third, 10s., W. A. Medhurst, Chobham, Surrey.

Class 10.—Three dishes of five Pears, one variety in each dish.—No awards.

Class 11.—Three dishes of other hardy fruit (which may include Quinces, Medlars, Plums, Damsons, Nuts or Walnuts, or any other hardy fruit not named above), one variety in each dish.—First, 20s., W. W. Bull, Bishops Ramsden, Billericay. Second, 15s., R. Cawthorn, Fordham, Soham.

Section III.—Amateurs and Gardeners, Northern Zone

Class 12.—Twelve dishes of five dessert Apples, one variety in each dish.—First, 40s., Mr. J. Crawford, gardener to Colonel Thorpe, Coddington Hall, Newark-on-Trent. One exhibitor only.

Class 13.—Twelve dishes of five cooking Apples, one variety in each dish.—First, 40s., Mr. W. Ingram, gardener to the Duke of Rutland, Belvoir Castle. Second, 30s., Mr. H. Price, gardener to B. C. Roberts, Esq., Oldfield, Upton, Chester. Third, 20s., not awarded.

Class 14.—Three dishes of five cooking, and three dishes of five dessert Apples, one variety in each dish.—First, 30s., Samuel Barlow, Esq., J.P., Castleton, Manchester. Second, 20s., Mr. H. Price, gardener to B. C. Roberts, Esq., Oakfield, Upton, Chester. Third, 10s., not awarded.

Class 15.—Twelve dishes of five Pears, one variety in each dish.—First, 40s., Mr. J. Hunter, gardener to the Earl of Durham, Lambton Castle. Second, 30s., Mr. W. Ingram, gardener to the Duke of Rutland, Belvoir Castle. Third, 10s., Mr. J. Crawford, gardener to Colonel Thorpe, Coddington Hall, Newark-on-Trent.

Class 16.—Six dishes of five dessert Pears, one variety in each dish.—First, 30s., Mr. J. Hunter, gardener to the Earl of Durham, Lambton Castle. Second, 20s., S. Barlow, Esq., J.P., Castleton, Manchester. Third, 10s., Mr. J. Crawford, gardener to Colonel Thorpe, Coddington Hall, Newark-on-Trent.

Class 17.—Six dishes of five cooking Pears, one variety in each dish.—First, 30s., withheld. Second, 20s., Mr. J. Crawford, gardener to Colonel Thorpe, Coddington Hall, Newark-on-Trent. Third, 10s., not awarded.

Class 18.—Six dishes of other hardy fruit (as in class 11), one variety in each dish.—No entry.

Section III.—Amateurs and Gardeners, South-western Zone.

Class 12.—Twelve dishes of five dessert Apples, one variety in each dish.—First, 40s., Mr. S. T. Wright, gardener to C. Lee-Campbell, Esq., Glewston Court, Hereford. Second, 30s., Mr. T. Parker, gardener to Mrs. Evans, Moreton Court, Hereford. Third, 20s., Mr. S. Kidley, gardener, East Coker, Yeovil.

Class 13.—Twelve dishes of five cooking Apples, one variety in each dish.—First, 40s., Mr. T. Parker, gardener to Mrs. Evans, Moreton Court, Hereford. Second, 30s., Mr. S. T. Wright, gardener to C. Lee-Campbell, Esq., Glewston Court, Hereford. Third, 20s., Mr. S. Kidley, gardener, East Coker, Yeovil.

Class 14.—Three dishes of five cooking, and three dishes of five dessert Apples, one variety in each dish.—First, 30s., Mr. S. T. Wright, gardener to C. Lee-Campbell, Esq., Glewston Court, Hereford. Second, 20s., Mr. W. Iggulden, gardener to the Earl of Cork, Marston, Frome. Third, 10s., Mr. T. Parker, gardener to Mrs. Evans, Moreton Court, Hereford.

Class 15.—Twelve dishes of five Pears, one variety in each dish.—First, 40s., W. Iggulden, gardener to Earl of Cork, Marston, Frome. One competitor only.

Class 16.—Six dishes of five dessert Pears, one variety in each dish.—First, 30s., W. Iggulden, gardener to Earl of Cork, Marston, Frome. Second, 20s., Thos. Parker, gardener to Mrs. Evans, Moreton Court, Hereford. Third, 10s., Mr. S. T. Wright, gardener to C. Lee-Campbell, Esq., Glewston, Court, Hereford.

Class 17.—Six dishes of five cooking Pears, one variety in each dish.—No competition.

Class 18.—Six dishes of other hardy fruit (as in Class 2) one variety in each dish.

Section III.—Amateurs and Gardeners, South-eastern Zone.

Class 12.—Twelve dishes of five dessert Apples, one variety in each dish.—First, 40s., George Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, 30s., Mr. J. Turner, gardener to R. H. Coombe, Esq., Pierrepoint, Farnham. Third prize, 20s., Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, Kent. Fourth, T. Turton. Extra, F. Miller, gardener to J. J. Friend, Esq., Northdown, Margate.

Class 13.—Twelve dishes of five cooking Apples, one variety in each dish.—First, 40s., Mr. G. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, 30s., Mr. W. S. Skinner, Beresford, Boughton. Third, 20s., Mr. C. Ross, gardener to Colonel Eyre, Welford Park, Newbury. Fourth, Mr. F. Bridger, Penshurst Place. Extra, Mr. A. Waterman, gardener to A. H. Brassey, Esq., Preston Hall, Aylesford.

Class 14.—Three dishes of five cooking, and three dishes of five dessert Apples, one variety in each dish.—First, 30s., Mr. F. Bridger, The Gardens, Penshurst Place. Second, 20s., Mr. T. Turton, gardener to J. Hargreaves, Esq., Maiden Erleigh, Reading. Third, 10s., Mr. E. H. Caterer, gardener to T. Arnall, Esq., Heddington Hill, Oxford. Fourth, Mr. C. F. Prangnell, Virginia Water. Extra, Mr. W. Goaring, gardener to C. J. H. Tower, Esq., Weald Hall, Brentwood. Extra, Mr. A. Waterman, gardener to A. H. Brassey, Esq., Preston Hall, Aylesford.

Class 15.—Twelve dishes of five Pears, one variety in each dish.—First, 40s., G. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, 30s., C. Blick, gardener to M. A. Smith, Esq., Hayes. Third, 10s., T. Turton, gardener to J. Hargreaves, Esq., Maiden Erleigh, Reading. Fourth, G. Trinder, Dogmersfield Park, Winchfield. Extra, T. Dunn, gardener to Sir F. W. Truscott, Oakleigh, East Grinstead.

Class 16.—Six dishes of five dessert Pears, one variety in each dish.—First, 30s., Mr. W. Allan, Gunton Park, Norwich. Second, 20s., Mr. R. Smith, gardener to A. Cox, Esq., Presdales, Ware. Third, 10s., Mr. C. Blick, gardener to M. R. Smith, Esq., Hayes. Fourth, Lady F. Fletcher, Kenward, Yalding.

Class 17.—Six dishes of five cooking Pears, one variety in each dish.—First, 30s., Mr. G. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, 20s., Mr. W. Dance, gardener to Mrs. Lowe, Gosfield Hall, Halstead. Third, 10s., Mr. G. W. Cummins, gardener to A. H. Smee, Esq., The Grange, Carshalton.

Class 18.—Six dishes of other hardy fruit (as in class 11), one variety in each dish.—First, 30s., Mr. J. Sheppard, Woolverstone Gardens, Ipswich. Second, 20s., Mr. G. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Third, 10s., Mr. G. Trinder, Dogmersfield Park, Winchfield.

Section IV.—Nurserymen and Trade Growers in the United Kingdom.

Class 19.—Collection of hardy fruit of all kinds, at the discretion of the exhibitors, each collection to cover not more than 15 feet run on tables of 3 feet width.—For these collections money prizes are not offered, but the Judges will award for those which are meritorious the framed certificate of the Worshipful Company of Fruiterers. Northern Zone, certificate: No award. South-western Zone, certificate to Mr. H. Berwick, nurseryman, Sidmouth Nurseries, Sidmouth, and John Watkins, Pomona Farm Nurseries, Withington. South-eastern Zone, certificates: Messrs. G. Bunyard and Co., nurserymen, Maidstone; J. Cheal and Sons, Crawley; J. Peed and Sons, Streatham; T. Rivers and Son, Sawbridgeworth; A. J. Thomas, Sittingbourne; J. Veitch and Sons, Chelsea; J. Laing and Sons, Forest Hill; Royal Horticultural Society, Chiswick; J. Clarke, Albion Nursery, Farnham. Awards of merit: Balchin and Sons, Hassocks Nursery; Paul and Son, Cheshunt; W. Paul and Son, Waltham Cross; Mr. A. Wyatt, Hatton, Middlesex; W. Taylor, Hampton.

Section V.—Amateurs and Gardeners in the United Kingdom.

The silver medal of the Fruiterers' Company and money prizes.

Class 20.—Six bunches of Black Grapes, distinct varieties.—First, silver medal and 60s., Mr. W. Allen, gardener to Lord Suffield, Gunton Park, Ipswich. Second, 60s., Mr. G. Reynolds, gardener to the Messrs. De Rothschild, Gunnersbury Park, Acton. Third, 40s., Mr. W. Iggulden, gardener to the Earl of Cork, Marston, Frome. Extra prize, Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle.

Class 21.—Six bunches of White Grapes, three muscats, and three other white varieties.—First, silver medal and 60s., J. Crawford, gardener to Colonel Thorp, Coddington Hall, Newark-on-Trent. Second, 60s., Mr. W. Iggulden, gardener to the Earl of Cork, Marston, Frome. Third, 40s., not awarded. Extra prize, J. H. Goodacre, gardener to the Earl of Harrington, Elvaston.

Class 22.—Six dishes of five Tomatos, one variety in each dish.—First, 30s., withheld. Second, 20s., H. H. Hurnard, Esq., Gurney's Manor, Attleborough. Third, 10s., R. Hill, gardener to H. B. Bower, Esq., The Brae, Gloucester. Extra prize, Mr. C. J. Wait, gardener to Colonel the Hon. W. P. Talbot, Glenhurst, Esher.

Section VI.—Amateurs and Gardeners in the United Kingdom.

Class 23.—Collection of fifty dishes of fruit, to consist of thirty varieties of Apples, and twenty varieties of Pears, five specimens in each dish.—First, gold medal, G. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, silver-gilt medal, C. Davies, The Mote Garden, Maidstone. Third, silver medal, J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle. Extra, S. Barlow, Esq., J.P., Stakehill House, Castleton, Manchester.

Section VII.—Amateurs and Gardeners Within a Radius of Seven Miles from the Royal Exchange.

Class 24.—Twelve dishes or less of hardy fruit at the discretion of the exhibitors, one variety in each dish.—First, 40s., W. Roupell, Esq., Roupell Park, S.W. Second, 30s., Lady Whitehead, Highfield House, Catford Bridge. Third, 20s., Mr. F. Minchiner, Avenue Rd., Penge.

Section VIII.—Jams and Preserves, Traders and Manufacturers.

Class 25.—Collections of Jams, Jellies, and Preserves of various kinds at the discretion of the exhibitors, made of British-grown fruit only, each collection to cover not more than 6 feet run on tables of 3 feet width.—Certificate, Messrs. Barnes and Co., Fishmongers' Hall Offices, for Bottled Fruit; The Britannia Fruit Preserving Company, Kelvedon, for Bottled Fruit; Messrs. Chivers and Son, Histon, Cambridge, for Bottled Fruit and Jam; Messrs. Beach and Sons, Ealing Road, Brentford, for Jam; Harrod Stores (Ld.), Brompton Road, London, for Jam; Goodhew and Son, Border, Sittingbourne, for Jam.

Section IX.—Jams and Preserves, Cottagers and Amateurs.

Class 26.—Four jars of Jam, distinct sorts.—First, 40s., Mrs. Smee, The Grange, Carshalton. Second, 30s., Mrs. Emma Wood, 70, Gloucester St., Warwick Sq. Third, 20s., Mrs. Goodacre, Elvaston Castle Gardens. Fourth, 10s., Mrs. S. H. Goodwin, Merryworth, Kent.

Class 27.—Four bottles of old Fruit, distinct sorts.—First, 40s., Mrs. Smee, The Grange, Carshalton, Surrey. Second, 30s., Mr. J. Taylor, Holee Hall, Cheshire. Third, 20s., Mrs. Goodacre, Elvaston Castle Gardens. Fourth, 10s., withheld.

Class 28.—Four bottles of whole Fruit preserved in syrup, distinct sorts.—First, 40s., Mrs. A. J. Budden, 65, Freshfield Road, Brighton. Second, 30s., Mrs. Goodacre, Elvaston Castle Gardens. Third, 20s., Mrs. G. T. Barnes, Stoodley, Tiverton. Fourth, 10s.—Not awarded.

Class 29.—Four bottles of Fruit Jellies, distinct sorts.—First, 40s., Mrs. Smee, The Grange, Carshalton, Surrey. Second, 30s., Mrs. Sheppard, Woolverstone, Ipswich. Third, 20s., Mrs. Nicholson, Sewardstone, Chingford, Essex. Fourth, 10s., Mrs. J. Macdonald, Clyde Villa, West Hill Rd., Wandsworth.

REPORTS ON THE POTATO CROP IN SCOTLAND AND IRELAND.

FYVIE CASTLE, ABERDEENSHIRE.

ALL sorts, both in garden and field, made a satisfactory growth until disease put in an appearance. For some years past I have found Sharp's Victor to hold the palm, while it does so still. On June 15 we had a pretty sharp frost, which, in many cases, injured the haulm, and this check necessarily retarded growth.—R. FARQUHAR.

EGLINGTON GARDENS, IRVINE, AYRSHIRE.

Early varieties were very soft and flavourless, owing to so much rain. The frost we had on the 6th and 8th of June—we had three degrees on both mornings—cut them rather badly in some places.—W. PRIEST.

TYNINGHAME CASTLE, EAST LOTHIAN.

Potatos looking strong and healthy until attacked by disease, which, however, has not done so much damage as it was feared it would do. Myatt's, Snowdrop, and White Don are the kinds chiefly depended on. Some of Sutton's new sorts promise well. Early Puritan is very early, but of inferior quality.—R. P. BROTHERSTON.

DYSART HOUSE, FIFESHIRE.

Old Ashleaf Kidney for a good early still holds its own. For succession crops Sutton's Kidney, Sutton's Seedling, and Sutton's Abundance do best on our soil.—CHARLES SMITH.

TAYMOUNT, BROUGHTY FERRY, FORFARSHIRE.

Potatos in this locality are, on the whole, a fair crop, and in some places decidedly above the average. The disease amongst early garden varieties has made its appearance more or less during the past three weeks, but as yet has made no serious impression. If the present fine weather continues the prospect of a good crop will be greatly increased. The varieties in general favour with the farmers hereabout are Walker's Farey, Regent, Champion, and Magnum Bonum.—A. SMITH.

DALKEITH GARDENS, MIDLOTHIAN.

Potatos rather suffered in growth from the absence of heat in June, but afterwards made a vigorous growth. The early varieties produced good crops, but the quality was deficient owing to the excessive moisture and want of sunshine. Ashleaf Kidney (Veitch's) has been much the best in quality, and is a very productive variety. Of the round early potatos Coldstream was the best in quality, but it is a poor cropper. Sutton's Early Regent crops abundantly, but requires a fine season to bring out its best qualities.—MALCOLM DUNN.

CAWDOR CASTLE, NAIRN.

Puritan, Beauty of Hebron, and Snowdrop, are the three of the newer kinds we grow; Myatt's, Veitch's, and Early May, the three old kinds; and for an autumn supply Dalmahoy's, grown in the field, is the best of the lot.—JAMES MAITLAND.

DARGAVEL, DUMFRIES.

In this district the crop is certainly very deficient, early kinds very much diseased, small, and quality poor. Late kinds not yet so badly diseased. Crop will be light, tubers small, and quality inferior. The varieties grown for general or main crop are Magnum Bonum, Maincrop, Abundance, Bruce; and for gardens, Beauty of Hebron, Snowdrop, Dalmahoy, and Ashleaf. It is quite possible, however, crops may turn out better than is expected, but if not it will be all the better as this crop has been a bad paying one for the last two or three seasons. I have a letter this morning from a friend in Ireland, who knows well the state of matters in that country, and here is one quotation from his letter: "The disease varies very much, round Dublin they are very good, and so they are in Tipperary and other parts, but in the West and round the coast in wet and not properly cultivated land they are very bad. But for all that this fine weather will pick them up, and on the whole the crop is not so bad as from the reports one would believe. Unfortunately in this country there is such a thing as politics which predominates throughout the country; therefore there is a party that would wish to propagate a political famine in the place of a real one." With regard to my own crop, I have not a diseased tuber in Myatt's, Bruce, or Maincrop, which are the only kinds I have recently examined. I was lifting to-day a fine crop of Puritan with only an odd tuber diseased, and in fact I expect to lift a nice crop on the whole of all kinds.—WILLIAM KERR.

BESSBOROUGH COURT, CORK.

Early and second early varieties produce very abundant crops. Disease showed itself in many places early in the season and has done much damage. Early Puritan, Beauty of Hebron, Magnum Bonum, and Champion are chiefly relied on by growers.—WILLIAM BESWICK.

SHANE'S CASTLE, ANTRIM.

We grow Veitch's Early Ashleaf for first crop; these have turned out well. Late varieties in fields looked remarkably well until the disease made its appearance. Fortunately this has not done so much damage as was anticipated. A few frosty nights in the second week in June cut the tops of the potatos in some low-lying plots rather severely.—CHARLES WARWICK.

CASTLE UPTON, TEMPLEPATRICK, DOWN.

Your efforts to get at the right condition of the potato crop in Ireland is an excellent idea, for I believe the reports which were circulated so widely and generally in the press were greatly exaggerated. The "fear," apparently the father of the thought, which, on the usual run of "sociability," bad news travel fast. True, some few weeks ago blight appeared, and on account of the wet season, suspicion immediately arose that the crop would be entirely destroyed. I have instituted inquiries as you ask, and find that crops are turning out satisfactorily; no disease of which to make complaint. For first early in this neighbourhood, American Red (local, Six weeks), is a good deal grown, but generally of a wet character, *i.e.*, the tuber. Cruffle is the great early market potato; in this, I think I may say province; it is liable to disease, always so. Skerry's, again, is the mainstay, and no other sort takes the market better after the Cruffle season is over. It is an all-round good potato, a good keeper, and prolific. Champion is also largely grown, but farmers are fighting shy of it a little, on account of a partial failure a year or two ago. Magnum Bonum is not so much grown now as it was, as it does not take the market freely, but I consider this variety of merit; it keeps well, none better of my ken, and becomes of really good quality late in spring or early summer. Irish White is grown for feeding purposes. Other sorts there may be, and are, amongst odd farmers here and there; but such are simply local and are grown because "my father used to grow them," and were the best potato, and grown by everybody in those days. Such affectionate remembrances sound prosy nowadays, but so it is.

I grow Veitch's, Myatt's, Rivers', and Lapstone Kidney; the latter is the latest, and a good all-round second early; we also grow Village Blacksmith, and some two or three others in garden. I may add also that kidneys are grown by some farmers for early market use. For earliness Co. Down can beat Co. Antrim, by eight, ten days, or a fortnight.—S. KEVAN.

CASTLEWELLAN, CO. DOWN.

On the whole, the potato crop in this locality will be a fair average yield. The disease has appeared in most of the potato fields, but not to seriously affect the crop. This is a very good potato district—light, friable, loamy soil on a dry subsoil, and first-rate crops of potatos are raised annually, which find a ready market in the large towns in the North of England. The farmers around here make sure to change their seed regularly. The varieties most in favour are Old Ashleaf and Rivers' Improved Kidney, Fortyfold, Early Rose, Beauty of Hebron, and Flounders for garden culture; Champion and Magnum Bonum for field cultivation; with a couple of good local varieties. The fine late summer weather has done much to benefit the crops generally.—T. RYAN.

KYLEMORE CASTLE, GALWAY.

Potatos are all cultivated on the "lazy bed" system in this part of Ireland, and promise but a poor return this year, for the growth was unsatisfactory and the crop fell a ready prey to the disease.—WILLIAM FARMER.

BESSBOROUGH PARK, PILTOWN, KILKENNY.

Potatos have suffered severely from attacks of disease. I have Reading Hero, Magnum Bonum, Sutton's Abundance, Best of All, Masterpiece, and Windsor Castle, and they have proved very satisfactory.—WILLIAM CLARKE.

SUMMERVILLE GARDENS, LIMERICK.

With respect to the state of the potato crop in the fields, I would say that to-day I had a long conversation with a very large grower for market, who informed me that the condition and prospects are not near so bad as they have been represented. There is a full crop of fine tubers, but in low-lying, badly drained land the disease has made sad havoc. On the other hand, where the soil is light and the position elevated the tubers have been little affected. Good potatos can be purchased in Limerick at from 3½d. to 5d. per stone of 14 lbs., which is sufficient proof that no great scarcity is anticipated. The variety most in favour in this locality for field culture is Scotch Champion, in fact very few others are grown. I am sorry I cannot give such a favourable report of the garden crop, the disease having destroyed quite three-fourths of all tubers which were left in the ground after the third week in July. One variety in particular, namely, The Flounder, which is a great favourite amongst the natives, both haulm and tubers completely melted away in less than a week. I have no doubt this variety would be good in favourable seasons and on dry soils, but I have not proved it. Our two best disease resisters have proved to be Myatt's Ashleaf and Dalmahoy. I hope to try Magnum Bonum next season, and one or two other well known varieties.—JOHN ELLICOTT.

CASTLE FORBES, NEWTOWN FORBES, CO. LONGFORD.

Till attacked by disease on uplands potatos were very promising, but on moors they suffered a good deal from frosts. There will be on the whole a poor crop. Early sorts were of very good size, but tasteless in consequence of a deficiency of sunshine and heat.—JOHN C. RAFFERTY.

LISMORE CASTLE, WATERFORD.

There was every prospect of a splendid crop, but the disease appeared unusually early and spread rapidly on account of the dull moist weather that so long prevailed. Beauty of Hebron appeared to suffer more from it than any other variety.—P. ABERNE.

Notes of Observation.

POLYGONUM CUSPIDATUM.

THIS hardy perennial herb is certainly worthy of extended culture in gardens, but it is but rarely to be met with, scarcely one garden in a dozen contains a plant of it. It is a capital subject for the rockery, choosing a prominent hillock where nothing overhead will interfere with its growth. It in itself grows very fast. There is a fine clump of it growing on the rockery in the gardens at Syon House. As a specimen on the grass it is a grand subject, the long arching stems and drooping flowers contrast favourably with the grass. The flowers are creamy white, and are freely produced. The plant itself is of exceptionally quick growth, making a shapely bush. In the herbaceous border its beauty is entirely lost, needing an all round position, and it is a coarse plant for any small garden or restricted position.

E. M.

HELIOPSIS LÆVIS.

This is one of the best of tall-growing plants for the back part of the herbaceous border. It commences to open its flowers early in July, and does not cease until the end of September, which is surely long enough for one kind of plant to give us its blossoms. In good soil it grows fully six feet high, and produces abundance of bright yellow flowers, which last a long time in a cut state. The bloom-heads resemble a miniature sunflower in form, except, perhaps, that the flowers are distinctly cup-shaped, the petals being almost upright in growth. Hundreds of sucker-like shoots will spring from the base in all directions the second year after planting. If these are taken off and planted they will grow into plants; in fact, when once it becomes firmly established it is difficult to get rid of.

E. M.

MR. ARCHIBALD MCKELLAR, some years gardener at Floors Castle, Kelso, has been engaged as head gardener at Sandringham, the seat of the Prince of Wales, in succession to Mr. C. Penny, who is retiring on a pension.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Stove Plants in bloom comprise.—Allamanda grandiflora, Amaryllis Mrs. Garfield, Begonia Ingrami, B. insignis, Eranthemum pulchellum, Eucharis candida, Euphorbia splendens, Gardenia citriodoro, G. radicans major, Gesnera cinnabarina, Impatiens Sultani, Plumbago rosea coccinea, Scutellaria Mocciniana, Tydæas.

THE HOUSE.

In the cultivation of hyacinths in water it is essential to allow the bulbs a long season of growth, therefore those who grow hyacinths in water from the first should at once put the bulbs into glasses, and large hard bulbs should be chosen for the purpose. This department of domestic horticulture is too often badly managed, and the result is long-stemmed starveling specimens that afford no pleasure. It is a great folly to use small cheap bulbs, because a very little more outlay will secure fine ones that will be worth the little trouble needed to do justice to them. In all cases *single* varieties are the best; the doubles are quite unfit for water culture. Having filled the glasses, place the bulbs and take care they do not touch the water. Pure spring water is best, and there is no need for the use of charcoal or any fertilizing substances. Wrap each glass in flannel or waste cloth or brown paper, and shut all up close in a cool dark closet. This course of procedure will cause the roots to grow before the growth begins at the top of the bulb. In about ten days the roots will be growing freely, and the top will be wanting to grow. Now put them in the window where the light is the strongest, and occasionally add a little water to make good the loss by evaporation, but do not at any time allow the water to reach the base of the bulb. Cheap wire supports are easily obtainable, and should always be used, for elegance is needed in this kind of gardening.

CONSERVATORY AND GREENHOUSE.

Cinerarias growing freely must be encouraged by a shift into larger pots, using a rich, light, fibrous soil.

Heaths are, generally speaking, so hardy that a good pit suits them as well as the greenhouse. Where they have to be mixed up with other plants, let it be borne in mind that they must have abundant ventilation, plenty of light, and only a moderate amount of water. The heath house at this season is rather dull. Give abundant ventilation, and avoid the use of fire-heat until the actual occurrence of frost.

Mignonette sown now, and put in a heat of 70 deg. will soon make a start. Sow in rich light soil, in pots extra well drained. When the plants are up, thin them to three in a pot and keep them in a greenhouse, where they will flower from the middle of February to the end of March, and be much valued. Any excess of moisture during winter quickly kills mignonette.

Pelargoniums must have all the light possible, and be kept rather dry, with plenty of air in fine weather.

FORCING AND FRUIT HOUSES.

Cucumbers for winter fruiting must be kept growing freely with a steady heat. Damping and mildew are the plagues that trouble young cultivators at this time of the year. Both may be prevented by affording sufficient heat, and carefully regulating the degree of atmospheric moisture. If mildew appears, apply dustings of sulphur immediately. If the plants show fruit before they are strong enough to bear nip it out.

Peaches and Nectarine Trees in the early house must be pruned at once, and the house rendered clean before starting them. Begin gently, to allow a steady increase of heat, and take care the border is moist enough in the first instance.

Vines.—Grapes intended to hang must be well aired, and the house be kept dry.

FLOWER GARDEN AND PLEASURE GROUNDS.

American Plants may be moved now better than at any other period of the year. Many of the natural loams about London suit them admirably, and on the other hand, there are many otherwise good loams in which they will not grow at all. It is only to be determined by experience on the spot, and where there is any doubt the safest course is to cart in peat from the nearest source of supply in the district. Pontic rhododendrons and their varieties are the least particular about soil of any of the race.

Deciduous Trees may be planted shortly, and roses, forest trees, ornamental shrubs, and all such things should be ordered in from the nurseries, and planted as soon as they come to hand; and from this date every day gained is a real gain for the future well-doing of the trees, which will begin to make roots directly, for the ground is *now warm*, but from this time will be coming cooler every day, and the longer planting is delayed the longer will the trees require to make more new roots, on which their vigour next season will depend.

Myrtles require protecting in almost all parts of Britain, though in the southern counties we find them hardy on south walls. There is no plan so good as to mat them, but a few branches of spruce or any other dense evergreen thrust in the ground in front of them will screen them effectually from severe frosts. Myrtles in pots can be kept anywhere out of the reach of frost—even a dark shed suffices; and for the window there is scarcely any plant more welcome.

FRUIT GARDEN AND ORCHARD.

Orchard Trees may be better pruned now than later in the season, as the dead and dying branches can be more easily discerned while the trees are still in leaf than when they are quite bare. Keep the heads of the trees open, so that every part is equally exposed to air and light; and remember all through that bearing trees very seldom grow too vigorously, or make wood where it is not wanted, and the less use of knife and saw the better.

Planting may proceed without regard to the leafiness of the trees. They will soon shake their leaves off after being lifted. If the operation is long delayed bad weather may render it impossible to plant until perhaps late next spring, and the trees will lose a period of four or five months in making roots in their new quarters.

KITCHEN GARDEN AND FRAME GROUND.

Artichokes must be cleared of flower stalks, and have a little protection at the roots; the amount of protection to be increased as the winter advances.

Asparagus Beds must soon be dressed for the winter. Cut off all the tops, carefully weed the beds, slightly break the surface with a hoe, taking care not to injure the roots, and cover the bed with four inches depth of rotten dung. Do not disturb the alleys.

Broccoli.—Those heading now must be protected in case of frost. A very simple way of accomplishing this is to snap the midribs of a few of the outer leaves, so that they will fall over and cover the head without being quite separated. Plants that will have to stand the winter must be treated according to the climate of the district. In the southern and western counties broccolis stand ordinary winters without harm, but in many places they are so frequently killed that some assistance must be rendered them. A very simple and effectual method is to heel them over with their heads to the north; this checks growth and enables them to resist severe frost.

Endive.—Plant the last lot on a warm, dry border. Blanched endive will be in demand now that most other saladings are scarce, and a few plants should be covered every eight or ten days to keep up the supply.

Parsnips.—Take up and store if the ground is wanted; if not, let them remain, and dig them out as required. They are much more buttery and sweet when left in the ground until a short time before they are cooked.

Seakale for forcing may be taken up now and laid in under cover but in a cool, exposed place. This will give it a check, and cause the crowns to ripen preparatory to forcing.

VILLA FARM.

The live stock of the home farm will now require more than the usua degree of care to ensure the maintenance of the animals in good health at a minimum cost. The old fallacy is now pretty well exploded with reference to keeping cattle on short supplies of food during the late autumn and the winter months, under the impression that it is a matter of but little consequence whether they fall away much or not; and the value of shelter is generally appreciated. But even now there are not wanting those who consider it true economy to reduce the supply of food considerably, and regard with supreme indifference the question of shelter. For the information of these it must be distinctly stated that from every point of view the starving system is a bad one, and cannot be too strongly condemned, both in the interest of the animals and their owners. We have stated over and over again that it is impossible for cows to give an abundance of rich milk when half starved, and we would add that when store animals are kept on a low diet now they fall away so considerably that the extra expense incurred in bringing them round again in the spring will far outbalance the slight saving effected in the winter. At the same time, we would not advocate an extravagant system of feeding, and would suggest that the food be judiciously selected and given out in quantities proportionate to the requirements of the several classes of animals. With reference to the question of shelter, it may be truly observed that apart from humane considerations the exposure of stock to the changeable and inclement weather characteristic of our winter is most unwise, and must necessarily result in more or less of loss. The grass they are able to pick up is not as a rule sufficient to afford them material support, and a great proportion of the other food with which they are supplied is diverted to the maintenance of animal heat instead of building up the frame and laying on fat, as is the case when the shelter of a warm dry shed is afforded. Sheep will not require shelter, and must be fed according to the purpose for which they are being prepared. The general flock now folded on turnips should have a little hay, and the animals to be sold off shortly will pay liberally for a little cake, the proportion to be about one pound each daily; and lambs fattening ought to have both hay and cake in addition to turnips.

ORCHIDS IN FLOWER IN THE QUEEN'S ROAD NURSERY, CHELTENHAM.

September 29th, is not perhaps a good time to see orchids in flower, but being in the neighbourhood, occasion was taken to run through the houses at Mr. Cypher's Nursery. The summer exhibitions having come to a close, the "giant" specimen heaths, azaleas, and other flowering plants were occupying their winter quarters and giving promise of a renewal of a wealth of bloom five or six months hence. The crotons were still in fine form, notably those known as Countess, Queen Victoria, Sunset, Angustifolius, Mutabilis, and Warrenii. Some of the choicest of the palms were doing duty in the way of harvest festival decorations, but otherwise the stock plants were in position. In a nursery where a demand for cut flowers is always going on, it follows that however extensive the collection, orchid blooms are largely utilized. In a short space of time I jotted down the following forms all in vigorous health, namely: Aerides Lawrenciana, furnished with long spikes of lovely blooms; Cattleya Eldorado, very sweetly perfumed; C. Gaskelliana, in variety; C. Harrisoniæ, four of five forms; C. maxima, fine dark form of the Peruvian variety; and C. speciosissima, very choice; Cypripedium bellatulum, a number of fine examples; C. cardinale, a quantity of this beautiful hybrid; C. Harrisianum, well represented in several forms; C. Haynaldianum, a specially large specimen with numerous flowers; C. Roezli, C. Spicereanum, several forms in flower, and a host following; and C. Swanianum, two good plants. Dendrobiums were very strong, there being a large number of examples; D. bigibbum, including some superb varieties; D Dearii, in plenty; D. formosum, several spikes of this useful form have bloomed for three months; D. Phalænopsis, the original variety, beautiful and rare, large and darker than D. bigibbum; D. rhodostoma, a beautiful bright hybrid; and D. superbiens, this is very pretty, and lasts long in flower; Epidendrum Brassavola, a fine form, curious and richly coloured; Lycaste Skinneri, a few early flowers; Masdevellia bella, a very large number of plants with their pretty white flowers; M. chimæra, similar to bella, but with much longer tails; M. Roezlii, a very dark form of chimæra; M. Reichenbachiana, a curious species, flowers resemble a huntsman's cap; and M. Veitchiana, grandly coloured; Odontoglossum Alexandræ, several good spotted varieties; O. grande, quite an array of this splendid old form, so useful and effective when cut, some of the specimens being large; O. Harryanum, several varieties; O. Pescatorei, two choice forms; O. Roezlii, very richly scented; Oncidium crispum, several stout spikes; O. incurvum, several long spikes, very valuable for cutting; O. papilio Krameri, a beautiful species; O. tigrinum, many strong spikes, very powerful violet-scented; and O. varicosum Rogersi, a few neat spikes; Trichosma suavis a few spikes fully out and a host to follow of this fragrant form; Vanda cærulea, a few spikes; V. suavis, the developed blooms indicate this to be very useful; and Maxillaria grandiflora, a number of pieces of this popular form.

Mention might be made of the choice Cypripedium œnanthum superbum; and note was also made of other kinds not in bloom, such as Dendrobium Wardianum, D. crassinode album, D. Falconeri giganteum, D. splendidissimum grandiflorum, D. Leechianum, Lælia anceps alba, Cypripedium Morganiæ very strong, C. Sedenii candidulum, C. selligerum majus, Cattleya Gaskelliana alba and Lælia purpurata.

William Greenaway.

Oxford.

VIOLETS FOR WINTER.

No time should be lost now in getting plants of violets replanted into frames, where such work is necessary. It is a common practice with some gardeners to plant their stock of winter-flowering violets direct into the frame where they are intended to remain for the winter, but I have never been able to carry out that plan, for the simple reason that the frames we use for violets in the winter months are in use during the summer for growing melons, primulas, and cinerarias in. Were it not so, I should not adopt the plan, as I believe the plants are more at home on some cool border than they would be in such a sunny position as would be necessary for winter blooming. Moreover, the plants lift so well from our somewhat strong soil that they do not miss the shift in the least, and we usually continue picking from the plants that are transplanted as though they had been established in their new quarters for months.

All growers of violets for winter blooming prefer to have the frames set in a somewhat elevated position, and many recommend litter and other fermenting material for that purpose. We ourselves adopt the plan more for convenience than because it is necessary, for we have proved beyond doubt that such material is not required to ensure a supply of good violets in winter and spring. If we had other materials at hand for raising the frames to the desired height, we should prefer it, but at this time of year there is usually a quantity of litter consisting of the refuse when preparing mushroom beds for winter and spring; and raising a position for the violets is a convenient way of disposing of this material, and being situated in the frame ground it is easily put together.

The raised beds having been made the frames are set on, and a few inches of old potting soil laid over the litter, which should be placed so as to bring the plants within a few inches of the glass in every part of the frames, and well trodden, to obviate as far as possible the settlement of the litter. When all the frames are in readiness, whether soil, stones, or whatever material has been used for raising the ground, the plants may be put in. But where any rough or hollow materials have been used, more soil will be necessary for the purpose of the plants rooting into it, or they may suffer from the want of moisture. The lifting of the plants may then be proceeded with.

We never allow our plants to be wheeled to their winter quarters, but lift them carefully and set them on hand barrows, when they are carried direct to the frame ground and set in position, which is usually about a foot apart. But this depends somewhat upon the size of the plants, the smaller ones being kept near the foot of the frame, where they may be planted somewhat closer. As the work proceeds one person is employed with some comparatively fine soil, and he fills all the spaces between the roots, working it well down so that there are no hollows, and making it quite firm, but taking care to leave the crowns of the plants somewhat raised, in much the same way as gardeners like to see strawberry plants for early forcing in pots. It would be impossible for us to put a great quantity of soil in the frames and plant our plants with a fork, as they come to hand with such large balls of earth. And yet they are but single crowns, planted out early in April, and all runners are picked off as often as possible. When treated in this way it is not a great quantity of soil that is necessary to fill in the hollows between the plants, and the work is got through comparatively quick.

After the frames are full, give a good watering through a coarse rose watering-can, and put the lights on and keep close for a couple of days, after which air should be admitted, and after a week or two the lights may be drawn off on all favourable occasions. We depend mainly on one variety, viz., Marie Louise, for winter and summer flowering; but always find room for a light or two of Comte de Brazza, but the latter does not flower freely with us until the new year is in. In mild winters violets bloom well out of doors, and some seasons we have had quantities of Marie Louise from plants unprotected. But they cannot be depended upon after a spell of mild and damp weather succeeded by frost. This cuts them up very much, so that this season we have planted all our double violets in such a way that those not intended for lifting may be protected by spare glass lights.

The Czar, Odoratissima, and Wellsiana are excellent single violets to grow in the open ground. Quantities of them are now being picked in this district. In mild seasons they are obtainable most of the winter; but with many they appear almost as profuse blooming in the autumn as in the spring.

Clarendon Park. C. WARDEN.

WHAT ARE TOMATOS?—In the City of London Court, before Mr. H. Eardley-Wilmot, sitting as deputy for Mr. Commissioner Kerr, Messrs. Knill and Grant, fruit brokers, of Monument Chambers, E.C., sued a fruiterer named Lefevre to recover £19 on a dishonoured cheque, or in the alternative £16 5s. 10d., the value of sixteen cases of tomatos sold to the defendant. The tomatos were purchased by the defendant at public auction, but it was claimed on his behalf that they were purchased from sample; that they were not equal to the sample; and that there was a smaller number of cases delivered than was mentioned in the printed catalogue. A witness named Brown was examined by Mr. Quilter, the defendant's solicitor, as to the quality of the tomatos. He denied that the tomatos were only fit for manure, and said the question was an absurd one. Mr. Quilter: Were they sold as fruit? Witness: No, as vegetables. (Laughter). Mr. Quilter: I always thought that tomatos were fruit. The learned judge found for the plaintiffs for £16 5s. 10d.

Replies to Queries.

J. G. P.—Now that Mr. Barron's book is reduced in price to 5s, it is at once the "best and the cheapest" work of authority on the cultivation of the grape vine.

Names of Plants.—A. W.: 1, Bignonia grandiflora; 2, Cratægus pyracantha; 3, Campanula pyramidalis; 4, Verbena venosa; 5 Dactylis glomerata variegata.—J. J. G. L.: Your plant is Escallonia Montvidiensis. —J. Kightley: The plant is Polemonium cœruleum variegatum.

Names of Fruits.—George Till: The pear is Beurre Diel, one of the finest of dessert fruit when well grown. Yours are badly cracked and disfigured, a proof that the tree is unhappy. If convenient, lift and replant in a warmer, drier, and more elevated position, and you may hope for better growth.—J. J. G. L: 1, Mere de Menage; 2, Braddick's Nonpareil; 3, not known; 5, Beurre Charneuses; 6, Bergamotte Esperen.—L. H. K.: 1, Emilie d' Heyst; 2, Hessle; 3. Beurre de Capiaumont; 4, Beurre Clairgeau; 5, Beurre Diel.

TRADE CATALOGUES.

J. R. PEARSON AND SONS, CHILWELL, NOTTS.—*Hardy Fruits for the Midlands.*

NURSERYMEN GARDENERS OF YOKOHAMA, 21 to 28, NAKAMURA, YOKOHAMA, JAPAN.—*Plants, Shrubs, Trees, Seeds, and Bulbs.*

WEBB AND SONS, WORDSLEY, STOURBRIDGE.—*Selected Seed Corn, season* 1890-91.

CHARLES R. WARNER, THE ABBEY, LEICESTER.—*Fruit trees, Ornamental trees and Shrubs.*

J. CHEAL AND SONS, CRAWLEY, SUSSEX.—*Trees and Shrubs, Roses, Fruit trees, &c., Dahlias.*

WM. RUMSEY, WALTHAM CROSS, N.—*Roses, Fruit trees, &c.*

A. M. C. JONGKINDT CONINCK, DEDEMSVAART, NEAR ZWOLLE, NETHERLANDS.—*Wholesale Trade List of Coniferæ, Roses, Rhododendrons, &c.*

FRANK CANT, BRAISWICK NURSERY, COLCHESTER.—*Roses.*

KENSINGTON STORES, WEST KENSINGTON.—*Bulbs, Plant Houses, Bouquet Papers, &c.*

J. M. THORBURN AND CO., 15, JOHN STREET, NEW YORK.—*American Seeds.*

Obituary.

MR. GEORGE BARNARD, landscape artist, died on Monday, September 29th, age 83. He was well-known for his water-colour pictures of Alpine scenery, and was one of the earliest members of the Alpine Club. He was drawing master at Rugby School for a great many years, and is still remembered with affection by many old Rugbeians. He was the author of several important works of great utility to the student—"Foliage and Foreground Drawing," "Landscape Painting in Water-colours," "Drawing from Nature." "Large Studies of Trees," &c.

Markets.

COVENT GARDEN.

FRUIT.

Apples	per ½-sieve	3s. 6d. to	7s. 0d.
Damsons	per ½-sieve	8s. 0d. ,,	10s. 0d.
Filberts, Kent, per 100 lb.		45s. 0d. ,,	55s. 0d.
Grapes	per lb.	0s. 9d. ,,	3s. 0d.
Lemons	per case	15s. 0d. ,,	30s. 0d.
Pears	per ½-bushel	3s. 0d. ,,	12s. 6d.
Pine Apples, English, per lb.		1s. 6d. ,,	3s. 0d.
Pine-apples, St. Michael's	each	2s. 6d. ,,	6s. 0d.
Plums	per ½-sieve	7s. 0d. ,,	11s. 0d.

VEGETABLES.

Artichokes, Globe, per doz.		4s. 0d. to	6s. 0d.
Beans, Kidney	per lb.	0s. 3d. ,,	0s. 6d.
Beet	per doz.	1s. 0d. ,,	2s. 0d.
Brussels Sprouts	per ½ sieve	1s. 6d. ,,	2s. 6d.
Cabbages	per doz.	1s. 6d. ,,	2s. 0d.
Carrots	per bun.	0s. 4d. ,,	0s. 6d.
Cauliflowers	per doz.	2s. 6d. ,,	3s. 6d.
Celery	per bun.	1s. 6d. ,,	2s. 0d.
Cucumbers	each	0s. 4d. ,,	0s. 8d.
Endive	per doz.	1s. 6d. ,,	2s. 6d.
Herbs	per bunch	0s. 3d. ,,	0s. 4d.
Horse-radish	per bun.	2s. 0d. ,,	3s. 0d.
Lettuces	per doz.	1s. 0d. ,,	1s. 6d.
Mushrooms	per basket	0s. 9d. ,,	1s. 6d.
Onions	per bushel	2s. 6d. ,,	4s. 6d.
Parsley	per bun.	0s. 4d. ,,	0s. 6d.
Scarlet Runners	per lb.	0s. 2d. ,,	0s. 3d.
Shallots	per bun.	0s. 4d. ,,	0s. 6d.
Small Salading	per pun.	0s. 3d. ,,	0s. 4d.
Spinach	per bushel	2s. 6d. ,,	3s. 6d.
Tomatos	per lb.	0s. 6d. ,,	1s. 0d.
Turnips	per bunch	0s. 3d. ,,	0s. 4d.

CUT FLOWERS.

Abutilons	per doz. bun.	2s. 0d. to	4s. 0d.
Asters	per doz. bun.	3s. 0d. ,,	6s. 0d.
Bouvardias	per bunch	0s. 6d. ,,	0s. 9d.
Callas		2s. 6d. ,,	5s. 0d.
Carnations, per doz. blms.		1s. 0d. ,,	2s. 0d.
Chrysanthemums, per doz. blooms		0s. 9d. ,,	2s. 0d.
Chrysanthemums, per doz. bun.		2s. 6d. ,,	5s. 0d.
Coreopsis	per doz. bun.	1s. 0d. ,,	3s. 0d.
Dahlias	per doz. bun.	2s. 0d. ,,	4s. 0d.
Eucharis	per doz. blms.	2s. 0d. ,,	4s. 0d.
Gardenias, per doz. blms.		2s. 0d. ,,	4s. 0d.
Gladioli	per doz. bun	5s. 0d. ,,	10s. 6d.
Heliotropes, pr doz. sprys		0s. 6d. ,,	1s. 0d.
Lapageria, per doz. blms.		1s. 0d. ,,	3s. 0d.
Liliums, various, per doz. blooms		0s. 6d. ,,	3s. 0d.
Maidenhair Fern, per doz. bun.		4s. 0d. ,,	8s. 0d.
Marguerites, per doz. bun.		2s. 0d. ,,	4s. 0d.
Mignonette, per doz. bun.		1s. 0d. ,,	3s. 0d.
Pelargoniums, Zonal, per doz. trusses		0s. 3d. ,,	0s. 4d.
Primulas, Double, per bunch		0d. 6d. ,,	1s. 0d.
Roses, Coloured, per doz.		1s. 0d. ,,	1s. 6d.
Roses, Tea, per doz. blms.		0s. 9d. ,,	1s. 6d.
Sunflowers, per doz. bun.		3s. 0d. ,,	6s. 0d.
Tuberoses, per doz. blms.		0s. 4d. ,,	0s. 6d.
Violets	per doz. bun.	0s. 9d. ,,	2s. 0d.
Violets, Parme, per bun.		2s. 0d. ,,	3s. 0d.
Violets, French, per bun.		1s. 0d. ,,	1s. 6d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents	per ton	55s. to	75s.
Magnum Bonum	per ton	60s. ,,	80s.
Beauty of Hebron	per ton	60s. ,,	90s.
Early Rose	per ton	50s. ,,	60s.
Imperator	per ton	55s. ,,	80s.
White Elephant	per ton	60s. ,,	70s.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.—The acting directors of this society met in the secretary's office, Bridge Street, Aberdeen, on Friday evening—Mr. Alexander Robson, vice-president, presiding. The draft report and statement of accounts, showing a surplus of £60 6s. 5d., were approved of. The annual meeting of the society was fixed for to-day (Saturday 11th). The meeting unanimously agreed to request Mr. James Murray Gorden, advocate, Aberdeen, to continue to act as chairman of the society. Mr. Robson was thanked for presiding.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets After.	High Water at London Bridge. Noon.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.		Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEC.			1 90
19	S	**20th Sunday after Trinity.**	6 31	14 59	4 58	—	8 17	4 49	5 9	1 55	2 14	49·8	Calanthe Veitchi	Gar. hyb.	292
20	M	Battle of Navarino, 1827. [Quarter.	6 32	15 10	4 56	1 52	9 21	5 32	5 56	2 34	2 57	49·5	Cypripedium Harrisianum	Gar. hyb.	293
21	Tu	Cambridge Michaelmas Term begins. ☽ First	6 34	15 19	4 54	2 39	10 38	6 24	6 56	3 21	3 49	49·2	Dendrobium superbiens	Torres Straits.	294
22	W	Lord Holland died, 1840.	6 36	15 28	4 52	3 12	Morn.	7 33	8 19	4 21	4 58	48·8	Pleione maculata	India.	295
23	Th	Earl of Derby died, 1869.	6 38	15 37	4 50	3 41	0 1	9 6	9 55	5 44	6 31	48·4	Pleione Wallichiana	India.	296
24	F	Michaelmas Law Sittings begin.	6 40	15 45	4 47	4 1	1 25	10 39	11 16	7 20	8 4	48·0	Pleione lagenaria	India.	297
25	S	*St. Crispin.*	6 42	15 52	4 45	4 20	2 50	11 49	—	8 41	9 14	47·6	Zygopetalum Mackayi	Mexico.	298

BRISTOL CHRYSANTHEMUM SHOW, WEDNESDAY and THURSDAY, November 19 and 20, 1890. Special Prize 48 Cut Blooms, £10, £6, £4. Schedules post free. F. Wilford Jones, Secretary, Hill Avenue, Totterdown.

DEWSBURY and DISTRICT PAXTON SOCIETY.—FIRST ANNUAL SHOW of CHRYSANTHEMUMS, BOUQUETS, MISCELLANEOUS PLANTS, FRUIT, and VEGETABLES, on November 14 and 15. Schedule of prizes, &c., now ready. James Podmore, Thornhill Lees, Dewsbury, Charles E. Bailey, Dewsbury Moor, Dewsbury, Secretaries.

KENT COUNTY CHRYSANTHEMUM SOCIETY.—The THIRD ANNUAL GRAND EXHIBITION will be held in the Rink, Blackheath (opposite S.E.R. station), on TUESDAY and WEDNESDAY, 4th and 5th November. Over £13 in money prizes and silver cups. Special "Centenary" Class. 48 blooms—24 Japanese and 24 Incurved, distinct. First prize, Silver Cup (value £10) and £8; second prize, £6; third prize, £4; fourth prize, £2. Schedules, &c., free of H. A. Needs, Hon. Sec., 49, Ringstead Road, Catford, S.E.

MARLPOOL CHRYSANTHEMUM SHOW, Nov. 22nd, open to all England. Schedules on application to the Secretary Marlpool Chrysanthemum Society. Entries close Nov. 15.

PORTSMOUTH FLORICULTURAL SOCIETY.—The SIXTH ANNUAL CHRYSANTHEMUM, FLOWER, FRUIT, and VEGETABLE SHOW will be held in the Drill Hall, Albert Road, on November 5th, 6th, and 7th, 1890. Entries close October 29th. Schedules and entry forms can be obtained gratis of Mr. F. Power, 26, Queen Street, Portsea, Hon. Sec.

READING CHRYSANTHEMUM SOCIETY.—ANNUAL EXHIBITION, November 13. Schedules of Mr. W. Smith, 109, London Street, Reading.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

The ANNUAL DINNER of the above Society will take place on THURSDAY, October 23rd inst., at the CANNON STREET HOTEL, at Half-past Five p.m.

E. R. CUTLER, Esq., will preside.

Tickets, 5s. each, to be had of the Secretary, W. Collins, 9, Martindale Road, Balham, S.W.

Exhibitions and Meetings for the Ensuing Week.

Wednesday, Oct. 22.—Royal Horticultural Society of Jersey.—Autumn Exhibition.

Thursday, Oct. 23.—United Horticultural Provident Society.—Annual Dinner, 5.30 p.m.

Auction Sales for the Ensuing Week.

Monday, Wednesday, and Saturday, Oct. 20, 22, and 25.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.

Monday, Thuesday, and Saturday, Oct. 20, 23, and 25.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

Monday, Oct. 20.—Messrs. Protheroe and Morris, at the American Nurseries, Leytonstone; Nursery Stock. (Four days.)

Tuesday, Oct. 21.—Messrs. Protheroe and Morris, at the Peltdale Nurseries, Maresfield, near Uckfield; Nursery Stock.

Tuesday, Oct. 21.—Messrs. Protheroe and Morris, at Southend Park Estate, Catford; Nursery Stock.

Tuesday, Oct. 21.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies.

Wednesday, Oct. 22.—Messrs. Protheroe and Morris, at St. Martin's Nursery, Canterbury; Nursery Stock.

Wednesday, Oct. 22.—Messrs. Protheroe and Morris, at Messrs. Seeger and Tropp's Premises, East Dulwich; Orchids.

Wednesday, Oct. 22.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Plants and Bulbs.

Thursday, Oct. 23.—Messrs. Protheroe and Morris, at Bedford Road Nurseries, Northampton; Nursery Stock.

Thuesday, Oct. 23.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Orchids.

Friday, Oct. 24.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

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The Gardeners' Magazine.

SATURDAY, OCTOBER 18, 1890.

The Exhibition Season may be considered to have come to an end with the Guildhall Fruit Show, for there is no proper dividing line between summer and autumn, because the flowers and fruits flow in a continuous stream until a decided break occurs, as at this moment, when we seem to be pausing in contemplation of the next endeavour. The pause will be brief, and far from complete, for Westminster testifies, by two reports in this sheet, that for horticultural observers, critics, and recorders, "there is no rest, no pause, but ever movement forward, world without end." Looking backward is by no means an unpleasant occupation; the season began with small promise, but in the end gave us more than we expected. The treacherous spring spoilt the great prefigurement of a crop of fruit, for the flowering was free and the fruiting poor, and the best of the year's productions in the fruit garden were first the strawberries, and now the apples. In wheat and potatos, which are more especially test crops, we have evidence that upon the whole the season has been fairly, though not highly productive, while some of its failings have been condoned for by extra good behaviour when to our poor perceptions it appeared to be too late, but in the end proved that it was not too late but really in good time to put a lot of things right that were threatening to go wrong. All's well that ends well; and perhaps we are none the worse but all the better for a season of fluttering between hope and fear, between believing and doubting, for Nature is often educating our spirits by mortifying our bodies and perplexing our minds, and the end of it is that we are really happier than if we had managed things in our own way, although we may be ignorant of the subtle truths the facts conceal. There is no fear of famine in any of these islands, and rumours of its near impending are to be boldly separated from the adventitious circumstances that surround them and possibly inspire them, the promulgators of such rumours being open to the dread suspicion that the "wish is father to the thought." If we can but imagine men saying in their hearts, "Oh, that a famine might come to promote our political purposes," we shall have secured a lively illustration of the possibilities of what are called "politics" at the expense of human nature, and we very much fear that politics may sometimes lead men so far even as that kind of infamy.

The exhibition season has not been without sensations and revelations, of which our reports have, we hope, fairly told the tale. We shall certainly cease to discourse on the Guildhall show, but while the whole affair is fresh in the remembrance of all it will be regarded as the sensation of the season, for its peculiar origin and location, and its unwonted splendour in certain features that are of some public importance. It has taught us that an ancient City company that has long appeared past use, and but poorly superannuated, was still capable of coming forth anew like a phœnix renewed by the fire of affliction to accomplish great things in the public service. And it has added a new and striking commentary to the oft repeated declaration that the production of hardy fruit of good quality is a possibility of the British Isles, and that the apple is the king of fruits for all large utilitarian purposes, as the potato is the king of roots in a corresponding region of general usefulness. Orchids are costly things, and pine apples are both eatable and costly, but potatos and apples are capable of swallowing both when a comparison is made of the money that is in them. We beg pardon for mentioning money, which we have been informed is a vulgar thing, but it happens to be the decisive and final test in the commercial world of the usefulness of an article, and no one will question that in respect of the turnover of money orchids are nowhere in comparison with "taturs," while pines are in a poor case if similarly compared with "pommies," which we are advised to say is the latest colloquial elegance for apples. Our reports will be of immense service to cultivators who are ever on the watch to "advance with the times," a kind of movement that many talk of and few accomplish. We have secured for our readers reports on the potato crop that will prove to those who can properly dive into the depths, of more substantial service than any reports that have appeared for six or seven years past, for the reason that we have attained to a clear stage in the cultivation of the noble tuber, and the varieties that lead have been put to a test in

a way we could never invent, and perhaps never should have thought of. They have been tried by prolonged damp and cold, with a certain baneful degree of darkness, for the solar light was weak in most of the time when the unfavourable weather prevailed. To some readers this may appear as a matter of course, but it is not so, for often in bad times for potatos, with electric storms and injurious changes of temperature, the solar light is occasionally powerful, and instead of sustaining the plant against its enemies, seems rather to aggravate their attacks by increasing the sensitiveness of the vegetable tissues. In addition to this trial of prolonged cold, the crop had a trial to follow of prolonged warmth, with unwonted brightness. "Not much of a trial that," may be said, and we quite agree with all who may take up the word. But the transition was sudden, and is in some sense alien to our experiences, and, whether right or wrong, we do for the present regard the good weather as well as the bad weather a trial for the potatos. Now the tale is told of the varieties that came through the trial of killing and the trial of restoration to life, and the people who cannot profit by the story must be regarded as beyond the pale of advancement in the direction of material prosperity.

An old lesson retold, and with peculiar emphasis, is that competition is the only sure source of life in an exhibition. Much may be done without it, but more may be done with it, and the truth should never be forgotten that the interest of human life is the highest of all interest, and it is that we must depend on for complete success in an exhibition. The dullness of men who aspire to lead is one of the wonders of humanity. They find all kinds of excuses for excluding from their schemes the one great principle of success. They trust to anything and everything in order to repudiate competition, and their successes are so often in the nature of failures that their persistency in a false system not only overpasses all respectable philosophy, but compels us to doubt if a fair measure of reason is ever brought into the elementary consideration of the business that is to be attempted. No reasonable being can hastily reject the doctrine of the fall of man from a high estate of reasonableness and duty, who has observed the course of affairs in quarters where horticultural exhibitions are seriously organized without any proper recognition of the prevailing passion of human emulation.

The brief pause allowed us will but suffice to prepare for busy times that are near at hand. As the naval captains of days that are gone cleared the decks joyfully to prepare for desperate action, we may do the same with only peaceable and harmless contentions in view—contentions we must not call them—but rather trials of skill of such a quiet nature as might serve as subjects for pastoral poems. The chrysanthemums succeed the dahlias as the hours succeed each other on the dial, and as every hour is good in its way and will give time for useful work, so is every flower, while each has its place and its purpose in the round of the seasons. The early chrysanthemums have for a long time past been gay in the open garden, and they are wondrously gay still, as bent on making the very utmost of the clear sunshine of this most glorious autumn. Their later relatives are ready for display and may light our way through darkening days agreeably, and beguile us into the belief that even yet the summer is not gone, for how else should the world be so full of flowers? What a time have we had to persuade us to praise God for light and the faculty of beholding what it produces! and should we cease from the song of praise when the light is dimmed without, but still glows within on the faces of the flowers as though they had given birth to it and were even now keeping some of it, unchanged in its glory, for their own enjoyment of life and to comfort human nature.

Bedford Chrysanthemum Show, November 19 and 20.

Ipswich Chrysanthemum Show, November 14.

Wanstead Chrysanthemum Show, November 12.

Dewsbury Paxton Society's Chrysanthemum Show, November 14 and 15.

Croydon Chrysanthemum Society will hold its annual exhibition November 12 and 13.

A German Exhibition of arts and industries is to succeed the French Exhibition at Earl's Court in the year 1891.

Imports of Potatos during September amounted in the aggregate to 45,144 cwt., or an increase of 10,182 cwt. received in the corresponding month of last year.

Apples Imported in September amounted in the aggregate to 393,020 bushels, or an increase of 103,284 bushels upon the imports of the corresponding month of last year.

Onions Imported in September show an increase of 92,320 bushels upon the quantities received during the corresponding month of last year, the imports in 1889 being 424,362 bushels, and in 1890 516,682.

Gardeners' Royal Benevolent Institution will, as usual, add to its pension list in January next, and intending candidates are reminded that all applications must be sent to the secretary, Mr. E. R. Cutler, 50, Parliament Street, S.W., on or before November 8.

Oxfordshire Chrysanthemum Society.—The exhibition announced for November 18 will be held November 11.

Southwark Park Chrysanthemum Show will be opened this day (October 18), and continue open daily from 10 till dusk, as long as the flowers last.

The Hybridisation of Plants was discussed with much ability by Dr. MacFarlane, of the Edinburgh Herbarium, in a lecture delivered the other evening before the members of the Scottish Horticultural Association.

American Apple Crop, as already reported in these pages, is, on the whole, a decided failure, but it is interesting to note that in the mountain valleys of western North Carolina the trees are bearing heavy crops of fruit.

The Germination of Seeds is the subject of a valuable and interesting paper by Professor J. R. Green, F.L.S., in the "Journal of Royal Agricultural Society," new series, part 3, published a week since.

New Vegetable Market in the City.—The Lord Mayor will lay the foundation-stone of the new market in Farringdon, of which we have given our readers some particulars, on Wednesday next, at twelve noon.

Messrs. Wesley and Sons' Natural History and Scientific Book Circular, No. 103, just published, contains a few entries of importance to buyers of books on botany, conchology, entomology, and general zoology.

An Apple Congress was the chief feature of the opening of the autumn session of the Reading Gardeners' Association. The principal exhibitors were Mr. Turton, Mr. Lees, Mr. Dockerill, and Mr. Pound. The president of the congress was Alfred Palmer, Esq. There was a prolonged and profitable discussion.

Mr. D. Morris has resigned the post of honorary treasurer of the Royal Horticultural Society in consequence of his leaving England for several months on a Government mission to the West Indies. At the Council meeting held on Tuesday a resolution was passed expressive of the regret with which the resignation was accepted.

Cutting down a Public Tree may prove a costly business. John Davies recently cut down a tree in London Street, Kingston, in order to obtain a photograph of a house in front of which the tree stood. The magistrates of Kingston have fined him £18 2s. 6d. for his wrong-doing.

The Framed Certificate of the Fruiterers' Company has been awarded to Mr. Samuel Barlow, of Castleton, Manchester, in recognition of the high merit of the fifty dishes of fruit exhibited by him in the Guildhall Show. The Master and Wardens have also recommended that the honorary freedom of the company be conferred on him.

Is Charcoal Useful in the Cultivation of Orchids? This question has been started in the pages of the new *Journal des Orchidées* of M. Lucien Linden. It is a question of more than momentary interest, and as the views of orchidists are brought forward in answer to the editorial invitation some valuable information may be looked for.

Edward Ray, charged with defrauding Messrs. Richard Smith and Company, Worcester, by entering fictitious names and sums in the wages book, was tried on Monday, before Mr. A. F. Bosanquet, and sentenced to six months' imprisonment. It pains us greatly to record the fact, for the annals of horticulture are singularly free from records that are otherwise than creditable. It is but right we should add that Ray fell from respectability through gambling.

The Weather Plant is on view at the Crystal Palace, and Mr. Nowack says that it prognosticates the occurrence of fire-damp in mines, and for giving warning of impending changes of weather surpasses all the machinery and methods of the Meteorological Office. That he himself believes in the possibility of utilizing the sensitiveness of *Abrus precatorius* none will doubt, and not many will doubt that he stands alone, or nearly so, in this faith, and will only make converts by establishing his faith on a basis of facts.

Open Spaces.—At the usual monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., it was stated that donations had very much fallen off, and that at the present time nearly £5,000 was required for the laying out of grounds to which the association was more or less pledged. It was agreed that the Earl of Meath, as chairman, should make a special appeal for the sum named, and that efforts should be made to obtain it without delay. It was resolved to secure a properly-qualified gymnastic and drilling instructor to form classes for boys and girls in certain playgrounds on Saturdays for teaching physical exercises and the proper use of the gymnastic apparatus erected in the grounds. Several other resolutions were also announced.

Birmingham Gardeners' Association held its first meeting of the current session a few evenings since, when A. W. Wills, Esq., J. P., of Erdington, gave a lecture on the people and flora of Burmah. The lecture was well illustrated by lantern slides, and there was a large attendance of members. The other arrangements for the first half of the session are as follows: October 20, exhibition of specimens and discussion. November 3, Cultivation of Masdevallias and Disas, by Mr. H. A. Burberry. November 17, Zonal Pelargoniums for exhibition and for the conservatory, by Mr. E. Burden. December 1, a National Federation of Gardeners' Associations, by the secretary, Mr. J. Hughes; also an exhibition of specimens and discussion. December 15, Evergreen shrubs for winter bedding and window boxes, by Mr. J. R. Petch, of Worcester. January 12, 1891, annual meeting.

Mr. E. S. Dodwell, whose health for some years past has been less than perfect is at the present time invalided, and his medical adviser demands for him perfect rest and quiet. We deeply regret the necessity for so painful an announcement, and earnestly hope we may soon be enabled to give a better report of our old friend. Miss Dodwell is compelled to ask the indulgence of all who are expecting carnations and picotees from Mr. Dodwell's garden, but the best efforts will be made to meet all engagements.

The Practice of Pruning Fruit Trees is incidentally touched upon by Mr. Hammond, in his admirable paper on growing apples for market. He advises pruning at the time of planting young trees to obtain growth suitable for the future bearing wood. After this he says "there is nothing more required in the way of pruning beyond the thinning of the branches and the removal of shoots that cross each other, but where the growth is weakly I cut back a second time. But when once a tree is properly furnished with an evenly balanced head, the best thing to do is to let it alone, that it may bear fruit, which it never will if the pruning knife is constantly used. In this matter the habits of the different varieties of apples must be studied. Some will bear more pruning than others, while some, apparently, will not bear any."

The Sewage that London pours into the River Thames under the benign arrangements of the late Metropolitan Board constitutes an awful burden of responsibility that neither the Corporation of London nor the London County Council appear to recognize as a fact, although it is of great importance to the first and may prove a question of life or death to the second. It is with satisfaction we note in the last report of Dr. William Collingridge, Medical Officer of the Port of London, that attention is directed to the subject. He says: "The London County Council, inheriting a legacy of a costly and useless sewage scheme, has not yet had an opportunity of investigating the matter and deciding as to its future action. . . . The effect [of certain precipitation works], so far as the condition of the river water is concerned, has been exactly what those who best understand the question predicted, viz., a thorough and complete failure." The very first proposal was the one that even now commends it as the most reasonable of the many that have been made, and it is the disposal of the sewage to fertilize the Maplin Sands.

The Dish of Five Peasgood's Nonsuch Apples that were in Mr. Barlow's collection of fifty dishes in the gold medal class were stated by us to weigh 9 lb. 2 oz., but in other papers the weight is given at 8 lb. 14 oz. Our figure is correct, and it follows that the others are incorrect. But we are in no position to cast imputation even of carelessness on the part of our contemporaries, because, in common with them, we had the weight from Mr. Barlow on the opening day as stated by them; but the next day that gentleman informed us that he had made a mistake, for when he said "nine pounds *minus* two ounces," he really meant nine pounds *plus* two ounces. As we are all liable to such errors, especially in the excitement of a great event, there is no mystery and no blame; it is an accident that will probably be survived by all the parties. But the justification of our figures is a matter of importance, because probably this is the greatest weight ever registered for five apples of British growth. It is possible some Tasmanian samples might reach such a figure, and it is even probable that on American soil the King of Tomkins County might equal it. But the fact is of more importance than any speculations, and it will form a datum of some interest in the future.

NOTES ON NARCISSI, 1890.

By Rev. A. Rawson, M.A., Windermere.
From the *Journal of the Royal Horticultural Society*.

The soil in my garden is a sandy loam, not the best for narcissus; for though the common pseudo-narcissus grows wild in great abundance all round, and is, in fact, a weed in some of the meadows, a more holding soil seems to be required for most of the varieties. I may specially instance *maximus spurius coronatus*, and similar sorts, which, though fine, do not grow well here. The climate apart from the soil is very suitable for daffodils; indeed, if we had the soil, I am not sure we should not manage them as well as Mr. Hartland at Cork. We are about twelve miles from the sea, with the Gulf-stream running up the coast, and the mean winter temperature is as high as that of Kent, where I lived for many years; added to which we have a rainfall averaging nearly sixty inches, in which the narcissus delights. The great drawback is "want of sun," we cannot get our bulbs so well ripened as in the south, and I have no doubt that to this we may attribute our want of success in the management of some varieties.

I have annexed two lists of the sorts I hold most in esteem, a first and second list; for though perhaps some in No. 2 list ought to appear in No. 1, it is very difficult to make an exact distinction, and as many are comparatively new varieties, requiring further proof, I feel that, when grown for another year or two, many may crop up to make me alter my opinion. At present in my estimation, for an all-round flower nothing beats *Horsfieldi*. For habit of growth, beauty, and productiveness it is A1, and growing as it does here, is the admiration of everyone.

I am not sure that I should not put Sir Watkin next, and then I have two sent me by Mr. Barr, called Bastomil and Santa Maria, which are beautiful, and succeed admirably here. I have also put my own seedling, Tridymus, "A. Rawson," in No. 1 list, not because I think my geese are all swans, but because of its good habit, striking flower, and fine foliage, all of which, added to its lateness, make it a very desirable variety.

The cernuus section do not do well here. They have a troublesome way of disappearing, but they are very beautiful. Colleen Bawn and Minnie Warren are in high favour. I have one also, a variety of *pallidus præcox*, called Asturicus, which is very fine.

With regard to the small sections, *triandrus*, *corbularia*, &c., I find they must have protection here to grow them in perfection, or the frost injures the bloom. It is the same with the Algerian varieties, *serotinus*, *elegans*, *viridi folius*, &c., which should certainly be under cover in summer as well as in winter, on account of the too great abundance of rain. They succeed very well with pot culture. I believe the secret in growing them is not to overpot them; leave them alone in the pots for two or three years, and finish them off, if possible, in a cool greenhouse where no frost can reach them. When the foliage dies down I place the pots (not plunged) under a handlight in the hottest part of the garden I can find; there they remain till September, when I remove the top soil down to the bulbs, plunge them overhead in a water-tank for an hour, put them to drain for a day, then top-dress with rich compost, plunge overhead in cocoa-nut fibre refuse in a cold frame, and think nothing more of them till they show signs of growth in February. After that they require the ordinary attention of plants in pots, and just before the bloom comes on I take the pots into the greenhouse, place them in pans with half-an-inch of water at the bottom, and now and then give them a pinch of any of the artificial soluble manures; and this method of treatment I find suits them to perfection. There are, however, two varieties which, as yet, beat me—*N. dubius* (the true sort) and *C. monophylla*. I used to grow the last on well, and indeed, was the first to exhibit it, some years ago, in any perfection; but my hand "has lost its cunning." The true *N. dubius* is a charming little flower, but quite distinct from what is advertised as such in bulb catalogues. I can grow it admirably, but it refuses to bloom. I have persuaded it to do so only once or twice, but I hope to succeed with it yet. *Narcissus cyclamineus* is another that seems to require different treatment from the *triandrus* section, but as Mr. Barr says, it grows in a swamp, it will doubtless be managed soon.

With regard to deep or shallow planting, there seems to be a great diversity of opinion among the best growers. I have hardly made up my mind about it, but I am inclined to think that where there is little sun and much rain, as is the case here, shallow planting is the best. As to the annual moving of the bulbs, is that they are better left in the ground for two years at least, helping them, during the growth of the leaves, with a little artificial manure spinkled among the rows.

List No. 1.

Magni-coronati:
- Ard Righ.
- Asturicus.
- Bastomil.
- Cernuus.
- Colleen Bawn.
- Countess of Annesley.
- Empress.
- Horsfieldii.
- Mrs. George Cammell.
- Pseudo-bicolor.
- Santa Maria.
- Medii-coronati.
- Barri conspicuus.
- C. J. Backhouse.
- Duchess of Westminster.
- Gwyther.
- Princess Mary.
- Queen Sophia.
- Sir Watkin.
- Tridymus A. Rawson.

Parvi-coronatii:
- Little Dirk.
- Poeticus grandiflorus.
- P. patellaris.
- Princess Louise.

Double:
- Hale's Silver and Gold.
- Codlings and Cream.
- Queen Anne's Double Jonquil.

As to the *small* varieties, *all* are gems, particularly:
- Cyclamineus.
- Dubius, *true*.
- Rupicola.

List No. 2.

Magni-coronati:
- Emperor.
- Grandis.
- Dr. Hogg.
- Lady Grosvenor.
- Mrs. J. B. M. Camm.
- Maximus.
- Oporto Yellow.
- Wm. Goldring.

Medii-coronati:
- Grand Duchess.
- Madge Matthew.
- M. M. de Graaff.
- Mrs. Langtry.
- Mrs. C. J. Backhouse.
- Sensation.

Parvi coronati:
- Poeticus grandiflorus.

For gathering for cut flowers the following are highly appreciated, apart from the lists:
- Cynosure.
- Figaro.
- Glow.
- Jonquil, double.
- Leedsi.
- Poeticus ornatus.
- Princeps.
- Rugilobus.
- Tenby.
- Bicolor.
- Moschatus.

THE GUILDHALL FRUIT SHOW.

Sir,—The Fruiterers' Company's recent free exhibition of fruit for three days at the Guildhall may prove to be an epoch-marking one for the public generally, as well as the farmers in particular, if it emphasises in the minds of the great landowning authorities and our County Council members the truth of the old maxim that "horticulture is the perfection of agriculture."

At the present crisis in the affairs of agriculture, when the ravages of cattle diseases are spreading anxious concern throughout all ranks of society (including her Majesty the Queen, according to Thursday's papers), we ought to get the question of man's best diet settled by aid of science once for all. It was suggested in the *Spectator*, May 10 last: "There are questions of diet really of importance, which to answer by solid evidence would be a work of humanity." Will not our large landowning noblemen and corporations combine to follow up this exhibition, and see how far fruit can be made a staple food of the people? Ought not the question, What food is best? to precede that of, How best to produce the food of the people?

As we are on the eve of the planting season, it is to be hoped that landowners and all cultivators of suitable sites will, after careful inquiry and suitable preparation of the soil, devote as large a share as they can to fruit in due variety; and in that case it will always give an average paying return. In my own place, with the worst crop of apples, pears, and plums known, gooseberries, currants, mulberries, and grapes have been quite the best I have ever had. The motto for the fruit planter should, therefore, be, "Make sure you are right, and go ahead," for the future is with you. How can fruit-growing be overdone, when it may be fairly expected eventually to supersede largely the butchers, brewers, and probably bakers' bills alike, as it can easily form the most wholesome of foods and drinks to those who care to put it to the test judiciously.—Yours faithfully, W. S. Manning.

Woodlands, Vanbrugh Hill, Blackheath, October 4.

P.S.—I shall be glad to supply a packet of literature bearing on fruit as food, and on bottling British fruit, to all sending stamp and addressed wrapper. Our abundant crop of autumn berries makes the present a very suitable time to test the merits of the suggestions therein afforded.

MESSRS. CHEAL AND SONS, LOWFIELD NURSERIES, CRAWLEY, SUSSEX.

THE first view of these nurseries gives no suggestion of their extent and importance as "factors" and "factories" in the great fruit industry that appears to be opening in new directions and expanding in old ones in all parts of the country. And the reason of that is, that instead of oases of fruit trees that one has to travel for with the risk of being lost, we see a beautiful collection of all kinds of trees and shrubs and herbaceous plants; in fact, we encounter the general nursery stock, which is put forward as a frontispiece to the great fruiteries that lie beyond, and will well reward us when we find them. The soil over most of these nurseries is a peculiar kind of loamy clay, admirably suited for the purpose, but requiring to be understood. Its fertility is vouched for by the cereals, turnips, potatos, and grass lands, the farming practised in this district being far in advance of averages that prevail, and of that finished kind that is possible only on good land. Though flinty in dry weather, and pasty in wet weather, it suits miscellaneous nursery stock fully as well as it suits turnips, wheat, fruit trees, and the finest grasses. It is not the kind of soil one would care to eat, as we have heard the silky loam of Wanstead, that we once were partial to, described by a cultivator who indulged in the language of hyperbole; but it is a soil that will hold to roots if it will not "stick to the ribs," and to which roots of all kinds "take to" as a natural food, warranted to be equally palateable and easy of digestion. The great pinuses, the spruces, deciduous trees of all kinds, and rhododendrons, appear to need no special help in this soil, and they lift with such balls as are likely to make the planter happy without the aid of brandy balls, and are as sure as ball cartridge when sent in the right direction. There is no end to the entertainment in such a place for a lover of trees. Passing from the miscellanies I soon found myself in front of a green regiment of the most wonderful uniformity, all standing in a solid square; and although this was the *Erecta viridis* quarter of the Lawson Cupressus group, I was struck by the delicious freshness of the colour, and the fact that every tree amongst hundreds was the *fac simile* of every other, the several squares differing in age and size, but in perfect pyramid form as precise as so many geometric figures. The day of this superb variety is yet to come. It is the most perfect promenade and "Italian garden" tree in cultivation. *Picea nobilis* and *P. Nordmanniana* have a fine colour here. *P. pinsapo* grows more compactly than in most places, and gains precision of character. *Pinus cembra*, which is said "not to grow at all," takes to the stiff loam as readily as the rest, and actually does grow to beautiful proportions. *P. insignis* is not grown at all, the climate is too cold for it, a fact favourable to the planter as regards the trees that on this soil brave the battle and the breeze. *Cryptomeria Japonica* likes the soil and lifts well; a proof that the moisture is sufficient: and *C. elegans* makes a fine growth also. This tree should be planted in the smallest state possible, no matter where it is found or where it is wanted. When of a showy size it is a troublesome subject for moving. *Libocedrus chiliensis* is hardy here and makes a beautiful growth. All the Retinosporas keep their character, but their mere growth is of no particular consequence, because they grow well anywhere, even in the suburbs of smoky towns. *Wellingtonia pendula* is here in true form, a curiosity for the amateur of trees. Of *W. gigantea* there is ample choice of trees of all sizes. The systematic lifting and spacing out that is practised here keeps the roots right for commercial purposes, and ensures furniture down to the ground, which can never be kept when the plantations stand for a few years undisturbed.

Amongst deciduous trees the Japan Acers are doing well here, and very beautiful they are, now that we can see their colours. *A. polymorphum atropurpureum* makes a bold show in the borders, and one has to talk about it even if one has nothing to say. That fine aralia, *Dimorphanthus mandshuricus* is in beautiful form, and judging by the stock, there must be a demand for it. A weeping pyracantha called *Cratægus pyracantha pendula* is interesting, and worked as a standard, makes a tempting lawn tree. A dazzling golden tree, not half enough known is *Quercus concordia*, which comes near to perfection in its own line of business, for the leaves neither change colour nor shrivel with heat, and for leaves so intensely coloured the two facts noted are peculiar. The *Cut-leaved lime* is a gem of a tree for choice purposes where the exquisite spring freshness of the lime is desired. A black-fruited *Pyrus spectabilis* may be noted as a curiosity, although it is a thing of quite secondary importance as regards the colour of the fruit. In growth and flowering it is true Pyrus spectabilis, and that should be praise enough. Amongst the hardy evergreens we noted as interesting *Benthamia fragifera*, *Ceanothus dentatus*, *Choisya ternata*, *Desfontainea spinosa*, *Diplopappus chrysophyllus*, *Escallonia*, *Philippiana*, *Raphiolepis ovata*, and many more choice things that are sought by choice planters.

To be wafted from a wilderness of trees into a garden of dahlias is like pantomime business where the pine wood suddenly changes into a fairy grot, and venerable Merlin becomes a harlequin and forgets his wisdom in his colours. Nor is it in vain that we are wafted, for there are some new things here. "New things," you repeat with half a sigh, as though we would bore you with new things of less than superlative merit. Of new varieties as the world understands the term there are many more, especially of singles and pompons, that will claim attention in due time. In the way of *Victoria* there are some delightful novelties, and of advances on such as *Duchess of Fife*, *Miss Jefferies*, and *H. M. Stanley*, which are strong types, and the red ring of Miss Jefferies is apparent in several good seedlings. But it is proper to note that two distinct forms of garden dahlias are in process of preparation here. One lot is to be *single cactus dahlias*, which may seem to some superflous; but between seeming and seeing there is a difference. Take a flower of *Juarezii*, and scoop out the centre, and insert there the most brilliant orange yellow disk you can find, and you have a new thing and one that society will jump at. The cultivators who are "precise and proper" will put up their backs at such things, but they will have to swallow them, and we will take the liberty of whispering that new forms, new styles, "novelties" in the proper sense of the word, are always wanted to keep the sacred flame of floriculture burning. [N.B.—Novelty is the fuel of fashion. Write it down as a business code, and take warning that a good novelty is better than a bad one.] Now for something of equal import. What would you say to a race of single dahlias as well adapted for bedding as the zonal pelargoniums? you shall have them if you will but wait. A gentleman whose name is in itself a sufficient guarantee of the possibility, and will be made public in due time, has established a race of dwarf singles that Messrs. Cheal will send forth to an appreciative public as *Tom Thumb Dahlias*. Would you believe it: three experts who in some technical matters would claim to lead the way in floral wisdom, stood in a brown study for several seconds and could only find in their profound noddles such distinctive designations as "miniature" and "nine-inch" dahlias; and they thought they were deserving of the pillory for not making a better job of it. But one of them was visited by Tom Thumb in a dream, and he was awakened by the sound of his own voice saying to the aforesaid Tom "These nine-inch dahlias shall be dedicated to you." The same dreamer has saved millions of oysters from a gastric grave, for he dreamt that an oyster opened its shell and fixed an eagle eye upon him and said, "you are about to eat me alive, how brutal, it is atheism." The dreamer published the dream, and all who have heard the story have from that time refrained from eating oysters. It is indeed a brutal business, when you have no opportunity for the brutality because then reason acts free from all temptation.

In the fruit quarters the enormous plantations, which here they call "drifts," comprise all the useful varieties in all the classes, and many that are not so well known as we hope they will be. Amongst the apples are *Bietingheimer Red*, a very distinct and useful fruit, that exhibitors will find useful; it is a culinary fruit, conical, and good to Christmas. *Vicar of Beighton* we had the pleasure to introduce to our readers as a capital culinary fruit of large size, the tree enormously fruitful. *Alfriston* belongs to Sussex, and is just right here; it is a tremendous cropper where it thrives. *Tyler's Kernel* is but little known, but is one of the apples of the future, and dates its days of fame from the first Chiswick Congress. It is a grand fruit, of first quality for the kitchen, and has a sprightly acidity that recommends it to many as a table fruit. It is good until January. The pretty *Wealthy*, that was seen in many collections in the Guildhall Show, is a good table and kitchen apple with tender flesh. Good until Christmas. The true *Pomeroy* is here; a conical fruit, highly coloured, and excellent for table. Good until April. *Newtown Pippin* we find here in its integrity, and it recalled to us experiences with it in the orchard house, where with a little care it ripens well, but is really not much of a thing when you have caught it. *Gravenstein* bears well, and ripens perfectly; a delicious apple. *Forge* is an important Sussex apple, and is one of the useful kinds that suit both kitchen and table. It is of medium size, round, well coloured orange and red. Good to January. The trees are heavily laden with its useful fruit. *Winter Pearmain* or *Duck's Bill* is a beautiful fruit of medium size, somewhat peculiar to Sussex, but good everywhere, and one adapted for universal planting.

The crop of pears in this nursery is the best we have seen this season. There is much fruit in the open, and a collection of pears trained cordon fashion in a span-roofed house presents a fine crop of large fruit richly coloured. The early-fruiting, constant bearing, and altogether beautiful and excellent *Louise Bonne of Jersey* is one of the most fruitful pears here both on pyramid trees, walls, and cool orchard house. The fruit hangs in clusters; in the open the colour is yellowish with bronzy cheek, under glass golden with but little bronze, but the flavour and melting quality nearly the same all through when the same degree of ripeness is reached. *Beurré Clairgeau* bears a great crop, and it is worthy of note that while connoisseurs of pears value it at a low figure, the great public esteem it highly, buy it freely, and ask for more. The same may be said of its offspring, *Fertility*, which is a capital market fruit, and as the crop is heavy and handsome it takes a good place as a profitable pear. *Beurré Diel* is fruiting freely here, and it brings us into the region of the finest dessert pears, where also we find fruit on *Beurré d'Amanlis*, *Beurré Superfin*, *Brockworth Park*, *Doyenné Boussoch*, *Doyenné du Comice*, *Pitmaston Duchess*, *Marie Louise*, *Passe Colmar*, *Nouveau Poiteau*, *Josephine de Malines*, *Glou Morceau*, *Durondeau*, and many more, all of the first order for beauty and quality.

Amateurs given to fanciful operations, and amateurs who are strictly utilitarian in their ideas, may equally find lessons here in the bye-paths of fruit culture. Amongst the fanciful things are arbours and covered walks formed of fruit trees, mostly cordons carried over rods and trained to proper lines, and being clothed with spurs produce fruit freely. A particularly interesting form of fruit garden, of which examples may be seen, is the wired garden, adopted not only for cherries, but for apples and pears. In one of those we saw apple trees in the form of upright single rod cordons, planted in double rows with three feet spaces between, and entirely roofed in with bird-proof wire. Here were many of the handsomest and most prized of apples producing beautiful samples, safe from birds, and thence from wasps and other small enemies. Should the reader ask how bird-proof wire can give protection against wasps, the reply will be that the wasps do not begin the work of destruction. A bird proclaims war by pecking a piece out of a fruit, which, of course, is one of the tenderest and sweetest, and usually one of the most handsome. The wound attracts the wasps and many kinds of flies, and these prey on the fruit and soon finish it. But as the birds begin we protect against them, and "thence" the protection suffices against the wasps and their small associates. These wired gardens and the cool—that is, entirely unheated—orchard houses have special claims on all who grow fruit for exhibition and the home supply. The market growers do much avail themselves of such resources and find them pay, but, generally speaking, they do not need to be urged to protect themselves. On the other hand, many private growers endure loss and vexation needlessly because a very small outlay on protective measures would turn the scale wholly in their favour.

SURPLUS BEDDING PLANTS.—The surplus bedding plants at Battersea, Victoria, Finsbury, Kennington, and Southwark Parks, Victoria Embankment gardens, and Myatt's Fields are ready for distribution as usual. Early application should be made for the same to the superintendent at each place.

THE DOUBLE COCOA-NUT, *Lodoicea sechellarum*, is one of the most interesting plants known to us, and the germination of the nuts is always watched with curiosity, although for the gratification of the observer the curiosity must be sustained by a large measure of patience. At Kew some of the nuts have been slowly germinating for over two years past, and the progress made amounts at present to a seed leaf each with accompanying roots. The seed leaf is two and a-half feet long by two feet broad, folded and divided into segments. To begin life with such a leaf is perfectly proper for a palm that attains a height of a hundred feet, and that does not usually produce flowers until it is over thirty years of age. The male catkins are three feet in length, and each cluster of nuts averages about forty pounds. The fruits are ten years ripening, and it is reasonable therefore they should require two years to germinate. This magnificent palm is in process of extinction as the result of reckless destruction of the tree to obtain the nuts.

CHRYSANTHEMUMS FOR EVERYBODY.

In selecting and cultivating chrysanthemums,for home adornment it is necessary to proceed on lines widely divergent from those which must be followed when the blooms are specially required for competitive purposes. In the one case the cultivator must aim at the production of an abundant supply of attractively coloured flowers, and in the other he must concentrate his efforts on the development of the individual blooms. The importance of this distinction is in many instances lost sight of or not fully appreciated. In consequence it is a frequent occurrence to meet with growers who have no intention of contributing a single bloom to a competitive gathering adopting the practice which obtains amongst those who aspire to honours on the exhibition stage, thereby devoting more time to their plants than is absolutely necessary, and perhaps failing to obtain results in every way satisfactory. The exhibition side of the question, as becomes its importance, receives a full share of attention, and I now purpose briefly referring to the culture of chrysanthemums for home adornment. In doing so I shall point out a few of the varieties specially adapted to the requirements of all, and describe, in as few words as possible, a course of culture by which excellent displays may be had with but little trouble.

There is perhaps plenty of room for difference of opinion as to whether chrysanthemums are required during the summer, but no question can well arise as to their usefulness in the flower garden during September and October or as to their value in the conservatory throughout the autumn. I will limit my observations to varieties that under ordinary cultivation can be had in bloom between the end of August and the beginning of December. The early flowering varieties in the open have bloomed most satisfactorily, and the great masses of white, purple, crimson, and golden flowers produced a striking effect in the mixed borders throughout September and are still immensely attractive. We have of late had some excellent additions made to the list of early flowering Japanese varieties, but the pompons afford such a wide range of colour that for the present we must chiefly rely upon them for the flower garden. The early pompons not only give a great diversity of colour, but they differ materially in quality, and the greatest care is therefore necessary in making a selection. There are two white pompons of special excellence and these are Mdlle. Jolivart and Mrs. Cullingford. The first-named is so early in flowering that it should be stopped once, the end of April being a good time for the stopping, to ensure its blooming during September. Mrs. Cullingford on the other hand ought not to be stopped. Golden Shah and Flora are two of the best varieties, having yellow flowers, and the last named of the two should be stopped as in the case of Mdlle. Jolivart if wanted in bloom in September. L'Ami Conderchet and Mdlle. Leonie Lassali are two distinct varieties, having large well-formed creamy white flowers. The colour is not particularly attractive, and it is not surprising they should not have become popular with the general body of cultivators, although they are free in blooming and the flowers are of a high quality. Of the varieties having flowers of various shades of red and orange, the best are Pierre Verfiel, F. Marronet, Alice Butcher, F. Pele, and Piercy's Seedling. From those with blush and rose coloured flowers Blushing Bride and Miss Davis can be selected with advantage. The best of the Japanese varieties are Madame C. Desgrange, Miss Hawkins, and Mrs. J. R. Pitcher. The last named is not equal to Madame Desgrange, but it is rather earlier and is therefore useful for prolonging the season.

In the cultivation of the early blooming chrysanthemums in the open borders it is necessary to provide them with a moderately rich and deeply stirred soil, and to plant them where they will be beyond the influence of both roots and branches of large trees. They are all more or less susceptible to injury from frost during the winter, and there is a risk of their being killed when left in the border throughout the winter. The best course is to lift two or three clumps of each variety in the autumn or early in the winter, and plant them in an unheated frame. Here they should remain during the winter, with the lights withdrawn in mild weather and efficient protection during periods of frost. Propagation should commence early in February, and this may be done by striking cuttings or by division of the old stools. The increase of the stock by means of cuttings is decidedly the best, although good results may be obtained by division, The cuttings should be inserted rather close together in five-inch pots filled with a light sandy mixture, and be placed where they will have the assistance of a little artificial heat. On their being struck they must be put singly into large sixties, and in due course be hardened off preparatory to their being planted out. In some gardens it is the practice to divide the clumps in March or April, and to at once plant in the beds and borders. There is considerable risk in doing this because of the great partiality of the slugs for the tender tops at that season of the year. It is very much better, on dividing the clumps, to pot up the young plants, and keep them in the pots until they are well rooted and commencing to grow freely. This will involve but little additional labour, and there will be no risk of any losses. They may be planted out in April, advantage being taken of suitable weather for putting them out. It may be added that where an abundant supply of cut flowers is required it is a good practice to bed out a dozen plants or so of Madame C. Desgrange and Mrs. Hawkins in an open position in the kitchen garden, and in September to lift them and replant in a pit or house. Here they will bloom freely, and render substantial service.

For flowering under glass during September the most useful varieties are Madame C. Desgrange, Mrs. Burrell, Mrs. Hawkins, Madame Foucher de Cariel, Grace Attick, Sam Henshaw, and Madame Leon Collin, all of which are highly attractive. They may be grown wholly in pots or be grown during the summer in the kitchen garden or reserve ground, and be lifted early in September. When planted out they require much less attention as compared with those in pots, but the latter usually present a more attractive appearance in consequence of the foliage being in better condition, the difference being sufficient to repay the additional labour.

In the selection of varieties for flowering from the latter part of October till the beginning of December, the Japanese varieties must of necessity have a prominent position. The following Japs are of special excellence for house adornment, namely: O. J. Quintus, a profuse flowering variety, the blooms of medium size, and a pleasing lavender-tinted rose; William Holmes and Roi des Precoces, two comparatively early varieties, having medium-sized flowers of a bright crimson hue; Avalanche, Alba Fimbriata, Elaine, Mdlle. Lacroix, and Mrs. Cannell, five white varieties, differing in their character and season of flowering; Beauté de Toulouse, Cérès, Fernand Feral, La Triomphante, Madame C. Audiguier, M. Burnet, Madame J. Laing, Comtesse de Beauregard, Bouquet Fait, and Rosea superba, ten good varieties with flowers varying in colour from pale rose to deep purple; Sunflower, Peter the Great, Soleil Levant, Mr. Garnar, Mr. H. Cannell, five good yellow varieties; and Duchess of Albany, L'Incomparable, Martha Harding, M. John Laing, M. Henri Jacotot, Roi des Japonais, Sarah Owen, Triomphe du Nord, William Robinson, Madame Bertier Rendatler, Triomphe de la Rue des Chalets, Criterion, Val d'Andorre, and Comte de Germiny, which have flowers ranging from light orange-buff to deep crimson. A much smaller number of incurved varieties will suffice, and the following comprise the best for general culture: Angelina, Alfred Salter, Empress of India, Queen of England, Lord Alcester, Miss M. Haggas, Mr. Bunn, Pink Perfection, Mrs. Shipman, Venus, Refulgens, Mrs. Heale, Princess of Wales, Miss V. Tomlin, Prince Alfred, and Mrs. George Rundle. The best of the reflexed varieties are Cullingfordi, Dr. Sharpe, White Christine, Elsie and Chevalier Domage. The pompons that can be specially recommended are Adele Prisette, Cedo Nulli in variety, Golden Mdlle. Marthe, Mdlle. Marthe, Marabout, Precocite (Delaux), Mdlle. Elise Dordan, President, Prince Victor, Souvenir de Jersey, St. Michael, Rubra Perfecta, and Orangère.

In the preparation of a stock of chrysanthemums for general decorations under glass, it will suffice to commence the work of propagation in February, but the cuttings may be struck in November or December if more convenient. They may be inserted singly in small pots, or several together in pots five or six inches in diameter. In the case of those struck in February and March it will be an advantage to assist them with a little bottom heat, such as would be afforded by a bed of leaves or spent hops. They must be potted off singly as soon as struck, and be subsequently shifted on as becomes necessary. It is a good rule to allow the plants to remain in the pots until they have well filled them with roots without their having become pot-bound, and then to shift into pots two sizes larger. Nine-inch pots are the most suitable to use in giving the large flowered varieties their final shift, and eight-inch pots the best for the pompons. A rich compost must be used at each shift, and the pots be efficiently drained. The water supply will require careful attention, and after they have filled the pots in which they are to bloom with roots, occasional supplies of liquid manure will be highly beneficial. An open position should be selected for their summer quarters, and to reduce the labour of watering ashes or some other loose material may be packed about the pots to about two-thirds of their depth. Very little training will be required, and it will suffice to stop the plants once early in the spring, and then take up from two to four shoots. But little, if any, disbudding will be necessary, and all that should be done in any case is to remove a few buds where they are in such large clusters as to render it practically impossible for the flowers to become moderately developed.

G. G.

CHEAP HYACINTHS AND TULIPS.

By W. Bradbury.

The necessity for the exercise of considerable care in making selections of hyacinths and tulips, whether for the garden, conservatory, or exhibition stage, is sufficiently indicated by the fact that the value of varieties is determined more by the plentifulness or otherwise of the bulbs, than by their intrinsic merits. It may be that in some instances the beauty and high quality of the flowers may so stimulate the demand, as to keep down the stock of bulbs, and thereby help to keep up the prices. But in taking a broad view of the case it may be said that the high-priced varieties are not invariably the best in the several sections, and therefore, in making selections for exhibition, the price must not be regarded as an infallible guide. In making selections for the garden and general decorations, it must be borne in mind that an attractive display is of more importance than individual excellence, and that as far as possible, the cheapest varieties should be taken advantage of. No one could more highly appreciate high quality in hyacinths and tulips, as in other flowers, than myself, but when the sum available for their purchase is limited, it is decidedly preferable to purchase a quantity of bulbs of varieties that are fairly good, than to have a few bulbs of those high in price, even if much finer.

To obtain a high position in a close competition, it is necessary to have thoroughly good varieties and bulbs of the finest quality, for if either the kinds or the bulbs are inferior, the highest cultural skill will avail but little. When it is proposed to grow either hyacinths or tulips for exhibition, it is advisable to dispatch the order somewhat earlier than is necessary, when they are required for home decoration, to make sure of obtaining the selected varieties, and bulbs that are solid and well matured. The hyacinths that can be specially recommended for exhibition are as follows: *Single red, rose, and pink*—Cavaignac, Fabiola, Garibaldi, Gigantea, Macaulay, Mrs. Beecher Stowe, Queen of Hyacinths, Solfaterre, Von Schiller, and Vuurbaak. *Single white and blush*—Alba maxima, Grandeur à Merveille, La

Grandesse, Madame Van der Hoop, and Queen of the Netherlands. *Single blue*—Charles Dickens, Czar Peter, General Havelock, Grand Maitre, King of the Blues, Mimosa, Princess Mary of Cambridge, and Sir John Lawrence. *Single yellow*—Ida and Obelisk. *Single purple*—Haydn. *Double blue*—Blocksberg and Laurens Koster. The hyacinths of the highest value for the garden, conservatory, window boxes, and general decorations include the following: *Single red, rose, and pink*—Fabiola, General Pelissier, Homerus, L'Ami du Cœur, Macaulay, Madame Hodgson, Princess Clotbilde, Robert Steiger, Sultan's Favourite, and Von Schiller *Single white and blush*—Alba superbissima, Baroness Van Tuyll, Grande Vedette, Grand Vainqueur, Grandeur à Merveille, Voltaire. *Single blue*—Argus, Baron Van Tuyll, Charles Dickens, Czar Peter, Garrick, Couronne de Celle, Grand Lilas, Leonidas, King of the Blues, Lord Melville, Marie, Regulus. *Single yellow*—Duc de Malakoff (yellow varieties are not suitable for beds, borders, or window boxes). *Single purple*—Haydn, Sir E. Landseer. *Double red*—Lord Wellington, Prince of Orange, Regina Victoria. *Double white*—La Tour d'Auvergne. *Double blue*—Blocksberg, Garrick, and Van Speyk.

Single tulips should alone be grown for exhibition purposes, excepting, of course, when classes are specially provided for doubles. The best of the single varieties for competitive purposes are: Bride of Haarlem, Chrysolora, Fabiola, Joost Van Vondel, Keizerskoon, Ophir d'Or (the finest of the yellow tulips), Proserpine, Vermilion Brilliant, Wouvermans, White Joost Van Vondel, and Yellow Pottebakker. The finest of the double tulips for exhibition are: Imperator Rubrorum, La Candeur, Prince of Wales, Raphael, Tournesol, and Yellow Tournesol. All the foregoing varieties are admirably adapted for the conservatory and indoor decorations. Generally under glass: Belle Alliance, Canary Bird, Cottage Maid, Couronne Pourpre, Duc Van Tuyll (in variety), Globe de Rigaud, Moliere, Rosa Mundi, and Thomas Moore. Varieties specially adapted for bedding comprise: Artus, Bacchus, Contour Ponceau, Cameron King, Duchesse de Parma, Keizerskroon, La Reine, Vermilion Brilliant, Wouvermans, Thomas Moore, and Yellow Prince of the singles. The best doubles for bedding are Duke of York, Gloria Solis, La Candeur, Rex Rubrorum, Tournesol, and Yellow Tournesol.

With reference to the cultural details, it does not appear necessary to say much. Whether for the conservatory or the exhibition stage, the hyacinths should be grown in six-inch pots, one bulb in each. The pots must be clean, the drainage efficient, and the compost of the most substantial character. The best compost that could well be prepared is one consisting of four parts turfy loam, two parts old hotbed manure, and one part of sharp silver-sand. It is advisable to use the compost in a moderately rough state, and to pot rather firm. It is the practice with some growers to fill the pots rather firmly with the compost, and then to press the bulbs down into the soil; but there is a grave objection to it. In pressing the bulb down the soil immediately underneath it is made so hard that during the production of the root the bulbs are lifted somewhat out of the soil. The better course is to fill the pots to within about two inches of the rim, then put the bulb in position and pack the soil round it. When this is done there is no risk of the bulb being loosened at any period of the growth. In any case the bulbs must be potted just deep enough for the neck to be on a level with the surface, or half-an-inch or so above it.

The customary practice must be adopted of standing the pots on a bed of coal-ashes or a hard surface in the open, and then covering them to a depth of eight or nine inches with some loose material such as cocoanut-fibre refuse or newly-gathered leaves. They are to remain in the plunge bed until they are well rooted and commencing to grow freely, when they must be removed to a pit frame or other glass structure. It is necessary to examine them at frequent intervals after the roots begin to run in the soil, for if they remain covered up until they have made considerable progress the leaves will become more or less drawn and the plants fail to present a satisfactory appearance on their attaining their full development. Special attention must be paid to this matter in the case of those intended for exhibition, as stout, well-proportioned foliage is an important factor in determining the relative merits of competing collections. When indoors the plants should have a position near the glass and enjoy a free circulation until draughted to the forcing pit. Those grown for competitive purposes will require but little fire heat, and if it is found necessary to remove them to a structure in which a brisk temperature is maintained they must be placed within a short distance of the glass. Those required for window boxes should be grown in an unheated pit until coming into bloom, when they can be turned out of the pots and arranged in the boxes.

The cultural details of the tulips do not differ materially from those that have to be observed in the case of the hyacinths. The chief point of difference is the number of bulbs in each pot. The general rule is to use six-inch pots for tulips, and to put three bulbs in each. In growing Duc Van Thols and others for the supply of cut flowers, shallow boxes of a convenient size may be used, and from two dozen to thirty bulbs put in each box.

In the flower garden rather close planting is necessary to ensure a good effect, and from eight to ten inches may be mentioned as a good distance at which to put the bulbs of both hyacinths and tulips apart. The planting should be done as early in the autumn as convenient, and the bulbs be buried to a depth of three or four inches.

DEADLY NIGHTSHADE.—It is reported from Vienna that at Pressburgh, a family consisting of father, mother, and six children died, after eating the fruit of the deadly nightshade, in ignorance of its poisonous character.

CAPE COWSLIPS.

THE lachenalias familiarly known as Cape Cowslips are so useful for the decoration of both the conservatory and drawing-room early in the spring that it is satisfactory to know their numbers have been increased and their cultivation materially extended. It is not so many years since there were not more than three or four kinds available, but now the number has been increased to fourteen or fifteen. Of these eight or ten are sufficiently distinct and beautiful to justify their being grown by the amateur with a small greenhouse as well as by the gardener with plenty of space under glass at command. Their cultural requirements are not less simple than their flowers are beautiful, and any one who has had a little experience in growing bulbous plants may take them in hand with the assurance of obtaining satisfactory results.

One of the chief points in the cultivation of the Cape Cowslips is to repot the bulbs before new growth has commenced, or as soon afterwards as possible. The middle of August is perhaps the most suitable time for potting them up, but it occasionally happens that a press of other work prevents one giving them attention until September is considerably advanced. Repotted so late as nearly the end of the month last named, they invariably make a vigorous growth and bloom as well as could be desired, but it is necessary to carefully avoid any injury to the young roots. Late potting is not attended with so much risk in the case of purchased bulbs as those grown at home, because when shaken out of the soil and placed in the bulb store they do not show renewed activity so quickly as when they remain in the pots in which they have been grown. There are several ways of growing the lachenalias, and of these two are so objectionable that they cannot be too strongly condemned. One is growing them in suspended baskets, and the other as pyramids. We hear much about the elegant appearance of the Cape Cowslips when occupying baskets suspended from the roof, and of their effectiveness when grown in pyramidal form, but under both conditions they appear so unnatural that I am surprised that either system of culture should have been tolerated. The lachenalias are naturally more or less erect in growth, and to have them with their foliage and flower spikes pushing through the bottom and sides of a wire basket is to convey as false an impression of their true character as could be well conceived. In the production of pyramidal specimens several pans of different sizes are taken, and are then placed in each other until the desired height is obtained. The largest of the pans is stood upon the potting bench, a layer of crocks is then spread over the bottom. The next smallest pair is stood upon the crocks, and the space between the two pairs filled with soil. The second pair has in like manner a layer of crocks spread ever the bottom, and a smaller pan placed in it. The space between the two is filled with soil, and the process is repeated until a pyramid of sufficient height has been formed, the topmost pair being filled with soil. Bulbs are then planted about two inches apart in the several spaces, and in the top pan they are arranged about three inches apart each way. Pyramids are less objectionable than the baskets, but they are decidedly ugly, and very awkward to move about.

The whole of our stock is grown in five, six, and eight inch pots according to the purpose for which they are required, but the middle size is the most largely used. The details are precisely the same for the three sizes, and as a matter of course the pots used are clean and well drained. A substantial soil is employed, and this is prepared by the admixture of loam, well rotted manure, leaf-mould, and coarse sand, the proportions being one part each of the manure, leaf-mould, and sand to every six parts of the loam. The soil is used in a rather lumpy state, and made moderately firm. The number of bulbs in the several pots will depend upon their size, and it is a good rule to put them two inches apart round the sides, and about two and a-half inches apart each way in the intervening spaces. The bulbs are put just deep enough for the neck to be just visible above the surface. They may be wholly buried without any apprehensions as to the results, and it will be better to have them entirely below the surface than for any considerable portion of the bulbs to be exposed. We place the pots in a sheltered position out of doors, and heap six or eight inches of leaves or cocoanut-fibre refuse over them. Here they remain until they commence to make new growth, when they are taken to a small plant house from which the frost is just excluded. A light position is selected for them, and they are supplied rather liberally with water. Under these conditions they come along slowly, with short spikes well able to bear themselves erect, and stout, finely-marked foliage. If it is desired to force a portion of the stock the plants should be placed at the cool end of the forcing pit or house, and upon a shelf near the glass. When coming into bloom the water supply must be considerably increased, and amateurs who are much from home should stand the pots in saucers filled with water.

The kinds most suitable for growing in quantities for general decorative purposes include Pendula, a strong grower, with bright red flowers tipped green and yellow; Quadricolor, a handsome form, the flowers red and yellow, and the leaves richly spotted; Nelsoni, a fine hybrid, producing long spikes of large, rich golden yellow flowers; Rubida, an attractive species with deep red flowers; Tigrina Warei, a dwarf-growing and late-blooming form, the flowers purple and orange yellow. Aurea and Luteola are two good forms with yellow flowers, and may be grown with advantage where there is plenty of space. The blue-flowered lachenalias are by no means wanting in beauty, but they are less effective than those having red and yellow flowers. The two best of these are Cærulescens and Pallida racemosa, which have pale blue and purplish-blue flowers respectively. J. W.

Notes of Observation.

CLARKE'S No. 1 POTATO.

For a second early potato suitable for field or garden culture we have found nothing to equal this. It is a pink skinned variety after the shape of American Rose, but of much better quality. It has yielded here an abundant crop and quite free from any traces of disease, and is in every way a desirable variety. C. Warden.

BOUVARDIAS.

In the article on these plants, page 598, "G. H.," finds growing the plants in pots the most serviceable way. I venture to say if he will give the following plan a trial he will not have much cause for regret:—We have a large brick pit facing south, a part of it is used for growing early potatos. When these come out, say in April, to the soil used for the potatos, which contains a free mixture of leaf-soil, we add a small portion of peat and some coarse silver sand. In this mixture we plant out a stock of bouvardias in May, a part of which are old plants, say two or three years old, the remainder being struck from cuttings the previous February. I find that those plants which have not had their shoots pinched more than twice from the cutting produce the best flowers, the shoots grow stronger, and consequently the trusses of bloom are better. Side branches too are freely produced, which send out good flower heads after the central one on the leading shoot has been cut. In the case of the older plants employed, they are cut hard back early in January to about two eyes, and are allowed to break in a gentle heat. From these growths cuttings are obtained to make the young stock annually. The new growth on the old plants receives two pinchings, and is gradually hardened off by the time the pit is ready. For a short time after planting, the frame is kept rather close until the roots are running freely into the new soil. Air is then freely given, and after a time the lights are taken off altogether.

The plants are well syringed every evening during the summer, which keeps down black fly, this insect being partial to bouvardias. Abundance of water is given to the roots, and when they are thoroughly established in the soil an occasional dose of liquid manure improves the growth, in the strength of the flower shoots and the colour of the leaves also. The flowers commence to open early in August, and continue without intermission for three months, and would continue longer if the pits were heated. In our case they are not, therefore the lights have to be protected from frost with mats. The flowers then are apt to be discoloured by damp. We replace the lights on the pit for the night towards the end of September, removing them on bright days. If "G. H." has the convenience here named, I would strongly advise him to give this plan a trial, and I think he will have little cause to regret as he is sure to reap a good crop of flowers, and with a minimum of labour expended. It is also a way of utilising the pits or frames during the the summer, when these structures are not always occupied. *Humboldti corymbifera*, I find the most useful of all. *Jasminiflora* and *Alfred Neuner*, too, are good, and so are *Vreelandi*, white, and *Elegans*, scarlet. E. M.

CHECKMATING THE WINTER MOTH.

On January 15, 1889, I showed before the Scientific Committee of the Royal Horticultural Society a band of green scrim smeared with cart-grease, in which were imbedded numbers of wingless females and some males of the Winter Moth that had been caught in the autumn before while crawling up our fruit trees. This season our bands, instead of being green scrim—which has the defect that, even when used threefold, some of the grease gets through to the tree—are a sort of brown canvas, made by the Willesden Paper Company. The material is not expensive, as the price is 1s. 6d. a yard of thirty-five inches wide; in our bill it is called "D D extra brown." One thickness of this seems to answer every purpose, and to hold the cart-grease well. A few of our trees which last year escaped treatment showed, in the most marked way, the advantage of the protecting bands; the width we use is four inches, tied on by thin tarred twine. The trees should have the bands on before the end of this month. George F. Wilson.

Heatherbank, Weybridge Heath.

HOW LONG WILL THE PÆONIES CONTINUE GROWING?

My herbaceous pæonies are still too full of life to be cut down with safety, and they are now so handsome in their deep bronzy colour that I should lose a feature were I to cut them down. Some people cut them down in July, and they do not see many flowers the next summer. Mine give me twenty to thirty flowers each on old established plants, and for long after flowering their rich bronzy stems and leaves are highly satisfying amongst rich greenery. But I never saw them defy the knife as they do now. J. E. Saunders.

POTATO CROP IN COUNTY DUBLIN.

With reference to the potato crop in Ireland, I would like to state that in this neighbourhood early sorts escaped fairly well, with a single tuber touched here and there, particularly amongst early kidneys. The second earlies, such as Red Bog Kemps, there were also a few affected. Early Rose, Puritan, and Beauty of Hebron were not touched, and there are splendid crops of each of these sorts Of later sorts, the Champion has suffered considerably, though the loss is not so great as first appeared, for on carefully examining a large field now being lifted, I could find but few full-grown tubers that were unsound, the disease having affected the small and immature potatos only. A new variety, called The General, a good cropping late potato, has also quite escaped the blight. The bright weather of September quite stopped any disease in the ground, and has matured the crop so well that it is now being saved in splendid condition, so that there are no apprehensions as to the supply being otherwise than plentiful all winter in this district. James Doran.

CACTUS DAHLIAS.

In addition to the admirable list given on page 605 by "S. S." of this—the most useful section of dahlias for garden decoration and for supplying cut flowers for vases, I should like to add four more, which certainly deserve a place in any garden.

The first is *Annie Harvey*: the growth is medium; the colour is the chief point in its favour; it is described as a rich crimson marone, but in my opinion there is a distinct dark velvet shade running over the whole flower which seems to heighten its attractiveness.

Lady M. Marsham, a flower of medium size, the points of the petals twisted, the colour a deep salmon, deepening towards the centre; this is a variety which lights up well by night.

General Gordon is of rather tall growth, the blooms perfectly shaped, and the colour very fine, a bright scarlet shaded orange.

Lady Emily Dyke.—This is perhaps the most free-flowering of the lot, being rather dwarf in growth than otherwise. The flowers are neatly formed, although in some cases a rather large yellow-eye is conspicuous. The colour is the great recommendation of this kind—a soft yellow. We grow cactus dahlias at the back of a border, the shoots being tied back to an evergreen hedge in a loose manner, and being mixed with single varieties a capital display is made, contrasting well with the dwarfer flowering plants in the front. E. M.

TEA SCENTED ROSES IN THE AUTUMN.

Given a fairly good soil, there is not very much difference in the behaviour of the different sorts of tea roses in the open air and under glass, as is generally supposed. There is a difference, of course, in some of them; still it is not so great as to make it a reason to exclude any where there is room for them. During the past six weeks some not very large plants that I possess have produced a goodly number of flowers that have been very useful for button-holes and similar purposes. The most conspicuous has been Homere, the half-expanded flowers of which have been very pleasing, the outside petals being charmingly tinted with a lilac-pink colour. Amongst those of a brighter shade of rose colour, I may mention Mdlle. Mathilde Lanaertz and Aline Sisley. Both these are very free in flowering, and their greater depth of colour makes them very useful. Madame Bravy, Madame Falcot, and Saffrano have been well furnished with flowers. Grace Darling, Innocente Pirola, and Jean Pernet have also been very satisfactory; so much so, in fact, that I advise that more of them be grown wherever autumnal roses are appreciated. W. B.

SOPHORA JAPONICA.

The deciduous flowering tree commonly-known as the Chinese or Japanese pagoda tree, is worthy of a place in the shrubbery or on the grass if it is only for the sake of its foliage and graceful habit of growth. The weeping variety with a tall stem should of course be planted where no interference with its long drooping branches will be felt by other growing trees. Therefore on the grass only should this sort be planted. Small plants of the former are exceedingly handsome for the fronts of shrubbery borders where they have space to grow outwards, thus breaking what is sometimes a stiff formal line as in the case of dwarf subjects being only planted at the front of any border devoted to shubs only. When enjoying a suitable position this tree flowers freely and beautifully in the autumn. E. M.

BLENHEIM PIPPIN.

The above variety has carried a better crop with us this year than it has done for some years past. We frequently get a sprinkling of fruit, but this year our two trees (standards) may be said to have carried a full crop, and the fruit is of good size and clean, many of them exhibiting more russet on the skin than usual. C. W.

KING OF THE PIPPINS.

For abundant cropping during this year of comparative failure of the apple crop, the variety named above must carry the palm. It is with us generally a reliable kind, but we have not had such abundant crops of it as during the present year, and the fruit is large and well coloured for such a cold sunless season. As a market dessert apple the above variety deserves to rank high, and is generally appreciated. C. W.

EARLY CHRYSANTHEMUM, M. ERNEST BERGMAN.

This is a new variety of 1890, of which a bloom has been forwarded by Mr. John Fox, of Warwick Road, Banbury. It was in perfection October 6th, and is described as likely to be of special value to market growers. Mr. Fox reports that plants struck early in June have grown eighteen inches high, and are flowering freely in five and six-inch pots, and are well furnished with blooms up the stem. The flowers are of medium size, and may be described as a thready Jap, though the florets are a little wider than the thready section when strictly defined. It reminds us of Beauregard, but the colour is deeper, being a soft rosy lilac, shading to purplish carmine at the base of the florets. It is singularly pleasing, and promises well for extensive usefulness. H.

The Belladonna Lily, *Amaryllis Belladona*, has for some weeks past, been one of the special glories of the Royal Gardens at Kew. Amid the richness and variety of the grassy spaces and beautiful trees, many of which are now in fine autumnal colour, it has been delightful to encounter the fresh rosy flower-bed that skirts the southern wall of the orchid house, where this beauty is perfectly at home, and enjoys undisturbed possession to manage its affairs in its own way. Whatever is done in the way of lifting, replanting, and the like, results in the loss of one year's flowering, but when left alone aided by the warm sun all summer, and a little warmth from the house all winter, the bloom is profuse, and altogether delightful, as may be seen by all who will be at the trouble of finding them.

AN IMPROVED SPIRÆA JAPONICA.

The plant so well known as Spiræa japonica, the proper name of which is Astilbe barbata, does not need any general recommendation, for it is one of many good things that speak for themselves. Although hardy, and flowering freely in a warm situation in the open ground, it is not greatly valued as a garden plant. But for the greenhouse, and more especially for forcing, there is no greater favourite; its brilliant green and ample foliage, its feathery plumes of delicate white inflorescence, and its perfect accommodativeness to circumstances, both justify and account for its extensive popularity. It is at once one of the best of market plants, and one of the best for the amateur's frame or greenhouse, needing only a fair amount of light and a liberal supply of water after growth has fairly commenced, to ensure a free development of its exquisitely beautiful flowers.

The object of this note is to direct attention to the best variety, which is known as *Spiræa japonica compacta multiflora*. Its merit consists in a compact growth, a more free production of the feathery panicles, while these are of larger size than those of the common form that is generally in cultivation. We have met with this in Mr. Ware's Nursery, at Tottenham, and fully agree with him that for all choice purposes, and especially for exhibition, it is a great improvement on our good old friend.



AN IMPROVED SPIRÆA JAPONICA, *Compacta multiflora*.

AURICULAS.

When at the Royal Nursery, Slough, a few days ago, I could not help remarking on the fine appearance of the collection of auriculas, both show and alpine. True, the season has been eminently favourable to the well-being of auriculas—moist and cool for the greater part of the summer. Still, there was something else which had operated to present to view the Slough Collection in such fine condition — namely, early potting. It is quite true that there is no uniform time for repotting among growers, but of late years an earlier period of the year is selected for this operation than used to be the case. August has been recommended by many as the best month in which to repot, but some at least of our leading growers prefer to do this directly the plants have gone out of bloom. The advantages of doing it at that time appear to be great. As soon as they have established themselves in the new soil, they make a bold dash of growth, and put soon on a robust foliage. The plants make a steady and a greater progress until they reach the time of their midsummer rest. "The summer rest of the auricula at the end of June and in July is that of refreshment after energy and strain expended during the months of its marvellously active life from the earliest to the latest months of spring." The auricula has two seasons of activity, and two of rest. The latter periods are the depth of winter, and the height of summer. The periods of activity are very soon after the shortest, as also after the longest day. These are the two seasons of its most active growth, "rapidly changing its habit and size, though no phase of its existence equals in beauty, intensity and power, its spring life between the middle of January, and the middle of May." After flowering the plants, if they remain unpotted, do not appear to make much headway; but if repotted, they, invigorated from contact of their roots with the fresh, sweet, fertilizing soil, push on into a free growth. It is at this period especially the plants may be said to be storing up force for the blooming season the following spring. I find in my own experience that the plants which are not repotted until August are much more affected by the woolly aphis than those that have been repotted.

The Rev. F. D. Horner, our champion auricula grower, adopts early potting, and he states that he sees no cause to change the plan. I have touched on one or two at least of the advantages of early potting. But there are objections to it. One is that repotting in May encourages the production of autumn trusses. This characteristic is what the Rev. F. D. Horner terms a "primulaceous trick" of the auricula, but I have seen as many autumn trusses on plants potted late as on those potted early. I remember being at the Royal Nursery, Slough, a few years ago, early in September, and notwithstanding that the auriculas had not been repotted until August, a large number of them had produced autumn trusses of bloom. My plants, show, alpine, and double, have made a vigorous growth this season, but very few autumn trusses are putting in appearance. I have been giving the plants some weak soot water, and they thrive luxuriously upon it.

During September the plants moved, but in a kind of slow and measured advance; and they are helped by keeping all decayed leaves removed from them, and by occasional stirrings of the surface soil. Cleanliness at this season of the year is of the first importance, and an occasional fumigation will be found of the greatest advantage in keeping the green-fly under. When October is reached "the auricula begins to gather itself together, slackening its growth, and preparing its winter's dress. Towards the month's end the plants may be again taken to their winter and blooming quarters facing the south, and will require less water by degrees, but no sudden stoppage. They are using less, and the atmosphere begins to contain more. They must have plenty of air, especially in foggy weather."

The month of September is a good time for going through the plants, examining the drainage and guarding against any attacks of debility through sodden soil. If a plant evidences loss of vigour it should be at once examined, and means taken to arrest decay. There is no collection safe from casualties through rot. It seems sometimes to affect a strong plant suddenly, eating itself through the strong tap root, and lays low a plant of which the greatest anticipations had been

formed. It is a disease, if I may so term it, that is ineradicable, but danger from it can be minimised with proper care.

Year by year the alpine varieties appear of an increased size and power of floral expression. That they attract the public at auricula shows there can be no doubt. The alpines were in strong force, both at the Drill Hall at Westminster and at the Royal Aquarium. I made notes of the following as representative of the finest varieties staged: Gold centres—Garnet, W. H. Grenfell, Sunrise, John Bright, Hotspur, Miss Moore, and Mr. Gibson. Cream centres—T. E. Henwood, Mrs. Harry Turner, Chastity, George Wheelwright, Melanie, Miss Blackburn, Roland, Defiance, Dandy, H. M. Stanley. White centres—Florence, Edith, Surprise, Countess, Bella Wheelwright, Mary Frances, Tennyson, Prince of Wales, and Toujours Gaie. My fear is that but very few of these are in commerce. In the main they are seedlings raised at the Royal Nursery, Slough, and new varieties of auriculas increase but slowly.



MRS. MORGAN'S LADY'S SLIPPER, *Cypripedium Morganiæ*. Engraved from a drawing by Mr. John Weathers. (*See page* 642.)

A few good and useful varieties which can be had are Amelia Hardwidge, Albion (white centre), Beatrice (white centre), Charmer, Garnet, George Lightbody (white centre), Grandis, John Ball, Meteor, Mrs. Dodwell, Mrs. Ball, Pallas, very fine; Prima Donna, Sensation, Sunrise, and William Brockbank. R. Dean.

CYPRIPEDIUM MORGANIÆ.

About twenty-six years ago the seeds of the first artificial hybrid Cypripedium germinated in the nursery of Messrs. Veitch, under the care of Mr. Dominy, to whom the idea of creating a new class of plants by means of cross-fertilisation was communicated by Dr. Harris, of Exeter. Nearly everyone knows that the result of the first experiment was the handsome hybrid, which first produced its flowers in Messrs. Veitch's nursery in 1869, and which was named C. Harrisianum in commemoration of the doctor. The first attempt having proved so successful, others were naturally made with equally gratifying results in the same establishment, but it is questionable whether there was ever more excitement caused than when, in 1880, Seden succeeded in producing the marvellous C. Morganiæ by fertilising C. superbiens (C. Veitchianum) with the pollen of C. Stonei. With the appearance of C. Morganiæ the climax may be said to have been reached, for no finer hybrid has ever been raised either before or after it. In habit it is much stronger than either of its parents, having broad strap-shaped leaves a foot or more in length, of a deep green colour with dark narrow bars. The flowers, as may be seen from the accompanying illustration, which was made from a plant in the collection of Mr. R. H. Measures, The Woodlands, Streatham, are very large. The upper sepal is creamy white, with two or three deep purple veins at the sides, which are usually flushed with delicate rose. The lower sepal is somewhat smaller, but otherwise similar. The petals, fringed with grizzly hairs, resemble those of the rare and remarkable C. Stonei platytænium to a great extent; they are olive green at the base passing into a creamy yellowish white, and are thickly covered with irregularly-shaped blotches, which are dark purple at the base, becoming purplish-pink towards the tips, where also they are more numerous. The large-pointed Slipper is what may also be termed purplish-pink at the toe, gradually softening into rosy-brown under the edge of the mouth, and having purple spots on the creamy inflexed basal lobes.

A fine specimen—perhaps the finest yet seen—was recently blooming in the handsome collection of Baron Schröder. It measured five feet through and produced a great number of scapes, two of which were shown at the Royal Horticultural Society on August 26, bearing respectively four and five flowers each.

A variety known as "Superbum" appeared last year in Sir Trevor Lawrence's collection at Burford Lodge, and formed the subject of a plate for the "Reichenbachia." It is characterised by having flowers of a deeper colour, and also by the petals being somewhat shorter and broader than in the ordinary variety. As there are a few plants of this variety in existence, it is possible that after a time it will become as well known as the type by means of judicious propagation. J. W.

FRUIT CROPS AT BROOKSIDE, HEADINGTON, OXFORD.

Notes on The Gardens, Brookside, Headington Hill, have occasionally appeared in the Gardeners' Magazine. Having an extent of eight acres, these gardens cover probably the largest space in Oxfordshire devoted to fruit cultivation. The trees have been planted about six years and, in lieu of the pruning knife, have been subjected to lifting. Of course, lifting involves the loss, so to speak, of one season's crop, but judiciously carried out, pays well. Each year since the trees were planted crops have been gathered both of apples and pears; but the past and present season has proved what may be accomplished by labour and outlay. Go where you will, the old orchards are fast wearing out, as much or more from neglect than from age. Trees planted eighty years ago, and which bore heavy and regular crops, have been allowed to take their natural course, and have in too many cases become a prey to lichen and canker, and fine, sizeable fruit from such trees is the exception and not the rule. By way of contrast, a walk through such plots as Brookside, Headington, will show that from young trees heavy crops of large, handsome fruit can be obtained, thus giving an early return for the outlay bestowed.

Mr. Thos. Arnall, the proprietor of the gardens under consideration, takes a pardonable pride in escorting his friends amongst his lines of trees (about eighty trees of one kind in a row), and in pointing out the weighty crops which bear the branches over to the ground line, all of full size, very level, and well coloured. This season some of the young Blenheims are producing fruit, but his *heaviest crops* are Warner's King, Lane's Prince Albert, Lord Derby, Cox's Orange Pippin, Cox's Pomona, and Ecklinville Seedling; those producing satisfactory *fair crops* being Queen, Grenadier, Cornish Aromatic, King of the Pippins, Stirling Castle, Peasgood's Nonsuch, and Sandringham. Of pears, the bulk of the varieties, with the exception of Rivers's Fertility, were a short crop. Peaches on west walls are heavy crops, Sea Eagle, grand; one small tree produced 36 fruits averaging half-a-pound each. Plums and damsons, no crop.

Apples and pears that were lifted last autumn promise well for another season. Raspberries were abundant, and a very heavy crop of strawberries was gathered, but sadly suffered from the heavy rains. Currants of sorts were abundant and of fine quality. Trees all round free from caterpillar. The crops of Black Hamburgh, Black Alicante, Muscat of Alexandria, and Madresfield Court grapes were simply superb, the canes being very young. Mr. Arnall has the assistance of Mr. E. H. Caterer as his gardener in chief.

Oxford. W. G.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Greenhouse Plants in bloom comprise abutilons; Browallia cœrulea; camellias; chrysanthemums; Crinum crassifolium; Dyckia altissima; Erica Austiniana; fuchsias; Habranthus Bagnoldi; Nerine flexuosa; Plumbago capensis; Passiflora racemosa; P. Colvilli; Salvia Betheli; Tacsonia Van Volxemi.

THE HOUSE.

Window and balcony gardens will now need replenishing in some way or other. A very obvious refresher is the chrysanthemum, but not many manage this flower wisely for the purpose. The earliest-flowering pompons make useful plants and are very gay and cheerful, but the later exhibition kinds do not answer so well, because if a sharp frost occurs it spoils their beauty. Bright yellow and two or three shades of rose are the most useful colours. The whites do not answer well, because they so soon look dirty, and the purple and bronze tinted flowers only show well in the midst of green herbage in the garden. To succeed these have in readiness a lot of potted evergreens, comprising for the most part golden Euonymus, Retinosporas, Laurestinus, Arbor vitæ, Holly, and Osmanthus. The favourites for the purpose are Box and Aucuba, which are rather common, but the small-leaved green female Aucuba when well covered with berries is eminently suitable. So also are two or three berberries, such as Darwini and neat plants of aquifolia and aquifolia undulata. Tastes differ and purses vary in length, and the cheapest of the good things are aucubas, rhododendrons, green and golden euonymus, and box. If reasonably cared for these will all be suitable to plant out in the garden when they have done duty in the window boxes, or they may be kept in their pots, and if regularly watered will be ready for service next winter, and perhaps for two or three winters to follow. It is a good plan to have a series of smallish boxes made to drop into the ornamental receptacles, as these can be planted with bulbs, &c., and be brought forward when wanted to produce a new effect.

CONSERVATORY AND GREENHOUSE.

Greenhouse Plants must enjoy liberal ventilation. On bright days open all the ventilators, to cause a free circulation of air amongst the plants. Avoid using fire heat as much as possible consistent with the safety of the plants, and give very little water to those that have finished their growth, or which it is desirable to throw into a state of rest. Plants in pits will endure short periods of frost better if kept well aired and moderately dry. In case of a severe frost, now to be looked for, light a brisk fire early in the day; give air while the sun shines, shut up early, and trust to covering up where it can be done rather than keep the fire burning all night.

Primulas and Cyclamens to be placed in the warmest part of the house, and have every encouragement to push forward for bloom. Keep these near the glass where there is no drip.

Plants in Frames will soon be infected with mildew, if kept close or damp. Though nothing should go dust dry, it will be best always to defer watering till the weather is clear and bright, and then water well the first thing in the morning, that the pots and plunge material may be somewhat dry before night; one good watering will go a long distance now.

STOVE AND ORCHID HOUSE.

Orchid House.—There are comparatively few orchids in bloom now, and those few must be made the most of. Many subjects, however, require to be started into growth, and the necessary repotting and pruning must be attended to. Amongst those now flowering are Odontoglossum grande, Phajus grandiflorus, Dendrobium chrysanthum, Cypripedium purpuratum, and these must have sufficient heat and moisture. Orchids approaching a dormant state should be kept comparatively cool and dry, but due caution must be exercised to avoid all extremes.

Stove.—Solar light is now scarce, and the careful cultivator will catch all he can. Clean glass, climbers a little reduced, and plants most in need of light put as high up as possible, are three direct ways of obtaining the fullest benefit of the present subdued daylight.

FORCING AND FRUIT HOUSES.

Peach and Nectarine Trees in the earliest house to be pruned at once; the roots top dressed, the branches washed, and the lights put on, but give plenty of air. Vacancies may now be filled up in the peach house, and nothing better for the purpose than bearing trees. Generally where peaches are unproductive on open walls the climate is most to blame, and the mere protection of glass, even without fire heat, suffices to convert barren into fruitful trees, besides the fact which must always be borne in mind, that trees under glass invariably get more attention than those in the open air.

FLOWER GARDEN.

Auriculas must be kept clean and dry; any drip from the frames will do incalculable mischief. At no time, not even during frost, should the roots be dust dry; it causes an exhaustion of the plant which will tell seriously on the bloom hereafter.

Carnations will often be found beset with green fly during damp, warm weather at this time of year; in which case fumigate at once, and again a few days afterwards, and they will probably remain quite clean till they begin to grow again in spring.

FRUIT GARDEN AND ORCHARD.

Currants and Gooseberries should now be lifted if required, as the next year's crop will be less jeopardized by getting them early to the places in which they are to fruit. Fork in a good dressing of manure between the trees in old plantations. Put in cuttings of choice sorts; the cuttings to be straight ripe shoots of this year, and all the flower-buds removed, so as to prevent the throwing up of suckers.

Fruit Trees to be planted as soon as possible; manure not to be used unless the ground is in a poor condition, and then a little fresh soil should be used with it if possible. Turf from the roadside, clay, the clearings of ponds and ditches, are excellent materials to invigorate old worn-out soil required for fruit culture, and also to give body to poor sandy and chalky soils. In planting keep all roots near the surface; never plant any tree deeper than it was planted before, and if it was evidently planted too deeply before, give it a better chance than it had previously by more shallow planting. Stake as soon as planted, to prevent rocking by the wind, and at the same time prune.

KITCHEN GARDEN AND FRAME GROUND.

Crops to be kept clean, all dead leaves removed, the ground frequently hoed between cabbage, &c. Thin winter spinach, clear off cabbage stumps, in compartments as used, and dig the ground over as soon as vacant.

Cauliflowers potted for keeping over winter should be kept rather dry, and as much as possible exposed to the weather, to keep them stocky and hard. Keep the lights or glasses on always at night from this time forth, removing them every morning, except during frost or drenching rains. In wet, muggy weather, tilt the lights upon blocks of wood or bricks, so as to create a circulation of air amongst the plants, and yet keep them from being soaked with water.

VILLA FARM.

Hedgerow Trees contribute in such a decisive manner to the beautifying of the country that to propose their destruction in a wholesale way would be to prepare a programme for the Vandals. But in very many instances hedgerow timber operates injuriously in robbing the land below and shading it above, and the truth of the matter is of considerable importance. Cases will arise, however, where the question of planting hedgerow timber and sheltering belts of trees requisite to the enrichment of the landscape demands attention, and then we would wish those to whom such questions are remitted to consider how far it may be advisable to plant fruit trees, which are rarely thought of in such cases. We have seen on grass farms enormous crops of first-class market fruits produced by hedgerow and woodland trees, and there are thousands of places where the same thing might be done, but where, generally speaking, it has never been thought of. It will not do to plant fruit trees in hedgerows near a town, for the crop will be stolen before it is ripe, and the thieves will tear the trees to pieces to get it. But where there is no such risk, and markets are not too far removed, the proposal is at least worth consideration. It would, however, be quite easy to make the resolve as the result of reasonable conviction, and then to go to work in the wrong way and have occasion afterwards to regret it. The soil, climate, and requirements of the district should first be taken into account. It should also be borne in mind that perishable summer fruits are altogether unfit for farm cultivation. The safe things are apples, pears, and nuts, that can be marketed in quantity and at times when there is a slackness of outdoor work, and that require no cultivation beyond being properly planted in the first instance; for the trees must take care of themselves to a great extent, and should never interrupt the regular work of the farm, or cause a single anxiety to their owner.

NEW CONTINENTAL CHRYSANTHEMUMS.

Alberic Lauder (Delaux), Jap.—Large, in the way of Stanstead Surprise; colour velvety crimson and carmine.

Arthur Crepay, Jap.—Large; canary yellow, shaded chrome yellow.

Aurore (Lacroix).—Very large, with florets of exceptional size; brown, striped golden yellow.

Cameleon (Rozain), Jap.—Medium size; yellow, shaded and margined with purple; early.

Césare Costa.—Large, with fine florets; deep red.

Charles Molin (Rozain), Jap.—Large, with long lance-shaped florets; chamois yellow, shaded rose; early.

Circe (Lacroix), Jap.—Large and full; chamois, suffused rose.

Cléopatre (Lacroix), Jap.—Rather large, with florets of great length; pure white.

Diademe, Jap.—Very large, double, and of fine form; bright purple.

Edouard Lefort (Delaux), Jap.—Blooms of average size, with large florets; amaranth tipped with white.

Emin (Reydellet), Jap. anem.—Large, with florets of great length; ray florets rose; disc citron yellow.

Esclarmonde (Lacroix), Jap.—Very large, and of fine form; rose salmon, shaded creamy white.

Eugenie Giat (Delaux).—Very large; amaranth violet.

Fulminant, Jap.—Medium size, with spirally arranged florets; brilliant red.

Galathée (Lacroix), Jap.—Medium size, with large spirally arranged florets; white, tinted salmon rose.

Giovanni Mazzi, Jap.—Medium size; bright rose and white.

H. Faisant Lamotte (Boucharlat), Jap.—Very large, with florets of great length; rose carmine and salmon; early.

Henry de Vilmorin (Lacroix).—Above medium size, with large florets; tubular at the base; brick red and yellow.

Jean du Lut (introduced from Japan).—Large, with broad florets, and in the way of Pelican; snowy white.

Joseph Bernard (Lacroix), Jap.—Large, with spirally arranged florets; rose passing to white.

J. Pernet fils (Lacroix), Jap.—Large, with finely developed florets; tender rose and white.

Jules Toussaint (Delaux), Jap.—Very large; brilliant carmine red; said to be a seedling from Edwin Molyneux.

Lakmé (Lacroix), Jap.—Medium size, with broad incurved florets; bright rose, with cream-coloured centre.

La Perle (Rozain), Jap.—Very large, with incurved florets; pearly white; rather early.

Le Farfadet (Lacroix), Jap.—Large, and globular in form; bright marone crimson.

Lumiere electrique, Jap.—Large, with semi-tubular florets; pure white.

Madame Ferdinand Bergman (Delaux), Jap.—Rather large, quite full; white, shaded cream colour in the centre; rather early.

Madame Leon Collin (Delaux), Jap.—Medium size, with long florets; orange yellow shaded red; early.

Madame Delobel (Delaux), Jap.—Rather large and globular; bright orange red.

Madame Anais de Reydellet (Reydellet), Jap.—Large, with long and curly florets; rose, carmine; white in centre.

Madame Antoine Rivoire (Reydellet), Jap.—Large and globular; satiny rose and white.

Madame Bruant (Reydellet), Jap.—Medium size, with long ribbon-like florets; bright rose.

Madame Charles Raffard (Delaux), Jap.—Full, average size; salmon, yellow and rose.

Madame Charles Vanderlinder (Reydellet), Jap.—Large and very full; rose magenta.

Madame Ernest Bergman (Dolaux), Jap.—Very large, with much curled florets; white shaded rose violet.

Madame Eugène Mulson (Lacroix).—Large, florets laciniated; pure white.

Madame Eugène Puvrez (Reydellet).—Large, full, and distinct in form; vermilion red.

Madame Gaston Menier (Delaux), Jap.—Medium size, florets laciniated; chamois shaded rose.

Madame Leon Grosjean (Reydellet), Jap.—Medium size, and very double florets; tubular, and more or less straight; bronzy brown.

Madame Mezard (Lacroix), Jap.—Large and globular; white striped tender rose.

Madame Marie Hoste (Lacroix), Jap.—Very large, with long ribbon-like florets; white, striped, and bordered with amaranth.

Mdlle. Marie Manet (Delaux), Jap.—Full, average size, with large florets; bright yellow and orange.

Marguerite Delobel (Reydellet), Jap.—Large, florets semi-tubular; bright rose, tipped white; early.

Marguerite Decazis (Lacroix), Jap.—Large, florets spirally arranged in the centre; tender rose.

Marie Azam (Lacroix), Jap.—Large and firmly formed; pure white.

Marie Tindel (Lacroix), Jap.—Large, florets long and laciniated; tender rose, shading to white.

Minerve (Lacroix), Jap.—Large and full; bright rose.

Mons. Raque (Lacroix), Jap.—Large; rose-salmon and yellow.

Mons. C. Petit (Reydellet), Jap.—Above the average size and full; bright violet.

M. Cuvelier (Reydellet), Jap.—Large, with long straight florets; bright rose purple.

M. de Chavagnat (Reydellet), Jap.—Large and full; bright carmine and yellow.

M. Dufosse (Delaux), Jap.—Very large; rose violet, passing into silvery rose, said to be a seedling from Edwin Molyneux.

Mons. E. Davillon, medium size; rose purple.

M. Fougerat (Reydellet), Jap., ref.—Medium size and very double; carmine, shaded bronze.

Mons. H. Fontanier, Jap.—Very large; bright red.

Mons. Leo Delabes (Lecroix), Jap.—Large and of firm form; amaranth purple, white centre.

Mons. Leon Say (Lacroix), Jap.—Medium size with long florets; amaranth violet.

Mons. Mezard fils (Lacroix), Jap.—Rather large, tender rose.

Mons. Robert Owen (Delaux), Jap.—Very large florets; quilled white suffused rose.

Mons. Van Imschoot (Reydellet), Jap., ref.—Large, very double, and of fine form; bright carmine and rose.

Mons. Helliot, large bright red.

M. Ernest Bergman (Delaux), Jap.—Large; chamois and yellow; early.

M. Harry Laing (Delaux), Jap.—Above the average and of good form; rose white and yellow.

Mons. Jules Humbert, Jap.—Large; violet purple and white.

Mons. R. Sautel, Jap.—Medium size; silvery rose.

Mons. Ulrich Brunner, Jap.—Rather large with quilled florets; carmine, shaded purple.

Mons. Victor Patallier, Jap.—Large and well incurved; bright yellow.

P. Radaelli (Rozain), Jap.—Very large and globular in form; white, with canary yellow centre.

Rose Laing (Delaux), Jap.—Medium size; silvery rose, shaded rose pink; early.

Portalis (Lacroix), Jap.—Medium size; brownish red, with orange centre.

Renée (introduced from Japan), Jap.—Very large with long finely incurved florets; red and yellow, back of florets bright yellow.

Secretaire, G. Gassagneau (Delaux).—very large; white shaded rose.

Souvenir de M. Menier (Delaux), Jap.—Medium size with long florets; red-crimson shaded velvety brown.

Striatum elegans (Rozain), Pom.—Medium size; red striped yellow.

Vice President Audiguier (Lacroix), Jap.—Large, florets long and spirally arranged; rose shading to white.

CERTIFICATED FRUITS AT THE GUILDHALL SHOW.

At the exhibition of fruit held by the Fruiterers' Company at the Guildhall, from the 6th to the 8th inst., a small committee was appointed to select for distinction the finest examples of the respective kinds in the several collections. As the result of the labours of the committee, the following certificates of merit were awarded:—

Messrs. T. Rivers and Son, Sawbridgeworth, for Marie Benoist and Doyenné du Comice pears; Lord Derby, Lady Henniker, King of Tomkins County, and Reinette du Canada apples; and Guigne de Winkler cherry.

British Fruit Growers' Association (Mr. L. Castle, secretary).—Mr. C. Herrin, Dropmore, Warner's King apple; Mr. Hammond, Monarch plum; Mr. W. Roupell, Peasgood's Nonsuch apple; P. Crowley, Esq., Bismarck apple; Mr. H. W. Ward, Longford Castle, Salisbury, Uvedale's St. Germain pear; and Mr. G. Harris, Alnwick, Hacon's Incomparable pear.

Mr. S. Barlow, Stakehill House, for Peasgood's Nonsuch, Gloria Mundi, and Cornish Aromatic apples, and Beurré Bachelier and Pitmaston Duchess pears.

Mr. G. Reynolds, Gunnersbury Park, for Ecklinville, Stirling Castle, and Mère de Ménage apples.

Mr. Goodacre, Elvaston Castle, for Pitmaston Duchess pear, and Peasgood's Nonsuch, Worcester Pearmain, Tower of Glamis, and Golden Noble apples.

Mr. McIndoe, Hutton Hall, for Striped Beaufin and Mother apples, and Williams' Bon Chrétien and Doyenné du Comice pears.

Mr. J. D. Dean, for Pitmaston Duchess pear.

Mr. Start, West Farleigh, for Lord Derby and Stone's apples.

Messrs. G. Bunyard and Co., Maidstone, for Lord Derby, Bismarck, Stirling Castle, and Gascoigne's Seedling apples; Doyenné du Comice pear, and Monarch plum.

Mr. Cummins, The Grange, Carshalton, for Bismarck and Blenheim Orange apples, and Salway peach.

Mr. Turton, Maiden Erleigh, for Frogmore Prolific, Bramley's Seedling, Annie Elizabeth, Warner's King, Mère de Ménage, The Queen, King of the Pippins, Adam's Pearmain, Rosemary Russet, and Cockle Pippin apples; and Easter Béurre, Maréchal de la Cour, Beurré Diel and Pitmaston Duchess pears.

Mr. Davis, Mote Park, Maidstone, for Marie Louise, Pitmaston Duchess, Beurré Hardy, Doyenné du Comice, and Emilie d'Heyst pears, and Mère de Ménage apple.

Mr. J. S. Pearce, for Gooseberry apple.

Messrs. James Veitch and Sons, Chelsea, for Peasgood's Nonsuch, Warner's King, Sandringham, Bismarck, King of Pippins, and Alfriston apples.

Royal Horticultural Society, for Louise Bonne of Jersey pear, and Braddick's Nonpareil and Lane's Prince Albert apples.

Messrs. Cheal and Sons, Crawley, for Duchess d'Angoulême, Conseiller de la Cour, and Doyenné du Comice pears, and Round Winter Nonsuch, Stirling Castle and Hereford Pearmain apples.

Messrs. W. Paul and Son, Waltham Cross, for Lady Henniker apple.

Mr. J. Watkins, Hereford, for Tyler's Kernel, Yorkshire Beauty, Warner's King, Stirling Castle, and Striped Beaufin apples, and Louise Bonne of Jersey pear.

Messrs. J. Laing and Sons, Forest Hill, for Stone's apple, Warner's King, Bismarck, Stirling Castle, Ecklinville, and Blenheim Orange apples.

Messrs. J. Peed and Sons, Streatham, for Peasgood's Nonsuch, Belle de Pontoise, Ribston Pippin, and Lord Suffield apples.

Mr. W. Tayler, Hampton, for Marie Louise d'Uccle pear.

Mr. A. Wyatt, Hatton, for Bedfordshire Foundling apple.

Mr. W. Forbes Gibbon, Seaford Grange, Pershore, for Grand Duke plum and The Malster apple.

Mr. Henry Berwick, Sidmouth, for Peasgood's Nonsuch, Warner's King, Lane's Prince Albert, and Royal Russet apples.

Messrs. W. Balchin and Son, Hassocks Gate, for Cox's Pomona, Peasgood's Nonsuch, Mother, and Worcester Pearmain apples.

Mr. Charles Turner, Slough, for Landsberger Reinette, Roundway Magnum Bonum, King of the Pippins, Dumelow's Seedling, Cox's Orange Pippin, and Ribston Pippin apples.

Messrs. Paul and Sons, Cheshunt, for Reinette de Caux, Reinette du Canada, Warner's King, Cox's Pomona, Mabbott's Pearmain, and Cockle Pippin apples.

Mr. A. J. Thomas, Sittingbourne, for Lane's Prince Albert, Bramley's Seedling, and Glory of England apples, and General Todleben, Pitmaston Duchess, and Beurré de l'Assomption pears.

English Fruit and Rose Co., Hereford, for Lane's Prince Albert, Gloria Mundi, Annie Elizabeth, Egremont Russet, King of the Pippins, and Blenheim Orange apples.

Messrs. Jarman and Co., Chard, for Nelson Codlin and Alfriston apples.

Mr. Webb, Beenham, for Wellington, Cox's Orange, and Lane's Prince Albert apples.

Mr. F. Bridger, Penshurst Place, for Peasgood's Nonsuch, Warner's King, Bismarck, Potts' Seedling, Stirling Castle, The Queen, and Wealthy apples.

Mr. W. Goaring, Brentwood, for The Queen and Cox's Pomona apples.

Mr. Sheppard, Wolverstone Park, for Blenheim Orange apple, and Louise Bonne of Jersey pear.

Mr. W. J. Taylor, Ealing, for Ribston Pippin apple.

Mr. S. Arnold, Oxford, for Lane's Prince Albert, Lord Derby, and Warner's King apples.

Mr. E. Chadwick, Ealing, for Alfriston and Ribston Pippin apples.

Miss Grace Harriman, for Cox's Orange Pippin apple.

Mr. Charles Blick, for Pitmaston Duchess, Magnate, Josephine de Malines, Doyenné du Comice, Beurré Diel, and Glou Morceau pears.

Mr. W. Allan, Gunton Park, for Durondeau, Doyenné du Comice, Marie Louise d'Uccle, Glou Morceau, and General Todleben pears.

Mr. W. Blest, Wateringbury, for Pitmaston Duchess pear.

Mr. Woodward, Barham Court, for Belle Dubois, Washington, Stone's, Golden Spire, Gascoigne's Scarlet, Flower of Kent, and Peasgood's Nonsuch apples, and Catillac, Beurré Hardy, Beurré Diel, Marie Benoist, Pitmaston Duchess, Conseiller de la Cour, Doyenné du Comice, and General Todleben pears.

Mr. G. Trinder, Dogmersfield, for Beurré Bachelier, Beurré Diel, and Pitmaston Duchess pears, and Vicomtesse Héricart de Thury strawberry.

Mr. J. Dunn, East Grinstead, for Beurré d'Anjou pear.

Mr. C. Ross, Welford Park, for Mére de Mènage, Prince Albert, and Brabant Bellefleur apples, and Doyenné du Comice and Bergamot d'Esperen pears.

Mr. R. Silk, Margate, for Newton Wonder Pippin apple, and Duchesse d'Angoulême, Conseiller de la Cour, and Beurré d'Esperen pears.

Mr. Prangwell, Virginia Water, for King of the Pippins and Waltham Abbey Seedling apples.

Mr. R. G. Waterman for Peasgood's Nonsuch, Warner's King, Gloria Mundi, Queen Caroline, and Ribston Pippin apples, and Chaumontel and Pitmaston Duchess pears.

Mr. Turner, Farnham, for Alfriston and the Queen apples.

Mr. H. Hurnard, for Lady Henniker apple.

Mr. Turner, Pierrepont, for Duke of Devonshire and Cox's Orange Pippin apples.

Mr. Tallack, for Summer Pippin apple.

Mr. Miller, Northdown, Margate, for Frogmore Prolific, Lady Sudeley, Cornish Gilliflower, Gravenstein, and Emperor Alexander apples.

Mr. Baynes, for Waltham Abbey Seedling apple.

Mr. A. Cook, for Pitmaston Duchess and Doyenné du Comice pears.

Mr. W. Iggulden, for Doyenné du Comice pear.

Mr. Parker, Hereford, for Golden Noble, Warner's King, Tyler's Kernel, Potts' Seedling, and Peasgood's Nonsuch apples.

Mr. S. T. Wright, for Round Winter Nonsuch apple.

Mr. A. Williams, Hereford, for Stirling Castle apple.

Mr. Hunter, for Pitmaston Duchess, Marie Benoist, and Beurré Diel pears.

Mr. Minchener, for Golden Noble apple.

Mr. Altman, for Blenheim Orange apple.

Mr. Hooper, Yeovil, for Coker Seedling apple.

Mr. R. Smith, Yalding, for Durondeau, Beurré Diel, Pitmaston Duchess, Beurré de l'Assomption, Marie Louise, and Emilie d'Heyst pears.

Mr. Buck, for Magnate and Beurré Diel pears.

Mr. Neighbour, for Beurré Bachelier pear.

Mr. Ings, for Waltham Abbey Seedling apple.

Mr. W. S. Skinner, Boughton Monchelsea, for Peasgood's Nonsuch, Warner's King, Worcester Pearmain, Mother, Blenheim Orange, Lady Henniker, and Stone's apples.

Mr. Caterer, for Prince Albert, Warner's King, and Blenheim Orange apples.

Exhibitions and Meetings.

CRYSTAL PALACE HARDY FRUIT SHOW, October 9 to 11.

As briefly stated last week the exhibition of hardy fruits at the Crystal Palace on the above date was of exceptional excellence, and generally regarded as the best October show that has yet been held at that popular place of public resort. Apples were staged in immense quantities, and excellent condition; pears were well represented, and of vegetables and gourds there were immense displays, which contributed their full share to both the interest and attractiveness of the gathering. Nine classes were provided in the schedule, and as indicating the severity of the competition, it may be stated that the collections occupied the whole of the available space in the nave.

Apples produced an exceedingly attractive display. The collections being remarkable for their uniformity, and the individual examples distinguished by their large size, superb colour, and high finish. Very keen was the competition for the prizes offered for collections not exceeding one hundred dishes, and here Messrs. G. Bunyard and Co., Maidstone, were first with a collection of great excellence. Especially good were the examples of Yorkshire Beauty, Queen Caroline, Old Nonsuch, Evagil, Winter Queening, Beauty of Kent, Smart's Prince Arthur, Queen Caroline, Old Golden Reinette, Gospatrick, Malster, Duchess of Oldenburgh, Herefordshire Beefing, Bramley's Seedling, Lord Derby, Washington, Reinette du Canada, Bauman's Red Winter Reinette, Gascoyne's Scarlet, Golden Spire, Grenadier, Worcester Pearmain, Lady Henniker, Seaton House, Cornish Aromatic, Caville Malingre, and Murfitt's Seedling; Mr. John Watkins, Pomona Farm Nurseries, Wittingdon, Hereford, was a good second with handsome samples, which were especially remarkable for their superb colour, some of the more noteworthy varieties comprised Summer Gilliflower, King of the Pippins, New Hawthornden, Mother, Loddington, Cox's Pomona, Cox's Orange Pippin, Tom Putt, Yorkshire Beauty, Tyler's Kernel, Lane's Prince Albert, and Rymer; Mr. C. G. Sclater, Devon Nurseries, Heavitree, Devon, and the English Fruit and Rose Company, King's Acre, were third and fourth with collections evincing careful selection and high-class cultural skill. Messrs. J. Cheal and Sons, Crawley, exhibited a remarkably fine collection, as did Messrs. Paul and Son, Cheshunt; Mr. H. Berwick, Sidmouth, also contributed a good collection. Messrs. J. Veitch and Sons, Chelsea, exhibited, not for competition, a magnificent collection, comprising two hundred and fifty dishes of apples, and forty-five dishes of pears. Conspicuous amongst the pears were Beurre Baltet pere, Beurre Clairgeau, Durondeau, Louise Bonne of Jersey, Pitmaston Duchess, Marie Benoist, and Beurre de Mortellet, a new variety with large handsome fruits of a brilliant carmine-red hue. The apples included King of the Pippins, Bismarck, King of Tomkins County, Warner's King, Tyler's Kernel, Cox's Orange Pippin, Hawthornden, Emperor Alexander, Lord Grosvenor, Ringer, Sandringham (a large and handsome culinary variety of comparatively recent introduction), Stirling Castle, and Cellini. Messrs. Veitch also exhibited sprays of Belle de Fontenoy and Sucrée de Metz, two red varieties, having fruit of the largest size, and free in bearing; the last-named especially so.

The entries were very numerous in the class for twenty-four dishes, distinct varieties, and the premier award was made in favour of Mr. G. Woodward, gardener to Roger Leigh, Esq., Barham Court, Maidstone. The following were the varieties, all of which were represented at their best: Alfriston, Brabant Bellefleur, Cox's Orange Pippin, Emperor Alexander, Washington, Caville Rouge, Stone's or Loddington, Queen Caroline, King of the Pippins, Flower of Kent, Mother, Warner's King, Golden Spire, Braddick's Nonpareil, Lord Derby, Bismarck, Ribston Pippin, Belle Dubois, Round Winter Nonsuch, Wealthy, Peasgood's Nonsuch, Worcester Pearmain, Gascoyne's Scarlet, and Golden Spire. Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston House, Aylesford, was a capital second with similar varieties in high-class condition; and Mr. S. Barlow, Stakehill House, near Manchester, was a close third with remarkably fine samples. In competition for the prizes for twelve dishes of apples, Mr. T. A. Killick, Weavering, Maidstone, was first with remarkably good examples of Peasgood's Nonsuch, Stone's or Loddington, Bismarck, New Hawthornden, Mere de Menage, Golden Noble, Worcester Pearmain, Wrotham Pippin, Ecklinville, Gascoyne's Scarlet, Lane's Prince Albert, and a local variety. Mr. T. Parker, gardener to Mrs. Evans, Moreton Court, near Hereford, and Mr. S. H. Goodwin, Mereworth, Kent, were second and third with collections that did much credit to their cultural skill. The British Fruit Growers' Association contributed a large collection grown by its members, and W. Roupell, Esq., exhibited a collection of fifty kinds grown in his garden at Streatham.

Pears, although not so largely shown as apples, were sufficiently plentiful to form an important feature. For twelve dishes Mr. W. Chisholm, Oxenoath Park, Tonbridge, was first, with a collection in which the whole of the varieties staged were represented at their best. The kinds staged were Glou Morceau, Van Mons. Leon le Clerc, Pitmaston Duchess, Brockworth Park, Beurre Bosc, Hacon's Incomparable, Durondeau, Beurre Hardy, Conseiller de la Cour, Gansel's Bergamot, Beurre Superfin, and Duchesse d'Angoulême. Mr. G. Woodward and Mr. W. Allan, Gunton Park, Norwich, were second and third with fruit that did much credit to their cultural skill. In the class for collections of pears without restriction as to numbers, there were two exhibitors only. These were Mr. G. Woodward and Mr. J. Watkins, who were second and third respectively.

Vegetables were plentiful, and remarkably good in quality. For the best exhibition arranged for effect Mr. T. A. Beckett, Cole Hatch Farm, Penn, Amersham, Bucks, was first, with excellent produce arranged with much taste. Mr. W. Palmer, gardener to Right Hon. Hume Dick, Thames Ditton, was third; second prize being withheld. For twelve kinds of vegetables, Mr. R. Lye, gardener to W. H. Kingsmill, Esq., Sydmonton Court, Newbury. Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, and Mr. C. J. Waite, Glenhurst, Esher, were the prize-takers in the order of their names. The exhibitor last named was successful in taking premier honours in the class for six kinds, in which the prizes were offered by Messrs. Sutton and Sons. Mr. Beckett, Mr. W. Pope, and Mr. R. Lye were awarded the remaining prizes in the class in the order of their names.

There was a sharp contest in Messrs. J. Carter and Co.'s class for six dishes of potatos, and the first prize was awarded to Mr. Lye, who had very fine tubers of Holborn Perfection, King of Russets, Delight, Holborn Abundance, and Ashtop Fluke. Mr. Pope, Mr. Hazell, Histon Road, Cambridge; Mr. E. S. Wiles, Edgcote Gardens, Banbury; Mr. Waite and Mr. C. W. Howard, Bridge, Canterbury, were awarded the remaining prizes in the order of their names. For two dishes of potatos to comprise Holborn Abundance and King of the Russets, Mr. Pope, Mr. Lye, and Mr. Hazell were first,

second, and third respectively with excellent samples of these two varieties.

Gourds were shown more largely than on any previous occasion, and the large display proved highly attractive. The most successful exhibitors were Mr. G. Sturgess, gardener to F. B. Fearon, Esq., Court House, Banstead; Mr. C. Osman, South Metropolitan District Schools, Sutton; Mr. C. Bontwright, Beckenham; Mr. E. C. Gaseltine, gardener to E. Byron, Esq, Coulson Court, Caterham; and Mr. George Shepherd, Pulborough, Sussex. The last-named exhibitor was first in the class for the heaviest gourd, with a fruit weighing 71 lb. The other fruits in the class weighed from 40 lb. to 5 lb., and were therefore in no way remarkable for their size.

Miscellaneous Contributions included a large and effective group of begonias from Messrs. John Laing and Sons, a fine collection of dahlias and begonias from Messrs. H. Cannell and Sons, and an attractive collection of dahlias from Messrs. J. Cheal and Sons.

ROYAL HORTICULTURAL SOCIETY, October 14.

Floral Committee.

Present: John Fraser, Esq., in the chair; the Rev. H. H. D'Ombrain, and Messrs. B. Wynne, T. Baines, R. Dean, W. C. Leach, J. Walker, R. B. Lowe, T. W. Girdlestone, H. Turner, C. Jefferies, H. B. May, and G. Paul.

Novelties were somewhat below the average in point of numbers, but miscellaneous objects were comparatively numerous and the hall was well filled and presented an attractive appearance. Mr. H. J. Jones, Ryecroft Nursery, Hither Green, Lewisham, exhibited two tastefully arranged groups of chrysanthemums, and was awarded the silver Banksian medal. The plants were all well grown and admirably flowered, and conspicuous amongst the several varieties was William Holmes, a well-known crimson Japanese reflexed, unsurpassed for decorative purposes during the current month. Well represented also were Pink Lacroix, Pynaert Van Geert, and E. G. Henderson and Sons, all of which may be had in perfection during the current month. Messrs. Pitcher and Manda, Hextable Nurseries, Swanley, staged cut blooms of three new Japanese varieties. These were Mohawk, a Japanese incurved, the blooms very large with incurved florets of medium width, and bright crimson with deep yellow back; Elliott F. Sharp, a promising Japanese, the blooms rather large, quite full, and of a bright yellow hue; will probably make a good exhibition bloom; and Clarence Bryant, a distinct reflexed Japanese, the blooms rather small and of a bright yellow hue. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, exhibited chrysanthemum Memoir, a distinct variety obtained as a sport from Mr. Wellam, a medium sized rose tinted flower. The blooms of the sport are similar in character to those of the parent but fuller, and the colour is pale fawn suffused with rose.

Messrs. William Paul and Son, Waltham Cross, Herts, exhibited six remarkably fine boxes of autumn roses, and were awarded the silver Banksian medal. It is seldom that roses are exhibited in such fine condition in October, and the collection obtained a full share of attention. Especially good amongst the teas were Madame de Watteville, Madame Hoste, Madame Falcot, Catherine Mermet, Marie Van Houtte, Sappho, Perle des Jardins, The Bride, Gloire de Dijon, and Safrano. The most noteworthy hybrid perpetuals were Mrs. J. Laing, Alfred Colomb, Ulrich Brunner, Victor Verdier, Comtesse d'Oxford, Alfred K. Williams, Charles Lefebvre, Duchess of Albany, Marchioness of Lorne, Earl of Pembroke, and Gloire de Margottin. Mr. E. Mawley, Rosebank, Great Berkhampstead, contributed an extremely beautiful arrangement of cut flowers which had for its centre a large basket of finely-developed blooms of tea-scented roses. There were several other baskets of roses, baskets of begonias, and numerous vases of dahlias and chrysanthemums, interspersed with groups of fern fronds and other foliage. The award of the silver Banksian medal was deservedly made to the exhibitor.

Mr. H. B. May, Dyson's Lane Nursery, Upper Edmonton, contributed a collection of plants consisting chiefly of choice ferns and crotons, and received the award of the silver-gilt Banksian medal. The collection was sufficient to form a bank extending the whole length of the hall, and the richly-coloured crotons presented an effective appearance in contrast with the bright green hues of the ferns and palms, with which they were interspersed. Dahlias were represented by a board of twenty-four superbly-developed blooms of show varieties from Mr. C. Turner, Slough, who was awarded the bronze Banksian medal. Mr. G. Fry, Hither Green, Lewisham, exhibited a pale-coloured fuchsia resembling in general character Fuchsia triphylla. The tube and petals are cream coloured, and the corolla salmon-pink.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. J. O'Brien, J. Douglas, E. Hill, H. J. Dominy, M. Pollett, Lewis Castle, and J. Courtald.

Orchids were contributed rather liberally, and included a considerable number of important novelties, chief amongst them being the varieties of Cattleya Warocqueana. Captain Hincks, Beckenbrough, Thirsk, exhibited blooms of Masdevallia Stella, a pretty little hybrid between M. Harryana and M. Estradæ, the flowers rather small and of a pleasing rose colour. M. Linden, Park Leopold, Brussels, exhibited, in addition to the orchids which were certificated, a well-flowered specimen of the beautiful Aganisia cyanea, and an example of Lælia grandis. Sir Trevor Lawrence, Bart., M.P., submitted an example of Epidendrum radiatum fuscatum, a pleasing variety, the flowers comparatively large, the sepals greenish-white, and the petals white marked with lines of purple. Messrs. Pitcher and Manda, Hextable Nurseries, Swanley, contributed a well-bloomed example of Lælia Arnoldiana. Mr. A. Sanders, 146, Camden Road, staged a good specimen bearing six spikes of Odontoglossum grande, and was awarded a cultural commendation.

Mr. H. Ballantine, gardener to Baron Schroder, The Dell, Egham, contributed a small but extremely choice collection, and was awarded the silver Flora medal. Especially noteworthy were the examples of Cattleya aurea Imsschottiana, which received the distinction of a first-class certificate; C. Fausta, a dwarf-growing hybrid of great beauty; and Lælia porphyrites, an exquisitely beautiful hybrid of comparatively small growth. Mr. J. Crispin, Fishponds, Bristol, exhibited a large well-bloomed specimen of Lælia Perrini, and a good example of the tall-growing Oncidium Londesboroughanum.

Fruit Committee.

Present: Sir Charles Strickland, Bart., in the chair; Dr. Hogg, Rev. W. Wilks, and Messrs. J. Lee, R. D. Blackmore, T. F. Rivers, G. W. Cummins, J. Wright, W. Denning, W. Bates, J. Smith, G. Wythes, J. Hudson, H. Balderson, F. Q. Lane, P. Crowley, J. Cheal, A. H. Pearson, and J. Willard.

Messrs. W. Paul and Son, Waltham Cross, Herts, exhibited a collection of dessert and culinary apples, comprising about sixty dishes of excellent fruit, and were awarded the silver Banksian medal. Messrs. Gayner and Son, Bannam, Attleborough, submitted a collection of cyder apples and samples of their cyder, for which they enjoy a high reputation, and were awarded the silver Banksian medal. Mr. J. Hudson contributed a basket of excellent fruit of Golden Noble apple, and Mr. G. Wythes presented well-grown bananas and fruit of the Monstera.

Novelties.

First-class certificates were granted as under:—

To M. Linden, Park Leopold, for

Cattleya Warocqueana amethystina.—A distinct and handsome form, with flowers of the largest size, the petals and sepals rich rose pink, and the labellum rich amethyst purple.

C. Warocqueana flammea.—A beautiful variety, with large, finely-formed flowers, the sepals and petals bright pink, the labellum pale pink, painted with amethyst and stained orange.

To Baron Schroder, for

Cattleya aurea Imschottiana.—One of the most distinct forms of this handsome species. The flowers are of average size, the sepals and petals creamy white, the labellum veined crimson and yellow, and margined with purple.

To Mr. Bishop, Wesley Hall, Bury St. Edmunds, for

Melon, Wesley Hall.—A scarlet fleshed variety, the fruit rather large, oval, and handsome in appearance, the skin deep green and finely netted, the flesh bright red and richly flavoured.

To Mr. A. H. Pearson, Chilwell, Notts, for

Apple, Beauty of Stoke.—A distinct culinary variety, the fruit rather large, roundish, and slightly conical, the skin deep. It is said to be a good cropper, and is evidently a late keeper.

Awards of merit were made as under:—

To Mr. H. E. Elliot, Jersey, for

Richardia æthiopica, Little Gem.—A dwarf growing form, attaining a height of nine or ten inches, and bearing miniature spathes.

To Mr. J. Robson, Altrincham, for

Cyperus sp?—A distinct species of the most elegant character, the leaves long, narrow, gracefully arching, and of a bright green hue. Likely to prove of immense value for table and other decorations.

To Mr. H. B. May, Upper Edmonton, for

Bouvardia Purity. A distinct variety, producing neat trusses of comparatively large, pure white and delightfully fragrant flowers. A valuable addition to the white bouvardias.

To M. Linden for

Cattleya du Buyssoniana. A handsome species, the flowers of medium size, the sepals and petals yellowish white, the labellum amethyst purple.

C. aurea Lindeni.—A remarkably fine form of this attractive species; the flowers rather above the average in size, and differing from the type in the petals being of a rich golden hue.

Catasetum Bungerothi Randi.—A handsome variety; the flowers bright yellow, with orange coloured blotch on the labellum.

To Mr. H. J. Jones and Mr. T. S. Ware for

Chrysanthemum Annie Clibran or *Pink Lacroix.*—A useful variety obtained as a sport from Mdlle. Lacroix. The flowers are similar in character and size to those of the type, and of a pleasing rose-pink hue.

To Messrs. Pitcher and Manda for

Cunila Mariana.—A pretty little labiate, introduced from North America in 1759. It is of dwarf growth, and bears a profusion of small rose-coloured flowers.

Botanical certificates were granted as under:—

To Sir Trevor Lawrence, Bart., for

Bulbophyllum amplum.—A distinct species; the flowers rather small, the sepals and petals pale green, spotted with marone, and the labellum deep marone.

To Mr. W. Vanner, Camden Wood, Chislehurst, for

Angræcum Kimballiana.—A distinct and beautiful species, with broad leaves, and producing elegant racemes of pure white flowers.

Exhibition of Jams and Preserved Fruits.

Although by no means extensive, the exhibition of jams and preserved fruits at the Drill Hall, Westminster, somewhat exceeded expectations, both as regards the number of entries and the interest attached to the productions of the several exhibitors. The following awards were made: Silver Knightian medal to Messrs. Beach and Sons, Brentford and Toddington; bronze Knightian to Messrs. Chivers and Sons and Mr. D. Macgregor; highly commended, Mr. Austen and the Mid-Kent Fruit Factory; commended, Sir C. W. Strickland, Bart.

Honourable mention was accorded to Messrs. J. Veitch and Sons for a large and highly interesting collection of syrups, preserves, candied and dried fruits, sweets, tomato paste, and olives as used in Turkey. This important collection included the following:—

Syrups: Orange, Madella cherry, rose, raspberry, verjuice (sour rapeg), strawberry, Mandarin orange, pine apple, cornel, tamarind, Isnicola raspberry, grape treacle. Preserved fruits: Arabian apricots, cornel berries, orange, Madella cherries, apricot, quince, Brousa peach, pear, apple, white plum, citron, egg plant, walnut, date, peach, strawberry jujube, fig, prunes, raspberry, rose. Candied Fruits: Pear, apricot, orange, Persian fistiks, almonds, citron. Dried fruits: Mecca dates, Smyrna pears, Arabian apricots, manna, Cretan locust, Arabian apricot paste, Madella cherries from Kutajah, Anatolia. Sweets: Vanilla, black cherry, rose, bergamot, mastik (handed to guests to be taken by a spoon, with water afterwards), tomato paste, black olives. Common articles of food offered for sale on barrows in the streets of Constantinople: Baked teblebee, unbaked teblebee, baked nuts, St. John's bread (John the Baptist's locust), baked pistachio nuts, American earth or butter nut, persice apricot, baked pumpkin seeds, sunflower seeds, stone pine seeds, used for kitchen purposes, pastry, &c.

Certificates of merit: Mr. D. Macgregor, Edinburgh; Mr. Austen, Mid-Kent Factory; Mrs. Fenn, W. Roupell, Esq., Roupell Park, S.W., who presented jam made from the last thinnings of Muscat grapes; an elegant preparation of a pale green colour, and sprightly grape flavour.

Votes of thanks to Mr. T. Woods, Messrs. Margetts and Co., Messrs. Ellis, Kishing, and Co., Mr. A. Faulkener, Lady S. Byng, Harrod's Stores Company, Mr. J. Talbot, and Mr. J. W. Lee.

NATIONAL CHRYSANTHEMUM SOCIETY, October 15 and 16.

With a view to bring into prominence the varieties that may be had in perfection during October, prizes were on the above dates offered for collections of cut blooms of Japanese and pompon varieties. There was a spirited competition in the several classes, and as the blooms were of good quality throughout,

the display produced was highly satisfactory. In competition for the prizes for twenty-four Japs in not less than twelve varieties, Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Mitcham, was first with finely developed blooms of Etoile de Lyon, E. Molyneux, Mrs. J. Wright, Golden Dragon, Elaine, William Holmes, Stanstead Surprise, Comte de Germiny, Jeanne Delaux, Mons. Tarin, Mdlle. Lacroix, Sunflower, Peter the Great, and Stanstead Surprise; Mr. J. Doughty, Angley Park, Cranbrook, was a very close second, the blooms large and bright in colour; and C. E. Shea, Esq., The Elms, Foots Cray, was third with blooms of great excellence. There was a very large number of entries in the class for twelve Japanese varieties, and at the head of the competitors was Mr. C. Blick, gardener to Martin R. Smith, Esq., The Warren, Hayes Common, with finely-developed blooms of Baronne de Prailly, George Daniels, Val d'Andorre, E. Molyneux, Hamlet, Mons. Freeman, Etoile de Lyon, Avalanche, Marguerite Marrouch, Carew Underwood, Frederick Marrouch, and Belle Paule; Mr. C. E. Shea followed very closely for second place with superbly-developed blooms; and Mr. W. Collier, Ashenden, Bayford, Hertford, was third.

The class for six blooms of any white Jap. was well filled, both as regards the number of entries and the quality of the blooms. Mr. Cox, gardener to J. Trotter, Esq., Brickenden Grange, Hertford, was first with superbly developed blooms of Avalanche; Mr. C. Richings, gardener to W. Lindsay, Esq., The Brandries, Beddington, was second, with good blooms of Elaine; and Mr. Howe, Park Hill, Streatham, was third. For six blooms of any yellow chrysanthemum, Mr. W. Wells, Mr. G. Stevens, and Mr. W. Gilbert, Sennowe Hall, Guist, Norfolk, were the prizetakers in the order of their names. For six Japs of any colour other than white or yellow, Mr. J. McKenzie, Linton Park, was first with Stanstead Surprise; and Mr. Hencet, Hillside House, Hythe, and Mr. G. Stevens were second and third with E. Molyneux. In the amateurs' class for six Japs, Mr. R. C. Nottcut and Mr. D. B. Crane were first and second respectively, with excellent boards of blooms. Pompons were well represented, and in the class for twelve varieties Mr. Neary, Hornsey; Mr. N. Davis, Camberwell; and Mr. Kendall, Roehampton, were the prizetakers in the order of their names.

To the miscellaneous class large and attractive groups of chrysanthemums were contributed by Messrs. J. Laing and Sons, Forest Hill, and Mr. H. J. Jones, Rycroft Nursery, Lewisham. A large collection of cut blooms was staged by Mr. Davis, and Mr. R. Owen, Maidenhead, exhibited a collection of seedling Japs, raised by himself, in which were several varieties of great promise.

Floral Committee.

A meeting of the Floral Committee was held on Wednesday, when numerous novelties were submitted. R. Ballantine, Esq., presided, and the members present included: Mr. E. Sanderson, Mr. H. Cannell, Mr. W. E. Boyce, Mr. L. Castle, Mr. R. Owen, Mr. J. P. Kendall, Mr. George Gordon, Mr. C. Gibson, Mr. J. Wright, Mr. G. Stevens, Mr. H. Shoesmith, Mr. H. J. Jones, with Mr. Richard Dean, honorary secretary.

The following chrysanthemums received first-class certificates:—

Puritan.—A remarkably fine Japanese incurved of American origin, the blooms large and of the purest white, with broad well incurved florets. Exhibited by Mr. E. Molyneux.

Mrs. Falconer Jameson—A distinct Japanese variety, the blooms large and full with long drooping florets, the colour orange-buff. Exhibited by Mr. E. Molyneux.

W. H. Lincoln.—A superb Japanese incurved. The blooms large, with broad moderately incurved florets; colour bright yellow. Exhibited by Mr. E. Beckett.

Charley Sharman.—An attractive Japanese variety introduced from Japan; the blooms of medium size and of a rich purple hue. Exhibited by Mr. E. Beckett.

Annie Clibran or Pink Lacroix.—A lilac pink sport from Mdlle. Lacroix, previously described in these pages. Exhibited by Mr. Davis.

Anna Hartzhorn.—A beautiful pure white Japanese incurved, the blooms large, of moderate depth, and well formed. Exhibited by Mr. Davis.

George Daniels.—A distinct Japanese variety, the blooms large, full, and of good form; the colour pale pink. Exhibited by Mr. J. Doughty.

Souvenir de Mons. Menier.—A Japanese variety, the blooms large, and of a deep crimson colour. Exhibited by Messrs. J. Laing and Sons.

Holmes Memorial.

In the course of the afternoon of Wednesday a meeting was held in the Board Room at the Royal Aquarium to consider what steps should be taken to perpetuate the memory of the late Mr. William Holmes, many years honorary secretary. R. Ballantine, Esq., presided, and there was a large attendance of members of the Society and other friends of Mr. Holmes. Much sympathy was evinced in the movement, and as the result of the discussion it was decided to raise a memorial fund, and to appoint a committee to prepare a scheme to be submitted to a subsequent meeting. Mr. L. Castle was appointed secretary.

ROYAL AQUARIUM FRUIT SHOW, October 15 and 16.

The series of horticultural exhibitions arranged by the Royal Aquarium Company for the current year was brought to a close on Wednesday and Thursday with a magnificent display of hardy and other fruits. The arrangements were, in consequence of the death of Mr. W. Holmes, carried out by Mr. R. Dean, and afforded satisfaction to all concerned.

Collections of Fruit formed an excellent feature. Mr. A. Miller, Rood Ashton, Trowbridge, was first with a collection in which the apples and pears were of high quality. Bellegarde, Salway, and Golden Eagle peaches were well represented; and the examples of Muscat of Alexandria, Alicante, Lady Downes, and Trebbiano were remarkable for their high finish. Mr. J. H. Goodacre, Elvaston Castle, Derby, was a close second, his collection being very strong in grapes. Sea Eagle peach was conspicuous, the fruit being large and well coloured.

Pears were staged in considerable quantities, and in excellent condition. Mr. W. A. Cook, Compton Basset, Calne, Wilts., was first for twelve dishes, with an admirable collection, particularly noteworthy being the examples of Pitmaston Duchess, Doyenne du Comice, Glou Morceau, Beurre Bosc, and Marie Louise. Mr. S. Barlow, Stakehill House, Castletown, near Manchester, was a close second, and Mr T. A. Wester was third. Messrs. E. Palmer and Co., Waterloo Road, S.E., were first for six dishes with large and handsome fruit, and Mr. C. Blick was second.

Apples were so largely staged as to produce a highly attractive display. Mr. T. Parker, Moreton Court, Herefordshire, obtained premier honours in the class for eighteen kinds, and Mr. Goodacre and Mr. S. Barlow were second and third respectively. For six dishes of culinary apples, Mr. F. Bridger, Penshurst Place; Mr. C. Richings, and Mr. Hosner, Meopham, Kent, were the prizetakers, and in the corresponding class for dessert kinds the awards were made in favour of Mr. C. Richings, Mr. Parker, and Mr. J. H. Goodacre. As the varieties were the same as those shown at exhibitions recently reported, it is not necessary to give the names.

Grapes were plentiful and good. For a collection, Mr. J. H. Goodacre was first with superb clusters of Alnwick Seedling, Foster's Seedling, Muscat of Alexandria, Gros Colmar, and Mrs. Pearson. Mr. George Winter, Barrow-on-Humber, and Mr. J. Wallis, Keele Hall, were second and third. For three bunches of Black Hamburgh Mr. J. Batten, Hollywood, Wimbledon, was first with good clusters, and Mr. F. Billings, Coombe Wood, and Mr. P. Blair, Trentham, were second and third. In the class for any other black variety Mr. J. Batten was first with Gros Maroc, Mr. Griffin was second with Alnwick Seedling, and Mr. G. Featherby was third, The finest examples of Muscat of Alexandria were shown by Mr. Goodacre, Mr. C. Griffin, and Mr. G. Winter, to whom the prizes were awarded in the order of their names. In competition for the prizes for any other white variety Mr. Osman was first with Mrs. Pearson, and Mr. Miller was second with Foster's Seedling.

Vegetables were staged in immense quantities, the competition being especially severe for the prizes offered by Messrs. Sutton and Sons. Mr. C. J Waite, Esher; Mr. R. Lye, Sydmonton Court; and Mr. Pope, Highclere Castle, were first, second, and third respectively. Mr. Phillips, Meopham, was first for a collection of tomatos with excellent fruit; and for six dishes of tomatos Mr. Wells, Redhill, and Messrs. Follows and Ryden, Orpington, were first and second respectively.

Miscellaneous Contributions included large collections of apples and pears from Messrs. J. Veitch and Sons, Messrs. J. Cheal and Sons, Messrs. G. Bunyard and Co., Mr. J. Watkins, and other exhibitors; a group of begonias from Messrs. J. Laing and Sons, and a collection of dahlias and chrysanthemums from Messrs. H. Cannell and Sons.

Conference.

On Wednesday evening a conference organized by the British Fruit Growers' Association was held in the Board Room of the Royal Aquarium, when Mr. G. Hammond read a paper on "The Cultivation of Apples for Market." Mr. George Gordon, vice-chairman of the association, presided, and there was a good attendance, the room being well filled. At the close of Mr. Hammond's paper, which was received with marked expressions of approval, there was a brisk discussion, in which W. Roupell, Esq., Streatham; Mr. J. Cheal, Crawley; Mr. Ivatt, Cambridge; Mr. E. Luckhurst, Romford; Mr. Bevan, Finchley; Mr. H. Cannell, Swanley; C. E. Shea, Esq., Foot's Cray, and others took part.

The proceedings terminated with votes of thanks to the reader of the paper, the honorary secretary, and the chairman.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

The quarterly meeting of this society was held at the Caledonian Hotel, on Monday evening last, Mr. G. W. Cummins in the chair. The committee report that the society continues to make steady progress both financially and numerically. No death among the members has occurred during the quarter, and there is only one sick member on the funds. All members are invited to subscribe to the Convalescent Fund, which was opened in July last. The fund is voluntary, and entitles members to a sum not exceeding 30s. for change of air after illness.

Letters on various subjects were read by the secretary, and the usual vote of thanks to the chairman ended the meeting.

FRUITS PRESENTED TO HER MAJESTY THE QUEEN.

Selected by the Fruiterers' Company from the Guildhall Exhibition.

About sixty dishes of fruit were selected by the Fruiterers' Company from the Guildhall Exhibition for presentation to her Majesty the Queen, and at the close of the show they were packed in two strong cases, and forwarded, carriage paid, to Balmoral, where the Court is now staying. The samples selected represented, as far as possible, the produce of the whole of the districts from which contributions were received. The following are the names of the varieties and of the exhibitors from whose collections they were selected:—

Apples.

Belle Pontoise.—Messrs. J. Peed and Sons, Streatham, S.W.

King of the Pippins.—Mr. S. French, labourer, Marstow, Hereford.

Warner's King.—Mr. A. Williams, bootmaker, The Moor, Bodenham.

Ecklinville Seedling.—Mr. Hyde, farmer, Calderwell, Bodenham.

Peasgood's Nonsuch.—Mr. J. Davis, farmer, Bunhill, Bodenham.

Coker Seedling.—Mr. W. Hilyar, farmer, East Coker, Yeovil.

Hormead's Pearmain.—Mr. S. T. Wright, gardener to C. Lee-Campbell, Esq., Glewston Court, Hereford.

Tyler's Kernel.—Mr. T. Parker, gardener to Mrs. Evans, Moreton Court, Hereford.

Ribston Pippin.—Lady Whitehead, Highfield House, Catford Bridge, Kent.

Worcester Pearmain.—Mr. F. Minchener, Park House, Penge, Surrey.

Tower of Glamis.—Mr. J. Wilson, labourer, Hall Lane, Lathom, Ormskirk.

Cox's Orange Pippin.—Mr. T. J. Pullett, cottager, Loughborough.

Bramley's Seedling.—Mr. J. Doncaster, farmer, Hallhoughton, Southwell, Notts.

Ribston Pippin.—Mr. S. Barlow, J.P., Stakehill House, Castleton, Manchester.

Duchess of Gloucester.—The English Fruit and Rose Company, Hereford.

Braddick's Nonpareil.—Royal Horticultural Society, Chiswick, W.

Washington.—Messrs. G. Bunyard and Co., Maidstone.

Bismarck.—Mr. P. Crowley, Waddon House, Croydon.

King of Tomkins County.—Messrs. T. Rivers and Son, Sawbridgeworth.

Rosemary Russet.—Messrs. T. Rivers and Son.

Lord Lennox.—Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby.

Lord Derby.—Mr. G. Reynolds, gardener to Messrs. de Rothschild, Gunnersbury Park.

Gascoyne's Scarlet.—Mr. C. Davies, The Mote Gardens, Maidstone.

Peasgood's Nonsuch.—Mr. S. Barlow, J.P.

Nelson's Codling.—Messrs. Jarman and Co., Chard, Somerset.

Transparent de Croncelles.—Paul and Son, Cheshunt.

Frogmore Prolific.—Mr. H. Berwick, Sidmouth, Devon

Hollandbury Pippin.—Mr. C. Turner, Slough.

Hoary Morning.—Messrs. W. Balchin and Son, Hassocks Gate, Sussex.
Pine Golden Pippin.—Mr. W. Taylor, Osborn's Nursery, Hampton.
Fearn's Pippin.—Mr. A. Wyatt, Market Gardens, Hatton, Middlesex.
Golden Noble.—Mr. W. F. Gibbon, Fruit Grower, Seaford Grange, Pershore.
Warner's King.—Mr. John Watkins, Pomona Farm Nurseries, Withington, Herefordshire.
New Hawthornden.—Mr. John Warner.
Bismarck.—Messrs. J. Laing and Sons, Forest Hill, S.E.
Herefordshire Pearmain.—Messrs. J. Cheal and Son, Crawley, Sussex.
Cellini Pippin.—Messrs. W. Paul and Son, Waltham Cross.
Sandringham.—Messrs. J. Veitch and Sons, Chelsea.
Emperor Alexander.—Mr. F. Bridger, Penshurst Place, Kent.
Stone's or *Loddington.*—Mr. G. Woodward, gardener to R. Leigh, Esq., Barham Court, Maidstone.
Lane's Prince Albert.—Mr. E. H. Caterer, gardener to T. Arnall, Esq., Headington Hill, Oxford.
Mere de Menage.—Mr. T. Turton, gardener to John Hargreaves, Esq., Maiden Erleigh, Reading.
Scarlet Nonpareil.—Mr. T. J. Pullett.
Dumelow's Seedling.—Mr. J. Wilson.
Stirling Castle.—Mr. W. Waghorn, Allington, Maidstone.
Lord Derby.—Mr. F. Marsh, Nettlestead, Maidstone.
Lady Sudeley.—Mr. W. Jacob, High Street, Petworth.
Dumelow's Seedling.—Mr. H. Newman, Eastbourne.
The Queen.—Mr. W. Bull, Ramsden, Billericay, Essex.
Lane's Prince Albert.—Mr. H. Manser, Northdown, Margate.
Cox's Orange Pippin.—Mr. R. Webb, Beenham, Reading.
Claygate Pearmain.—Mr. J. Turner, gardener to R. H. Combe, Esq., Pierrepoint, Farnham.
Worcester Pearmain.—Mr. W. S. Skinner, Broughton Monchelsea, Sussex.
Cornish Aromatic.—Mr. F. Miller, gardener to J. J. Friend, Esq., Northdown, Margate.
Ribston Pippin.—Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford.

PEARS.

Doyenné du Comice.—Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, Frome.
Pitmaston Duchess.—Mr. James Hunter, gardener to the Earl of Durham, Lambton Castle, Durham.
Louise Bonne of Jersey.—Mr. A. J. Thomas, Sittingbourne.
Magnate.—Mr. T. Turton, Maiden Erleigh.
Beurré Bachelier.—Mr. C. Blick, gardener to M. R. Smith, Hayes Common, Kent.
Seckle.—Mr. T. Dunn, gardener to L. Hibbert, Esq., Walberton House, Arundel.
Nouveau Poiteau.—Mr. G. Woodward, Barham Court.
Pitmaston Duchess.—Messrs. T. Rivers and Son.
Louise Bonne of Jersey.—Mr. J. Sheppard, gardener to Captain Berners, Wolverston Park, Ipswich.
Emilie d'Heyst.—Mr. R. Smith, gardener to A. Cox, Esq., Presdales, Ware, Herts.
Doyenné du Comice.—Messrs. G. Bunyard and Co.
Durondeau.—Mr. J. Nicholson, gardener to W. Mellis, Esq., Sewardstone Lodge, Chingford.
Marie Louise d'Uccle.—Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich.
Doyenné du Comice.—Mr. W. Allan.
Doyenné du Comice.—Messrs. J. Cheal and Son.
Marie Louise.—Mr. C. Davies, Maidstone.

PEACH.

Lord Palmerston.—Messrs. T. Rivers and Son.

CRAB.

Edulis.—Messrs. J. Cheal and Sons.

THE CULTIVATION OF APPLES FOR MARKET.

By Mr. G. HAMMOND, Brentwood.

Read at the British Fruit Growers' Meeting, October 15.

IT is not without considerable hesitation and diffidence that I appear before you this evening to read a paper upon this subject, knowing as I do that many older and abler men than myself have already dealt with it, and I can hardly expect to say anything new. Still, I am aware that instruction in the cultivation of fruit, as in other things, must be line upon line, precept upon precept, here a little and there a little; and as it is possible that I occupy a somewhat different position, and therefore see things from a different standpoint from many who have preceded me, I hope it may not be altogether wasting your time in listening to what I have to say upon the matter in hand.

I wish it to be understood at the outset that my remarks refer to the cultivation of apples for profit, therefore, of course, for market, as distinct from the growth of extra large fruit for the exhibition table, or the growth of a large number of sorts for the supply of the gentleman's table and kitchen for the longest possible time. With regard to the cultivation of the apple one thing has been clearly proved by the recent show at the Guildhall—viz., that this fruit can be grown, and well grown, over a very much wider area than has been generally supposed, and that although our esteemed Kentish friends may have led the van, they can by no means claim a monopoly of either suitable soil or favourable situations for the growth of this fruit, but as in the case of the queen of flowers, so also with the most useful of fruits. Although some soils and situations may be naturally better adapted than others, still with a wise selection of sorts, combined with careful and attentive culture, it is possible to succeed almost anywhere between the Channel and the Tweed; nor do I forget that most useful fruit is grown beyond the border, and some of our most useful kinds have come to us thence. Our secretary also, and his companion in travel, have convinced us that the apple at least can be profitably grown, with care and attention, even in the Emerald Isle, and we may hope that some of the labour hitherto spent upon the potato may be diverted to the growth of the apple, with the best results of bringing more money into the pockets, better health to the bodies, and greater comfort and contentment to the homes of our Irish friends.

Now the first point in the successful culture of the apple undoubtedly is the thorough preparation of the ground before planting." It is not enough simply to make a hole in otherwise unbroken ground just large enough to thrust in the roots, but the whole field, or portion to be planted, should be well stirred to a depth of not less than from 12 to 18 inches. I myself in this matter prefer not to bring up the subsoil to the surface, nor do I think it necessary to insist upon the ground being double-trenched. In my opinion a good preparation may be made at less cost, either with the "steam digger" or by a good ploughing with a subsoil implement of some kind following the plough, and breaking up the bottom of the furrow. This process should, if possible, be repeated, and if the second ploughing or digging can be done crosswise of the fruit so much the better. If the soil be poor a good coating of manure should be carted upon the land before the first ploughing; if the soil be in good condition this may not be necessary.

Having well prepared the ground, the next thing to be done is to mark out the lines in which the trees are to be planted, and at this stage it will be advisable to decide as to what shall be done with the ground—whether it shall be laid down with grass or planted with other fruits, as more room should be given in the case of orchards than in gardens, as I will presently show. The ground should be marked out both lengthwise and crosswise, and may be done either with a marking line and hoe or by an implement made for the purpose, such as may be often seen in the county of Kent. The trees will then, when planted, be equidistant, and straight in every direction.

The selection of the trees will follow next in order, and this depends, both as to the class of trees and also as to the kinds of fruit, upon the decision made as to the future of the ground. If for orchards, then standard trees only should be planted, and these upon the crab or free stock, and of kinds that can be best recommended by the nurserymen for this form of tree. If the ground be intended for continual cultivation, then in my opinion the best form of tree is what is generally known as "half-standard." These are not so much exposed to the wind, are much more convenient for the gathering of the fruit, and can be grown in a greater variety of sorts, and also upon various stocks.

If the trees are to be well fed and cared for, then I think the best stock will be one of the freer-growing paradise; these will, I think, best attain the desired end in fruit culture—viz., to grow a fairly good tree while also bearing a large quantity of fruit. But if what is known as the starving process is to be followed—*i.e.*, plant the trees and take no further trouble about them—then by all means avoid every kind of paradise stock, as trees upon the crab, however vigorous, will be none too much so for such a method of treatment. I prefer to buy two-year-old untrimmed trees, and to make my own personal selection, so as to secure the kind of trees which I desire.

Having secured the trees (which should always be obtained from some well-known and established nurseryman) it is of all things most important that they be properly planted. First let the roots be seen to, and all injured ones cut back, and also all long straggling roots; then have a hole made—not deep, but of sufficient space to allow of the roots being spread out their whole length, not cramped into a heap, and then filled in with the earth made as fine as possible, so that it may shake well into the roots; then tread tolerably firmly with the foot, according to the state of the ground, and let the ground when finished be slightly higher round the trees than elsewhere.

If the trees be standards they will need immediate staking, or they will soon be displaced and injured by rough stormy winds. This should be done carefully and well, otherwise much harm may come to the trees by chafing against the stakes, a result which I saw some time ago in the case of a young plantation. If the trees be "half standard," or two years old, such as I have described, they will not need staking, except in a few cases where the roots are few and feeble, and this not until some time after planting, "at least such is my experience and practice."

We come now to a part of the subject upon which I am aware a great diversity of opinion exists, greater perhaps than in any other. I mean that of pruning. In this matter I wish to give my own experience and belief, in no dogmatic way, but with an honest open mind, willing to believe that others may have found some other practice to be preferable. It is my practice with trees such as are to be obtained generally, to cut back severely the same season as the planting takes place, and I have rarely failed to secure good shoots with which to form the basis of the trees. Often these require nothing more in the way of pruning beyond the thinning of the branches and the removal of shoots that cross each other, but where the growth is weakly I cut back a second time. But when once a tree is properly furnished with an evenly balanced head, the best thing to do is to let it alone, that it may bear fruit, which it never will if the pruning knife is constantly used. In this matter the habits of the different varieties of apples must be studied. Some will bear more pruning than others, while some, apparently, will not bear any.

With the approach of spring (or even at the autumn planting), the trees will be greatly benefited by some manure being spread round the stems of the trees, and remaining upon the surface. This will help to exclude the dry penetrating winds, and will also tend to encourage surface rooting, which is much to be desired.

I have thus dealt with the preliminary stages in the cultivation of apples, as being the all-important time upon which the success or failure of after years to a large extent depends. If the land be intended for orchards, it will be better to defer sowing the seeds for at least two years, and planting the ground with other crops, such as potatos or roots, so that the trees may become thoroughly established, when the grass seeds may be sown and afterwards fed off with young stock or sheep, or if cut for hay, care should be taken to replenish the soil so that the trees may not suffer.

In the case of trees upon land under constant cultivation much more may be done in the management of the trees where a tree shows signs of running to wood. If upon the paradise stock it may be lifted and replanted, or if upon the crab it may be root pruned with very good results, whilst those that appear weakly may be encouraged by stirring the soil and by surface dressing. So far I have said nothing upon the distances at which the trees should be planted. This will vary very much indeed, for while 30 feet by 20 may not be found too much for orchard standards of vigorous kinds, 18 feet by 12 or 15 will be found ample for many sorts upon the paradise stock.

It may be expected of me to give a list of sorts that I consider most profitable. I therefore append a list, not as being in any way complete, but rather as types of all classes to which they belong, always remembering that any one kind of apple will not succeed equally well in all soils and in all districts, and that in making a selection regard should be had to the soil and situation, and to plant those sorts that seem best to succeed in each particular locality.

For kitchen use I should advise the following: Early Julien, Lord Suffield where it succeeds, Keswick Codlin, Yorkshire Beauty or Red Hawthornden, Stirling Castle, Duchess of Oldenburgh, Lord Grosvenor, Ecklinville Pippin, Jolly Beggar, Lord Derby, Grenadier, Small's Admirable, Warner's King,

New Hawthornden, Stone's Apple, Tower of Glamis, Bismarck, Lane's Prince Albert, Bramley's Seedling, and Wellington where it succeeds.

For dessert or table use I would suggest the following:—viz., Red Juneating, Mr. Gladstone, Yellow Ingestre, Devonshire Quarrenden, on soil that suits it; Lady Sudeley, Worcester Pearmain, which has more money in it than any table apple I have yet seen; Duchess's Favourite, King Pippin (if in orchard Blenheim Orange), and Cox's Orange Pippin. The last-named will, I think, be generally found to answer best upon the paradise stock.

I purposely pass over the cost of planting, which may be easily ascertained by reference to catalogues of fruit trees, and by a little calculation. I would like, in closing, to emphasise a few points. First, do not plant a few trees of a large number of sorts, but first ascertain what is best for each particular locality, and then plant a large number of those sorts. Give preference to those which can be gathered from the trees and sent direct to market. If possible, plant a whole field, or at least several acres when planting. Avoid all patchwork business. Do not force growth too freely when young, but as the trees advance in age, and heavy crops have checked their vigour, let them be well fed and cared for, which expense and trouble they will well repay. Remember that "whatever is worth doing at all is worth doing well," but that it is impossible to do anything well without attention.

Replies to Queries.

Zonal Pelargoniums.—T. H. B.: The conditions under which the zonal pelargoniums bloom best are a light position, a dry atmosphere, and a genial warmth. It will be advisable for you to devote a small house or spacious pit wholly to them. They will require supplies of water at the roots, and as far as possible they must be watered early in the day.

A. C. M.—The spiræas may be left undisturbed as you do not intend to flower them under glass. The plant should be never "quite dry." If you pinch out the flower heads of the cinerarias they will produce another crop in due time, but it is late for such business, and perhaps it would be better to allow them to push on The ground that is now occupied with the injured esculents may be dressed with a coat of gas lime with advantage.

Carnations and Picotees.—M. F.: Certainly the potting up of the layers of the carnations and picotees should be proceeded with at once. Put those well rooted singly in three-inch pots, and use fibrous loam to which a moderate addition of sand has been made. Remove any leaves that may have been damaged, and pot rather firm. Those not nicely rooted should be put in three-inch pots, two in each.

Names of Fruits.—Ivan: The apple is Golden Spire.—J. W. P.: 1, Mere de Menage; 2, Warner's King.—J. Hartrig: 1, Reinette Van Mons; 2, Golden Knob, not worth a place in a garden; 3, Herefordshire Beefing; 4, Sheepsnose.—H. Harris: 1, Passe Colmar; 2, Autumn Nelis; 3, Bishop's Thumb; 4, Forelle; 5, Jean de Witte; 6, Seckle.—F. A. L.: The plums are fine samples of 1, Late Rivers; 2, Blue Imperatrice; 3, Ickworth Imperatrice.

Salvias and Bouvardias.—C. J.: The bouvardias, salvias, and epiphyllums require more warmth during the autumn and winter months than azaleas and similar subjects, and cannot therefore be successfully wintered with them. They would do very well in the stove, but as you have not a plant stove under your charge, we would suggest that you devote one of the melon or cucumber houses to them. In a structure such as that devoted to the culture of melons or cucumbers they will be within a short distance of the glass, and can have the temperature most suitable for them. The day temperature should range between 55 deg. and 60 deg.

A Puzzling Query.—Frux writes as follows: "Will you inform me what fruits and vegetables grow wild, and which are most worthy of cultivation in the metropolitan area." To reply to such a question it appears necessary to review the whole vegetable kingdom, and restate all that has been taught on practical horticulture with the singular limitation of applying the conclusions to the "metropolitan area." We confess our inability to tackle such a subject in the way of a "reply," but if Frux will ask a question on any point arising out of the selection or cultivation of any particular vegetable or fruit, we will endeavour to furnish him with useful information.

Names of Plants.—J. J. G. L.: Escallonia Montevidiensis.—Emslie; 1, Liquidambar styraciflua; 2, Ulmus suberosa; 3, Rubus corylifolius; 4, Phillyrea lancifolia.—F. R. A.: 1, Rudbeckia asperrima; 2, Coreopsis crassifolia; 3, Aster concinnus; 4, Scizostylis coccinea.—Zero: The tree you refer to is probably the flowering ash, Ornus Europeus, but we cannot guarantee the name unless we see something of it.—A. H. B. B.: 1, Abutilon vexillarium; 2, Crinum Herberti; 3, Hibiscus syriacus purpureus; 4, Leonotis leonurus; 5, Solanum Tweedianum.—Flora: We cannot name the single dahlias or the pelargoniums. The flowers sent are shrivelled out of recognition by being placed loosely in a paper box, and even if fresh, it is probable we could not name them with any certainty.

Cutting Evergreens.—F. F.: You may cut them now without fear of any serious harm, but this is not a good time for such business. It is very much the practice to cut back evergreens that are over-crowded or have become inconveniently tall, so as to render the material removed serviceable at Christmas. Not that Christmas is the best time, but because cuttings of evergreens are then in request, and, generally speaking, the trees suffer nothing by the process. If not wanted at Christmas, the spring is the best time for the operation, as the new growth follows quickly and the mutilations are soon repaired. But we advise you to consider well whether your evergreen shrubs require to be pruned back. If they are shapely and not inconveniently large, leave them alone, for pruning does not, as a rule, add to their beauty, and when the operation is needed some skill is necessary for its due performance.

Tomatos.—A. T. S.: Your sample is affected with the well-known tomato disease, the cause of which is universally understood to be unfavourable conditions in the growing season. A cold damp soil, or a cold damp air, or the two combined, will produce the disease, notwithstanding what may be done to avert it. To dust with sulphur or adopt any measures short of improving the condition is useless. The tomato requires a warm, dry soil and a dry, moving atmosphere to maintain a healthy growth; and much mischief is made in houses by over-watering, and a too free use of the syringe at times when the temperature is too low for the plants to appropriate the moisture supplied to them. When the leaves are affected they should be removed and burnt, and to prevent distress of the plants by too free removal of leaves, those that are only slightly touched should have the diseased parts only removed, retaining for the use of the plant as much of the healthy leaves as possible.

Watercress.—Emil: The cress on the border that you find so serviceable will disappear with the first sharp frost unless it is protected. The simplest method would be to put a frame over and give air freely, except during frost. A moderate supply of water will suffice to keep the cress growing, and you will be enabled to gather useful salads from the frame all through the winter. Watercress is often unobtainable in winter, but a bed started in August and protected by a frame may generally be depended on to afford abundance until spring.

Stimulants for Chrysanthemums.—W. S.: You must exercise considerable care in supplying the chrysanthemums with liquid manure, for if injudiciously applied it will do more harm than good. Unless the pots are well filled with roots, but little, if any, liquid manure will be required, and such a powerful stimulant as sulphate of ammonia ought certainly not to be used. A very excellent liquid manure for chrysanthemums may be made by steeping horse droppings in soft water, a good plan being to put the manure in a canvas bag and then throw it into a large vessel of water. The bag should be about two-thirds full, and be moved about occasionally with a stick to enable the water to act more readily upon the manure. To the water should be added a rather liberal quantity of soot. The colour of a liquid so prepared is a very good indication of its strength, and as a rule the colour of the liquid when used should closely resemble pale ale. If of a higher colour you must dilute it by adding sufficient water to reduce it to the proper strength. Liquid manure of this discription may be used alternatively with clear water. Sulphate of ammonia is a valuable stimulant for plants that have become pot-bound, and is of much service in improving the colour of both the foliage and flowers. The proportion in which it should be used is one ounce to every three gallons of water. The plants should be supplied with it at intervals of three or four days, and generally speakiug four applications will be sufficient. Chrysanthemums ought not to be supplied with liquid manure after the blooms have attained about one-half their usual size.

TRADE CATALOGUES.

W. PAUL AND SONS, WALTHAM CROSS, HERTS.—*Roses.*

H. CANNELL AND SONS, SWANLEY, KENT.—*Garden Wants during Autumn and Winter.*

JAMES WALTERS, MOUNT RADFORD NURSERIES, EXETER.—*Roses.*

Obituary.

RECENTLY, as the result of an accident at Mersey Road Station, Mr. ENOCH HARVEY, of Aigburth, the well-known amateur orchidist. Mr. Harvey, who was the senior member of one of the principal firms of solicitors in Liverpool, devoted much attention to orchids, and was for many years chairman of the Liverpool Horticultural Company.

ON the 12th inst., Mr. THOROLD ROGERS, Professor of Political Economy at Oxford, and author of a "History of Agriculture and Prices in England," "Six Centuries of Work and Wages," and editor of the Oxford reprint of Adam Smith's "Wealth of Nations."

Markets.

COVENT GARDEN.

FRUIT.

Apples	per ½-sieve	3s. 6d.	to 7s. 0d.
Filberts, Kent, per 100 lb.		50s. 0d.	,, 55s. 0d.
Grapes	per lb.	1s. 0d.	,, 3s. 0d.
Lemons	per case	15s. 0d.	,, 30s. 0d.
Pine Apples, English, per lb.		1s. 6d.	,, 3s. 0d.
Pine-apples, St. Michael's each		2s. 6d.	,, 6s. 0d.
Plums	per ½-sieve	7s. 0d.	,, 12s. 6d.

VEGETABLES.

Artichokes, Globe, per doz.		4s. 0d.	to 6s. 0d.
Beans, Kidney	per lb.	0s. 4d.	,, 0s. 6d.
Beet	per doz.	1s. 0d.	,, 2s. 0d.
Brussels Sprouts	per ½ sieve	1s. 6d.	,, 2s. 6d.
Cabbages	per doz.	1s. 6d.	,, 2s. 0d.
Carrots	per bun.	0s. 4d.	,, 0s. 6d.
Cauliflowers	per doz.	2s. 6d.	,, 3s. 6d.
Celery	per bun.	1s. 6d.	,, 2s. 0d.
Cucumbers	each	0s. 6d.	,, 0s. 8d.
Endive	per doz.	1s. 0d.	,, 2s. 0d.
Herbs	per bunch	0s. 3d.	,, 0s. 4d.
Horse-radish	per bun.	2s. 0d.	,, 3s. 0d.
Lettuces	per doz.	1s. 0d.	,, 1s. 6d.
Mushrooms	per basket	0s. 9d.	,, 1s. 6d.
Onions	per bushel	2s. 0d.	,, 4s. 0d.
Parsley	per bun.	0s. 4d.	,, 0s. 6d.
Savoys	per doz.	1s. 0d.	,, 2s. 0d.
Scarlet Runners	per lb.	0s. 2d.	,, 0s. 3d.
Seakale	per pun.	1s. 0d.	,, 1s. 6d.
Shallots	per bun.	0s. 4d.	,, 0s. 6d.
Small Salading	per pun.	0s. 3d.	,, 0s. 4d.
Spinach	per bushel	2s. 0d.	,, 2s. 6d.
Tomatos	per lb.	0s. 6d.	,, 1s. 0d.
Turnips	per bunch	0s. 3d.	,, 0s. 4d.

CUT FLOWERS.

Abutilons	per doz. bun.	2s. 0d.	to 4s. 0d.
Asters	per doz. bun.	3s. 0d.	,, 6s. 0d.
Bouvardias	per bunch	0s. 6d.	,, 0s. 9d.
Callas		2s. 6d.	,, 5s. 0d.
Carnations, per doz. blms.		1s. 0d.	,, 2s. 0d.
Chrysanthemums, per doz. blooms		0s. 9d.	,, 2s. 0d.
Chrysanthemums, per doz. bun.		2s. 6d.	,, 5s. 0d.
Coreopsis	per doz. bun.	1s. 0d.	,, 3s. 0d.
Dahlias	per doz. bun.	2s. 0d.	,, 4s. 0d.
Eucharis	per doz. blms.	2s. 0d.	,, 4s. 0d.
Gardenias, per doz. blms.		2s. 0d.	,, 4s. 0d.
Gladioli	per doz. bun.	5s. 0d.	,, 10s. 6d.
Heliotropes, pr doz. sprys		0s. 6d.	,, 1s. 0d.
Lapageria, per doz. blms.		1s. 0d.	,, 3s. 0d.
Liliums, various, per doz. blooms		0s. 6d.	,, 3s. 0d.
Maidenhair Fern, per doz. bun.		4s. 0d.	,, 8s. 0d.
Marguerites, per doz. bun.		2s. 0d.	,, 4s. 0d.
Mignonette, per doz. bun.		1s. 0d.	,, 3s. 0d.
Pelargoniums, Zonal, per doz. trusses		0s. 3d.	,, 0s. 4d.
Primulas, Double, per bunch		0d. 6d.	,, 1s. 0d.
Roses, Coloured, per doz.		1s. 0d.	,, 1s. 6d.
Roses, Tea, per doz. blms.		0s. 9d.	,, 1s. 6d.
Sunflowers, per doz. bun.		3s. 0d.	,, 6s. 0d.
Tuberoses, per doz. blms.		0s. 4d.	,, 0s. 6d.
Violets	per doz. bun.	0s. 9d.	,, 2s. 0d.
Violets, Parme, per bun.		2s. 0d.	,, 3s. 0d.
Violets, French, per bun.		1s. 0d.	,, 1s. 6d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents	per ton	55s.	to 70s.
Magnum Bonum	per ton	60s.	,, 80s.
Beauty of Hebron	per ton	60s.	,, 90s.
Early Rose	per ton	45s.	,, 55s.
Imperator	per ton	55s.	,, 75s.
White Elephant	per ton	60s.	,, 70s.

KEW BULLETIN for October is well filled with matters of importance. A report on an edible fungus (*Hirneola polytricha*) of New Zealand will be valued by many. Mexican fibre or Istle is reported on by Mr. W. S. Booth. A Forest Plague in Bavaria (*Liparis Monacha*) claims the attention of all who are interested in forestry and coniferous trees. Cocoa-nut Butter, reported on at length, is a somewhat new commercial article that is coming into use for culinary purposes, and is described as perfectly wholesome, and, as compared with butter, remarkably cheap. Other subjects, scarcely less attractive, will be found in this useful issue of the "Bulletin."

"THERE IS UNQUESTIONABLY" no better remedy in the whole world for all cough and throat troubles than KEATINGS LOZENGES—any medical man will assure you of this fact. Relief is speedy; they contain no strong acting, but only simple drugs; the most delicate can take them. Sold everywhere in 13½d. tins.—[ADVT.]

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Noon.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.		Day of Yr.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.			1890
26	S	**21st Sunday after Trinity.**	6 44	15 58	4 43	4 36	4 15	0 17	0 39	9 42	10 4	47·3	Angræcum caudatum	Madagascar.	299
27	M	○ Full Moon.	6 46	16 4	4 41	4 55	5 37	1 2	1 24	10 27	10 49	47·0	Cattleya Gaskelliana alba ...	Brazil.	300
28	Tu	*St. Simon and St. Jude.*	6 48	16 8	4 39	5 16	7 0	1 44	2 3	11 9	11 28	46·6	Lælia autumnalis	Brazil.	301
29	W	Allan Cunningham died, 1842.	6 50	16 12	4 37	5 38	8 21	2 23	2 43	11 48	—	46·4	Odontoglossum Sanderianum	Colombia.	302
30	Th	Sheridan born, 1751.	6 51	16 16	4 36	6 8	9 38	3 2	3 20	0 8	0 27	46·2	Oncidium Rogersi	Brazil.	303
31	F	*All Hallows' Eve.*	6 53	16 18	4 34	6 44	10 52	3 39	3 58	0 45	1 4	45·9	Vanda cærulea	Khasya.	304
		November.													
1	S	*All Saints' Day.*	6 56	16 20	4 32	7 28	11 54	4 16	4 34	1 23	1 41	45·7	Zygopetalum Gautieri.....	Brazil.	305

CRYSTAL PALACE.—GRAND EXHIBITION of CHRYSANTHEMUMS.
FRIDAY and SATURDAY, November 7th and 8th.
Schedules on application to Mr. W. G. Head, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close October 31st.

BRADFORD AND DISTRICT CHRYSANTHEMUM SOCIETY.
FOURTH ANNUAL EXHIBITION, November 7th and 8th. Schedules post free.
Entries close November 1st. Over £100 in prizes.
102, Godwin Street, Bradford. Geo. R. Taylor, Hon. Secretary.

BRIGHTON AND HOVE CHRYSANTHEMUM SHOW.
November 11th and 12th.
TWO CUPS, £10 and £5.
Schedules of M. Longhurst,
18, Church Road, Hove, Sussex.

HINCKLEY AND DISTRICT CHRYSANTHEMUM SOCIETY'S ANNUAL SHOW, Nov. 17 and 18.—A Silver Challenge Cup will be offered for Competition. Schedules and Entry Forms on application to Mr. J. H. Robottom, 20, Castle Street, Hinckley. Spaces to Let for Novelties.

KENT COUNTY CHRYSANTHEMUM SOCIETY.—The THIRD ANNUAL GRAND EXHIBITION will be held in the Rink, Blackheath (opposite S.E.R. station), on TUESDAY and WEDNESDAY, 4th and 5th November. Over £13 in money prizes and silver cups. Special "Centenary" Class, 48 blooms—24 Japanese and 24 Incurved, distinct. First prize, Silver Cup (value £10) and £8; second prize, £6; third prize, £4; fourth prize, £2. Schedules, &c., free of H. A. Needs, Hon. Sec., 49, Ringstead Road, Catford, S.E.

KINGSTON & SURBITON CHRYSANTHEMUM SOCIETY.
President—G. C. SHERRARD, Esq., J.P.
The FOURTEENTH GREAT SHOW of CHRYSANTHEMUMS, FRUIT, &c., will be held in the Drill Hall, Kingston-on-Thames, on TUESDAY and WEDNESDAY, November 11 and 12, 1890, when, in addition to valuable money prizes, the Sixth Champion Challenge Vase, value 25 guineas, will be offered. Schedules and any other information of Mr. Geo. Woodgate, Warren House Gardens, Kingston Hill, Surrey, Hon. Sec.
Entries Close Nov. 6.

THE BATH CHRYSANTHEMUM SHOW.—12th and 13th November, 1890. Entries close November 7th. For prize schedules apply
2, Northumberland Buildings, Bath. B. R. F. Pearson, W. Jeffery, } Secretaries.

WIMBLEDON ROYAL HORTICULTURAL SOCIETY.—GRAND SHOW OF CHRYSANTHEMUMS, &c., DRILL HALL, WIMBLEDON, on November 13th and 14th, 1890. Challenge Cup (value 15 guineas) and £5 for 24 Incurved (not less than 18 varieties), and 24 Japanese (distinct); Cup (value 5 guineas) for group of Chrysanthemums.—Schedules may be obtained of Hon. Secs., Dr. Walker, 12, Lingfield Road, and Mr. W. Thomson, The Nurseries, Wimbledon.

Exhibitions and Meetings for the Ensuing Week.

Tuesday, Oct. 28.—Royal Horticultural Society.—Meetings of Floral, Fruit and Scientific Committees.

Wednesday, Oct. 29.—National Chrysanthemum Society.—Meeting of Floral Committee.

Auction Sales for the Ensuing Week.

Monday, Tuesday, and Wednesday, Oct. 27, 28, and 29, and Saturday, Nov. 1.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.

Monday and Thursday, Oct. 27, and 30, and Saturday, Nov. 1.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

Monday, Oct. 27.—Messrs. Protheroe and Morris, at Cliff, near Rochester; Fruit Trees, &c.

Tuesday, Oct. 28.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies.

Wednesday, Oct. 29.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Plants and Bulbs.

Thursday, Oct. 30.—Messrs. Protheroe and Morris, at Londesborough Gardens, Norbiton; Greenhouse Plants.

Thursday, Oct. 30.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Lilium auratum, Tuberoses and Amaryllis, Lily of the Valley Crowns, Dutch Bulbs, &c.

Friday, Oct. 31.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.
ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.
Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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No. 1,330 New Series.—Vol. XXXIII.

THE DOUBLE
CHRYSANTHEMUM NUMBER
OF
THE GARDENERS' MAGAZINE,

Will be published on Saturday, the 1st of November, price 6d. It will in form and general plan correspond with the chrysanthemum number published in 1889. It will be liberally illustrated with wood engravings and tinted plates. The contents will include:—

THE LATER HISTORY OF THE CHRYSANTHEMUM, by C. Harman Payne, forming a continuation and completion of the history commenced in the special issue 1889.

PORTRAITS OF HEROES OF THE CHRYSANTHEMUM.

THE EMPEROR OF JAPAN'S CHRYSANTHEMUMS, for the first time figured, from a photograph taken by command of the Emperor.

CENTENARY CHRYSANTHEMUM EXHIBITION at Ghent, 1889.

THE GREAT SPIDERKRY OR KARAKWMI, of the exact size of life and in true character. The most remarkable chrysanthemum yet seen.

A BIBLIOGRAPHY OF THE CHRYSANTHEMUM, the first hitherto attempted.

EVOLUTION OF THE CHRYSANTHEMUM; a centenary address by Shirley Hieberd.

THE CHRYSANTHEMUM IN 1828, from a paper by E. Rudge, Esq. of the Evesham Horticultural Society, unearthed for the occasion.

MR. HAWORTH'S CLASSIFICATION OF CHRYSANTHEMUMS, as proposed by him in the Gardeners' Magazine in 1833.

MUMCHANCING in the region of the past, with the dead and the living, the mummers and the mums.

TO ADVERTISERS.—The circulation of this Chrysanthemum Number will be large, and extend over a large portion of the globe. To Advertisers its pages must prove of great value, as the interest evinced in the history of the flower is of no ordinary character. The latest time for the receipt of Advertisements is Wednesday Morning, October 29.

Advertisement Offices—148 and 149, Aldersgate Street, London, E.C.

The Gardeners' Magazine.

SATURDAY, OCTOBER 25, 1890.

The rights of Judges obtain less attention than the rights of those they judge. The judges at horticultural exhibitions do not often make a declaration of rights, but occasionally circumstances force from them words they would prefer to leave unsaid; but there are times when the pinching of a shoe becomes too severe for silent submission, and mere words may give relief though there may be "nothing in them." If we might put the case in a general way, we would say in respect of judges generally that their work is generally well done, and is generally appreciated. But many promoters of exhibitions find it an easy matter to obtain the needful aid in judging, and so by custom become indifferent to the respectful and generous recognition such services should obtain, and then there is reason for the judges to complain. In a certain few important centres the judges are paid a small fee—it is never anywhere a large one—and are agreeably entertained in respect of civilities and creature comforts, one result being that having enjoyed their work they enjoy what follows, and leave the place with a sense of having had respectful and generous treatment. But this sort of thing is by no means the rule. The judges are usually not paid for time, and they do usually pay their own travelling expenses; and sometimes at the end of the story they are left to find needful nourishments at their own expense and as they may, whether familiar or strange to the district. This sort of treatment should be resented by judges, and would be much better prevented by managers. If the means of providing the judges with suitable refreshments are not available, the promoters should manage the judging, and if they are not competent for the business should frankly inform the exhibitors that they cannot afford a few sandwiches

W W

for the refreshment of experts, and must leave the exhibitors to settle amongst themselves their several positions in the exhibition. In plain English, the promoters of an exhibition are bound by all that is decent to treat all that help them in a respectful manner, and those who fail in this should be rebuked on the spot, and should be made to understand that if the labourer cannot be paid his hire he must at least have bread to eat on the way at the expense of those he goes forth to serve.

Certain horticulturists known to be at once willing and able, are much in request as judges, and generally prove compliant, because good workers enjoy work. But these men are usually burdened with the costs of railway fare and other such small expenses, and when much in request the tax upon their resources, taking the year through, is considerable. It is a wrong these men suffer, and one easily averted, because railway travelling does not usually amount to much in any one particular case, and therefore to those who obtain the assistance they need the burden is but slight. On the other hand, the individuals who are perpetually giving time and strength, and also putting their hands in their pockets, feel the aggregate of the outgoing as a kind of punishment for their folly in being too free in serving others to the neglect of their own interests. It is true a man when invited to attend an exhibition as a judge is free to decline doing so, as he is also free to say he must be paid expenses out of pocket. But business of such an agreeable nature should not be subjected to such severe conditions; managers of exhibitions should consider such matters in a fair spirit, and apart from the sour philosophy of squeezing as much as possible out of men who will suffer sooner than complain. There could be no reasonable objection to the acceptance of an invitation to judge at a show on condition of reimbursement of railway fare, and we should consider that any man who demanded it had done no more than the merest justice to himself, and that, too, with some advantage to the cause, for work prospers where the workers are contented, and it is not well for a constant friend to exhibitions to cast up at the end of a year what it has cost in money as well as time to contribute a trifle towards making the world revolve smoothly and cheerfully. When it comes to showing the judges the door without the offer of a sandwich the case is too bad for any kind of argument. Happily this rarely occurs, and the few instances may be well forgotten.

CHRYSANTHEMUMS MAY BE DESCRIBED in the language of the showman "as large as life and twice as natural." They have had a fine time for growing, and in all other ways for making themselves ready for exhibition, and they are everywhere in the best of condition to do their duty in that state of life, and so forth. No one living has seen a finer lot of plants than this season can show, and we will aver that no one dead has seen the equal of them. A cool rainy summer and a brilliant autumn have done their work, and the mishaps have been few. Early in the season celery fly was troublesome and made marks, but one can scarcely find them now, so generous has been the growth, as the result of a combination of happy circumstances. The exhibitions will make work for many, and that will be enjoyed as one of the blessings of life in the region of floriculture. The advance of the flower in one year is great, but how great has been the advance since 1847, when the first exhibition was held in Stoke Newington only the history of the flower can disclose to us, for it is beyond the grasp of the individual mind in any ordinary effort. But while the advance of the flower explains in part the increase and increasing love for it, that love must be invoked to explain the progress; for none would have laboured for its improvement unless stimulated by admiration of its beauty, interested in its variability, and supported by a large consensus of opinion in favour of improving it to the utmost possible.

The chrysanthemum has attained to the proud position of gratifying every variety of taste and suiting every variety of means. We see it now where we sought for it in vain until quite recent years, in the great gardens where orchids and tropical trees and other horticultural grandeurs are largely dealt with; and we see it in the poor man's garden, where it flowers freely and finely with the aid of any cheap rough shelter, and does not disdain to glorify an open wall and in a modest form fill a flower bed with radiant beauty. All ranks and all classes acknowledge its claims to admiration, and its usefulness ensures it universal popularity such as no other flower enjoys. That the world should be full of chrysanthemums in the two months that close the year is a most proper thing, for they preserve the light and glow and greenness of the summer to us, and their place is in the first order of our household gods.

Our business will be to report, criticise, and compare exhibitions, flowers, methods, fashions, and proposals, as in the long years that have gone in which we have watched the flower with some devotion. We trust we shall be enabled to bear the new and pleasant burden of duty that Nature, with the aid of the cultivators, is preparing for us. One serious duty we shall hope to discharge next week by placing in the hands of our readers another DOUBLE CHRYSANTHEMUM NUMBER OF THE GARDENERS' MAGAZINE, in which the flower will be shown in a new light, and much will be said about it that has not been said before. In the interests of our readers we have penetrated the inner courts of glory in Japan, and have obtained the Emperor's own Chrysanthemums for the delectation of our readers, with some varieties that may pass for novelties, and will probably not be matched by any other acquisitions, no matter whence they come or who may bring them. And if we add a few portraits to the budget they shall be of worthy men who have made and are making this fascinating flower. In truth, we shall open a new gallery, free to all comers, on payment of sixpence each; and we shall be too busy to take bad money or give credit, or pass any without payment. Those who come in time will find the doors open, and those who come late will find them closed, for we know when to begin and when to stop, and we solemnly promise not to go on for ever.

FRUIT JAMS AND JELLIES have made impressive exhibitions both at the Guildhall and at the meeting of R.H.S. This kind of exhibition will no doubt be repeated, and there are a few points of importance that may be thought of in view of further endeavours. The jams and jellies shown were mostly new and too sweet. Now the sweetness is necessary, and time subdues it. There are two objections, therefore, to the exhibition of preserves of the same season. First, they are of necessity too sweet, but that objection experienced judges can allow for. But in the next place *good keeping* is a matter of the highest importance, and the keeping has to be taken on trust when the samples are of the newest. In our view of the matter, all preserves exhibited should have been made the year previous: then we should see them as tested by the winter in the store, for if faulty in the cooking the winter seals their fate with mildew, but at the end of a year they have had that test, and have attained to their best condition.

It is a question, too, if glass jars are needful, It often necessitates removal from the jars they were originally placed in, and the removal destroys the guarantee of age which we consider important. No sample can be judged without tasting it, and the colour of the jar, therefore, is of no consequence whatever. It will be said we want to see the contents. But we have to see the contents when the tasting is performed, and, after all, jams and jellies are not much to look at even when in the most tasty of glass jars. And another objection to glass jars is that housekeepers cannot so well provide them unless they happen to be in customary use, in which case, of course, the sample jars can be placed on the table without disturbance of their contents, which, it appears to us, is a matter of primary importance.

PARLIAMENT WILL RE-ASSEMBLE for an autumn session on Tuesday, November 25.

BRISTOL CHRYSANTHEMUM SOCIETY will hold its annual exhibition November 19 and 20.

ROMFORD CHRYSANTHEMUM SOCIETY'S exhibition will be held November 6 and 7.

NATIONAL AURICULA AND NATIONAL CARNATION SOCIETIES will hold their annual meeting at the Horticultural Club, Queen Victoria Street, on Tuesday next, at 4 p.m.

MESSRS. JAMES CARTER AND CO. have an extensive and beautiful collection of chrysanthemums now flowering in their nurseries at Forest Hill.

JUDGES AT GUILDHALL SHOW included, in addition to those named in the report, Messrs. Jas. Tegg, J. Hudson, J. Laing, William Paul, Arthur Turner, John Watkins, Charles Ross (of Welford Park), and Mr. Miller (of Margate).

BARLEYS FOR MALTING are an important feature in the Brewers' Exhibition, and severe is the competition of the various growers. Messrs. Webb and Sons, of Stourbridge, take the champion prize for their Kinver Chevaliers, grown and exhibited by John Akers, of Goring Farm, Oxfordshire, this being the fourth year that this same variety has taken the championship of the show. The same firm was also great in hops and corn of several distinct strains, the samples being conspicuous for vigour, health, and beauty.

NEXT WEEK will be full of business for horticulturists. On Tuesday, committees of R.H.S. will meet at the Drill Hall, Westminster; and in the afternoon of the same day, National Auricula and Carnation Societies will meet in the rooms of the Horticultural Club. On Wednesday, National Chrysanthemum Society's Floral Committee will operate on Novelties. On Friday, Committee of Gardeners' Orphan Fund will hold its first meeting after the recess, and Mr. William Marshall, who succeeds the late Mr. G. Deal as chairman, will preside.

THE WEATHER has been agreeable for the season, cheerful sunny hours alternating with times of fog with a general tendency to frost. At the time of penning this note the barometer is objectionably high, and frost and fog increasingly probable. It is but too likely the anticyclone will disperse in favour of blustering westerly winds with rain, which is everywhere much wanted. We do not apprehend severe frost or snow at present, although we hear from Canada that winter has commenced business there too early and with too great severity, nor much of the harvest has been caught ungathered.

The Concert for the Benefit of the Gardeners' Orphan Fund, that is to take place in the Vestry Hall, Chiswick, on Wednesday evening next, should prove an interesting affair. The programme promises a good entertainment by the Boston Park Glee Club, Miss Ada Morgan, Miss Adela Dale, Mr. George Cannon, Mr. William Poupart, Mdlle. Zara, Mr. E. H. Pearson, Mr. H. Schartau, and other talented performers, and the element of humour will not be wanting.

A Bee Plant.—I am not aware whether *Polygonum vaccinifolium* is known to be a good plant for bees. In our cottage garden, near here, we have a large bed of it, more than usually covered with flowers, owing to the long spell of sunny weather. On passing it about a week ago I found it swarming with honey bees; at this time of year, when flowers are becoming less plentiful, this may be worth noting.—George F. Wilson.

Transplanting Season.—A note from the Old Nurseries, Maidstone.—For nearly seven weeks but little rain has fallen, and the soil is hard and dry, so much so that the nurserymen cannot lift roses, &c., which are usually ready to send out at this season. Plums and pears have completed growth, but apples, nectarines, and peaches are yet in growth. Amateurs will do well to defer planting until the land is sufficiently moist, as trees lifted in the present state of the soil must leave many good roots behind.

We are to have a hard winter, say the prophets, because there are some berries on the thorn and holly trees. And many persons, reputed intelligent, believe this trash. It is a survival of a fine old superstition, and the survival proves how ready enough pretentious people are to swallow the fables of fools rather than put themselves to the trouble of thinking. There are berries for the same reason that there are cabbages, potatos, and apples, *because* the circumstances of the season have produced them. What more needs be said. No rational being should need to be told that trees know no more than we do what will be the character of the coming winter.

The Destruction of Refuse is a matter of serious importance in the great metropolis, and the London County Council has adopted a bye law to regulate the operation, with a view to prevent its becoming a public nuisance, or rather, to check a nuisance long since established. All such materials as cabbage stumps, animal refuse, and other rubbish, that cannot be sorted out for commercial uses, in dust-yards and other places where rubbish is dealt with, are burned in suitable (or unsuitable) furnaces, and the effluvia given off in the process is described as intolerably offensive, and decidedly injurious to health. There can be no doubt that objectionable fuel is commonly used in brickfields in the burning of bricks, and the offensive smells from the brick-burning are much more deleterious than any that may be diffused from the tall chimnies attached to the Destructor furnaces.

The New Fruit and Vegetable Market was formally inaugurated by the laying of the foundation-stone by the Lord Mayor on Wednesday last. Its position near the great thoroughfares of Farringdon Road and Charterhouse Street ensures great advantages, and though it is not "properly" connected with the railways beneath by a basement structure means will no doubt be discovered to establish relationships of a suitable character. The site has a frontage on Charterhouse Street of 166 feet, and on Farringdon Road of 180 feet, the superficial area being 30,000 superficial feet. One good feature of the scheme is that all unloading will be done within the market, and there will, therefore, be no such external confusion to the detriment of trade and traffic around as is chronic in Covent Garden.

Royal Horticultural Society.—The Council intend to hold the following Conferences at Chiswick Gardens during the year 1891, viz.:—

July 7. "Hardy Midsummer Flowers."
July 8. "Strawberries, Raspberries, Currants, and other small fruits."
Oct. 6. "Hardy Autumn Flowers," especially "Michaelmas daisies, perennial sunflowers, autumn crocuses, &c."
Oct. 8. "Conifers—as ornamental trees, and for timber."

The Council would be greatly obliged to anyone possessing good varieties of Michaelmas daisies, or of perennial sunflowers, if they would be kind enough to forward plants of them, *without delay*, to Mr. Barron, superintendent R.H.S. Gardens, Chiswick, London, W., as they are very anxious to obtain a thoroughly representative collection of these charming flowers, with a view both to the selection of the best varieties, and the correction of their nomenclature, which seems to be at present somewhat confused.

An offer to plant trees on the roadway of St. Saviour's, Southwark, was made by the Metropolitan Public Gardens Association. The proposal was that £100 should be expended in planting plane trees, and the District Board were to be responsible for their safe keeping. The District Board fears the responsibility in consequence of the failure of previous experiments, and declines the generous offer of the Metropolitan Association. We ought, of course, to be "upsides" with the St. Saviour's Board, but we are not. The district is less suited for trees than many that possess trees, or have endeavoured to possess them, and have failed; but, as often pointed out by us, the planting is usually performed at a late period of the spring, when the trees have actually begun to grow, and ought not to be disturbed. Urban councils, generally speaking, do not know, or, for some occult reason, repudiate the knowledge, that trees should be planted in autumn, in clean, well-prepared soil, and not in mere holes made in mud, to ensure a fair probability of success for the operation. As a matter of fact, city trees are usually planted late in the spring, and are planted "anyhow," and one result is that they perish "somehow."

EARLY FLOWERING CHRYSANTHEMUMS.

This season has been a very bad one for the growth and perfection of the early flowering chrysanthemums. The spring was favourable, inasmuch as there were not so many spring frosts as there often are. Then we had a fine warm May, which forced some into bloom before their proper time; but after that came June, July, and August, wet and cool, with insufficient sunshine. September was a very fine month for the growth and perfection of the later sorts, but it was then too late to restore the forward ones. There has also been a more than usual quantity of earwigs, which in many cases destroyed the hearts of the shoots causing many to be blind and crippled. In many instances the petals were so weak that the backs of the flowers faded before the fronts were hardly open, the petals being thin and poor. All this told with great effect on the show at the Crystal Palace, for the plants were not equal to those of former years. There was nothing particularly noteworthy there except the appearance of a group from new exhibitors, Messrs. Reid and Bornemann, of Trewsbury Road, Sydenham, who took the second prize.

The September show of the National Chrysanthemum Society, at the Aquarium, Westminster, on September 10 and 11, was a remarkably good one; the display was extensive. For groups, Messrs. J. Laing and Sons, of Forest Hill, S.E., were first; Messrs. Reid and Bornemann, of Sydenham, S.E., were second. In this exhibit was a very fine large white Japanese sort, called by them "Sydenham," but there seems some doubt as to its origin, and it may be found to have another name; but if it should come as early when not disbudded, which this plant was, it will be a useful sort for early work. They also at this time showed a sort called Spiralis, which was a disbudded plant with about three flowers on. There is some doubt, too, regarding this. There are two plants of this name, and it does not seem certain if either of them are really early sorts. One I have grown which was not so, that really neither of them may be. Mr. N. Davis, of Camberwell, London, was third. Mr. H. J. Jones, who has recently commenced business at the Ryecroft Nursery, Hither Green Lane, Lewisham, S.E., and with whom early-flowering chrysanthemums are a feature of importance, exhibited, though not for competition, a fine group, for which he was given a silver medal and a certificate for the new yellow pompon Golden Shah.

The class for cut chrysanthemums was filled with a more than usually great variety of sorts, Mr. R. Owen, of Maidenhead, being first with sixty sorts, among which was Miss Phillis Broughton, exhibited for the first time, and the beautiful little white pompon Miss Lilly Stevens, for which he received a certificate. Mr. N. Davis, of Camberwell, was second. In this class was exhibited for the first time a new early sort, Mr. Harry Laing, a kind of straight petalled magenta Jap, and Ernest Bergman, a new crimson, both of which, although I have grown, I have not seen in sufficient perfection to say what amount of virtue is in them, and which must be deferred till another season. They are both new French sorts of this season. Mr. E. F. Such, of Maidenhead, was third for cut flowers. In the class for twelve pompons Mr. D. B. Crane, of 4, Woodview Terrace, Highgate, London, N., exhibited some flowers of Rosamundi which I do not remember to have seen before at any early show, and if it will grow good flowers without disbudding it may be useful. I have grown one of this name this season but it is late, and evidently a different plant. I will grow the other next season and see its merits for myself. Of course I do not consider because blooms of any sort can be shown in September that such a kind can be called early or semi-early, but only such as will do it without any buds being taken off or forced in any other way except good cultivation in the open.

Though the season has been a bad one for the growth, it has been a very good one for the extension of the culture in many directions; many of those who have thought nothing of the early sorts find that it is necessary for the welfare of their trade that they should grow them. But it is in the many good new sorts that have come to light in this country that the season shows the most advance. We have not had to grow so many poor plants to discover good ones as we generally do, and besides, there are several good English seedlings from English seed in view for next season.

Perhaps the best find of the year is *P. Radaelli*. This is a very beautiful early sort, blooming first in August on the crown bud, but afterwards shooting on and blooming during the following months. It will grow a flower four or five inches across without a bud taken off. It is white, with a narrow reflexed petal with a rounded end. It has spare foliage, and grows to a height of four feet or more.

Arthur Crepey, certificated, is a very good early dwarf plant, blooming in September; perhaps another season in August. It is a primrose-yellow to white, blooms about three inches across; height of plant two feet. It resembles Madame Desgrange, but the petals are rather broader and the buds come naturally farther apart, making it better for growing without any buds being taken off. It is of stiff habit, and can be grown without sticks. It seems to be a seedling of the above, and is likely in many places to be grown instead of Madame Desgrange.

Madame Léon Collin is an entirely new form and colour among the early sorts, being a bright light bronze. Japanese in form, with narrow twisted and curled petals. It does well either disbudded or grown naturally. Flowers three to four inches across, plant about three to four feet high. It is a charming addition to the early sorts; quite a new shade of colour, and has had a certificate granted to it. Blooms in September.

La Perle is a very exquisite dwarf white, blooming at the end of September. It is a stout plant, and will come into competition with La Vierge, but while that is reflexed this is slightly incurved, has broader petals than that, and is considerably earlier. Grows two feet six inches high with flowers three inches across.

There are several others which will probably come earlier another season in colours, much desired, viz., crimsons, reds, and purples, but as they are not yet out (October 15) sufficiently to be spoken of with certainty, and there are some very promising things among them I will try to write a bit more on semi-earlies in a week or two.

Of the few good new ones of last year I may say that the *Madame la Comtesse Foucher de Careil* which seemed a weak plant last season turns out to be not so. It is a real good stout sort, being so dwarf, just over two feet high, that it can be grown without sticks. It is a very great acquisition because there are so few reds, which it is, and a very bright red too. The ladies call it a terra-cotta, but it is very much brighter than a garden-pot red. It is a lighter colour than L' Admirable, besides being nearly a month earlier, in fact there is no other like it. It stands alone as a Red September reflexed Japanese beauty, and being so dwarf, is excellent for front rows in decoration. As a cut flower it is striking and distinct both by day and night. It will probably be a great market sort in a season or two, both as a pot plant and for cut flowers. It is certificated.

I have one or two good seedlings from my own seed and so has Mr. Owen from his own seed, but as they will not be sent out next season, will reserve judgment upon them till then. There are other good seedlings which I will refer to in the semi-early paper. W. Piercy.

89, *Beadnell Road, Forest Hill, London, S.E.*

POTATO DISEASE IN GREAT BRITAIN.

The Board of Agriculture has published a Memorandum containing the result of the special inquiry made through the inspectors under the Drainage and Improvement Acts into the position and prospects of the potato crop in Great Britain, in view of the appearance of potato disease in Ireland. The information placed at the disposal of the board is drawn from the personal observation of twenty-four inspectors in England and seventeen in Scotland, who have reported on the apprehended extent of disease in the potato crop during the month of September in twenty-eight English and eighteen Scottish counties. Ireland, where the relative importance of this crop is by far the greatest (one-fifth of the arable surface being employed in potato growing), lies beyond the jurisdiction of the Board of Agriculture, and was outside the scope of the present inquiry, which concerned Great Britain only, where little more than 3 per cent. of the arable land is used for potatos.

Among the English counties the relative importance of the potato crop varies greatly. In the south-eastern, midland, western, and south-western counties the area is considerably less than in certain counties of the north and east, where the greater prevalence of the crop is to be ascribed to soils specially favourable to the growth of the potato and special facilities for marketing. Thus in the east, Lincolnshire alone reports this year an area of nearly 43,000 acres, while a group of contiguous counties in the north-west, viz., Lancashire with 37,000 acres, Chester with 24,000 acres, and the West Riding of Yorkshire with 22,000 acres, swell the relative total of that region. Dealing with the information supplied in the order in which counties are grouped for the Agricultural Produce Statistics, it appears that reports have been received from three inspectors relating to Cambridge, Huntingdon, and Suffolk, and furnishing information respecting the East Anglian potato crop. All three report but a slight presence of disease, varying from 15 to under 10 per cent. In some parishes, it is said, there has been never less disease: and the damage seems largely restricted as one reporter clearly shows, to cottage gardens, allotments, and potato plots—where frequent planting with the same crop is regarded as the responsible cause. Among the predisposing causes to such attacks of disease in seasons favourable to its development, stress is laid on the want of change in the seed of potatos grown, and the use of the smallest tubers. From Lincoln, with its large area of potato land, the reports indicate the general soundness of the crop in the south-east of the county, and the presence of not more than 17 per cent. of disease in the west. In Norfolk an average yield, with some failures in the early crop, but not much disease in the latter, is reported.

Reports from the five south-eastern counties speak also of but a slight appearance of disease. In Kent, where 14,000 acres are grown, an injury of not more than 10 per cent. is indicated, cold clay soils showing most disease, and some of the earlier varieties of potatos were most affected. Among the predisposing causes, other than the wetness of the summer, noted by the Kentish inspector, is the loss of vitality from continuous planting of the same sorts. The potato crops of Hants and Berks are mentioned as almost free from disease, but less in bulk, Notts has 7,000 acres and Warwick with 5,000 acres are the largest potato-growing counties in the Midland group, and there little actual disease is reported, although its presence among the earlier kinds of potatos in gardens is noted. Leicester reports speak of the early crops as "Tinged with disease," but the later as free and promising a full crop. Mention of as much as 25 per cent. of disease comes from one inspector in Oxford.

The reports from the western group of counties between Salop and Wilts inclusive concur in pronouncing little occasion for alarm. The main crops seem sound, and 5 to 10 per cent. only of harm is suggested, although here again exceptionally early sorts have suffered more or less, some of the garden crops being diseased up to 50 per cent. Change of seed and soil are among the precautions here also suggested. In the south-west of England, Somerset, with an area of 7,000 acres, reports but a small proportion of the later sorts diseased, although the earlier sorts were badly affected. In North Devon some crops are noted with 25 per cent. of disease, crops in the east and south of the county being a full average with very little disease, while in a limited area to the west, between the Tavy and Tamar, as much as 75 per cent. of disease among the earlier potatos, and 33 per cent on the whole is reported.

At the opposite extremity of England, a full report from Northumberland, where, however, the area is small (4,500 acres), notes the appearance of disease on nearly a third of the farms, but only to the extent of 8 to 10 per cent. where present. The inspector who writes for the West Riding, of Yorkshire, a county with 22,000 acres of potatos, speaks of "but little or no signs, and only rumours of disease." Further west, in the large potato-growing county of Lancashire, a total damage of some 20 per cent. is spoken of in the early sorts, the crops on wet cold strong clays suffering most. There has, however, been no spread of disease here since September began. In Cheshire the blight is not regarded as serious, although a third of the early sorts have been diseased, the most highly manured land being said to suffer most, and the "moss" land scarcely at all. Samples of the late crops, on being tested, show only 2½ per cent. of disease. In Stafford and in Derby, as also in Cumberland, only the early and garden sorts appear to have suffered badly, from 50 to 75 per cent. of these crops being diseased. The northern Scotch inspectors send a more unfavourable report than those already considered. A very serious and general presence of disease in Inverness, Ross, and Cromarty, where collectively 16,000 acres are grown, is mentioned. In the Orkney Islands disease has been unusually prevalent; half of the early crop was affected, but not the later and main crop, while from Shetland it is reported that no disease at all has yet appeared.

The general result of the inquiry appears to be that no serious loss of the potato crop in Great Britain from disease is to be apprehended, as the late or main crop is regarded as comparatively sound.

ORCHIDS AT DULWICH.

The firm of Messrs. Seeger and Tropp, in Lordship Lane, East Dulwich, is daily gaining importance among lovers of orchids owing to the energy of Mr. Seeger maintaining a collection of the most suitable species and varieties. Unluckily there are not many orchids in flower at the present time, and this was a good excuse for a better inspection of the specimens. However, among the plants in flower was a grand specimen of Cypripedium Druryi, with buff yellow flowers, the upper sepal and petals being remarkable for having a broad deep purple band down the centre. Calanthe veratrifolia was also in flower, its erect spikes of pure white flowers presenting a fine contrast to the deep green plaited foliage. One of the finest forms of Mesospinidium vulcanicum, known as Paterson's var, was in bloom, having two or three long arching scapes densely covered with very dark crimson flowers. It is a great improvement on the ordinary variety, owing to the richness of colour. Dendrobium secundum, although hardly what may be termed a popular orchid, is nevertheless distinct and remarkable. It is a native of Malaya, and when it produces its short racemes of rosy crimson flowers with a yellow lip in abundance may without exaggeration be then termed attractive. Mr. Seeger has a fine (if not the best) collection of Masdevallias which it is the fortune of a nurseryman to possess. Almost every species known is to be found, and some of them are extremely rare. An attempt has been made, and apparently with great success, to cultivate all the Harryana section out of doors during the fine weather. Some hundreds of these plants have stood out since the spring in the open air, in such a position, however, as to be shaded during the hottest portion of the day from rays of the sun by meant of a splendid specimen of the false Acacia (Robinia pseudacacia). As night the lights are put on, but no other protection. The effect of this treatment will be, of course, to harden the constitution of this section of Masdevallias, and should it prove beneficial, we may hope at some future time to see beds of Harryanas decorating our borders with their beautiful brilliant flowers. Mr. Seeger intends to try a few outside in a frame during the winter, and hopes, by means of a little careful attention, to be able to make them survive the ordeal. Another feature in the cultivation of orchids at Dulwich is the method of shading the plants from the sun. The usual custom is for the shading material to be placed outside the houses, but here it is inside. While quite sufficient to prevent the sun doing any damage, the material, which is about two or three times as thick as muslin, nevertheless admits abundance of light. The advantages of this system are that the top ventilators may, on a warm day, be opened without the fear of causing a draught to rush through the plants, and perhaps cause the ultimate death of some of the more tender kinds. Then the time and labour of putting on shading every day is done away with, as the fine tiffany is tightly stretched directly beneath the roof; and it is possible that in the long run it lasts much longer, and does not present the tattered appearance it would do if it were daily mauled about on rollers. Ein Besucher.

FRUIT PRESENTED TO THE QUEEN FROM GUILDHALL EXHIBITION.

Mr. G. W. Cummings presents the following list of corrections of our report of the fruit presented to her Majesty the Queen by the Fruiterers' Company. As we published the list sent us officially, we did not inquire into the accuracy of any of its particulars.

Seckle Pear was selected from the exhibit of Mr. C. Ross, gardener to Lieut.-Colonel Eyre, Welford Park, Newbury. Not from Mr. T. Dunn.

Beurre Bachelier Pear.—Mr. Fred. Dunn, gardener to Sir Francis W. Truscott, Oakleigh, East Grinstead. Not from Mr. C. Blick.

Magnate Pear.—Mr. C. Blick, gardener to Martin R. Smith, Esq., Hayes Common, Kent. Not Mr. T. Turton.

Uvedale's St. Germain Pear.—Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury.

Dumelow's Seedling Apple.—Mr. John White, Home Farm, Hampton.

Peasgood's Nonsuch Apple.—Mr. W. Roupell, Harvey Lodge, Roupell Park, Streatham, S.W.

Wadhurst Pippin Apple.—Mr. A. H. Smee, The Grange, Carshalton, Surrey.

New Hawthornden Apple was from Mr. John Watkins, Pomona Farm, Withington, Herefordshire, and not from Mr. Warner as printed.

TRADE CATALOGUES.

Howden and Company, Inverness.—*Coniferous and Deciduous Trees, Roses, &c.*

Charles Turner, Royal Nurseries, Slough.—*Roses, Fruit Trees, and Nursery Stock.*

Sir John T. D. Llewellyn, Bart., has accepted the invitation of the Town Council of Swansea to occupy the office of Mayor of the town next year.

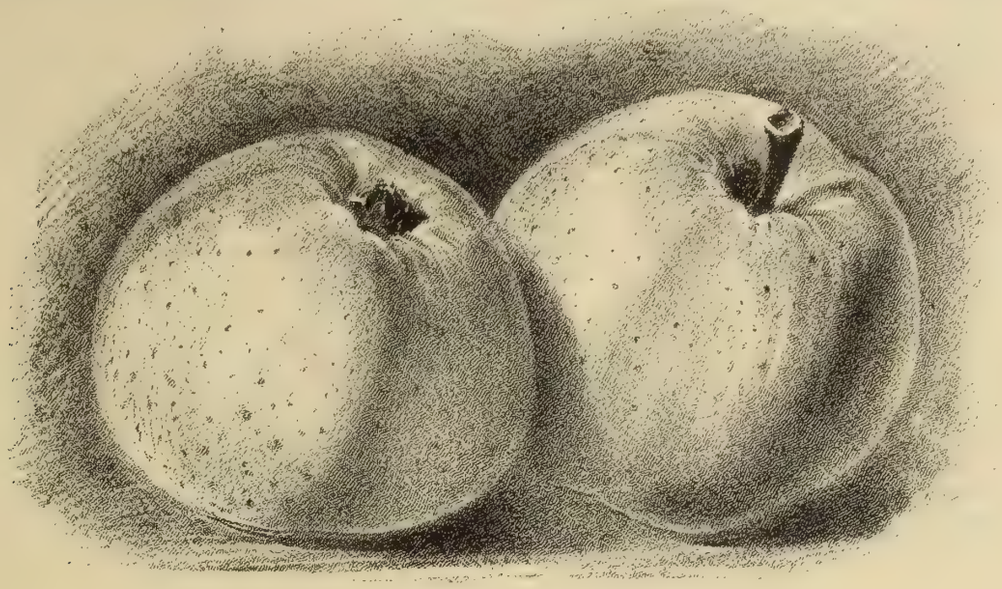
The Potato Famine in Gweedore is described by Father McFadden as a very serious matter. He speaks of several large parishes wherein the crop is really infinitesimal, and the distress of the peasantry is already severe, and must advance, unless averted by help given in good time. He says, speaking from knowledge of the facts, "the potato crop in Gweedore is a disastrous failure; the produce, rotten and sound, of all sizes, is not the fourth of the bulk obtainable from an average crop; and not more than half of that produce is fit for human use.

DESSERT APPLES.

Irish Peach is here figured from examples exhibited by William Roupell, Esq., of Roupell Park, at the meeting of the Royal Horticultural Society at Westminster, August 26. It is an excellent early dessert fruit, widely known and generally esteemed for its tender, richly-flavoured flesh and refreshing juiciness, which are often a great recommendation of a table fruit in the summer season.

The fruit is of medium size or less, roundish, flattened, with knobs around the eye. The skin is pale green, tinged with reddish brown, which passes into bronzy red on the sunny side. The eye is small, the stalk somewhat fleshy and inserted in a deep cavity.

The tree is hardy and bears abundantly, and is admirably adapted for garden cultivation on the paradise stock. It is not the less useful that the fruit is best flavoured when eaten direct from the tree; but for all that it keeps well for a short time after being gathered, and is often to be seen in August and September in the shops of the London fruiterers. The samples figured are smallish, but they represent careful cultivation in a garden not far removed from the great metropolis.



DESSERT APPLE, *Irish Peach.*

The Gladstone is a newish apple, not as yet widely known, but by reason of its good qualities likely to become a favourite. It was raised at Kidderminster, and was certificated by the Royal Horticultural Society in August, 1883.

The fruit is small, oblate or roundish, and somewhat obscurely ribbed; skin yellowish on the shaded side, red with stripes of crimson on the side exposed to the sun. It has a bloom like a plum, and is decidedly attractive. The eye is strongly defined, set in a wide wrinkled basin; stalk slender, not deeply inserted. The flesh is tender, juicy, and agreeably flavoured, though less rich than the Irish Peach. Ripe in August, the tree a most abundant bearer on the paradise, and is well adapted for market culture.



DESSERT APPLE, *Mr. Gladstone.*

WINTER CUCUMBERS.

Not very often do we get such fine weather as we have experienced thus far into the autumn. It has been just right for those who are engaged in getting cucumber plants established for fruiting during the winter. Those who know the value of having strong plants to start the season with have made the most of the sun heat we have been favoured with, as, except to keep the temperature from suddenly falling too low during the night, very little fire heat has been required. This is a decided gain, fuel has been saved, and the plants are in better condition than usual, because they have been able to make good progress under the influence of plenty of light, and chiefly with the assistance of the natural temperature. As a matter of fact the light has been rather too strong in the middle of the day sometimes, the sun has been so powerful that it has been necessary to give the plants a little shade. Where they have had this attention I find the growth is very satisfactory, and the foliage a better colour than on plants which have not been shaded at all. As a rule I am not in favour of shading cucumbers at this time of year, but the exceptionally bright weather has rendered it necessary this season. The treatment of the stock from this time forward is not attended with great anxiety. The main point to attend to is to keep the temperature regular, 60 deg. at night and 70 deg. by day, by fire-heat, will keep the plants growing and fruiting.

As soon as the first fruit is cut, the border should have a top-dressing one inch thick of loam and rotten manure in equal quantities. It will be necessary to repeat the top-dressing once a month to keep up the fertility of the border, but the materials must be taken into the house twenty-four hours before it is used, so that it may get warm before it comes in contact with the roots on the surface of the border. With regard to watering, young hands at this work must remember that the stronger the bottom heat the more water is required. This

is the most important point in the routine of the winter management. If the border is too dry, the plants are liable to die away suddenly without any warning, and if too wet the leaves will turn yellow, and make but slow growth. The best way of ascertaining the condition of the border with respect to moisture is to carefully examine it down to the depth of twelve inches, and to give water accordingly.

Inexperienced growers of winter cucumbers are rather inclined to think that they can pinch off the tops of the young growth, and thin out the leaves the same as they would do in the summer. But that is a mistake. As soon as the short dark days of mid-winter come, every leaf will be wanted. Plants that are fruiting do not often make more growth or foliage than is necessary to keep them in health. For that reason the cultivator must guard his actions in this matter, and only stop the most vigorous shoots. It will be well also to remember that the plants must not be allowed to carry too many fruit at one time. The aim should be to have a succession of fruit of different sizes always. If too many set at one time, some of them should be removed, or there will be a glut of fruit one time, and a blank after they are gone. I know of no plant so resentful of over-cropping as the cucumber. If they are over-cropped at any time they will be sure to take a rest, no matter how much the grower may coax them. The best policy to follow is to crop them judiciously, and then if other things are equal they will give a long succession of fruit. J. M.

LIME FOR CELERY.

Those who have a heavy soil to deal with in growing this crop will have no difficulty in obtaining robust plants which grow to a large size with a minimum of attention as regards watering. In every way the crop looks well until it is dug and washed for the use of the house, when it is often seen to be so damaged by ravages of vermin, mostly small black slugs, that those that would be fine heads, have to be mutilated so much that they are but meagre things by the time the damaged parts have been removed. Many are the plans recommended for the prevention of this evil, such as wrapping the stems up with paper, using quantities of coal ashes, or other materials, instead of the natural soil; as well as using quantities of soot in the process of earthing-up and also enveloping each stick in drain pipes. The former plan is successful, but too tedious for general adoption, especially where the number of plants runs into thousands, as it does in our case this season. We have not been satisfied with the use of coal ashes or soot, the ashes answer the purpose where they can be used in large quantities so as to entirely supersede the natural soil around the stems of the plants, but to carry this out, what a quantity of ashes would be required, and I fear the amount of labour set against the growth of the celery crop would be a heavy one, which it mostly is, but in the latter case too much so. The failing with many heavy soils as well as many old gardens which are annually treated to a dressing of leaves and litter, is exhaustion of calcareous matter. This defect is not often met as it should be; the consequence is that the soil is often infested with so many pests that it is very difficult to grow carrots, parsley, or to dig celery fit for table. The remedy for this is in the free use of lime.

It is not my purpose to discuss the question of the value of lime in the garden, but simply to speak of its value for celery at the season of earthing up this crop, as a preventive of ravages from ground vermin. We have tried all the foregoing antidotes, but now resort to lime for the whole of the celery crop. The manner of using it is to dust it over the ground making both celery and ground quite white with it a day or two before the work of moulding up is commenced, and this we do about three times during the season, or a day or two in advance of the first, second, and final earthing up. Since we have adopted this plan we have had no anxiety about the plants, as they have always come out clean and free from disfigurement. Those who are troubled with insects disfiguring their celery, I would strongly advise to adopt this plan. Not only does the lime kill out the vermin, but it improves the soil in favour of future cropping.

C. Warden.

Experimental Agriculture.—The United States Government has appropriated a sum exceeding £145,000 for the maintenance of agricultural experiment stations during the current year.

AMERICAN LETTER.

Easter Lilies.

Enormous quantities of these lilies, *Lilium longiflorum* and its variety *Harrisii*, are grown for the Easter trade. The larger flowers of *Harrisii* are preferred for home trade, but in the sales which preceded last Easter week it was noticeable that the wholesale dealers gave preference to the smaller flowers of the type for shipping purposes. They are more easily packed and arrive at the end of a long journey in better condition than the others. One large grower for the wholesale trade informs me that he has discarded *Harrisii* altogether, partly on account of the foregoing peculiarity, and partly because he finds *longiflorum* more profitable. The bulbs, he further states, are cheapet on account of the great demand for *Harrisii*, and an appreciably greater quantity of flowers are obtainable from a given number of plants.

Some growers plant the bulbs singly in pots varying in size from five-inch to eight-inch, according to the size of the bulb. Others again have their pots of uniform size, pot only the largest bulbs singly, and confine from two to four of the others to one pot. The latter plan is by far the most economical of pots and space, and otherwise there is nothing of importance to urge against it. A moderately rich soil is invariably employed, and with the most satisfactory results. Potting is commenced during the first weeks in August, and continued, at intervals, till the latter part of December, to ensure a succession of bloom commencing about Christmas and ending with the Easter festivities. The early lots are stood outdoors, in a position sheltered from strong sunshine, after potting, and covered with coal ashes or other protecting material until the pots are filled with roots—it is necessary to place later batches beyond the influence of frost, and to do so they are buried in cold frames or cellars. The plants are then placed under glass and encouraged to grow by a gradual increase of the temperature until it reaches the maximum of seventy degrees. This is maintained, with the free admission of air on favourable occasions, till the flowers appear, when the necessity of a higher or lower temperature will depend upon whether their development requires to be hastened or retarded. It is deemed advisable to be ahead rather than behind time, as, when it comes to a matter of the few days, it is easier to retard than to advance the flowers, especially as the weather is often unfavourable to growth during the cold season. Strength and substance are imparted to the flowers by an occasional application of liquid manure after the flower-buds appear. These instructions cover all the important points of culture as practised by growers here, and the displays of bloom produced in some of the large establishments by attention to them, are sights that cannot be forgotten in one's lifetime.



Diagrams of Neponset Paper Flower Pots.

One concern offers bulbs this season at a considerably reduced price, and the other dealers evince some anxiety to know how it is done. It is currently supposed that the cheap bulbs have been raised in Florida, and they are said to be of inferior quality. An examination of the bulbs, however, would hardly justify the statement as to quality, and as this is, presumably, the first season of their appearance, there is no other feasible ground for the claim. Bulbs grown in Florida would reach the consumers some weeks earlier than those from Bermuda, which, as is well-known, has hitherto been the chief, if not also the only source of supply. Should the supposition be correct, and the Florida material prove to be of as good quality as that from Bermuda, we may look forward to a rapid expansion of the industry and, doubtless, much cheaper supplies of these desirable plants. Perhaps, too, the growers may be tempted to experiment with other bulbous plants, and it is not at all improbable that, with the great variety of soil and climate which this country affords, there may be developed an important rival to some or all of the great bulb-producing countries.

Celery Lettuce.

This was the name given by an enterprising American firm to some specimens of cos lettuce which were to be seen in the window of the concern's seed store some time ago. So much for the coining of new names for old-established plants—a practice in which some nurserymen in America seem to be as much interested as they pretend to be in favour of a handy system of nomenclature. New names of this kind are responsible for at least half of the confusion which already exists in seed catalogues. The varieties of cos lettuce are seldom cultivated in this country, preference being given to those of the cabbage type.

A New Pot.

The "Neponset" is the latest thing in flower pots, and it promises to be exceedingly useful in a variety of ways. It is made of thick rigid waterproof paper, a special roofing material manufactured and sold extensively by the firm of Messrs. F. W. Bird and Son, East Walpole, Mass. The paper is of bright terra cotta colour. The manufacturers claim that the pot is unbreakable, water-tight, clean, insect-proof, light, durable, handsome, and cheap. Ample provision is made for drainage; and the formation and material of the pot admits of a large number being packed in small space. Its use would most certainly effect an enormous saving in those establishments where bedding and other similar plants are extensively grown and sent out in pots,

inasmuch as, while taking the place of the "travelling pot," sent out some years ago by Messrs. Blake and Mackenzie, I believe, it could also be used as an ordinary pot for several months if necessary. The "Neponset" is made only in five sizes, ranging from two and a-quarter inches to four inches in diameter. The first-named size costs about twelve shillings and sixpence per thousand at retail. Pots like these could be manufactured in England much cheaper than would be possible here, and perhaps it would pay some wide-awake man to look into the matter. The accompanying diagrams will convey some idea of the pattern better than any written explanation:—A shows a piece of the paper cut in proper form and ready to fold, B the method of fastening at the side, and C the arrangement at the base.

Boston, Mass., U.S.A. UNCLE SAM.

Calls at Nurseries.

KEYNES, WILLIAMS, AND CO.'S NURSERIES, CASTLE STREET, SALISBURY.

To one of the ancients in floriculture there is a very pleasant ring in the name of Keynes. A flood of pleasant recollections rush into the mind without any further bidding beyond mention of the name. For the time being we seem to renew our youth and enjoy once more many pleasant half-hours spent in the company of the late John Keynes, who, it will be remembered, was the founder of the business at Salisbury that is still associated with his name. It was equally agreeable to find on a recent visit that the wide renown these nurseries have enjoyed for many long years is still maintained, and that on every hand there is abundant evidence that the energy characteristic of days gone by is still as apparent as at any time during the long years I have known the place. Mr. H. K. Williams, who is the guiding spirit in the business, although comparatively young in years, has brought to bear on the conduct of all the affairs more than an ordinary degree of tact and judgment, which, being associated with characteristic energy, is leading to an expansion of the trade in more than one important direction.

With regard to the various subjects which this firm handles in a large way, it is well known that dahlias are a leading feature, as they have been for very many years past. It is pleasant to record that the prestige obtained in this direction still continues, and is, if possible, increased. I saw several indications that plainly showed we must be prepared to see a breaking away from some of the old lines, and that in a way that will still popularize this noble flower. Those who attend the various shows where dahlias are exhibited do not require to be told that the plants occupy every year considerable space. That will be apparent by the number of flowers in each section that this firm is in the habit of placing upon the exhibition table. At the same time one requires to see the plants growing to understand and appreciate the advances that are being made in the way of improvement. The plants of the show section are much dwarfer than they were twenty years ago, few of them in this collection exceeding three feet in height, while the greater proportion is considerably less. In the flowers there is greater depth and more refinement. The following, which were all raised in these grounds, were particularly good at the time I saw them.

Harry Keith, a finely made flower of a rosy purple colour that is particularly attractive.

Majestic is a first-class flower, with a white ground beautifully edged and shaded with purple.

Duke of Fife is a striking variety on account of its clear and distinct colour, which is a rich cardinal purple.

Miss Fox is another of those distinct flowers that by its very distinctness speaks of its origin, and it is one of the best sent out from here. The ground colour is a pleasing shade of blush heavily edged with lake.

John Hickling. The able manager, Mr. Wyatt, considers this to be far and away the best yellow dahlia ever sent out, the colour being particularly clear and bright, while the form and build of the flower leave nothing to be desired.

Crimson Globe is emphatically a flower to be proud of, as the colour is intensely bright; the centre is well up, and the form exquisite.

These are only a few of the many fine varieties recently raised here. To enumerate all of them that struck me as being worthy of notice would occupy more space than I can ask for. The cactus dahlias are of necessity largely grown here. I did not inquire how much space was devoted to the seedlings of the present year, but I know it took me some time to go over them, and to take notes of those reserved for distribution. The old sorts are all grown, as a matter of course, but the chief attention just now is devoted to the new ones raised this year and last. Mr. Williams feels that the advance in the form of the petals and shape of the flowers has been so great of late, that but an insignificant number of the old ones will remain in cultivation many years longer. It is interesting to note that the new ones are more strictly of the cactus form than the established kinds. Of the correctness of this view no one can doubt who has seen the Salisbury varieties, that in due time will be distributed. The new ones of this section sent out last spring includes *Amphion, Asia, Honoria*, and *Panthea*. These are all now pretty well known, having been largely distributed. The last-mentioned variety possesses a pleasing shade of reddish salmon, the petals are longer than usual, and are very neatly arranged. In point of form and colour this is a decided advance on existing varieties.

Amongst the pompon section there are several new ones that will make their mark when the time comes. But the crown of the lot must be given to one named *Phœbe*, which has been awarded a first-class certificate wherever exhibited. The habit is dwarf, with the branches growing in the form of a perfect thicket, each plant producing scores of flowers at one time. The colour is quite distinct, being of a bright terra-cotta. From this section, and the cactus form, the year 1891 promises to be a rich one in this direction.

While on the subject of dahlias, I may mention that Mr. Williams has been experimenting on a new way of exhibiting them for decorative effect. It would be manifestly unfair to describe it here. I may, however, say that the plan is a bold departure from that ordinarily practised, and I feel sure when it comes before the public it will meet with nothing but approval.

I must now pass on to the roses. The efforts of the firm in this direction have extended considerably, as not less than twelve acres of land are devoted to them, and the stock is grown in a way to impress the visitor with confidence, for in no part of this large multitude of plants did I find any symptoms of weak growth. All appeared, whether dwarfs or standards, hybrid perpetuals or teas, in the most vigorous condition. I, however, asked the question again, as I have done many times before, where all this vast number of plants were going to; for it appeared to me utterly impossible to find a home for them all. In reply to my question, my guide pointed to a distant quarter of plants and said, "All these, and all those on the opposite side, have been specially prepared to send to America this autumn to the number of 15,000; while the young piece at the far end is being prepared to follow them next year."

This information was in a way a relief to such an anxious temperament as I possess, for I could not possibly see a channel for them within this little sea-girt isle. No doubt the reader will think as I did, that the number of plants to be exported is large, but they must remember that such popular roses as Mrs. John Laing, Merveille de Lyon, Earl Dufferin, and others, are ordered by the American trade in numbers of 500 each, and in some cases more. It will be no news to the readers of the G.M. to tell them that the new climbing variety of that well-known rose, Niphetos, was distributed from this nursery. They, may, however, like to know that the original plant is still in existence, and that its condition fully warrants all that has been said in its favour. As showing the rapid way in which this rose grows in the spring in a warm temperature, I may mention that the leading shoot on one plant grew fifteen inches in eight days. No better evidence is required of its climbing character.

Pot vines were always a remarkable feature of this nursery, and they are so still; as a matter of fact, the number of plants produced each season appears to increase. The stock of vines is distributed about in all directions, undergoing the process of finishing off the ripening of the wood in the open air. All the stock has been raised from eyes this year as usual, because the firm finds their customers prefer them to cut-backs. I learnt that about ten Black Hamburghs are grown to one of any other sort.

The reader will please understand that I have only briefly touched on the matters to which I have referred. I have left unnoticed many things that should have been mentioned had time and space permitted, but I have only space enough left to say that the place abounds with all that we might expect to find, whether in hardy trees or tender plants, in a well appointed nursery.

I append a list of the best dahlias in each section, which I hope may be useful to the general reader.

SHOW VARIETIES.—Nellie Cramond, Harry Keith, Mrs. Gladstone, Mr. Spofforth, Colonist, Hon. Mrs. P. Wyndham, R. T. Rawlings, Maude Fellowes, Mrs. Langtry, Willie Garrett, Mr. Glasscock, Georgina, Mr. G. Harris, and William Rawlings.

FANCY VARIETIES.—Mathew Campbell, James O'Brien, Rev. J. B. M. Camm, Pelican, Mrs. Saunders, Frank Pearce, Buffalo Bill, Gaiety, T. W. Girdlestone, Hercules, Duchess of Albany, Peacock, George Barnes.

POMPON.—Darkness, Rosalie, Leila, Grace, White Aster, Janet, Admiration, Favourite, Fairy Tales, Gem, Isabel, Little Darkie, Little Duchess, Lady Blanche, Red Indian, Whisper, Golden Gem.

CACTUS VARIETIES.—Amphion, Mrs. G. Reid, Empress of India, Honoria, Panthea, Professor Baldwin, Beauty of Brentwood, Lady Marsham, Mrs. Tait, Juarezi, Mrs. Hawkins, King of Cactus, Henry Patrick, William Darvil, Lady Brassey. J. C. CLARKE.

KEEPING LATE GRAPES.

FROM this time onwards for a couple of months is an anxious time where late grapes have to be kept. It is next to impossible to keep large clusters in a house with a quantity of plants, or where the roof of the house is at all leaky. Those who may have either of these evils to contend with should lose no time in removing the plants to another structure and have the roof painted without delay.

By this time all late grapes should be ripe, and as the sun daily has less power some attention may be given to thinning the foliage. By thinning the foliage I do not intend it to be understood that any of the principal leaves should be removed, for these should be as scrupulously attended to and retained as are the bunches of fruit. But all sub-laterals, especially those at the foot of the leaf-stalk behind the bunch, may now be cut out without fear of injury to the main buds, as also any sappy and unripe wood near the points of the shoots. After this time these sappy points only tend to foster humidity, which is the very thing to be avoided; but their removal assists the clusters of fruit by admitting more light and air, which tend to harden the skins and fit them to bear the better the damp and foggy days of October and November.

It is not prudent to remove any great quantity of leaves at one time, nor would it be good for the grapes; but the sub-laterals may be removed without fear of harm, and a little more done each week for a couple of weeks afterwards. Where borders for the roots are inside, it is a good plan to litter them over with some dry bracken or clean straw, for the double purpose of preventing their becoming too dry, and also to arrest any humidity arising from the borders.

All outside borders of houses where late grapes are expected to hang should be covered with shutters of some kind, or with glass lights, to shoot off the heavy rains, and it is well to do this before any of the ill effects, such as damping and moulding of the berries, take place. In this, as in everything else, prevention is better than cure. I have frequently noticed that when once damping in a bunch sets in, it is difficult to prevent the whole bunch going, even although care may be taken to remove all affected berries daily.

It is never well to allow the pipes to get cold in houses where grapes are hanging late, for by keeping a genial warmth in the pipes at all times it obviates the necessity of using strong fires at other times for the purpose of expelling damp. We find that under this system the grapes are less likely to shrivel.

Clarendon. C. WARDEN.

STAPELIA GIGANTEA has recently bloomed in the gardens of Pendell Court, Bletchingley, and its large and somewhat attractive flowers have excited much interest. This species was discovered some thirty years since in Zululand by Mr. Plant, and was introduced into this country by Mr. Cooper, who sent a cutting to Pendell Court. A bloom was submitted to the Floral Committee of the National Chrysanthemum Society on the 15th inst., when a cultural commendation was unanimously voted to Mr. F. Ross. The species, which on this occasion was exhibited for the first time in England, is figured in *Bot. Mag.* 7068, and has flowers about ten inches in diameter and attractively coloured white, carmine, and reddish brown.

NEW CARNATIONS AND PICOTEES.

THE entire business of growing and showing carnations and picotees is undergoing a change. The border flowers are advancing in value; the winter flowering varieties are more and more esteemed; fragrance is demanded in a way that is somewhat new, because hitherto colour and form have pushed the perfume out of consideration; while "pod splitters" are at a discount even for the exhibition table. This generation may see the use of cards abolished, and the addition of foliage made imperative, for notwithstanding the force of custom, convention, and habit, common sense will rule at last, and good taste is only a form of common sense; an objective form in which the results are seen, and the process is not necessarily advertised. The report at page 505 of the G.M. of this year is of priceless value to cultivators, for although the names of varieties certificated have been made public, they were in other places put in the hard official form that helps the least to understand them, but a descriptive list helps the cultivator to some reasonable estimate of the suitableness and desirableness of a variety, and fifty is a fair number for a serviceable collection.

Recent enlargements of the recognized forms and colours of flowers are all in the direction of common sense. The flowers are novel, beautiful, of fine substance and quality, and Mr. E. S. Dodwell, one of the severer florists of the older school, has given them a place in his unrivalled collection, and put them forward as living treasures the world will not willingly let die. Raisers of seedlings are taking note of these things, and often they are the authors of expansions, and what we will venture to speak of as heterodoxies, one of our number having said recently at a social gathering of no small importance that orthodoxy is an abstraction representing not a fact, or a theory, or a doctrine, but a fashion, or, in other words, a temporary standard that may vanish at any moment when some more reasonable and attractive doxy pushes it out of court. The newer varieties of carnations and picotees illustrate the breadth of the ground on which we are now marching, and we may rejoice in its breadth, for we see in the newer kinds vigour of constitution, increased hardiness, a greater variety of floral beauty, and a larger proportion of fragrant flowers than in days not long since gone were brought before us for a critical imprimatur.



BORDER CARNATION, *Germania* (Colour clear canary yellow).

In a look round at Mr. T. S. Ware's nurseries, Tottenham, recently, many good things were noted, and amongst them some novelties of considerable importance. Mere shades of difference do not make "novelties," although they may make "new things." The bland young man behind the counter may book the lady for a purchase by saying "this is quite new," especially if he styles a young maid "madam" aud an old wife "miss," but his idea of a new thing is of the most superficial character, as, we lament to say, it often is amongst the florists. The terra cotta series of carnations are not only new, they are "novel," and only noodles will dispute the propriety of the distinction. Ogilvy defines novelty as *a striking or noticeable newness*, and we have it in *Mrs. Reynolds Hole* and any of the yellow-ground picotees, which are altogether novel, and will so continue until they become common in gardens, when they will have no more claim in that way.

Germania has made its name and fame as the best of its own group of yellow selfs, and few of the habitués of the R.H.S. meetings will forget the grand lot sent up from Lord Rothschild's gardens at Tring Park, July 8, as illustrative of the esteem in which this is held in places where flowers are grown for home use, and not for sale. Germania was certificated in 1888, and is, therefore, no longer new, but for the world at large it is still a novelty, and should be everywhere grown as the finest yellow carnation known, and one so easy to do, that it will be seen it proved A1 as a border variety at Chiswick.

Mrs. Frank Watts was carefully compared with others of its class, and came through the comparison as the best white self for border culture; a good grower, the habit dwarf, flowering abundantly, the flowers of good form, smooth, pure white, fragrant, and self-contained. This at Chiswick was in every way first-rate.

Mrs. Reynolds Hole made a conquest at her first appearance when the undersigned assisted in naming the flower, and placing it on the list of leading varieties with the sanction of a certificate. It needed no certificate to ensure its popularity, but if critical tribunals are of any account they must pronounce decisions, and with this it was an award as by acclamation. At Chiswick this very distinct variety flowered freely and finely in the open ground, and its terra-cotta colour was deeper than we had seen it in any exhibition flowers. Mr. Ware describes it "salmon-apricot," which is happy, but to many will not convey a just idea of its peculiar colour. But no matter for that; those who love carnations already know it, or will seek the knowledge, and it will be grown everywhere as one of the most attractive. As a button-hole flower it is unique. The plant is hardy, vigorous, produces plenty of grass, and is profuse in flowering. But the habit is weedy, and the best must be made of it with a little extra attention.

Pink Malmaison is a deeper coloured variety of an old favourite, and one that will be much valued for flowering under glass. The colour is a rich salmon-pink. It is not a good border flower.

Cowper will be famous as a border flower; the growth is vigorous, free, the flowers large, of good form, white ground with light red stripes; pleasing and satisfactory.

Lord Byron is likely to prove the best border scarlet, and that is a point of some importance. The growth is moderate, the flowers abundant, the colour vivid scarlet; the form neat, not large; petals fringed. For home use where cut flowers are wanted, first rate, and probably of some importance to market growers.

Tom Hood is one of Mr. Ware's best of last year, the habit dwarf and stout, flowering abundantly. The flowers well made and self-containing, the colour lively rose of the most cheerful character.

Wordsworth is a grand border flower of robust habit, flowering most abundantly, making a great head of rosy pink flowers that are conspicuous in a mixed plantation, which is a sure test of distinctness. The flowers are not large, but large enough for all ordinary purposes, and make perfect button-holes. It is well named, for it has all the complexion of a poet's flower, especially such a lover of nature as was Wordsworth.

Duke of Clarence tree carnation is one of the great things of the season, and will probably obtain a lead corresponding to that of Malmaison. The growth is vigorous, with a fine healthy grass, the flowers large, of fine form, very full and yet self-containing; the colour a brilliant crimson-scarlet peculiarly warming as a winter flower. It has a long season, being truly "perpetual," and by reason of its good health and free growth gives no trouble.

Duke of Fife is now known to many, having been often exhibited. It is a first-class winter-flowering carnation of fine growth, producing flowers from the base upwards, and lasting long in flowering temper; the colour soft salmon-scarlet, the very tone that suits the ladies.

Mrs. Moore is a good white for winter work, and should have a trial where cut flowers are in demand.

Alice Ayres is a new and beautiful and eminently useful border carnation, with flowers striped carmine on a white ground. It grew to a medium height at Chiswick, and flowered abundantly, the flowers being of good form, stout, and self-contained.

Gloire de Nancy bears a name that should carry it, for Nancy does not send us bad things. This border clove is not so well known as it should be, for it is the perfection of a plant for the border in an amateur's garden. At Chiswick it was noticeable for its strong, handsome grass, large fragrant flowers, and uniform handsome heads of snowy white when the flowers were full out and loading the air around them with their spicy perfume. The *Blush Clove* and the *Crimson Clove* are equally useful, and should be freely propagated to fill up odd places, for one can never have too much of such things. New they are not, and we ought to apologise for mentioning them, but ——.

Comte de Chambord is a good novelty in the way of hardy carnations, for it carries the style of Malmaison into the open border, and will be valued by many for that reason. The colour is pale flesh shading off to white.

Mabel Morris has long enjoyed popularity, but may usefully have a place in this list, for though by no means new it is scarce, and its good qualities will keep it in request. The handsome rosy flowers are richly fragrant, and the plant produces them freely. It is a pity it has not a place in every garden.

Paul Engleheart is an improvement on the old crimson clove, stout and compact in growth, flowering freely, the colour and fragrance surpassing our old friend in a sufficient degree to establish it as distinct.

Annie Douglas is a superb yellow ground heavily edged with bright pink, the form excellent, with smooth petal.

Colonial Beauty is extra good as a yellow ground, the colour buff heavily edged pink. A fine plant, much to be desired.

Florence is a large flower of fine form, the colour nankin yellow; good.



BORDER CARNATION, *Mrs. Frank Watts* (Colour pure white).

Pride of Penshurst is a good grower, a good flower, and forces well; colour clear yellow.

Sir Beauchamp Seymour is novel and distinct; yellow ground, edged carmine.

Will Threlfall has taken the fancy of the judges at all the exhibitions at which it appeared, and certificates have been the result. It is a capital yellow self, of robust habit, and differs sufficiently from Germania. Growth tall but compact.

Annie Lakin and *Emma Lakin* enable us to finish the list with two white carnations that will suit those who would cut and come again. They are stout in growth, free to flower, pure in colour, self-contained, and agreeably fragrant. They will be in large demand.

Kent County Chrysanthemum Society will hold its exhibition on November 4 and 5, when a silver cup of the value of £10 and £8 in cash will be offered as the first prize for forty-eight blooms.

THE AURICULA.

By James Douglas.

Not since April 26th have I written anything upon this favourite flower of the old florists. At that time our plants were in full beauty, and most of them were arranged in the auricula house, where the flowers are seen to the best advantage. As the plants passed out of bloom they were taken out of the house and placed in frames where the lights could be removed from the frames entirely in fine weather. I find it answers best in our hot, dry district, where the rainfall is not more than twenty-one inches or so in a year, to place the frames during the summer months on the north side of a wall or fence. This protects them from scorching sunshine without the necessity of shading them with scrim or any similar material, for when the frames are fully exposed to the sun, the plants suffer unless they are shaded for many hours in the day.

The above described summer treatment applies to most of the districts in the South of England; but as we travel northwards as far as Sheffield, a different system of culture is necessary. I have called upon Mr. Simonite during the summer months, and found his collection of show auriculas in a span-roofed house unshaded, and the house fully exposed to sunshine; and considering the unhealthy surroundings, Mr. Simonite's collection is in remarkably good condition. Probably the smoky atmosphere which, to a considerable extent, obscures the light of the sun at midday, acts as a shade. At any rate, the collection is in a span-roofed house in the best of health, proving conclusively how well adapted the auricula is for cultivating within the precincts of a smoky town. I did not observe that the plants were more healthy or in a better condition in the garden of the Rev. F. D, Horner, at Kirkby Lonsdale, where the air is as pure as it is in any garden in England. Mr. Horner's plants are also grown in houses all the year round; not so much because greenhouse culture is necessary or even desirable, but because in small gardens there is not room for frames as well as for an auricula house. Moreover, it is an extra expense to supply frames as well as houses, when one is sufficient. That was a matter which I took into consideration when building our houses here. I believe the auricula plant succeeds better when the lights can be removed at certain times and seasons altogether, therefore I had the lights of our house where the auriculas are cultivated made removable, and they can be drawn off at any time, so that the house answers the purpose of ordinary garden frames when it is required to do so. In our case we find it useful late in the autumn for growing cinerarias, calceolarias, &c., in the early stages of their growth, and for many other purposes of a large garden.

One point I may not have drawn particular attention to is the system of planting out unflowered seedling show auriculas as practised by the Rev. F. D. Horner. Many persons are anxious to make their

mark in the world by the production of a new seedling auricula, superior to anything that has ever been seen in the floral universe, and after years of patient labour, there is nothing but the hope deferred which maketh the heart sick, although the pleasures of hoping and anticipating count for something. Perhaps Mr. Horner knows as much of failure and success as any auricula fancier in the country. He still continues to raise as many seedlings as ever, but his labour is greatly lessened by planting the young stock out in the spring, and they grow into fine large flowering plants by the month of September, when the most promising plants are lifted and planted in pots, where they will flower strongly the following season.

The seeds of auriculas were long in ripening this year; not until quite the end of July could we save some from our choice green-edged flowers, but they ripened at last, and were sown as soon as ripe. The young plants appeared in three weeks after sowing, and up to the present time they appear at intervals, and will continue to do so whenever the weather is mild up to the month of March. Our plan is to remove the young plants carefully as soon as they are large enough and prick them out in small sixty-sized pots, as many as a dozen plants in each pot. There they remain until they are large enough to be replanted, as many as three plants in the same sized pots, and after another interval they are repotted singly.

On the old system the plants were repotted about half-a-dozen times before they reached the flowering stage, and the incessant care required to water and attend to them is very trying to one whose leisure hours are but few. The planting-out system saves frequent repotting, and does away with all anxiety on the score of watering.

Every auricula cultivator has to deal with offsets from the parent plants, and it is rather remarkable that some persons have much more difficulty to obtain offsets than others. I visited a good auricula grower on one occasion, and he told me that although he could beat his neighbour in the quality of his blooms, he was considerably behind him in the production of young stock. There is no doubt that this is a matter of treatment.

Every class of plants requires a season of growth and a season of rest, if satisfactory results in the way of flower and fruit production are to be obtained: and the cultivator who gets the best flowers on his plants or fruit on his trees will be he who studies their life history, and knows exactly what treatment is best at special seasons of rest and the growth. On the other hand, it is highly probable that if auriculas are grown on freely all the year round without any consideration being shown to them, they will produce offsets much more freely than if they had obtained their due season of rest. It must also be taken for granted that some varieties produce offsets much more freely than others. Trail's Beauty produces them much more freely than Heap's Smiling Beauty. And some varieties, such as Walker's John Simonite, will not produce more than an average of one in a year. There was an old auricula grown years ago known as Stretch's Alexander. The last time I saw it was in the collection of the late Mr. Alex. Meiklejohn, of the Raploch, near Stirling. He had a strong healthy plant, but it had not produced an offset for six years.

It is not a good plan to remove the offsets too early. I allow them to remain until they have formed a portion of roots from their base, when they are removed by cutting them off close to the stem with a sharp knife. This may be done at any season of the year, but the best results are obtained from those taken in the spring or early summer months; they have time to become well established before the winter, but will not arrive at the stage of good flowering plants until they have had another season's growth. Probably the planting-out system might answer quite as well for offsets as it does for seedlings.

All the plants intended to flower well next season should now be planted in the pots in which they are to flower. Indeed, it would be too late now to shake the old plants out of their pots as is done in the summer, even to the extent of washing all the soil from the roots. So late as the end of September young plants only should be repotted without disturbing their roots.



BORDER CARNATION, *Alice Ayres* (Colour white flaked carmine). (*See page* 656.)

THE HOMES OF SOME INDIAN FERNS.

No. I.

At the present time, when the subject of ferns and their cultivation is attracting so much public attention, it may not be void of interest to offer a few remarks on the homes of a few of our most common stove and greenhouse ferns, with notes on the conditions under which they are found growing in a state of nature.

My remarks will be confined to the species found in Southern India, and founded upon actual observations extending over some years. Most of the species I shall have occasion to refer to are doubtless widely diffused over Northern as well as Southern India; at the same time, the conditions under which they are found growing in the two divisions of India perhaps do not differ to any material extent.

Gleichenia dichotoma.—This beautiful fern grows in abundance on the Nilgiri mountains, preferring the eastern slopes, where the rainfall is moderate. It abounds on dry ridges far removed from streams and stagnant water, and the ground it affects is of an extremely hard and ferruginous nature, with a top covering of an inch or two of vegetable mould produced by the decayed fronds of the plant. In fact the ground where the plant grows is so hard that I have frequently experienced difficulty in digging up specimens with any roots attached to them at all. The plant grows in large patches, sometimes of an acre in extent, and completely covering the ground with its tangled fronds, so that some idea may be formed of the beauty displayed by this fern in its native wilds. During the winter months I have often seen the fronds of this fern injured by the frost, so that it will be seen that it does not affect localities of a warm and sheltered nature, but seems to thrive best when growing without shelter from sun and storms, and, as it were, under extreme natural conditions.

Davallia tenuifolia.—This plant is found in South India, from an elevation, above sea level, of from 3,000 to 6,000 feet. It is frequently found clothing, with its graceful fronds, banks by the road sides, hiding the red earth with its delicate drapery. It seems to prefer ground of a stiff and hard nature, and I may state that I never found it in what I may be allowed to term a true state of nature—that is, that I never found it growing promiscuously in the jungles like other ferns, but only in places where Mother Earth had been disturbed by the hand of man, notably on roadside cuttings where roads had been recently formed, on recently made excavations, near jungle temples where the soil had been disturbed, and such like places, but never in the wilds where the hand of man had not been. This is a strange fact, but a fact nevertheless. I have found this fern in abundance and in rare beauty in localities where the rainfall exceeded 130 inches and where the annual fall never exceeds 35 inches.

Adiantum lunulatum.—This charming maidenhair is never found in Southern India in districts exceeding 3,000 feet in elevation, and only

in localities where the rainfall is light and the temperature high. It grows in rich abundance in the bamboo jungles of Malabar, on the confines of Mysore, and spreads over a vast extent of country. I shall never forget the pleasure I experienced on first seeing this plant spring suddenly into life immediately after the first drenching thunder shower which wound up the six months of hot sun and east wind of my first year of jungle life in India. All around the earth of the bamboo forest had been blackened and charred by fires, the leaves of the bamboos and deciduous trees, grass, and everything green had disappeared for many months. Little did I suspect that all around and everywhere were stored up in safety, the roots of the Adiantum lunulatum waiting patiently for the call of nature in the thunder cloud and the drenching rain to summon them again into life. In a marvellously short space of time there issued from the steaming earth, clefts of rocks, splits and cavities of old trees, and other places, the delicate fronds of the lovely adiantum, which, together with lycopods, grass, and other vegetation, soon re-clad the earth of the parched and blackened jungle with a mantle of green. In England, I believe, this fern is frequently treated as an evergreen, and kept growing throughout the year without any season of rest; but this mode of treatment, I cannot help thinking, is a mistake. In Malabar the plant has ample opportunity for leaving the arid bamboo jungles and taking up its abode in the adjoining moist evergreen forests, but this it never does, and not a single plant is ever found outside the region where it yearly undergoes the climatic privation described above, which fact I think, points in the direction that the plant requires an absolute rest for a considerable period yearly.

Lygodium scandens.—This climbing fern is found in great abundance in Malabar, at an elevation of 3,000 feet. It has a curious habit of keeping exclusively to the margins of swamps and rice fields, and is rarely found in any other situation. It generally grows amongst low evergreen shrubs, which it festoons and covers with its trailing fronds, in many instances forming at angled mass of great extent and wonderful beauty. Its roots never extend to the water of the swamps and paddy fields, and yet, for some reason unknown to me, it hugs the banks of these moist portions of the country, and, although fully exposed to the fierce sun throughout the year, is always of a bright and refreshing green. Probably the plant may derive benefit from the near proximity of water, although its roots do not reach the moisture, and possibly its cultivation in England might be promoted by placing the pots in which it is grown in the near neighbourhood of tanks and other pieces of water. The soil in which it grows in a wild state is by no means rich; on the contrary, it is almost invariably of a poor, gravelly nature, and, as stated above, the plant receives no shade or shelter whatever, but is fully exposed to the sun continually.

Pteris Argyræa.—This fern has a wide range, growing abundantly from 3,000 feet elevation in Malabar, up to 8,000 feet on the Nilgiri range. So that in England it is equally adapted to the stove and greenhouse, in either of which it adapts itself and forms a highly decorative subject. In South India it is never found except in the deepest shade of cool and moist forests. In fact the deeper the shade, the larger and more highly coloured are the fronds. It is also invariably found growing in rich vegetable mould, and is always a most attractive object in the jungles, the fronds frequently reaching a height of from three to four feet and broad in proportion. It shuns the light, and if the forest is disturbed or thinned near where it is growing it soon perishes.

Pteris longifolia.—This handsome fern I have found growing under the most opposite conditions. On the Malabar coast line it may frequently be found lining the walls of deep wells where the rays of the sun never enter, and again on the mountain ranges up to an elevation of 6,000 feet and fully exposed to the sun.

Adiantum Æthiopicum.—This fern is found abundantly on the Nilgiri Hills in woods, where the soil is mostly composed of decayed leaves, it grows in large masses and in a perfectly wild state, far away from the haunts of man, not so, however, A. caudatum and A. hispidulum, which are found on the same range of hills, but only near native dwellings and temples, or where the ground has been disturbed to some extent. A. capillus veneris is found but only in a very few spots. I can remember finding it by accident growing in a sort of cave formed by a huge overhanging rock. In the innermost recess where water was trickling in abundance, grew the pretty little plant, the deep-green fronds forming a fringe round the base of the rock, giving a peculiar interest to the spot. It was strange to stumble across this British maidenhair in such a locality, when not another plant of its kind was to be found for miles around.

Lindsæa cultrata.—Nearly all the streams of the Nilgiris abound with this fern. It grows in dense masses on the banks right down to the water's edge, forming a lovely green fringe, and giving a finishing touch to the verdure of the river banks.

This fern, I fancy, is not often seen growing in England, but it is a plant of rare beauty, and would well repay cultivation. During the rainy season in India the plant is entirely submerged for considerable periods; and it is never found growing in localities other than the banks of streams and close to the waters edge when the streams are at their lowest; so that without the adjunct of water the cultivation of the plant in this country could hardly be a success. In India the Osmunda Regalis is often seen as a companion plant to the Lindsæa. J. Lowrie.



BORDER CARNATION, *Mrs. Reynolds Hole* (Colour, apricot buff or "terra cotta"). *See page* 656.

AUTUMN PLANTING.

By J. C. Clarke.

At the time of writing this the ground is too dry to admit of planting evergreens with much prospect of success. There are, however, indications that a change in the character of the weather may be shortly expected. It will be well, therefore, for those who have planting operations to undertake to make every necessary preparation. The late dry weather and brilliant sunshine that we have experienced has made the ground warm, and only requires a soaking rain to render it in a condition very suitable for planting operations. I have great faith in being early with the work in the autumn, because many evergreens begin to make new roots again directly, the condition of the soil being favourable, while the same subjects removed in mid-winter do not make an effort to move until late in the spring. More than this, it is an acknowledged fact that root disturbance increases root formation. That being so, it is very clear that the sooner the disturbance takes place after this the better progress will be made in forming new roots, so that everything points to the advisability of commencing operations in every case where the ground is sufficiently moist to do so.

The larger the subjects are that have to be dealt with the more necessary it is to do the work early in the autumn, they should therefore be the first taken in hand. Questions are frequently asked whether it is safe to move evergreens of large size? The same answer cannot be given to all, as the success of the operation depends upon how old the plant or tree may be, and what amount of care is devoted

to the work. If it is carefully done under skilful supervision I should invariably say "Yes," but if the work is entrusted to inexperienced hands, and improperly performed, my answer would be "No." I have done a good share of transplanting both large and small trees in my time, and have had failures as well as other people, but I unhesitatingly say that when dealing with subjects above medium size I have had a fair measure of success, when sufficient time and care have been devoted to the work to allow of all the details being carried out in a steady and thoughtful manner. But whenever there was an attempt to hurry on the work, failure more or less followed. To the inexperienced it may appear a tedious business to see three or four men undermining the roots of a tree the whole of one day, and still leave it unfinished at the close of the day's work. Such, however, has been my experience many times, and measuring the results against work not so carefully performed, the slow and careful process stands out boldly as being the best, and therefore the proper course to follow.

There is no gainsaying the fact that much depends upon how the work of transplanting is done and the preparations made to receive the tree or plant in its new home. If there is not a good depth and breadth of space well moved up, the newly planted subject cannot long continue to make satisfactory progress. If the roots as soon as they begin to extend come into contact with walls of unmoved earth, their progress is impeded to an injurious extent, but let them have a wide run of good soil well broken up at planting time, and the roots will lay hold of it quickly, and a corresponding rate of growth in the branches will take place.

I am well aware that it involves a considerable amount of labour to dig out a hole six feet over for the roots of a tree that at first only requires half that space to contain them. But looking at the future requirements of the same tree, I am fully convinced that it is labour well directed, because I have been engaged in this kind of work long enough to know that a tree planted in a well-moved soil will in the end prove ten times more satisfactory than one which simply has its roots placed in a hole only just large enough to receive them, and the space beyond that a mass of unmoved earth.

Planting damp places is not a very desirable job, but when circumstances render it necessary it is best to face it with a determination to succeed. This can only be done by making a suitable selection of subjects, and planting them in a proper manner. Leaving altogether out of the question the consideration of first well draining such positions, my experience is that the greatest difficulty likely to be met with is to get the trees or plants to grow freely after they are planted, and not in getting them established. When dealing with damp places I have had no trouble in getting the trees to live when carefully planted, but to get them to thrive afterwards that is the question. For this reason I recommend that all choice subjects should be planted on mounds. Indeed, if I were not aware of the difficulty generally experienced in getting a sufficient quantity of earth, I should advise that raised mounds be used for the whole of the subjects planted in such positions, for I am satisfied that is the only way to secure a full measure of success. Planting in shady places, where the soil is good and dry is much more pleasing than planting in wet places, for do what one will short of well draining the position, the foliage of whatever trees may be planted will always wear a sickly appearance, and instead of being a healthy green the tone will be of a yellowish hue. In the majority of cases there is no help for this, all the blame must rest on the character of the position. At the same time, the greater body of earth used to form the mounds the more healthy and vigorous the trees will remain.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Orchids in bloom include:—Cattleya guttata, C. labiata, Cypripedium Sedeni, C. Schlimi, Dendrobium album, D. discolor, Lælia autumnalis, L. Perrini, Miltonia Moreliana, M. atrorubens, M. Regneli, Oncidium ornithorynchum, O. roseum, Pleione maculata, P. Wallichiana, P. lagenaria, Vanda gigantea, Zygopetalum Mackayi.

THE HOUSE.

It is now especially necessary to direct attention to the fact that ornamental plants employed in the decoration of indoor apartments should have their leaves kept free from dust, and in the case of the palms, dracænas, and ficus, this will not be a difficult matter. Not only does an accumulation of dust on the leaves spoil the appearance of the plants, but it is decidedly injurious to them, especially if allowed to remain for any considerable period. The fires being again started, the plants should have the leaves washed with a clean sponge and tepid water about twice a week. In washing the leaves, which will be highly beneficial to the plants, apart from the mere removal of the dust, the sponge should be used just damp enough to remove the dust, as it is not desirable at this season of the year to saturate the foliage with moisture.

CONSERVATORY AND GREENHOUSE.

Conservatory.—Maintain a genial temperature in this structure, and keep the atmosphere dry now, as the chrysanthemums are coming into flower. Also open the ventilators early in the morning whenever the external air will admit of its being done with advantage to the inmates.

Greenhouse.—Maintain a pure atmosphere by the aid of occasional fire-heat and judicious ventilation. Keep pelargoniums of all classes rather dry at the roots, and the plants near the glass, as too much moisture at the roots and a close confined atmosphere are the principal causes of the disease commonly known as "spot," which frequently makes its appearance at this season of the year on the leaves of the show and fancy varieties. Succulent plants must now be arranged in their winter quarters. In a mixed collection, the best place for them is a top shelf in the full light, and where they are not likely to suffer by drip. The requirements for their winter safety are a dry position, plenty of light, air when needful, and security from frost. Give them no water from this date, or at most, water with caution only such as obviously need it; and any in active growth or flower keep warm until they go to rest.

FORCING AND FRUIT HOUSE.

Asparagus and Seakale for the first supply to be put in at once. All that is wanted is a mild, sweet bottom-heat. A melon-bed still retaining some warmth may be revived by turning it over, and mixing with the dung a good proportion of leaves, straw, grass-mowings, and other fermentable litter. A bottom heat of from 50 deg. to 60 deg. will be ample. Place the roots close together, and cover with light soil. Seakale must be shut up close and dark; asparagus will want air and light; the latter to be cut when the plump purple crowns are two or three inches long above ground.

Pines require careful attention at this season of the year. Fruiters to be started early in the ensuing spring must be kept rather dry at the roots, and in a comparatively low temperature. Others now swelling their fruit must have the benefit of a brisk temperature of about 75 deg., and a bottom heat 10 deg. higher. All the young stuff must be kept quiet in a temperature of about 65 deg., and rather dry. Too much water just now will do an immense amount of mischief.

Vines to be planted as the crops are cleared off, to give the wounds ample time to heal over before the sap gets into circulation again. This is especially important in the case of vines intended to be forced early.

FORCING GARDEN AND PLEASURE GROUNDS.

Grass Turf.—This is the best season of the whole year for laying turf. Let the ground be dug up deeply, and then made perfectly level and beaten hard. Secure the turf from common or pasture land which is free from coarse-growing grasses, and contains a plentiful proportion of clover. After laying it, give it a thorough beating.

Rose Garden.—Plant brier stocks; the most desirable are those with green bark and formidable spines, and reject all which have grey bark and are hide-bound; for it is simply impossible for them to produce a vigorous growth accompanied with fine, fully-developed flowers. Roses planted now will begin to make fresh roots at once, and the sooner all alterations in the rosery are completed the better. Never mind their still having leaves on them. Where the planting cannot be done now, manure and trench the ground in readiness.

FRUIT GARDEN AND ORCHARD.

Bush Fruits should be pruned and the ground forked over between the rows. Burn the prunings and strew the ashes over the newly-forked surface. Red and white currants must be cut back to skeletons; the chief of the fruit-buds being at the junction of the new wood with that of last year, leave only three or four joints beyond that point, and cut clear away at the base every branch that is ill placed or that chokes up the centre. Black currants do not like the knife. Trim the branches to regular distances, and shorten the longest back to good joints, but preserve plenty of young wood, leaving the plumpest branches nearly their full length, and cutting all weak ones clean away. Treat gooseberries in the same way; they never bear well if severely pruned.

Plantations to be made ready for planting without delay. Let the earth be deeply stirred. Stubborn clays are greatly improved for planting fruit trees by digging in plenty of broken oyster shells, half-inch bones, and building rubbish from which all large bricks and stones have been removed. Of course drainage is the first requisite of success. Put stakes to everything fresh planted, or better still, three lengths of tarred rope fastened to pegs driven firmly in the ground.

KITCHEN GARDEN AND FRAME GROUND.

Early Peas and Beans.—A sowing of first crop peas and Mazagan beans may be made in high and dry localities. A certain risk is attached to the crop sown now, especially if the garden abounds with slugs and snails; but as the cost of the seed is so trifling, and as the crops will, if not destroyed, come in earlier than the spring-sown ones, it is worth a trial. The border facing the south is the most favourable position for sowing the seed. Snails and slugs are now very active, and a sharp look-out must be kept up, or they will devour wholesale the young cabbage and lettuce plants which are remaining in the seed bed, as well as those planted out.

VILLA FARM.

There is no breed of poultry of which any individual bird will do more than lay during a small part of the twelve months, and although some birds will lay for a longer period than others, they must all rest after having laid a certain number of eggs. To have a succession of eggs, we must also have a succession of birds of an age suitable for laying, and these, need it be said, can only be obtained by enlarging the hatching season considerably beyond the usual limits. Those who set themselves the task of producing a supply of fresh eggs all the year round, must make up their minds for some little extra w rk and a fair share of vexation and disappointment, for they must commence hatching in February at the latest, and they must continue at intervals until the end of September or even into October, if the soil is naturally dry and warm. Those who have had much to do in the rearing of either early or late broods, or, better still, both, will agree with us that the task is not a light one. At the same time, to avoid discouraging any one disposed to engage in the business, we would observe that those who have the requisite time and patience to be perpetually looking after young chickens, and are able to manage with skill the earliest and latest broods, will secure an ample return. The directions here given apply with equal force to all the breeds, but as some are much better layers than others it is essential to state that the best for this special purpose are the Brahmas and Cochins, more particularly for carrying the supply through the autumn and winter.

ADIANTUM FARLEYENSE.

In the stove at the Palace Gardens, Salisbury, are to be seen some fine specimens of Adiantum Farleyense. Mr. Smith is very successful in his treatment of this fern. He attributes his success in a great measure to the use of pure loam, some sharp silver sand, and a little decomposed hot-bed manure, which materials form the potting compost. Never upon any consideration will he use peat for this fern, and that they enjoy the compost he prepares is abundantly proved by the health and vigour of his plants. In the next house, which is kept as a fernery, are also to be seen some fine specimens of Gymnogramma chrysophylla, Davallia Mooreana, and others, but peat forms the staple of the soil used for these. C. W.

TRENTHAM.

It will sound strange to those who know not Trentham, but have heard of it, as have all who hear anything, that the manager of the gardens there has to devote himself without reserve to the pursuit of horticulture under difficulties. A magnificent property with many peculiar natural advantages, and with "all appliances and means to boot" ensure for the operator some favourable conditions, but the difficulties of the case are great, and full of instruction. Within the view from these magnificent grounds are the tall chimnery of Stoke, where the Messrs. Minton, Messrs. Copeland, and other consumers of coal send forth a cloud to advertise the pottery district as a great integer of the black country. In the park at Trentham may be seen great trees dying from the poisonous effects of those gases that are unceasingly diffused by the chimnies in addition to the visible smoke, and that are often operating in a deadly manner when the sky is serenely blue, the sun shining brightly, and the face of nature appears to be one of complete serenity with light and air equally pure for the service of the gardener. Within a quarter of a century past many of the trees have perished from atmospheric poisoning and the evil does not diminish, it rather increases, but many years must elapse ere the splendours of Trentham suffer visible and unmistakable reduction from this special cause, because the place is so rich that it can spare some of its elements and yet remain as it now is, Trentham.

Another, and not a small difficulty arises out of the situation apart from the poison from the chimnies. The place is on a low level with hills rising around it, and the water is calcareous and soon corrodes the boilers, while the free use of it on the vegetation, more especially under glass, results in the deposit of a film of colour which may be termed a coat of white paint, or a bloom of hoar-frost, or a dusting from a flour-bag. The damp situation is accompanied with a kind of abnormal degree of cold, more frequent of course in winter and spring than at other times, but occurring at any season of the year; and this renders the successful cultivation of many plants impossible, or nearly so, that give no trouble elsewhere, and is curiously reflected in the work carried on under glass, for we see things in houses that elsewhere take care of themselves in the open, and we know that these same plants, whatever they may be, would be perfectly hardy in gardens two hundred miles further north, are not so and must have the shelter of glass at Trentham. There are thousands of orchids here—how many thousands I would not dare to guess—and when winter fogs prevail, it is no small task to keep them in good behaviour, and consequently the orchidists of London may be asked to remove from their minds all idea of their possession of a monopoly of miseries when winter fogs involve their orchid houses in darkness.

In a recent visit to Trentham, I learned something of the difficulties of horticulture there, but not from Mr. Peter Blair, the able and cheerful gardener in chief. I knew of all these things as they existed in the days of Zadok Stevens, who, when judging implements and boilers with me, appeared sometimes morbidly sensitive about the deposit of lime on leaves and the incrustation of boilers. Mr. Blair had nothing to say on such matters, for he is not the kind of man to take pains to advertise himself. I saw the foliage in the houses everywhere embellished with a hoary bloom; I saw the dead and dying trees that were quietly asking for the application of the axe as the last thing that could be done for them; and I saw the evidences of damp and cold added to atmospheric poisoning that render the work of the gardener immensely difficult at Trentham. The pleasant manager spoke only pleasant words: he enjoys his work, and probably is not half so sensitive about the difficulties as he might be, because he does so much to abolish them by his management, and what we *can* do is always easy as compared with what we *cannot* do, and that is where, in the world at large, the discontent begins.

And having touched on the difficulties I will go on, for darkness is as instructive as light, if you can but see it. There is a great school of opinion that settles everything in favour of wealth and prescription, and the disciples of that school would say, "triumphs at Trentham? Well, there ought to be triumphs at Trentham, with plenty of land and plenty of money." Yes, there is something in it; but the fact is not generally known that this fine property lacks horticultural features that in themselves are of importance, and that neither money nor skill can secure. The arbutus will not thrive at Trentham. Probably both the soil and the climate are adverse to it. The laurestinus will not thrive at Trentham, and the climate is certainly against it, which is less of a surprise than the failure of the arbutus. But the most curious of these instances is the common cherry laurel; the shrub that in many places is planted in thousands to clothe banks and form underwood, and that, though commonest of the common, acquires a sort of poetic beauty in the gardenesque of Miller's Dale and the Westmoreland and Cumberland lake scenery, where often we see it systematically cut back to form vast sheets of the most brilliant greenery imaginable. No such greenery is possible at Trentham, though there are some scenes in which it might play a conspicuous and agreeable part.

Turning from the negative to the positive, we have here glorious woodlands, as wild as nature will make them, for the hand of man is stayed from touching them except for most cogent reasons. Woods open upon glades and glades lead to labyrinths, and great waters flow between, and the embellishment of the ample green slopes that rise from the lake are at once beautiful and noble, the Tittensor and Barlaston hills giving a fine finish to the scene. The house commands the best views as a matter of course, but it does not stand well for the enrichment of the landscape, and from only one point of view does it appear as the stately thing it really is. The frontage is Italian, and eminently dignified, the lines being finely relieved by a campanile tower, 100 feet high. A conservatory that is at least respectable connects the house with the terrace gardens, which are gay enough, and lead off severally to the parterres, the Italian gardens, and the terrace walk and the nursery, the aggregate of the gardens being about 70 acres, of which, owing to the geography, the lake is the visible and necessary centre, although in truth, the house should be so, but the geography or geodesy is against it.

Amongst the triumphs of Trentham, making amends for the absence of arbutus and the laurels, must be mentioned the rhododendrons. This fact constitutes a kind of surprise to the visitor who knows something of the geology, and has noticed the deposit of lime on the leaves of plants that are favoured with showers from the subterranean water. We are here on or near the line of junction of the Millstone grit and Carboniferous limestone with the new red Sandstone, the Magnesian limestone lying between. There is probably an immensity of coal beneath this beautiful property, which, indeed coal has created, and because of its underground savings bank the days of Trentham are probably already numbered. While the chimneys of Stoke kill its trees, the furnaces that speak through the chimneys make a clamour for coal, and no king, duke, parliament, or people can for long resist the temptation to dig deep and drag out the coal to keep the commercial game going. These matters touch the rhododendrons in a way. These noble vegetables do not like smoke or sulphuric acid in the air they breathe, or calcareous matter in the soil they devour, consequently to grow rhododendrons at Trentham is impossible. But there they are, and not a few are they, and not mere Ponticums are they; for they include all the grand types, culminating in the magnificent Rhododendron Arboreum which, if not in its Indian form, is here in garden form, and with Caucasicum, Maximum, Catawbiense, and any number of the most splendid hybrids and crosses, many of them as large trees; many more in great masses that have tremendous power of colour. The explanation is to be found in the physical geography. Here is an extensive valley with the usual characteristics of a valley. In such formations we usually find a rich, deep bed of surface soil that has no special or chemical relation to the rocks on which it rests. Often the surface soil is the débris of the rock below, as in the red soil overlying the Devonian formation, where the cattle are said to be red because the soil is red, and this is said by people who are not well read in the science of the subject. The soil in such a valley as this consists of washings brought down by floods. It therefore represents the débris and surface accumulations through the agency of vegetation from the higher lands around. The course of the flood is the course of the mud, and in river bottoms we generally find the best soil, and one that has least relation to the rocks beneath. It is in this fertile drift the rhododendrons thrive, and they constitute one of the sensations of Trentham.

There is a world of glass at Trentham, and it covers an endless variety of vegetation. Much of it appears to have been designed with a view to complete the catalogue of difficulties for the gardener; at all events, it often embodies queer notions. There are ridge and furrow roofs where there is not the least need for them, unless it might have been the object of designer and builder to ascertain the maximum of material, money, and skill that could be employed in covering a minimum of space for the shelter of tender plants. Past masters of horticulture here indulged in costly fancies, and it would be well, I think, if we knew not their names, as unfortunately we do, for in our simple estimate of things even the purse of a duke should be treated respectfully, and to waste money because there is plenty may secure the approbation of a brutal cynicism, but will ensure the disgust and reprobation of honest men. The ridge and furrow roofs, however, do their work very well at five times the necessary cost, and they do not trouble us so much as the so-called glass walls, of which there is an enormous run that almost makes one run wild to walk through them. They constitute a range of houses too wide to be sheltered walls in any proper sense of the term, and too narrow for anything useful. Here you see plum trees pressing hard upon the glass, and the leaves appearing as if glued to it. Everywhere the endeavour is nobly made to adapt serviceable vegetation to these narrow spaces, and everywhere the result is a grand demonstration of triumph over difficulties. Mr. Blair has gone so near to the accomplishment of the impossible that we must regard him as one of the heroic gardeners whom no difficulties dismay and no impediments stop.

That there are in the houses at Trentham grapes, and pines, and peaches, and figs, and other such necessities of a princely establishment, goes without saying. But it should be said that many things that in colder latitudes are grown in the open are here grown under glass, because of the combined effects of atmospheric poison and humidity with the curious coldness natural to the place. Hardy fruits do not in a general way thrive at Trentham, hence we see plums, pears, and even apples, grown under glass, and grandly grown they are, notwithstanding the painting of the leaves by the subterranean water. But the peculiarity of the place is not made manifest in things of this kind, however considerable may be the talent required to keep so many and such various cultures going merrily. The great feature in the management at Trentham consists in the cultivation of flowers for the table. The consumption of cut flowers is enormous, and as a gardener's duty is to provide the house with what it requires, Mr. Blair places himself in a position to cut thousands and tens of thousands of flowers of all kinds that are of the profitable complexion for the purpose. A plant that gives but half-a-dozen flowers in as many years does not very well come into this line of business. Thus in the orchid houses the little Nanodes and Mesospinidiums are not considered of great importance, but the crispum series of Odontoglots come direct into the category, and our friend can often cut a thousand or even three thousand spikes of Odontoglossum Alexandræ. Other of the "useful" things are grown in the like proportions. The more showy of the dendrobes, maxillarias, orchids, cattleyas, epidendrums, calanthes, aerides, angræcums, cœlogynes, saccolabiums, phalænopsis, and the like are grown here in vast quantities, while the curiosities of the orchid house are but little cared for; these, indeed, are intended by nature for the amateurs who are not too rich to take an interest in individual plants, and who consequently find deeper and broader joys in the study of nature than are vouchsafed to dukes, whose affairs are too large for the recognition of such trifles. Happy amateurs! they have cheap pleasures unknown to dukes, and a sweet revenge on fate is always at their command in those exquisite and incommunicable pleasures that wit, knowledge, and taste may, but wealth alone cannot command. The Duke of Sutherland is not a duke simply, but a man of rare taste and judgment, and a model of a man of business. The comparison suggested, therefore, is general and not particular, but as it occurs in a report on Trentham it is enough to say that if the duke has no special care for orchids as an amateur of that family of plants, that is the case with many men whose names command universal homage for their high culture, liberality, good sense, and exemplary lives. The comparison is general and not particular: if curiosities in orchids are not wanted at Trentham, that, perhaps, is as fair evidence of the duke's good taste as an orchid lover could desire.

But here is an episode of great importance in the history of gardening. It is not many years since we were accustomed to deplore repudiation of chrysanthemums in great places and now we have frequently to report that in great places they are appreciated. Well, they make a large feature at Trentham, and they obtained their footing by their usefulness, for cut flowers being ever in demand these were found to be worthy of attention to supply any amount of the most beautiful material to the house through the dreariest part of the year at Trentham, for it is not quite so cheerful there in winter as in the summer. The result of the favour shown to the flower is that Mr. Blair has progressed steadily until he has become a king of the chrysanthemum in the Midland counties. Not at home only is he great, but in the exhibition room stands forth supreme, and he must be a bold and an able man who will dethrone him in a competition. The chrysanthemums at Trentham are as great a sensaton as anything in the place; their number, variety, majesty of appearance and perfect growth, with their great leaves richly bronzed holding to the stems to the very base, and their grand flowers crowning a massive growth do not soon pass out of remembrance, and for this sight even if for no other, I thank you for appointing me to visit Trentham as your own unlicensed Eaves-Dropper.

THE POTATO CROP.

THE following appeared in a recent issue of the *Times*:—The present prevalence of potato disease has been fully anticipated by authorities of experience, and much has been done both to mitigate the severity of the visitation and avert some of its worst consequences. A cold, rainy season, unfavourable to many forms of exotic vegetation, and especially to the potato, has not been without compensation, for green crops and roots generally have made free growth, and will probably mature sufficiently for all the purposes required of them. The potato murrain finds us better prepared for it than in years within the remembrance of many of the present generation, when its devastations seriously affected the national welfare, and in many instances were followed by disasters that have left dark lines in our history. One consequence of increased knowledge and its judicious application will be the harvesting in the present unfavourable season of a considerable bulk of healthy potatos, although probably prices will rise, though not to a point that will greatly distress the poor. Even in Ireland, where the calamity is more general than in Britain, there are extensive breadths of useful roots ripening with but few marks of disease, and they are in districts where the improved knowledge of cultivation prevails and finds expression in rational practices. We may, indeed, look for a check to the tide of prosperity in the event of the winter proving severe, but at present the prospect, as estimated by the crops on the land, is less gloomy than is generally represented.

Reports that reach me from various parts of the United Kingdom tell of good and bad crops, the good being mostly in the north and on the higher table lands of the midlands, where the rainfall generally has been but moderate, while the failures are reported mostly from humid valleys and heavy soils.

It is a matter for satisfaction and thankfulness that in such an unfavourable season we have at command a substantial armoury of defence against the enemy. The series of twelve international potato exhibitions completed four years since brought together for exchange of views and comparisons of products the more observant and experimental both of commercial and domestic cultivators of the potato, and many points in practice tending to fortify the plant against its insidious enemy, and to improve its qualities and productiveness were established for the advantage more immediately of the conferring parties, but ultimately of mankind at large. The advantage is now seen in the persistency of the plant and its precious freight of starchy tubers, for were we in the same state of mind on the subject as were the cultivators of 1846, or even of 1860, it is not likely there would be any prospect of a crop this year.

Amongst the more striking results of the awakening that has followed upon demonstrations and inquiries is the more careful preparation of the land that is now practised; the drainage is made secure, the tilth is finer, the manuring more liberal, and the plant is allowed sufficient space for the access to the whole of its leafage of the life-giving light and air. In those parts of Ireland where the disease is making havoc of the crop the land is badly made for planting; its powers of production are exhausted, and often the plant is so crowded that its texture is rendered soft and easily assailable by the destructive fungus. In a sunny season the leafage covers less space even where the planting is unreasonably close, and the evil is in part obviated by the invigorating effects of solar light. The distance from plant to plant is a matter of vital importance in the cultivation of the potato, and as the older kinds that scientific cultivators repudiate have spreading shaws that cover much ground, where these are still in favour the evil of overcrowding is generally aggravated.

The selection of seed sets is now most carefully managed by intelligent cultivators, but it is really a modern notion to recognise in potato culture that "like begets like," for until quite recently this part of the business obtained but little attention. We might find in many places a survival of the pernicious old practice of reserving the merest refuse for seed purposes, and there also we should find in such a season as the present the disease in full force, making havoc of the crop. In a sunny season the worst of seed will sometimes make a fair return, so generous is this plant when conditions are favourable to its growth. But prosperity is not secured by accidents and exceptions; bad practices will end in bad results in a run of years, and only fools fail to learn from their calamities.

It is now the rule to select for seed purposes tubers of moderate size and of good typical form, or, say, handsome tubers properly representing the variety, and being neither very large nor very small, the smallest that a false economy is apt to favour being the worst for the purpose. The poor are often tempted to eat the very last handful of tubers of a size that may be cooked, and whatever then remains is trusted for a crop, and unless the season happens to be particularly favourable disappointment follows, and they have to face starvation.

Your correspondent "W. G. T.," who in planting lays his sets on the hard ground and covers them with earth taken from between the rows, will be interested to learn that this system of planting has been practised many years, and has often been described in the books and papers that treat of rural economy. It is an admirable mode of securing a crop of potatos on heavy land unsuitable for the purpose, provided the earth employed for moulding over is well broken up and in a fair condition of fertility. It is not well adapted for light land, because in the event of a dry, hot summer, the plant is starved through being too well up in the light and removed from the moisture which is requisite to healthy growth. Whatever the length of time the plant may be in the ground, it will be found that its serious work, the formation of tubers, is accomplished in about eight to ten weeks; and unless it has previously accumulated sufficient material—a sort of savings bank of protoplasm—the tubers cannot be manufactured in such plenty as to enable the plant to pay its rent.

Having for many years practised experimental potato culture on various kinds of soil, I adopted for a heavy clay land a form of tile that might be likened to the lid of a shallow box. These tiles being laid hollow side downwards, provided for the seed sets a hard, dry, warm bed, with tunnel beneath to render lodgment of water impossible, while it was equally impossible for the root to push down into the ungenial clay. Being placed on the tiles, they were moulded over with earth prepared for the purpose; and the hill was added to as the season advanced, until the green shaws appeared at the top of a high ridge within which was formed a prodigious quantity of potatos unsurpassed and but rarely equalled for beauty and quality. The system was perfect for a disease year, as it insured a clean crop of great weight, and so far it was instructive as to the advantage of perfect drainage and a warm bed. But the cost was far too heavy for any commercial cultivator, and had to be consigned to the region of fads, or, at best, could only rank as an aid to the exhibitor of potatos, aiming, above all things, to obtain beautiful samples.

The moulding up that is commonly practised has been the subject of many careful experiments; and more especially in the gardens of the Royal Horticultural Society have beneficial results been arrived at. The absolute necessity for moulding has been abundantly demonstrated; therefore the careless cultivators who neglect it, or take no pains to perform it properly, will have but themselves to thank when such of their crop that are not diseased are rendered uneatable and unwholesome by contact with light and air. Potatos not well moulded are readily assailed by disease, and rot on the ground; on the other hand, scientific moulding is a powerful protector, as the earthy covering not only favours expansion of the tubers and the accumulation of starch, but places them at a sufficient distance from the germs that are scattered by millions in the atmosphere, and that eat into leaf or root alike whenever contact is possible. Mr. Jensen's several modes of moulding were carried out in the gardens at Chiswick three years in succession, and one very simple method proved of such value that it insured a crop in the very midst of a plague-smitten plantation that was neglected intentionally to serve for comparison. This system consists in high moulding to a sharp ridge, and then bending the green shaws all to one side. Ordinary moulding should be the subject of several operations, both for stirring the earth between the rows and to cover the roots gradually as they fill the ridge, for to cover them to a considerable depth at one effort is to give the plant a check and limit its production. It should be understood that the disease does not pass down to the roots by way of the stems, or any inner conduit; its access is always directly from without, and consequently the outside of the leaf or the tuber is the vulnerable part. By moulding high when the plant has attained to its later stages and begins to be in danger, the spores are shed at a distance from the roots of the plant, and there is less likelihood of their being washed down into the hill to make contact with the tubers. The bending over of the tops aids their removal to a distance, and although the tops will soon turn to the light, the stems remain where placed, and the danger is greatly lessened.

It is observable that certain varieties suffer less than others in times when disease prevails; some even escaping unharmed when others on the same ground succumb quickly, even to the extent of obliteration. Speculations on the causes of the difference have been fruitful of results. Certain kinds have become known as "disease resisters," the power of resistance appearing to reside in the cuticle, which by extra firmness of texture offers an impediment to the penetration of the agent of destruction. While many varieties, once renowned for productiveness and high quality, have passed out of cultivation, owing to their small powers of resistance, others of the older kinds remain, and within the past ten years or so have been added to and improved upon; so that we now possess an extensive collection, the merits of which are well known to the foremost cultivators, who in such a season as the present find their reward for the recognition in having plentiful crops to sell at high prices, instead of having to flow with the dull stream in disappointment and dejection.

The far-famed Magnum Bonum was the first of this series, the original distribution of which in the year 1876, we owe to Messrs. Sutton and Sons, of Reading. Subsequent to the establishment of that variety the Reading house has sent forth a number of original seedlings that now constitute a series quite unique in distinctive qualities and capability of resisting the assaults of the fungus. There is no parallel to this useful work in that of other raisers anywhere, inclusive of those of the United States, to whom we are indebted for Beauty of Hebron and other superb varieties. There can be no limit to the usefulness of the school of which Magnum Bonum, Reading Russet, and Satisfaction are the representatives, for they offer us all the varieties of form and colour that were known in the older kinds, while adapted to every variety of soil, and combining fine table quality, with high productiveness, and a peculiar power of resisting disease. As benefactors in this direction Messrs. Sutton stand alone, but justice must be done to the memory of the late Mr. James Clarke, of Christchurch, the raiser of Magnum Bonum, which was no chance production, but the result of a true scientific endeavour to establish a new race of potatos, the constitution of which should fit them for the climate of Britain more effectively than that of the older favourites. As these robust and stout-textured kinds become known and appreciated, the disease will be removed further and further from us, and improved practices will co-operate with the work of the raiser in augmenting the usefulness of the potato.

In a comparison of varieties that are now cultivated on a large scale the Champion makes but a poor figure, and is the poorer in such a season as the present by reason of its lateness. It does not form its tubers until most other sorts are nearly ready for lifting, and by thus prolonging its growth far into the autumn it imitates those unfortunate beings who lose their trains because the clock is wrong, or present themselves where invited just too late for dinner. The Champions are only now beginning to make a show of business, but the Magnums may be lifted where they were planted in reasonable time.

It is of great importance in all seasons, and of the greatest importance in the present, that so soon as a fair bulk of tubers is formed they may be lifted with safety and without regard to their degree of ripeness. It is the practice with many to leave the crop in the ground to ripen, or if diseased, to "clean itself." It is like opening the door of the cage at the moment when the young birds have become strong enough to fly. The crop left to clean itself is likely to take itself clean off in a dirty kind of way, for the few touches of disease that may be apparent as the tubers attain maturity will spread rapidly with the encouragement of the damp earth, and general destruction will follow. The result of many experiments and observations is that potatos may be lifted with advantage, however unripe, provided they are fully grown, for when transferred to the store, whether it be a well-made clamp or a dry-root house, the ripening will be safely completed, and they will keep better and improve faster than if left in the ground, however favourable the circumstances may be. The practice enlarges our power to save the crop when assailed in its later stages; and, indeed, it is so rarely assailed in its earlier stages that the rule of lifting at the earliest moment possible is of universal application. Probably thousands of tons of fully-grown tubers are now in danger and might be saved by timely action; whereas, if left to the care of the elements, they may be wholly lost. We must have growth; there must be a crop in the ground. But that being so, the rule of Donnybrook fair should govern the case, "Wherever you see a head, hit it."—I am, yours, &c.,

Kew. SHIRLEY HIBBERD.

"A SIMPLE FACT ABOUT" KEATING'S COUGH LOZENGES.—Ask throughout the world, in any country that can be named, you will find them largely sold. There is absolutely no remedy that is so speedy in giving relief, so certain to cure, and yet the most delicate can take them. One Lozenge gives ease. Sold in 13½d. tins.—[ADVT.]

Exhibitions and Meetings.

BRUSSELS AMATEUR ORCHID SOCIETY, October 12.

The meeting of this flourishing society was held in the Central Pavilion, Park Leopold, Brussels, on the above date, and was one of the most important gatherings that has yet taken place. The jury included Messrs. J. Linden, Lucien Linden, Trieu de Terdonck, Rodigas, Kegeljan, Miteau, Wincqz, and Massange de Louvrex, with Dr. Van Cauwelaert.

M. G. Warocqué contributed a highly attractive group, including two examples of Odontoglossum Alexandræ, a good specimen of O. Alexandræ guttatum, distinguished by its rich markings; Cypripedium cœnanthum, bearing twenty-seven flowers; C. hybridum, bearing twenty-three flowers; C. Curtisi, well flowered; and the exquisitely-beautiful Cattleya exoniensis.

M. Linden exhibited an important collection, in which were the beautiful varieties of Cattleya Warocqueana, that obtained so much attention when submitted to the orchid committee of the Royal Horticultural Society, on the 14th inst. Also well-represented were Cattleya gigas, C. du Buyssoniana, Lælia grandidissima, L. elegans Turneri, Masdevallia macrura, Galeandra d'Escragnolleana, Oncidium Landsbergeanum, Catasetum Bungerothi Randi, a pleasing yellow form; Phalænopsis Lowi, P. Esmeralda candidula, and Dendrobium inauditum.

The remarkably handsome Cattleya aurea superba was well shown by Dr. Van Cauwelaert, who had also good examples of Odontoglossum Insleayi and Cypripedium cœnanthum superbum. Dr. Capart presented a beautiful form of Odontoglossum Alexandræ; M. Wallaert had Cypripedium expansum in good condition; M. H. Schmitz sent a specimen of Oncidium aurosum; M. Vervaet contributed Lælia elegans Turneri; Madame O. Block exhibited Cypripedium marmorophyllum, C. cœnanthum superbum, Miltonia candida, and Cattleya Gaskelliana. From M. Stepman came a finely-flowered specimen of Odontoglossum grande, and from M. A. Wincqz the interesting Odontoglossum Schlieperianum.

The following awards were made, diplomas of honour of the first class to M. Linden for Cattleya Warocqueana, vars., amethystina, flammea, delicata and regalis; C. du Buyssoniana, Catasetum Bungerothi Randi, and Aganisia discolor; and to Dr. Van Cauwelaert for Cattleya aurea superba, diplomas of honour of the second class to M. Linden for Galeandra d'Escragnolleana and Lælia purpurata delicata.

Certificates of the first-class were granted as under: To M. G. Warocque for Odontoglossum Alexandræ and Cattleya exoniensis; to M. Van Lansberge for Cypripedium callosum; to Dr. Van Cauwelaert for Cypripedium cœnanthum superbum; to M. Linden for Lælia grandidissima and Masdevallia macrura; to M. Vervaet for Lælia elegans Turneri; to Comte de Bousies for Oncidium Forbesi; to M. G. Miteau for Cypripedium Van Molianum; and to M. Wallaert for Cypripedium expansum. Cultural certificates of the first-class were awarded as follows: To M. G. Warocque, with acclamation, for Cypripedium cœnanthum superbum and C. hybridum, and for Oncidium flabellatum; to M. Schmitz for Oncidium aurosum; and to M. Linden for Oncidium flabellatum.

The next meeting of the society will be held on November 9.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

Annual Meeting.

The annual meeting of this Society was held in the hall of the Christian Institute, Aberdeen, on Saturday, 11th inst., Mr. J. Murray Garden, advocate, President of the Society, in the chair.

Annual Report and Accounts.

The report by the directors to the members was read by the Secretary (Mr. A. M. Byres), as follows: The directors have pleasure in reporting to the members that the society continues to carry out the objects for which it was formed, namely, the encouragement of all efforts to improve the knowledge of scientific horticulture, and to extend its practice in Aberdeen and the north of Scotland. The annual floral fête was held in the Duthie Public Park on Thursday, Friday, and Saturday, August 21, 22, and 23, and proved, notwithstanding the inclemency of the weather, a financial success. The entries numbered 1,607, as against 1,627 in 1889. A notable feature in connection with the fête was the two-part lecture, entitled, "How Plants Feed," delivered by Professor J. W. H. Trail, which proved highly interesting and instructive to those present. Following the example of the societies in the south the directors engaged the services of a military band to discourse music for the benefit of the large number of citizens who thronged the fête. The result was most successful. The illuminations, fireworks, and lighting attracted a good deal of attention, and gave every satisfaction. The financial surplus amounted to £60 6s. 5d., which, added to the balance brought forward from last year, makes £188 19s. at the credit of the society. The directors beg to remind the members of the spring show to be held next year, and to request their cordial support in connection therewith. The best thanks of the society are due to the Aberdeen Town Council for granting the use of the Duthie Park, to Professor Trail for his admirable lecture, and to Professor Milligan for his services in connection with the opening of the fête. The directors desire to place on record the deep obligations under which the Society lies to the chairman, Mr. James Murray Garden, for the warm interest he has taken in the welfare of the society, whose claims he has so successfully advocated to the citizens of Aberdeen.

Mr. Mortimer, gardener, Tullos, thought the statement that the society continued to carry out the objects for which it was formed was not consistent with the paragraph relating to the fact that a military band had been engaged to discourse music for the benefit of the large number of citizens who thronged the annual floral fête.

The Chairman did not see that the one sentence conflicted with the other, and did not think he was called upon to make an explanation.

Mr. Mortimer considered that too little money was spent in prize-money and too much upon other things. (Hear, hear.)

The Chairman said that could be discussed when the accounts came up.

The report was then adopted, and the Chairman, in submitting the accounts of the past year, said he thought he was entitled to congratulate the society upon their financial position. They had in bank the sum of £188 19s., which he believed was the largest sum the society had ever enjoyed as its own money after meeting all liabilities. (Applause.) He thought, however, they must not be content to leave their reserve, if he might so call it, at that figure; but in the future administration of the society they should aim at accumulating a still larger sum. (Applause.) In the accounts the first item was "Subscriptions and donations, £147 3s." That was a reduction of £14 upon last year, which he rather regretted; but he hoped that the members of the society and the public, who had so generously supported them in the past, would not think it necessary to withhold that support because the society was prosperous. That would be the very thing to destroy their prosperity, and he did hope that the item "subscriptions and donations" would be continued and, to some extent, increased. The next item that he wished to draw their attention to was "Drawings at the floral fête, £330 5s. 7d.," which showed an increase of £100 upon the previous year. (Applause.) Now it was a fair question to ask, and he now asked it—To what is this very large increase due? He had no hesitation in saying—the enterprise of the society in popularising their scientific objects. (Applause.) Science was a most delightful thing; it was an informing thing, but it was a laborious thing; and it was not a popular thing. He hoped to see the day when science would be a more popular thing than it was now; but they could not shut their eyes to the fact that if they were to hold a show of flowers, and nothing but flowers, they would find themselves without the large drawings which appeared in their accounts. (Applause). Consequently, he was satisfied that the society would do wisely in the future to link with the pure study of flowers, and the simple pursuit of the cultivation of flowers, such cognate objects as would make that quiet and peaceful pursuit very attractive and more exciting. (Applause.) So they attracted the young people by fireworks; both old and young by high-class music; and when they got them into the net by these popular methods they could not help looking at the flowers. (Applause.) The prize money amounted to £121 0s. 4d., and he should like to see that item increased, though he confessed he would have liked to have seen a better display in some of the classes at last show. (Applause.) In some of the classes there was a very good display, but in some classes the display was rather disappointing. There was, however, this fact to be taken into account, that a great many of the entries were late; but he had no doubt the directors would make it quite clear before another year, so that no such mistake or misapprehension on the part of exhibitors should happen again. While they ought to enlarge the prize money, they must also keep in view the other expenditure of the society, without which they could not hope to draw £300 or £400 from the public. As a friendly critic, he might say that a saving might be effected in some of the items, while some details in the arrangements of the show were capable of improvement. They were gaining the experience that in large shows, or rather in large public displays, and in the hurry and bustle of a three days' fête it was not easy for the directors or treasurer to keep such a tight hand on the pursestrings; but he was quite sure the directors expended the money of the society not with the desire to be lavish—for they were poor—but with the desire to make the money go as far as possible. (Applause.) The expenses of the fête, he admitted, were heavy. He then referred to other items in the accounts, and, in concluding, said they had to thank their secretary and treasurer (Mr. Byres) for the enthusiastic way in which he had managed the society's affairs. (Applause.) He moved that the accounts be adopted.

Baillie Lyon seconded. He thought the society should consider the desirability of making the charge on the last day of the fête sixpence instead of threepence. The cheapest seats in any entertainment, much less attractive than theirs, were sixpence; and he did not think the society could afford to pay sixty or seventy guineas for a band, £40 for fireworks, get up a first-class show and splendid promenade, and give the whole thing to grown-up people for threepence. (Laughter.) He thought they should consider this with the view of increasing their finances. He thought the public had this year supported the society very well; and now they were fairly out of debt, they should be able to lay past £100 a-year. After referring to the manner in which the secretary and treasurer performed his work, he suggested that an increase should be made in his salary.

Mr. Taylor, Raeden, wished some explanation regarding the expenditure of £8 18s. for suppers to judges, stewards, &c. This item, he said, was always increasing.

Mr. A. M. Byres, the secretary, said it was agreed this year to give the judges and those engaged in working at the fête a hot supper, which accounted for the extra expense under this head.

Mr. Mortimer: When I was a director I never got but a sandwich, and very seldom that. (Laughter.) I want to know about the £1 1s. for a bouquet. I think it is time we had a contract for that. (Laughter.)

The Chairman thought there was more than one bouquet. His wife got one, but he was quite willing to pay for it, and let it disappear out of the accounts. ("No, no," it was well worth it.) As to the question of feeding—(laughter)—he did not think they could expect workmen, policemen, judges, stewards, and attendants to give their services for nothing, and then make them pay for their food. If they wanted the item done away with, they could make a remit to the directors, and they would carry it out most loyally; but they must remember they could not keep two thousand people in order without expense. Otherwise the thing would get into hopeless confusion.

Baillie Lyon thought Mr. Mortimer should look back a little before he began to criticise. If he had been a director for twenty years there must have been gross negligence and mismanagement when he allowed the society to get into debt.

After some further discussion, the statement of accounts was unanimously passed.

Election of Office Bearers.

The meeting then proceeded to the election of office-bearers, and on the motion of the Chairman Lord Provost Steward was, without dissent, re-appointed honorary president of the society. The hon. vice-presidents and hon. directors were also re-appointed.

Baillie Crombie, in proposing that Mr. James Murray Garden be requested to accept again the office of chairman, said they all knew the great trouble and interest he had taken in the affairs of the association for some years. It was the feeling of the present directors that he should continue for another year; and he was perfectly certain that the directors about to be appointed would wish he would again accept the office. (Applause.)

Baillie Byres, in seconding, said that no more efficient chairman could be got in the city of Aberdeen. (Applause.)

Mr. Murray Garden returned thanks for his re-election, and hoped the society would continue to prosper.

Mr. Alexander Robson was unanimously reappointed vice-chairman, the Chairman and Baillie Lyon alluding to the great interest which that gentleman took in the affairs of the society.

The following were then appointed acting directors: Professional gardeners, Grigor, Fairfield; Ogg, Heathcot; and Ross, Cranford. Market gardeners, Messrs. Milne, Queen's Road West; Leslie, South Stocket; Davidson, South Stocket; and Anderson, Cornhill. Nurserymen, florists, or jobbing gardeners, Messrs. Troup, Granitehill; Giles, Union Street; Cocker, sen., Sunnypark;

and Mavor, jun., Holburn Street. Amateurs, Baillie Crombie, Messrs. D. M. Smith, Minty, and Pope. Working class, Messrs. Maitland, Edwards, Gillespie, and Bowers.

Messrs. Alex. Robson and William Reid were re-appointed auditors.

Mr. A. M. Byres was unanimously re-elected secretary and treasurer; the Chairman, in nominating him, suggesting that the question of his remuneration should be considered by the directors.

This was all the business, and the meeting closed with a hearty vote of thanks to the chairman.

ROYAL HORTICULTURAL SOCIETY, October 14.

Scientific Committee.

Present: Mr. W. T. Thiselton Dyer in the chair; Mr. McLachlan, Mr. Morris, Dr. Oliver, Mr. Veitch, Dr. Scott, Dr. Müller, and the Rev. G. Henslow (hon. sec.).

Plantain Fruit.—Mr. Morris exhibited two large fruits of Musa sapientum var. paradisiaca, or the common plantain, grown at Sion House. It is generally used before it is quite ripe as a vegetable in the tropics. It practically takes the place of the potato, and is a very valuable food, especially in tropical America.

Merulius lachrymans (?).—Dr. Oliver exhibited an interesting specimen of the mycelium of some fungus which had grown between two sheets of canvas. It had spread in a radiating manner, covering a space of about eight inches square.

Antirrhinum majus, Monstrous.—Mr. Henslow showed a flower of the yellow snapdragon, with narrow ribbon-like yellow and white out-growths from the calyx. Such growths are not uncommon from the outer surface of corollas, as in the fringed cyclamen, polyanthus, gloxinia, &c.; but in the present instance they were detached from the inner surface of the calyx—*i.e.*, by tangential chorisis.

The Fog Report.—Dr. Oliver read a report as to the scheme proposed at the preliminary meeting. A discussion followed as to the methods to be adopted, and it was suggested (1) that Dr. Oliver should confer with Mr. Veitch as to the setting up of a pump at Chelsea for collecting fog particles; (2) that the Meteorological Society should be asked to lend a pump already used for the purpose; (3) to consult with Dr. Russell as to the construction of an absorbent apparatus; and (4) that a duplicate chamber with filters should be prepared for use at Kew. It is also proposed to re-issue circulars with an additional request as to the opacity of the fogs experienced.

MEMORIAL TO THE LATE MR. WILLIAM HOLMES.

A meeting of the members of the National Chrysanthemum Society and friends, convened by special circular, was held at the Royal Aquarium on Wednesday, October 15, 1890, to consider the expediency of raising a memorial to the late Mr. William Holmes.

Mr. R. Ballantine, chairman of the Committee of the National Chrysanthemum Society, presided, there being a large attendance of sympathisers. The circular calling the meeting having been read, it was stated that letters expressing approval of the proposal had been received from Mr. John McKenzie, Linton Gardens, Staplehurst; Mr. J. T. West, Cornwall Gardens, Brentwood; Mr. J. C. Restall, Broad Street, Birmingham; and Mr. E. Wilson, Uffington, Stamford; and a letter was read from Mr. D. B. Crane, of Highgate, making some suggestions as to the form the memorial should take.

The Chairman opened the meeting by setting forth the objects for which they were met, and invited suggestions from those present, both as to the expediency of raising a fund to provide a memorial, and also as to the form the memorial should take.

After some discussion it was moved by Mr. T. Bevan, seconded by Mr. Witty, and carried unanimously, "That in the opinion of this meeting it is desirable to raise a memorial to the late Hon. Secretary of the National Chrysanthemum Society."

Considerable discussion followed, and suggestions were offered by Messrs. Shea, Doughty, Broughton, E. Molyneux, E. Harland, and others as to the form the memorial should assume. It was then resolved to raise a fund, to be called the William Holmes Memorial Fund, and that a committee be formed to obtain subscriptions to the same, and to consider suggestions and formulate a method of applying the fund.

It was also resolved that the following should constitute the committee, together with the officers of the society and the representatives of affiliated societies: Messrs. E. Sanderson, E. Molyneux, J. Laing, T. Bevan, H. Cannell, L. Castle, G. Stevens, W. Roupell, W. Witty, N. Davis, C. E. Shea, E. Beckett, C. Gibson, G. Gordon, G. Prickett, B. Wynne, R. Owen, and E. F. Kemp.

Mr. Harland, of Hull, proposed that Mr. Lewis Castle be desired to act as hon. secretary, and consent having been given, the proposition was duly seconded, and carried unanimously.

Mr. Molyneux's suggestion, which was most favourably received by the meeting, was as follows: "That the memorial take the shape of a class or classes in the schedule of the N.C.S., to be called the Holmes Memorial Class, to be competed for at the November Exhibition of the N.C.S., terminable at a period consistent with the amount of the funds forthcoming."

Mr. Shea's suggestion was to this effect: "That the form the memorial to Mr. W. Holmes should take be that of a medal or medals given triennially, after the character of the Veitch Memorial Medal."

[Several subscriptions have already been promised, and all communications should be addressed to Mr. L. Castle, Hotham House, Merton, Surrey.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.

The fortnightly meeting of this society was held on the 14th inst., the Rev. A. E. W. Lofts presiding. The membership steadily increases, and gives greater power to the society by their influence. A capital collection of fifteen varieties of pears was staged by Mr. R. Smith, of Presdales, Ware, and a very interesting exhibit was staged by Mr. Alexander, of Poles, Ware, in the shape of a collection of onions in ten varieties. They were grand samples, and gave abundant evidence of the superior culture they had received. Apples and chrysanthemums were also staged by members. A paper was read on "Plant Stoves and Their Occupants," by Mr. A. King, who treated the subject exhaustively. His remarks were followed by Mr. R. Smith and Mr. J. B. Riding. A cordial vote of thanks was passed to Mr. King for his paper. [Report received October 22.]

Replies to Queries.

Wireworm.—A. C. M.: A dressing of gaslime applied early in the winter would no doubt be beneficial. It should be applied immediately the ground is vacant and be at once dug in, care being taken to thoroughly mix it with the soil.

G. H. A.—Doctors will differ to the end of time, and it is waste of time to attempt to reconcile their differences. To go into the questions you propose would be tedious and profitless, for in a right point of view they are trifles, mere trifles.

Blood as Manure.—W. M.: This is a valuable fertilizer, and suitable for every crop that needs a nitrogenous manure. The simplest and safest mode of employing it is to mix with fine dry earth until all is absorbed, and dig in the mixture, or use it as a top-dressing. Your letter was forwarded to a gentleman versed in these matters, and he has not yet had an opportunity of replying to it.

Names of Fruits.—J. S.: The handsome broad pear is Hacon's Incomparable; the narrow pear is Durondeau. One of the best raspberries for market culturer is Carter's Prolific. Lane's Prince Albert apple is a good grower generally, and we are bound to assume that the trees you refer to are on a soil that does not suit the variety.—F. G.: Your pretty apple is the Kerry Pippin. Fruit sent in box with flowers, 8, Ribston Pippin; 9 and 11, Dumelow's Seedling; 10, Alfriston.

Lamb's Lettuce.—Frux: This is better known as corn salad, *Valerianella olitoria.* It is an annual usually sown in February and March, and again in August and September. By many it is esteemed, and may be occasionally seen in the markets. But it is quite of second rate merit, and is seldom used when lettuce is available. We grow it, but seldom use it, and the crop is generally dug in as manure. It requires a good soil, and the autumn sowing should be on a well-drained south border. The centre of the plant only is used, the outer leaves being tough and unpleasant.

Names of Plants.—Specimens sent in box with fruits, 1, Rudbeckia speciosa; 2, Aster cordifolius; 3, Aster Novi Belgii; 4, Erigeron speciosum; 5, Aster diffusus; 6, Aster acris (one of the best, and one that rarely comes to us to be named); 7, Nigella Hispanica; 12, Scablosa atropurpurea.—W. Horrocks: 1, Niphobolus lingua; 2, Nephrodium molle; 3, Davallia dissecta; 4, Pleopeltis elongata.—F. F.: The leaf is from the variegated variety of Indiarubber, Ficus elastica.—H. Rhodes: 1, Lobelia Nuttali; 2, Prinos lucida; 3, Osmanthus ilicifolia, in a very poor state; 4, Ligustrum coriaceum, a fine shrub when well grown; 5, Raphiolepis ovata.

Carnations.—A. L. D.: Layers of carnations that have not become rooted may now be taken off and potted up in much the same manner as those well furnished with roots. Three-inch pots should be used, and two cuttings be put in each. Cuttings may be struck thus late in the season, but they require greater care than is necessary in the case of those struck in August or early in the month following. Use three-inch pots and a light sandy compost, and put three cuttings in each pot, each cutting being so inserted that the base rests against the side of the pot. It will be necessary to pay special attention to watering, for if the soil is maintained in too moist a state a very large proportion will perish.

Stove Climbers.—R. R.: The plants of scandent habit that require the temperature of the stove for their successful cultivation differ more or less in their culture, but the majority agree in requiring a thorough season of rest. Especially it is necessary to thoroughly rest the allamandas, stephanotis, dipladenias, and bougainvilleas. The reduction of temperature made at this season of the year has an immense influence in checking the growth, but the most important factor in the matter is unquestionably the gradual withholding of the water at the roots. The plants must not be kept so dry that the leaves and wood shrivel, but if the growth is well matured and the supply of water reduced in a gradual manner, but little water will be necessary from the middle of November until the end of January. The growth should remain on the roof trellis, but the shoots should be trimmed where so crowded as to prevent the plants on the stages receiving their full share of light.

ROBERT ON THE GUILDHALL FRUIT SHOW.

On Toosday I spent nearly the hole day at Gildhall in surveyin, and criticisin, hay, and in one case, acshally tasting the wundrus collecshun of all kinds and condishuns of frute that the hole Country can perduce, that had been collecked there! I wunders how many of the tens of thousands who came to Gildhall to see the temting sight, can say the same. But ewery wise perducer of heatables or drinkables allus tries to captiwate the good opinyon of a Hed Waiter. The hidear jest ocurs to my mind to ask at about what part of the next Sentry the County Counsil will be a dewoting of their time and money to a similar usefool purpuss! And hecco answers, Wen! The uniwersal werdick of heverybody as was there agreed in saying, that nothink like it in buty, and wariety, and size, wasn't never seen nowheres before. And then came the werry natural enquiry, what on airth's a going to be done with it all? And then came the equally nateral answer, "The Fruiterers' Company is a going to send all the werry best of it to the Lord Mare?" And then, "Hey, Presto!" as the cunjurer says, and on Wensday evening there it was on the table at another Grand Bankwet at the Manshun House, and quite a number of the Fruiterers' Company a sitting a smiling at the Lord Mare's horspitable table, and the werry head on 'em all, Sir James Whitehead giving the distingwished compny sitch a delightful acount of what they had bin and gone and done, and was a going to do, as made ewerybody rejoice to think that we had such a nobel Company as the Fruiterers' Company, and such a prince of Masters to govern 'em. And I feels bound in honor to say, that the black grapes was about the werry finest as ewer I tasted.

Robert in *Punch.*

Obituary.

On the 11th inst., Mr. George Brighton, for many years head gardener at Mount Edgecumbe, near Plymouth, the seat of the Earl of Mount Edgecumbe, in his 68th year.

Mr. Julius Niepraschk, the director of the Royal Garden, "Flora," at Cologne, died on the 14th inst., after a short illness. His business tact and urbanity had won for him golden opinions amongst the many horticulturists of all nations who have taken part in the exhibitions at the Cologne "Flora."

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets After.	High Water at London Bridge. Noon.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	M. S.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
2	S	**22nd Sunday after Trinity.**	6 57	16 21	4 31	8 24	—	4 51	5 11	1 59	2 16	45·5
3	M	Battle of Hohenlinden, 1800.	6 59	16 21	4 29	9 26	1 28	5 32	5 54	2 33	2 57	45·4
4	Tu	(Last Quarter.	7 0	16 20	4 27	10 31	2 0	6 20	6 46	3 19	3 45	45·1
5	W	Gunpowder Plot, 1605.	7 2	16 19	4 25	11 40	2 24	7 17	7 54	4 11	4 42	44·8
6	Th	*Leonard, Confessor.*	7 4	16 16	4 24	Morn.	2 45	8 34	9 20	5 19	5 59	44·5
7	F	Battle of Mooltan, 1848.	7 5	16 13	4 23	0 49	3 2	10 3	10 38	6 45	7 28	44·1
8	S	John Milton died, 1674.	7 7	16 9	4 22	1 58	3 17	11 9	11 37	8 3	8 34	43·8

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CRYSTAL PALACE.—GRAND EXHIBITION of CHRYSANTHEMUMS.

FRIDAY and SATURDAY, NOVEMBER 7th and 8th.

Schedules on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close October 31st.

NATIONAL CHRYSANTHEMUM SOCIETY.—GREAT CENTENARY CHRYSANTHEMUM FETE AND DISPLAY at the ROYAL AQUARIUM, WESTMINSTER, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, NOVEMBER 11, 12, 13, and 14, 1890.

£500 offered in money prizes, plate, and medals, including the Centenary Class for 48 blooms of Chrysanthemums, 24 Incurved and 24 Japanese distinct. First prize, £25; second, £20; third, £15; fourth, £10; 5th, £5.

Classes for all types of Chrysanthemums, Table Decorations, Fruit, and Vegetables.

A Bronze Centenary Medal will be awarded to every competitor in certain leading classes.

Entries must be received not later than the morning of Saturday, November 8. Schedules of prizes and all information can be obtained of RICHARD DEAN, Hon. Sec. and Superintendent, Frampton Park Nurseries, Hackney, London, N.E.

BIRMINGHAM CHRYSANTHEMUM EXHIBITION.

Open to all England.

NOVEMBER 12 and 13, 1890.

£235 in Prizes.

Including the following:—

Forty-eight Cut Blooms, £20, £15, £10, £5, £3, £2. Group of Chrysanthemums, £10, £6, £4, £2. Grapes, six bunches, £5, £3, £2. Other prizes in proportion.

Entries close November 5th. Schedules post free on application.

J. HUGHES, Secretary, Northwood Villas, Metchley Lane, Harborne, Birmingham.

BRADFORD AND DISTRICT CHRYSANTHEMUM SOCIETY.

FOURTH ANNUAL EXHIBITION, NOVEMBER 7th and 8th. Schedules post free.

Entries close November 1st. Over £100 in prizes.

102, Godwin Street, Bradford. GEO. R. TAYLOR, Hon. Secretary.

BRIXTON, STREATHAM, and CLAPHAM HORTICULTURAL SOCIETY.—The THIRTY FIRST ANNUAL EXHIBITION of CHRYSANTHEMUMS, &c., will be held at STREATHAM TOWN HALL, S.W., on TUESDAY and WEDNESDAY, NOVEMBER 4 and 5. J. SALTER, 34, Wingford Road, Brixton Hill, Secretary.

BRIGHTON AND HOVE CHRYSANTHEMUM SHOW.

NOVEMBER 11th and 12th.

TWO CUPS, £10 and £5.

Schedules of M. LONGHURST,

18, Church Road, Hove, Sussex.

HINCKLEY AND DISTRICT CHRYSANTHEMUM SOCIETY'S ANNUAL SHOW, Nov. 17 and 18.—A Silver Challenge Cup will be offered for Competition. Schedules and Entry Forms on application to Mr. J. H. ROBOTTOM, 20, Castle Street, Hinckley. Spaces to Let for Novelties.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.—SEVENTH ANNUAL SHOW AND CENTENARY, HULL, WEDNESDAY and THURSDAY, NOVEMBER 19th and 20th. £160 in Money Prizes and five Silver Cups. Entries close November 12th. Schedules free from the Hon. Secretaries, EDWARD HARLAND, Manor Street, Hull, and JAMES DIXON, 2, County Buildings, Hull.

KENT COUNTY CHRYSANTHEMUM SOCIETY.—The THIRD ANNUAL GRAND EXHIBITION will be held in the RINK, BLACKHEATH (opposite S.E.R. station), on TUESDAY and WEDNESDAY, 4th and 5th NOVEMBER. Over £130 in money prizes and silver cups. Special "Centenary" Class. 48 blooms—24 Japanese and 24 Incurved, distinct. First prize, Silver Cup (value £10) and £8; second prize, £6; third prize, £4; fourth prize, £2. Schedules, &c., free of H. A. NEEDS, Hon. Sec., 49, Ringstead Road, Catford, S.E.

KINGSTON & SURBITON CHRYSANTHEMUM SOCIETY.

President—G. C. SHERRARD, Esq., J.P.

The FOURTEENTH GREAT SHOW of CHRYSANTHEMUMS, FRUIT, &c., will be held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, NOVEMBER 11 and 12, 1890, when, in addition to valuable money prizes, the Sixth Champion Challenge Vase, value 25 guineas, will be offered. Schedules and any other information of Mr. GEO. WOODGATE, Warren House Gardens, Kingston Hill, Surrey, Hon. Sec.

Entries Close Nov. 6.

RUGBY CHRYSANTHEMUM, FRUIT, and FLORICULTURAL SOCIETIES' EXHIBITION, NOVEMBER 19th and 20th, 1890. Entries close November 12th (open classes).—WILLIAM BRYANT, Secretary.

SHEFFIELD, HALLAMSHIRE, AND WEST RIDING UNITED CHRYSANTHEMUM SOCIETY ANNUAL SHOW, CORN EXCHANGE, SHEFFIELD, NOVEMBER 14th and 15th, 1890. £200 in prizes. £50 in cash for cut blooms in the open class. Schedules and form of entry post free on application to the Secretaries.

THE BATH CHRYSANTHEMUM SHOW.—12th and 13th NOVEMBER, 1890. Entries close November 7th. For prize schedules apply

2, Northumberland Buildings, Bath. B. R. F. PEARSON, W. JEFFERY, } Secretaries.

YORK CHRYSANTHEMUM SHOW, FINE ART EXHIBITION BUILDING, NOVEMBER 19, 20, and 21, 1890.—36 Cut Blooms, £5 Cup and £5 cash; 6 bunches Grapes, £5; with other liberal prizes in Plants, Cut Flowers, Fruits, and Vegetables. Entries, November 12. There will be a stall for the sale of Flowers, Fruit, &c., the proceeds to be devoted to the Gardeners' Royal Benevolent Institution.

Contributions are solicited of Fruit, Flowers, &c., and will be thankfully received on any of the above days by

13, Feasegate, York. J. LAZENBY, Secretary.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

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No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

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THE GARDEN ORACLE FOR 1891

Will be published in the usual form at 1s., and will be, as heretofore, a complete review of horticulture and floriculture in the past year, and a guide for cultivators, exhibitors, and purchasers of plants, flowers, fruits, &c., in the year that is before us. This is the oldest horticultural almanac extant, and as it contains the latest information on new varieties, forthcoming exhibitions, and undertakings of various kinds in prospect, it cannot be published so soon as the general run of almanacs, that are chiefly made up by hasty compiling. The Oracle now preparing will be rich in reports, announcements, and selections, all condensed into the smallest possible space, and arranged for handy reference. The Oracle is a business almanac and diary, in addition to its special floricultural features. Published at the GARDENERS' MAGAZINE Office, 4, Ave Maria Lane, London, E.C.

The Gardeners' Magazine.

SATURDAY, NOVEMBER 1, 1890.

THE CHRYSANTHEMUM MAKES ITS ANNUAL CLAIM for universal admiration as the flower of the season and one of the most gracious gifts of the floral year. It will beautify the homes of thousands, and claim homage as a festival flower of the first order of merit in public exhibitions and festive assemblies and wherever flowers of any kind are admissible to give a joyous tone to a gathering of friends or richness of colour to a public function. It is fitted for every purpose for which flowers are cultivated, save and except where sweet odours are in especial demand, and then it fails to satisfy all tastes, although persons with highly-favoured olfactories have been heard to declare that some have the fragrance of roses and others equal the violet in the sweetness of their perfume. The praises of the flower have been attempted in prose to any extent, but not often has the poet invoked the muses in its praise, and for the aspiring bards who sigh for new subjects there is this, all untouched, and with more than the metaphorical brightness of the morning to commend it to their favouring fancy and eclectic eulogy. When the lecturer said the other day that the dahlia is the most wonderful flower for its variability, he must surely have for the moment forgotten the chrysanthemum, which might be a native of every clime under heaven if its many distinctive forms could be taken to represent distinctive creations or results of geographical influences. Between one of Fortune's Liliputian flowers, as round and compact as buttons, and scarcely larger than a sixpence, and the Great Spiderkry, that is now for the first time introduced to the notice of the public, the difference is so vast that it is hard to believe in their specific unity and common geographical origin. Yet we must recognise in both the Linnean species *Chrysanthemum Indicum*, a plant as fully entitled to the designation "variable" as the dahlia, to which the great plant namer assigned it as a sort of special privilege. But while we see the species underlying the varieties, and thus, by the aid of the botanist's eye, reduce the variations to a few simple particulars, such as the enlargement of this part and the contraction of that, we do not eliminate the element of wonder from the consideration or fully establish the phenomena in the region of the commonplace.

For a moment contrast two plants. One is the plant known as wheat, that man has operated upon and been deeply interested in for thousands of years, and yet the variations he has secured by selecting, cross-breeding, and all other agencies by which plants are influenced, amount practically to nothing. We know the wheat that was grown in Egypt when the Israelites were in bondage there. It is represented in paintings on the monuments, and occasionally samples are met with in mummy cases, and no matter how the samples differ or the drawings vary, they show us nothing that is decisively distinct from the wheat we have seen growing in the past summer in our own fields, and that we may find in all parts of the world subject to every conceivable variety of circumstances. But we obtain a dahlia from Mexico or a chrysanthemum from China, and in the course of a hundred years establish widely differing races, and of these we secure innumerable varieties, the range of variation being, as compared with some other subjects—say wheat for example—truly marvellous. When lately discoursing on the dahlia, we spoke of the gigantic stature of the varieties commonly cultivated fifty or even thirty years ago, and since then our attention has been directed to a new race rising only nine to twelve inches, and it was proposed to call them "Nine-inch dahlias," but the designation was abandoned in favour of "Tom Thumb." When the early-flowering pompons that Mr. Piercy is so assiduous in improving attain the popularity they deserve, there can be no doubt they also will be dwarfed down to a nine or even six inch rule to suit special purposes in garden decoration, for this plant is as plastic as the other, and any exhibition will demonstrate its inexhaustible variability.

But why, it may be asked, should man have the power to alter one plant to almost any extent, and apparently have no power, or a quite infinitesimal degree of power, to alter another? It cannot be that in fashioning plants of special usefulness, as the wheat for example, Nature renders them stubbornly constant to their original types in order that they may be protected against injurious variability, because while the wheat is so little liable to this influence, the potato is immensely variable. Darwin gives some interesting particulars of the wheats cultivated in the stone age in that most precious work of his on "Animals and Plants under Domestication," and while he makes no such comparison as we are attempting, he is not less impressed with the "slow and gradual improvement of our cereals." A new race of brassicas may be established in the course of a few years, and many other esculents are equally accommodating, within certain limits, to the purposes of the cross-breeder. If we assume a problem to be propounded the solution appears to lie in the fact that the cereals are self-fertilized and are in a great measure or altogether independent of immediate external agencies. The soil, the temperature, the prevailing weather are external agencies that affect their fertilization, but an immediate agency, such as insects or the hand of man, appears not to be provided for in the scheme of their multiplication.

The comparison, though superficial, is full of suggestion for the lovers of flowers. We do not profess to find sentiment in outward Nature, but for the sentiment in ourselves Nature provides abundant encouragement and sustenance. The chrysanthemum, happily, illustrates the whole of the vast subject. It may be moulded to any form and any colour, but as above remarked, the variability, however apparently exhaustless, is yet restricted within certain limits. A chrysanthemum cannot be changed into a rose or a violet, its specific characters will accompany its variations, and beyond these we shall not proceed in our manipulations for the production of novelties. Whether a blue chrysanthemum is a possibility is a question we do not pretend to answer, but we will venture to say this much, that if the thing actually exists, it can be actually produced by cross-breeding without resort to the secret chamber wherein the rarity is hidden. If there are chrysanthemums that emit the odour of violets they may be multiplied; any form the flower has acquired it is capable of acquiring again; and the only question is not as to the possibility, but simply *how to do it.* The Spiderkry will read a lesson for the present on the wonders that are concealed within every chrysanthemum flower, for this, like others, owns for its progenitor a little yellow flower not greatly differing from our Chrysanthemum segetum that nobody has thought of improving into a Karakwmi.

PROPOSED NEW PARKS FOR LONDON now receiving the attention of the Parks Committee of the County Council will, if the schemes under consideration are carried out, augment the area of the open spaces within the metropolitan boundary by about one hundred acres. It is proposed to purchase the pine woods, some seventy acres in extent, adjoining Bostall Heath, near Woolwich, and to convert the Victoria Park Cemetery and the Bishop's Fields, Fulham, into recreation grounds. The estimated cost of carrying out the scheme is £18,500, of which sum the Metropolitan Gardens Association have promised to contribute £3,000.

SHEFFIELD CHRYSANTHEMUM SHOW, November 14 and 15.

SENOR BARBOZA RODRIGUES has been appointed director of the Rio de Janeiro Botanic Garden.

A CHRYSANTHEMUM SHOW has been formed by Mr. Wells at the Earlswood Nursery, adjoining the Earlswood Station, L.B. and S.C. Railway. It will be open free until November 22.

THE WEATHER has been as our last note anticipated, stormy and frosty, but not unseasonable, and by reason of the much-needed rainfall, decidedly beneficial. We may now look for a term of westerly winds, with occasional changes, and we see no prospect of severe frost at present.

THE FROST OF TUESDAY NIGHT was general throughout the country, and made a clean sweep of dahlias, tropæolums, vegetable marrows, and other tender vegetation in all except the most favoured localities. Leaves are falling fast, and planting is the business of the time.

NATIONAL CHRYSANTHEMUM SOCIETY has issued a new catalogue on a larger and more complete scale than any of its predecessors. Copies of this catalogue may be obtained of E. W. Allen, 4, Ave Maria Lane, and of Mr. Richard Dean, secretary, Frampton Park Nurseries, Hackney,

WILLIAM HOLMES MEMORIAL.—The committee appointed to organize this memorial have determined to raise a fund to assist in the technical education of the eldest son of the late Mr. Holmes, who is desirous of becoming a landscape gardener. Any surplus of money that may remain when sufficient has been subscribed for this purpose will be devoted to special prizes for chrysanthemums.

THE MEETING OF R.H.S. on Tuesday last was more than usually interesting, for there were many new and interesting orchids shown, a few new and beautiful chrysanthemums, a great lot of cyclamens from Mr. Taylor, of Isleworth, and some choice subjects from Kew. The afternoon lecture by Dr. Masters on "Trees and Shrubs for Towns" was one of the best of that class of entertainments we have had for some time, although the society has been singularly fortunate in securing able essayists and attractive subjects.

FRUITERERS' COMPANY have offered to confer the freedom and livery of the company on Mr. George Bunyard, Mr. Joseph Cheal, Mr. Shirley Hibberd, Mr. T. F. Rivers, Mr. A. H. Smee, and Mr. J. Wright, in recognition of the services of these gentlemen as members of the executive having the management of the recent fruit show in the Guildhall of London. With the exception of Sir James Whitehead, this distinction has not until now been conferred for the past thirty years. Mr. Shirley Hibberd has declined the honour.

THE WEATHER IN THE NORTH OF SCOTLAND.—On Sunday a complete change in the weather was experienced in the North of Scotland. A cold northerly wind had been blowing on Saturday, but up to Sunday forenoon the weather had remained dry, when from that time towards evening heavy showers of rain fell at intervals. Early on Monday morning showers of snow were experienced, and continued at intervals throughout the day. The country is now, for the first time this winter, covered with its winter's garb. The weather still remains disturbed and threatening.

CENTENARY FESTIVAL OF THE NATIONAL CHRYSANTHEMUM SOCIETY will include conferences to be held on the 11th and 13th inst. On the first day Sir Edwin Saunders will preside, and papers will be read as follows: "Chrysanthemums in Tasmania," by Mrs. Mariane Thrower; "Origin of the Florists' Chrysanthemum," by Mr. Shirley Hibberd; "The Chrysanthemum in Art," by Mr. G. C. Haité, F.L.S. On the second day of the conference Sir Guyer Hunter, M.P., will preside, and the papers to be read are: "Experiments in Chrysanthemum Culture," by Mr. H. Briscoe-Ironsides, and "Chrysanthemums for Exhibition," by Mr. C. Gibson. The proceedings will commence on the 11th at six p.m., and on the 13th at half-past two p.m.

A NEW DISEASE OF THE HOLLYHOCK is reported to have been very destructive in many parts of the United States. In the *Journal of Mycology*, published by the Department of Agriculture, the disease is described as quite distinct from the well-known hollyhock fungus, *Puccinea Malvacearum*, and also from the spot disease described by Professor Halstead. The trouble made its appearance five years ago, and has proved so destructive where hollyhocks are grown for bedding purposes that the price of the plants has quadrupled in New York during the past two years. The fungus attacks leaf, petiole, or main stalk; the flow of sap is stopped, and the parts of the plant beyond the diseased portion shrink and die. Treatment with the copper solutions was not completely successful this year; but a thorough spraying with Bordeaux mixture on both sides of the leaves as soon as the young ones appear, and again later, is recommended. It is also advised that all diseased plants be removed from the greenhouse, and whenever practicable the plants be wholly grown out of doors.

APPLES.

A VISIT to a well-filled fruit room in the autumn of the year is always interesting, as it is when apples are brought side by side that the distinctive features of each are the most noticeable. In the fruit-room at the Palace Gardens, Salisbury, there are some beautiful fruit of apples. Especially good are Emperor Alexander, New Hawthornden, Old Hawthornden, Melon Apple, The Queen, Cox's Pomona, Cellini, Warner's King, Wellington, Golden Noble, Blenheim Pippin, Cox's Orange Pippin, King of the Pippins, as well as several other well known kinds. C. W.

EVOLUTION OF THE CHRYSANTHEMUM: A CENTENARY DISCOURSE.

By SHIRLEY HIBBERD.



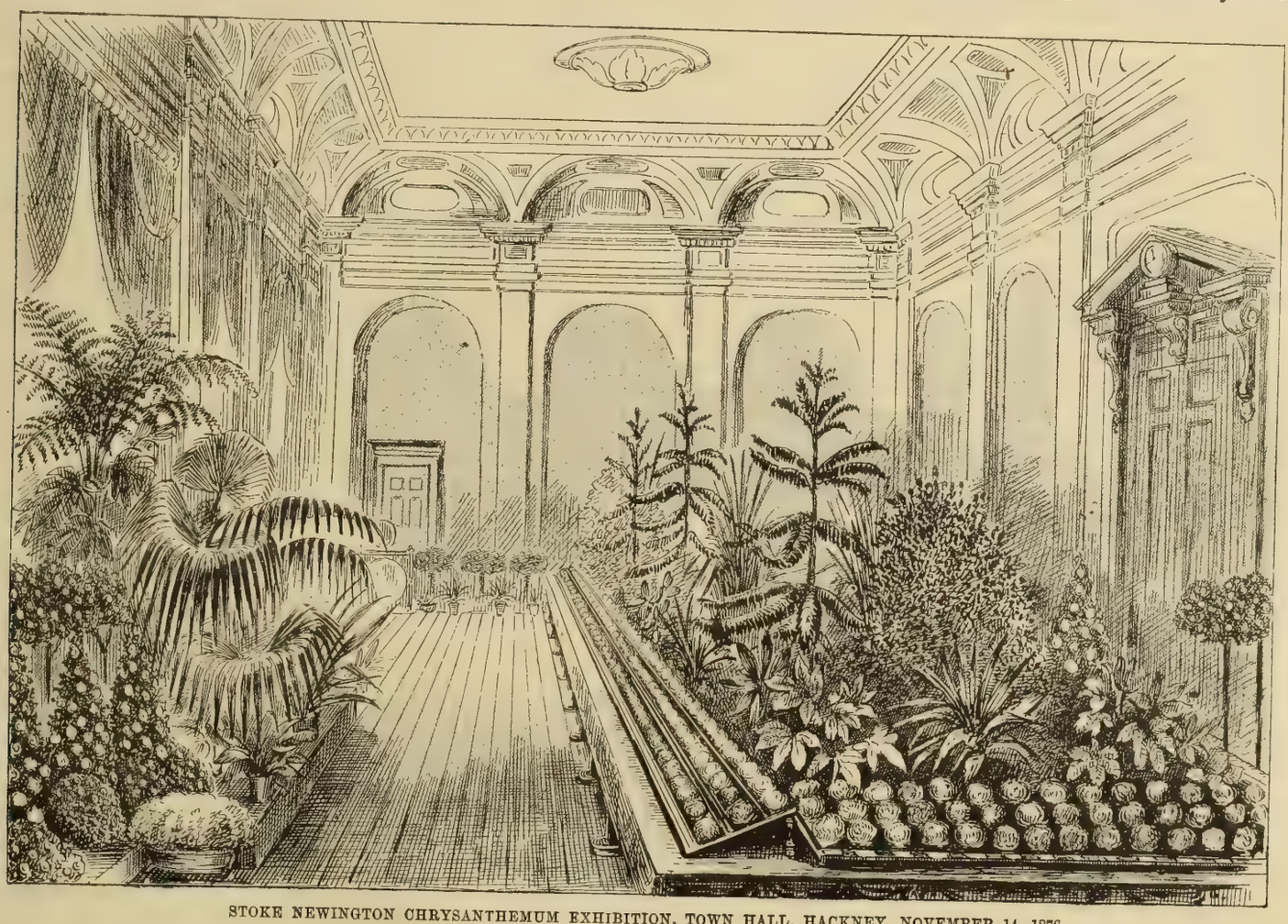
THE centenary of the chrysanthemum was celebrated by the Royal Horticultural Society in November, 1889, by an exhibition and conference in the great vinery in the society's garden at Chiswick. The task assigned to me on that occasion was to give an introductory discourse on the progress of the flower under the influence of European cultivators, and, as a matter of course, I sought in the facts of its history for illustrations of the evolution of the flower under the guidance and in accordance with the taste of the florists. Although the discourse has a place in the society's *Journal*, the full text appears to be a proper thing for this particular issue of the G.M., and I accordingly place it before the reader.

The subject I am appointed to discourse upon is partly historical and partly biological, for the progress seen in the development of the chrysanthemum corresponds with the progress of taste in selection, and illustrates the capabilities of the flower to respond to the demands of taste operating through time, with definite ends in view. By the term "taste" may be understood, in this connection, all that we might otherwise call science, art, or technical floriculture, for we employ the means at our command for the production of flowers of certain types and styles, and it is the taste, whether true or false, that influences our endeavours from first to last.

In the development of the flower from its earliest forms, as it came into the hands of Europeans, to the splendour in which it appears at this time, the florists have been the principal agents; but, happily, they have not been all of one mind as a party, bound by severe laws and obligations, but of very diverse tastes, and often operating in contrary ways; in many instances earnestly labouring and succeeding in obtaining forms that in other instances would have been, and actually were, regarded as undesirable, and even objectionable. As an example of the advantage to society in establishing a diversity of forms of a particular flower, the London florists objected without hesitation to the fantastic and often eminently beautiful forms of the so-called Japanese varieties that a school of florists in the south of France may be said to have doated on; while Frenchmen, on their part, cared but little for the sumptuous incurved flowers that were as emblems of all possible perfection to the florists on this side. But the men were better than the schools that owned them, and they soon perceived in each other's favourites beauties that should be recognised and qualities that should be encouraged.

For the historical part of my argument, I am bound to direct attention to the earliest flowers that were cultivated, and more especially those that became established between 1790 and 1820. It be must observed of these in a general way, to speak in the language of the exhibition, they were a very rough lot. The first that reached us was the veritable *Kiku*, which has become a most famous flower as figured in the *Botanical Magazine*, t. 327. It was a showy reflexed flower, so far attractive as to be likened to Dr. Sharpe of the present day, a few of our friends believing them to be identical. Not sharing in the belief, I am prepared to believe that Dr. Sharpe is many degrees superior in make and shape, but probably is of no better colour than its gay prototype.

If we regard the *Kiku* as the first of the reflexed group, the question will arise, when did the first of the incurved appear? I submit to you that the variety *involutum*, figured in Sweet's "British Flower Garden," vol. i. plate 7, published 1823, is the first of the series in the historical view, and of true incurved character, although, in common with other early flowers, rough. It may be proper to keep in mind that with a little dressing, *involutum*, in a well-developed form, might be worthy of a place on the show table even now. It is enough for my purpose, however, to establish that at this early date we had the pattern of the incurved to serve as a guide in selecting and raising. In this department the English cultivators have had a great tide of good fortune, for this glorious group is almost wholly of home manufacture. We will call this the prototype of Prince Alfred, and hurry on to avoid having to encounter close comparisons.



STOKE NEWINGTON CHRYSANTHEMUM EXHIBITION, TOWN HALL, HACKNEY, NOVEMBER 14, 1876.

We will now look for the earliest of the Japs. I find it in the series figured in Mr. Sabine's paper, published in the "Horticultural Transactions," 1822, and it is called the *Quilled Flamed Yellow*. If this came to us new this day we should class it as Japanese, and we might say that in character it comes near to Gold Thread or Gloriosum.

Prophetic patterns of three great groups being before us, we fail to find good examples of anemone-flowered or of globular pompons, such as Trevenna or Duruflet of early date, but examples abound that come near to them. The double *Chrysanthemum indicum*, figured by Sabine in the "Horticultural Transactions," 1822, may be regarded as the precursor of the pretty Drin Drin, while the *Small Yellow* of "Horticultural Transactions," 1824, may stand for Aigle d'Or or some such.

Of anemone flowers any number may be found lacking the final finish of Lady Margaret, Gluck, or Queen of Anemones. In "Horticultural Transactions" of 1824 and 1826 Mr. Sabine presents figures that may fill us with delight even now, and that, at any rate, prepare the way historically for the anemones and the single Japs by means of brilliant examples. The *Two-coloured Red* is a grand single with

large disc and ray florets of a rich glowing crimson colour. The *Semi-double Quilled Pink* and the *Semi-double Quilled Orange* are such as we now class as single Japs of fine fantastic quality, from which we might hope to obtain Jap anemones of the grandest patt rn.

An observation of some importance appears to be necessary at this point. In the making of the chrysanthemum we certainly did not begin with raw material. The majority of varieties introduced were obtained from the gardens of China and Japan; they came to us with much of man's work in them already, and, above all things, with that disposition to vary beyond all known limit which appears to become a characteristic of certain plants that have been long under cultivation. It cannot be averred that cultivation develops the initial impulse to variation, but it is certain that cultivation encourages it, for we all select for perpetu tion the flowers that plense us best, and in the end they represent our taste almost as much—sometimes perhaps more than as much—as they represent the species out of which they originated. Between the more characteristic of Chinese and Japanese chrysanthemums the differences are great, but they represent the diverse tastes of the people much more than the diverse conditions of production. Forms that assimilate with the Japanese have unquestionably been introduced from China, but they are not specially characteristic of Chinese taste. The change in form and fashion may be traced from the North-west Provinces eastward through the Corea to Japan, where finally the reflexed and incurved groups are but poorly represented, while in place of them we have the magnificent absurdities that in the eyes of our public threaten to outshine the incurved, but in the eyes of true florists only enhance, by the contrast of their grotesque and extravagant charac ers, the exquisite beauty and refinement of the incurved flowers.

We begin, then, with types of all the forms ready made, and not a few of the types of good quality, though for the most part rough. It will be seen in the sequel that the florists have not created any new form, but have improved all, and to those more especially favcured for exhibition purposes have imparted qualities that place our best chrysanthemums as works of art in advance of all known florist's flowers. In power of expression, distinctness of character, in forms of beauty no less cheering to the heart than delightful to the eye, a beauty that is unique and the embodiment of the highest harmonies of plastic form, the chrysanthemum surpasses all other fl wers, not even the rose, the tulip, or the dahlia being excepted.

If we ask for explanation of this, undoubtedly the initial form is the first to be considered. It is that of any ordinary aster, a central circular table filled with tubular hermaphrodite florets for the disc of the single flower; and a circle of ligulate female florets for a boundary, a defence, a range of external attractions to lure to the fertile florets in the centre the insects required to effect fertilization. The circle is the most perfect of all figures and the source of all beauty of form and proportion; and related circles are inexhaustible in variations, as they are also in creative power in the production of curvilinear forms without end. We lose a grand primary feature when we have sterilised a flower by converting the tubular into ligulate florets; and, from the æsthetic point of view, the double starwort is less beautiful than the single. But the loss of the disc which gives such a fine character to the anemone chrysanthemums, and in a less striking degree to all the single flowers, is compensated by the enlargement of the ligulate florets, and by the repetition over the entire periphery of their elegant ribbon or wire-drawn forms; moreover, their curvatures bring into the field circles, segments of circles, and modifications of circles without end, giving the imagination the task of leading where the eye cannot follow, and in the incurved flower displaying the regularity of an example of engine-turning, expressed in the delicate material and translucent colouring of the living flower. Nature has worked with this primary pattern in asters, helianths, pyrethrums, and chrysanthemums as though a mere circle to begin with would suffice for her to fill the universe with varieties of beautiful forms, each having in itself the power to generate an infinity of other forms; and yet the simple circle should be the foundation from first to last—the Divine idea of the pattern of the orbs in space as well as the flowers that adorn them. You say all flowers are not composites, and not all are of regular form; but the circle underlies them all, and, like the world itself, each may be said to revolve upon a centre.

Geographical influences, probably, have been peculiarly operative in the development of the chrysanthemum. Its range of territory in the Far East is greater than it has in the whole of Europe, and the peninsula of the Corea appears to have been especially favourable to the transition from the compact form originating in North-western China to the diffuse form prevalent in Japan.

The Corea is a cold mountainous country, and cold favours the doubling of the chrysanthemum by suppressing fertility, for the tubular florets more readily change to the ligulate form when no longer capable of producing pollen in juxtaposition with active stigmas. Atmospheric humidity is about equally operative with cold in suppressing the reproductive power, and this again tends to the encouragement of doubling. Thus the Japanese, who obtained their chrysanthemums through the Corea, have formed a race of flowers characterised by a profusion of ligulate florets of extravagant proportions and irregular forms; and our friends in the South of France, having a warm and dry climate, have been enabled to restore fertility by producing single and Anemone forms, the overplus of their seed-beds running to Japanese forms of infertility. Incurved flowers have prospered in this cold country, which is not only, to speak in a general way, too cold to ripen seed, but too cold for the production of the pollen that must precede the process. The names of the anemone forms tell us whence they came, and the lesson of the story as thus viewed appears to be, that the first step towards obtaining chrysanthemum seed will be to make a climate expressly for the purpose, and to encourage in that climate the production of tubular florets, for so long as you disbud and feed high, and repudiate discs, you may whistle for seed and grow weary of whistling.

In all the early forms of the flower it may be said there is suspicion of singleness. Observe the beautiful *Pink Quilled*, as figured in the *Botanical Register*, 1822, t. 616. Here you have an extremely beautiful flower, with narrow rosy florets which incurve slightly, showing their silvery undersides at the points, and in the centre appears a half-concealed button, suggestive of a disc, in a state of transition, having become sterile possibly, but not yet having completed the doubling process. It is described as "remarkable for the incurved form of its florets, which shorten regularly and gradually towards the centre, forming a brilliantly pink full flower of about four inches in diameter." Sabine's *indicum* has a distinct disc which appears to consist of aborted tubular florets. Sweet's *tripartitum* of "British Flower Garden," vol. ii., plate 93, is a single *indicum* differing but little from Sabine's type. The *Kiku* of 1789 shows a centre likely to be fertile. The six beautiful flowers figured by Sabine in "Horticultural Transactions," 1822, include four singles, while the other two, though figured as doubles, would probably prove to have fertile centres could we but examine them as we do the flowers on the show table.

It is of the greatest interest to observe that, while we have in our system of selection co-operated with our cold damp climate in sterilising this flower, nature has not been utterly thwarted in her passion for multiplying varieties. The additions that have been made from year to year to our collections have comprised a large proportion of sports, these representing, probably, an initial power derivable from the seed, and possibly indicating that the pollen parent was of a different colour to the seed parent, for the stigmas of composites are not of necessity fertilised by pollen produced in the selfsame disc. This suggestion does not meet the case of any more than two forms of one variety, but as we have four Christines we shall want four pollen parents, unless we stretch the imagination to a case of the conjoint influence of two or more pollen grains from diverse sources.

Passing from the occult to the practical, we have to note that while on the one hand we sterilise the flower, and so reduce the probability of seed production, the plant, no longer having to prepare for that business, devotes its energies to the production of ligulate florets in profusion, and in what we may term gigantic proportions. Could we have an incurved flower with a fertile disc it would be but a poor thing, for the absorption of energy by the tubular florets would effectually check the development of the ligulate florets, and so keep down, from the exhibition point of view, the quality of the flower. It follows, therefore, that we must go back for seed while we go forward for exhibition quality. But for the most striking and splendid decorative features to select the noblest incurved or tassel flowers for stud purposes will be a grave mistake. We must rather keep in mind how double stocks and China asters are obtained, for when these are completely sterilised there will be an end of them. While we make a climate for the work, we must find fertile forms for the climate; or, by a combination of roasting and starving and allowing the plant to mature all its flowers, force the doubles back upon the single forms out of which they originated, that they may be fertile again and useful as seed producers.

Having thus studied the business anew, we shall look forward for results, and the question arises, Have we anything to hope for in the way of new forms or new colours? May we expect to obtain a blue or scarlet chrysanthemum? May we expect to substitute for the odour that now pleases few and offends many one that shall give universal pleasure, like that of the violet or the rose?

And here the question arises, Is the blue chrysanthemum of the Eastern pottery a fiction or a fact? You may find examples easily wherever works of art of Chinese or Japanese origin are in any plenty. One example shall suffice for my purpose, and I invite attention to what is undoubtedly intended for a blue chrysanthemum on a beautiful jar of Japanese Cloisonné. It is a reflexed flower, with rigid florets of a full blue colour, all defined with golden lines of Cloisonné work. The leaves that accompany the flower are clumsily drawn, but they do not suggest that any other flower is intended. On this same jar is a blue pæony, which we may class with the chrysanthemum as presenting at least a parallel problem.

Now it is a matter of some interest that the Japanese profess to have this flower, and to keep it as a sacred secret. The love of the people for the flower is, perhaps, best embodied in the Festival of Happiness, which occurs in the ninth month of the year, when the flower is in bloom, and is called *Kiku-dzuki*, when the chrysanthemum enters largely, as the emblem of happiness, into all the ceremonies of the day. But the blue flower does not appear in this festival; it is reserved for religious uses; it is jealously guarded against inquisitive vulgar eyes, and will only be seen by Europeans when the safeguards against intrusion are broken down by artifice, bribery, or treachery. So far as to the Japanese theory of the blue chrysanthemum. It will profit nothing to multiply examples; but I will refer to one amongst many in the "Keramic Arts of Japan," the valuable work of Messrs. Audsley and Bowes. In plate 15 of that work, representing pheasants and flowers, occurs a cluster of blue chrysanthemums that have a more natural appearance than the average of examples. They are certainly reflexed flowers, and possibly were pompons of large size. Near them are some incurved Japs of a colour approaching scarlet. I cannot be wrong in describing these as blue, and yet the colour is of a tone that we may really hope to attain, for it is removed from the full deep azure of the example of the Cloisonné jar, and is sufficiently touched with rosy hues to permit the description of it as rosy lavender blue. I submit that a colour of this kind may be hoped for, as in accordance with the range of variation in

the direction of bloom already witnessed, as a fact. And I submit further that a fanciful artist, with a flower of this kind before him, might be tempted to suppress the red tone and intensify the blue tone without being over fanciful in his picturing.

The flowers occasionally met with in Japanese art are the chrysanthemum, pæony, wistaria, lily, hydrangea, iris, carnation, convolvulus, and water lily. But the *Kiku* stands before all, and attains to the highest degree of artistic importance when conventionalized after the fashion of a star, with a definite number of rays for every special signification.

The imperial crest, termed the *Kiku-mon*, is a chrysanthemum of the flat star pattern, with sixteen rays or florets. And the question may now be put—If the flower is conventionalized in form, may it not also be falsified in colour?

Possibly we talk too freely of the fidelity to nature of the artists of Japan. They are human and inventive, equally capable of serious truth and boisterous fun, and in burlesque inexhaustible. What are their dragons that wind around their bowls but magnificent nightmares that carry the facts of nature into the region of the impossible, and justify any doubt we may entertain as to the *bona fides* of their painted flowers?

A chronological study of garden varieties will of necessity throw some light on the nature and rapidity of progress in the development of floral qualities. Valuable aid in such a study may be derived from the catalogue of large chrysanthemums, given in the "Garden Oracle" for 1889. This catalogue contains the names of about 1,760 varieties, with names of raisers, dates of distribution, class, and colour of flower, the whole arranged in alphabetical order for convenience of reference. With this before me, I take a list of the incurved varieties that are now in favour, and I make comparisons. It happens that incurved varieties at this time generally recognised as worthy of cultivation do not exceed a hundred in number; but while I deal with certainties, apart from doubts and speculations, I cannot extend the list beyond eighty. We will now consider how they rank in order of time.

The very first note to be made is in the nature of a startler. It is that Queen of England, still unsurpassed for beauty, the universal favourite as a model of form, and in all other respects worthy of its name, heads the list as the oldest of the series, and dating from the year 1847, when the first Chrysanthemum Society was but newly born and had almost everything to learn in the way of business, for in the same year it held its first exhibition. Shall we venture to say we have in this flower an embodiment of the highest floral qualities, and that in a run of forty years we have obtained nothing to surpass it? I will not venture on a declaration that can have no basis, in fact, apart from individual opinion. It is enough now to say that the late John Salter raised this true queen of queenly flowers, and that it exercised a potent influence on English taste which may be said to have culminated in the formal adoption in the year 1851 of the incurved form as the official form, or say the form that should have precedence of all others on the show table.

In the brief review I am now attempting the Queen stands alone. I find no other flower amongst modern favourites of earlier date than the year 1852, which claims *Beauty* and *Arigena*. The year 1856 gives us *Alfred Salter*, which has no companion in the list of modern favourites. We meet with nothing in the two years that follow, but 1859 gives us *Barbara, Golden Queen of England, Jardin des Plantes*, and *Yellow Perfection*. From this time the successive years are somewhat uniformly represented, as thus: 1860, *Novelty*; 1861, *Lady Hardinge*; 1862, *Empress of India*, or *White Queen, White Globe* (of which there are two, one Smith's, the other Salter's), *General Slade, Nil Desperandum*; 1863, *Abbe Passaglia, Beverley, Golden Eagle, General Bainbrigge, Princess of Wales, Venus, Prince Alfred*; 1864, *Lady Slade, Mr. Brunlees, Mrs. Haliburton, Rev. J. Dix, Sir Stafford Carey*; 1865, *Empress Eugenie, Eve, Hercules, Lady Carey, Prince of Wales*; 1866, *Golden Beverley, Gloria Mundi, Hereward, John Salter, Mr. Gladstone*; 1867, *Faust, Hetty Barker, Isabella Bott, Lady Talfourd, Mrs. Heale*; 1868, *Bronze Jardin, Baron Beust, Enamel, Guernsey Nugget, Le Grand, Mrs. G. Rundle, Mrs. E. Sharpe, Miss Marechaux, Princess Teck, Princess Beatrice*; 1869, *Barbara, Blonde Beauty, Golden John Salter, Pink Perfection, St. Patrick*; 1870, *Miss Hope*; 1871, *Duchess of Roxburgh, Ensign*; 1872 was a bad year for everything, and it makes no figure in the present summary; 1873, *Hero of Stoke Newington, Refulgence*; 1874, *Emily Dale*; 1875, nothing; 1876, nothing; 1877, *Golden Empress*; 1878, *Mrs. Shipman, Rev. C. Boys*; 1879, nothing; 1880, nothing; 1881, *Angelina, Mr. Bunn*; 1882, *Jeanne d'Arc, Lord Alcester, Mabel Ward, White Venus*; 1883, *Lord Wolseley, Mrs. J. Crossfield, Sir B. Seymour*; 1884, *Duke of Teck, Mrs. Weston*; 1885, nothing; 1886, *Bronze Queen, Yellow Globe*; 1887, *Fingal*.

The dry list is, like many a dry tree, full of useful material. It points to some interesting, perhaps I may be permitted to say curious, conclusions. The best varieties of the incurved were produced from 1847 to 1871, since when the lists have been refreshed by sports chiefly, and the true seedlings have been secured through happy accidents rather than as the result of systematic effort, as in the case of those produced by Smith and Salter. In plain truth the incurved pattern was used up in the course of twenty to twenty-five years, a result attributable not to the niggardliness of Nature, who can bestow new countenances on her children *ad infinitum*, but through the systematic sterilisation of the flower for the attainment of floral perfection. When it is clearly understood that to grow for the show-table and to grow for new varieties are ends incompatible, we may hope for a new era of variation in the incurved group, and the chrysanthemum will enter upon a greater and grander phase of development than has been witnessed hitherto. Looking back from this point to the collapse in 1871, I will ask you, where should we have been in this particular region of the floral world had not the new tide of Japs from the South of France arrived to keep us floating? In all probability we should not be here to-day to celebrate the centenary; and so, however devoted we may be to the civilised beauties that stand for the highest range of perfection, let us not forget the services rendered by the savages that are so weak in artistic finish, but so strong in expression and the vigour that speaks of enduring vitality.

Imported incurved flowers may date from 1820 when *involutum* was obtained from China, but the first home-raised incurved date from 1836, when an amateur of Jersey originated several, of the history of which but little is known beyond the fact that they passed into the hands of Mr. Chandler of Vauxhall, and, through him, were distributed. Concurrently, Mr. Freestone, of Norwich, raised many new seedlings, amongst them some that were incurved, and these, with the Jersey seedlings, were secured, by Salter when he established himself at Versailles in 1838, and entered upon the career that has placed his name in a high rank in our floral Walhalla. Our business is not with the history except in so far as it teaches something of the principles of progression. Well, the raisers have generally kept their secrets, but Freestone has divulged that he selected semi-double flowers for seed production, and forced them into early bloom to increase his chances of success. In this way he secured fertility and a suitable climate.

The future of the chrysanthemum may be predicated to this extent, that when distinctive forms no longer appear, it will have passed the meridian of its fame. It is not likely to "pass into nothingness," but the appearance of new forms from time to time will alone advance or sustain its popularity. But in the evolution of the flower many new features or modifications that will have the merit of novelty may reasonably be expected. If we do not see promise of blue or scarlet flowers, we may perhaps find comfort in the consideration that they are not wanted. If you will take a good stand of twelve or twenty-four, and having removed one flower, fill its place with a bunch of scarlet pelargoniums, you will need no further persuasion that positive colours are not to be desired. It produces but one pure positive colour, and that is yellow—a colour needing to be employed with caution in all decorative works.

In grouping these flowers it will be found that while rosy tones may predominate, an unpleasant effect is the certain consequence of a predominance of yellow. We have a parallel case in roses, and nature has taken some care that the golden colour shall not spoil the rose-garden or the exhibition table, by making rosy roses plentiful, and yellow roses few. We are less in need of further developments of the yellow tones than of the reds and purples in the chrysanthemum, and we see in Progne and Julie Lagravère material of a promising nature for newer and richer tones of red.

Perhaps more than anything, the odour of the chrysanthemum needs improving. There are varieties that are said to emit the odour of the violet, the rose, and the musk; but the senses of all are not equal to the discovery of them. Considering that the composites are often highly aromatic, and that our flower inclines to the manufacture of a camomile odour, there is some ground for hope that varieties possessed of an agreeable fragrance may be secured, and if these appear with flowers of less than the highest merit, they should be preserved for the inauguration of a new feature that in time may become characterized by the highest floral qualities.

CENTENARY CHRYSANTHEMUM SHOW AT GHENT.

M. O. de Meulenaere's Group.—A full report of the Ghent show was given in the Gardeners' Magazine last year. In the centre of the hall was a large oval-shaped group, staged by M. O. de Meulenaere, which contained some of the finest blooms in the show, and attracted very much attention from the visitors, but more especially the English ones. It was composed of one hundred and twenty-five well-grown plants, bearing many blooms quite fit for cutting for the show boards of an English exhibition, and was unanimously awarded the first prize of a gold medal of the Royal Agricultural and Botanical Society of Ghent (value two hundred francs). All the Japanese were good, particularly Madame Audiguier, Sunflower, Middle Temple, Edwin Molyneux, Fair Maid of Guernsey, Ethel, Harman Payne, &c. Incurved were well represented by such standard sorts as Miss M. A. Haggas, Princess of Wales, Mrs. Rundle, Mrs. Dixon, and Baron Beust, reflexed and anemones also being shown in good form. Many of the plants carried from forty to fifty fine flowers.

The second prize in the same class—a gold medal of the society, worth one hundred and fifty francs—was awarded to M. Alexis Callier, who arranged his group in semi-circular form just behind M. de Meulenaere's, and is partly seen in the illustration a little to the right. M. Callier also set up a nice bank of plants of the large-flowered varieties. The chief sorts in his collection were Mélanie Fabre, Bois Rosé, L'Adorable, Le Tonkin, Eve, Lord Alcester, Guernsey Nugget, Emily Dale, Pink Christine, Nelson, Lady Margaret, Timbale d'Argent, &c.

The other view represents the third prize in the same class, a gold medal of the value of one hundred francs, which was carried off by M. de Beer. His collection was much dwarfer than the others, and charmingly arranged beneath the shadow of a huge palm, but the effect was a little marred by the multitude of small tickets bearing the names of the varieties staged.

General Bidwell's Orchard in Chico, California, has recently had 700 acres added to it, and now extends over an area of 2,200 acres.

CHRYSANTHEMUM ♦ PORTRAIT ♦ GALLERY.

IN this year's gallery we add three portraits to the lengthy series of representatives of our flower who have passed from the scenes of their floral labours. They rest from their labours, but their works do follow them. Two of these are well remembered by many who will read these notes; they are MR. GEORGE GLENNY and MR. JAMES BUTCHER; the third, MR. SAMUEL BROOKES, is perhaps remembered least of any, although we have felt compelled to speak of him as the "Father of the Chrysanthemum." Respecting the first two we have nothing here to add to what has been said already, but the biography of Brooke's is in one sense new, and as a feature of the history it is certainly important. We place him at the head of the list, both because of his position as a founder and because the waves have gone over him. The living may follow the dead, they cannot precede them. The portrait of Brookes should surprise any who knew the man, for it was taken twenty-six years after his death, and is a veritable photo of the man when living. This is like an enigma, but it is a serious matter of fact.

SAMUEL BROOKES, THE FATHER OF THE CHRYSANTHEMUM.

In the third chapter of Mr. C. Harman Payne's "History of the Chrysanthemum," published in our last Chrysanthemum number, occurs a notice of Messrs. Barr and Brookes, of Balls Pond, who were growers of the flower as early as 1817, and indeed earlier, for it was in that year they obtained the Superb White from China. Mr. Brookes was a member of the Council of the Horticultural Society, and a man of much spirit and enterprise, as may be judged by the fact that he sent a traveller named Poole to China, who returned in 1819, having secured some new varieties, amongst which were the Tasseled White, the Quilled Salmon, and the Small Yellow Single. Mr. Brookes subsequently emigrated to America and died at Chicago. We have copies of two printed sermons, one preached at the funeral of Mr. Brookes, September 5, 1875, the other at the funeral of Mrs. Brookes, June 16, 1874. What follows is taken from the *American Florist*, February 1, 1886, and is from the pen of Mr. Edgar Sanders.

When one has to go back fifty years in a place like Chicago to find the sort of place it was, he will find very little from which a florist could hope to build a business. And yet the subject of this sketch, at the age of forty, after breaking up a similar business in London, landed here in October, 1833, the year the town of Chicago was incorporated; it was inhabited by 550 people, living in 175 houses, with a taxable property of £60,000, and a first year's tax levy of £48·90. A wild bear had been killed this year just out of the city proper, and 7,000 Indians congregated there, with whom a treaty was concluded by the United States.

Samuel Brookes was born at Hammersmith, near London, in 1793;* received a first-class education, early manifested a great love of flowers, served an apprenticeship to a florist, and we find him at the early age of 21 with Mr. Barr, at Balls Pond, London. This partnership, however, lasted but a short time. Mr. Brookes becoming sole owner, built a beautiful place, second to none in his day. His love of new plants led him to carry on a correspondence with botanical collectors in all parts of the world, and he was the introducer of many novelties, the azalea and Norfolk Island pine not among the least. Mr. Fortune, of China fame, was one of his acquaintances, if not in his employ.

The rapid growth of London caused him to vacate a large portion of his grounds, and he built several blocks of dwelling-houses on them, which, through the treachery of a contractor, greatly crippled his resources, and was really the cause of his emigrating to this country. His outfit consisted of a heavy invoice of nursery and seed stock generally, household goods, including a piano, the first that reached Chicago, and a large bell, also noted in the early days here. Finding a market for his stock in New York, he took a steamboat for Albany, a canal boat for Buffalo, where he landed in May. He then, with his household in a couple of waggons, and the heavy articles sent by lake, continued his journey, and, as he often used to say, in spite of many a hardship, had a delightful trip, botanizing on his way, and, after a two months' jaunt, reached Chicago. After a winter spent in the city, he decided to try farming, and located thirty-five miles out. The infant city growing apace, and his younger children requiring better educational facilities, he, in 1843, moved back again, and decided to once more try his favourite pursuit, the population of the city having risen in the meantime to at least 8,000.

His first adventure, and the first greenhouse in the city, was erected in 1844, on the corner of Clark and Adams Streets, which was then out on the prairie; but buildings soon encroached on our traveller, and in 1853 he moved again, this time greenhouse and all, to more spacious grounds, now known as Oakwood, five miles out. Here he stayed until 1860, when he purchased land and made a move to Lake Avenue and Forty-fifth Street, where the writer found him in 1861, and where his son, Frederick, still continues the business. It was the writer's good fortune to pass many a pleasant hour with Mr. Brookes in his house among his books, in his greenhouse among his favourite plants, and as co-exhibitor at the annual floral shows, that in the earlier history of the city it did not seem difficult for the florists and others to bring about, although now, with half a-million of inhabitants and a hundred florists it seems an impossibility.

Mr. Brookes' genuine love of plants amounted to an enthusiasm; his knowledge of them was extensive, and nothing gave him greater pleasure than an arrival from across the ocean of a kindred spirit with latest knowledge of plant growth and lore to impart. He was an importer of choice plants from the start, try them he must, even if the western people were slow to catch with his enthusiasm. Father Brookes, as for years he was called (being a pillar of the Congregational church), was a true gentleman of the old school; dignified, gentle, honest, and upright in all his dealings. He departed this life surrounded by a loving family of children and grandchildren, if we mistake not, to the third generation, surrounded with plants to the last, and, what few can say, had lived to see the city of his new western home spring up from a frontier town of 500 people, to 300,000 or 350,000. He had a soul so gentle that the wonderful change from the luxury of a life in London to that of the wilds of the West never disturbed his serenity.

[*The note appended to the funeral sermon says "born July 21, 1794; died June '6, 1874."]

LORD BROOKE, M.P.,

PRESIDENT OF THE NATIONAL CHRYSANTHEMUM SOCIETY.

The Society is fortunate in having secured a man so admirably adapted for every public function that can be required of him as President, while leaving the practical men free to manage business not in his line, and all apart from the public office for which his position and education as an English gentleman so thoroughly adapt him. We shall hope that when higher personal dignities and larger affairs of State than his lordship is at present directly concerned with engage his interest and attention, he will still give some portion of his time to the advancement of floriculture, for it is an art that promotes the peace and prosperity of a nation; it is the friend of intellectual culture, and no enemy to title, wealth, or any of the personal decorations in which men delight. Its objects are the creation and diffusion of beauty, the education of taste, and the promotion of pursuits that encourage the observation of nature and the profitable occupation of leisure hours. But Lord Brooke knows all this so well that we apologise for obtruding our observations.

MR. F. W. BURBIDGE, M.A.

Kew turns out more good men than any other establishment of its kind in the world. Mr. Burbidge is one of them, and his career is known to a great extent by reason of his public performances. Our readers have had the advantage of his taste and talent, and readers of other papers have been equally fortunate. In his position of chief at Trinity Gardens, Dublin, he has earned not only the esteem of all men, but the honourable grant of the M.A. degree, to which, beyond all doubt, others not less worthy will be added as time unfolds opportunities and the man is found ready. Mr. Burbidge should have a front place in our gallery as the author of a sound and much-valued treatise on the chrysanthemum, and the best exponent of its history in the Centenary Conference at Chiswick in 1889. As a near and dear friend, we shall ask him to be content with a brief notice on this occasion, as we may have, in some less busy time, occasion to speak of him at greater length, even if we may fail to do him justice.

R. FALCONER JAMESON, ESQ.

The Hull Society has been of singular service to the cause that at this moment is before all others, both by reason of geographical location and the spirited manner in which the society is managed. One of its best friends is the gentleman whose name heads this note, and the whole fraternity are in debt to him for the fire he has sent into Yorkshire and the other counties that touch the Humber.

Mr. Jameson attributes his love of the flower to the impression made on him by the exhibition in the Temple Gardens ten or twelve years ago. He did as thousands have done; he immediately grew a few, and these created an appetite for more, and now he finds himself the happy possessor of some six hundred plants. One result of his seeing the Temple Show was that he became one of the founders of the Hull and East Riding Chrysanthemum Society in 1884, and joint hon. secretary from then until 1887, when he was elected chairman, a position he still holds. As a merchant and a lover of the garden, Mr. Jameson has preferred to enjoy his own chrysanthemums at home, and to leave the stage clear so far as regards his own presence at exhibitions. As a trader in timber, he believes it good that chrysanthemums should make strong wood, and his political sympathies incline him to the belief that the blue chrysanthemum exists, and will yet come forth triumphant. Although destitute of politics and dreadfully lean in principles, we echo the pious wish of our friend, may the blue mum soon come and complete the sum of human happiness, for which *that* alone is wanting.

WALTER FURZE, ESQ.

As a pillar of the state in the present connection, the florists of the Thames Valley owe much to Mr. Furze, of Roselands, for his good example and encouraging services in behalf of the chrysanthemum. He first entered upon the cultivation with earnestness in the year 1882, and in the next year founded the Teddington Society. He won the first challenge vase offered by the Teddington Society in the years 1885 and 1886, and since then, in order to make a clear field for others, he has abstained from competing for the challenge vases.

In the year 1886 Mr. Furze was unanimously elected chairman of the Kingston and Surbiton Society, and he is still a member of the committee of that society. It was a great achievement to secure the twenty-five guinea challenge vase offered by the Kingston Society. For this Mr. Furze competed for five years, and was first successful in 1888, and finally won the vase in 1889. In the first year of showing he was placed third, and in the two following second; the triumph therefore marks a steady upward progress to the highest place as the result of application sustained by ambition resting on genuine love of the flower.

Mr. Furze was one of the Selection Committee appointed by the Royal Horticultural Society last year at the Centenary Exhibition and Conference at Chiswick, and being a Fellow of the society, takes a lively interest in its progress, and in horticulture generally. At Richmond, Putney, Chiswick, Teddington, and Twickenham, Mr. Furze is a frequent exhibitor, making bold marks in the prize lists to the great advantage of the exhibitions, which never prosper so well as when the competition is severe in all the more important classes.

Mr. Furze informs us that his gardener, Mr. E. Coombs, has, in the six years he has been at Roselands, taken upwards of three hundred prizes, in nearly all cases firsts, in summer and autumn exhibitions; a fact fully as creditable to the employer as to the gardener, for without co-operation of the right kind such success is impossible.

E. C. JUKES, ESQ.

This gentleman, who for the last twelve years has been an active member of the National Chrysanthemum Society, was formerly a member of the committee of the Borough of Hackney Society. He now occupies the position of vice-chairman of committees, and is perhaps the most eloquent and effective speaker on the executive. As a chrysanthemum grower Mr. Jukes is specially interested in the cultivation of anemone varieties, both of the Japanese and old-fashioned types in which he has been very successful.

In 1887, for 24 large-flowered anemones at the Aquarium Show he won that much coveted prize the Veitch Memorial Medal, and in the following autumn carried off the National Society's silver medal for twelve Japanese anemones.

Visitors to the provincial show at Hull, will recollect that as an encouragement to cultivators of varieties in the anemone groups, he offered a valuable silver cup for competition for the best nine large-flowered anemones in six distinct varieties. Mr. Jukes, like many other members of the society, has no business interest whatever in horticulture, being occupied in a different sphere of life entirely, but he is a devoted and enthusiastic amateur of the chrysanthemum, and an excellent supporter of the Society to which he has so long belonged.

MR. EDWARD COOMBS.

Although the flower we seek to honour with the men who have made it have no geographical partialities that can be defined, it does happen that the valley of the Thames is a kind of chrysanthemum garden, for collections and cultivators abound there. The chief reason is that horticulture prospers wherever the wealthier members of the trading class pitch their tents, and the silver Thames reflects the green trees and sloping lawns of many prosperous citizens. Mr. Edward Coombs, the gardener at Roselands, is one of our leaders in the practical business, and his winnings tell of his success.

He first appeared in this connection in that capital school, the Brixton Hill Society, in 1872, being then in the employ of B. Baker, Esq., Palace Road, Roupell Park, securing first honours for cut blooms in the leading classes four years in succession. In 1879 he took the management of the gardens of F. A. Browne, Esq., Lawn Bank, Teddington, and secured the first Teddington challenge cup while in this service.

In 1884 he went to Roselands, and for this establishment secured the Teddington trophy two years in succession. Since being superintendent at Roselands he has won the Kingston Challenge Vase twice in succession. Since he has been in his present employ, he has taken 95 first, 22 second, and 7 third prizes for cut blooms, a total of 124 prizes, to which, of course, he intends presently to make additions.

MR. W. MEASE.

The worthy champion of Downside, Leatherhead, has been an exhibitor of chrysanthemums about sixteen years, and with very considerable success. He has taken two silver cups at Liverpool, and a Veitch memorial medal; also the Hull challenge cup, which up to the date of his securing it (1887), was the best prize ever offered, including vase valued at fifteen guineas, with a like sum added in money.

MR. J. W. MACHATTIE.

Considering the strain the exhibition season imposes on men who have many cares in the management of gardens, and the continual watchfulness at all seasons essential to success with the chrysanthemum, it is somewhat surprising that men like Mr. Blair, Mr. Parker, Mr. Mease, and Mr. Machattie, to name but few amongst many, should attain to the success they have, and should sustain it so long. Mr. Machattie, of the gardens at Newbattle Abbey, Dalkeith, is a great leader with our flower in the north, and at times in the way of exhibiting he reaches down southward, although usually "auld Reekie" has a first claim on his devotion, which he honours with ardent loyalty. Where shall we find the parallel in any branch of industry of the leading men amongst our head gardeners and nursery foremen? Where? We know not where.

Mr. Machattie is a native of Morayshire, and served his apprenticeship at Moy Hall, Inverness-shire, the seat of the Mackintosh of Mackintosh, and was employed at Antray House, Nairnshire; Altyre House, Forres, Raith, Fifeshire; Knightshayes Court, Devonshire, and at Oxenfoord Castle, Midlothian, the seat of the Earl of Stair. For the last six years he has been gardener to the Marquis of Lothian at Newbattle Abbey, Dalkeith, where he has been most successful as a grower of fruit and flowers, and has won many memorable prizes, and has proved himself worthy of being called a gardener.

MR. PETER BLAIR.

It is well we should have a few Scotchmen in the ranks, for they bring into the field another kind of enthusiasm to that of the Londoner who has known the flower from his youth upward. To many northerners it is even now comparatively unknown, and the missionaries of the north have yet work to do.

Mr. Peter Blair was born at Largo House, Fifeshire, May 29th, 1854, where his father was then head gardener. At the age of fourteen he commenced his gardening career under his father at Shrubland Park, Suffolk, where he stayed six years. He obtained a thorough "grounding" in those noted gardens, and had considerable experience in the various departments. In the spring of 1874 he was appointed foreman in Trentham Gardens under the late Mr. Stevens, who was well known to be as competent as he was strict, and under him he learned much that has tended to success. Trentham has always been noted as one of the best of schools, in which young gardeners may acquire a knowledge of practical horticulture. After being at Trentham four years he was engaged by Messrs. Veitch as a foreman for their Chelsea Nursery, and there remained over seven years. It is his pleasure to report that he received much kindness at the hands of Messrs. Veitch whilst in this employment.

In July, 1885, he was selected by His Grace the Duke of Sutherland to take charge of the extensive gardens at Trentham, during the long illness of the late Mr. Stevens, and on his death, in the autumn of 1886, was at once appointed his successor. Since that time Mr. Blair has effected various improvements in the extensive pleasure grounds and American garden, renovated vine and peach borders, largely extended the collection of orchids, and made a speciality of the chrysanthemum. Of the latter all sections are grown, the total amounting to about 3,000 plants. Some are grown as specimen plants, three to five feet diameter: some are grown on to any height they naturally assume, many are "topped" and kept dwarf, these produce very fine flowers. Others are grown as natural bushes. Mr. Blair commenced exhibiting chrysanthemums in 1888 with considerable success at the local shows. In 1889 he extended his operations, and competed with invariable success at the Crystal Palace, Hull, Leeds, Bradford, Leicester, Hanley, and other places, carrying off first honours in nearly every instance, including the challenge cup from Hull. The chrysanthemums this season at Trentham are nice plants, as we have already reported, and will probably give flowers as good as last year. It is most agreeable to hear from our friend such words as these: "I have at all times received liberal encouragement from my noble employer, and much kindness from the Duchess since I have had charge of these gardens."

MR. RICHARD PARKER.

This giant of the Midlands began "this breathing world" at Chigwell, Essex, and so we claim him as one of our Little Johns of Epping Forest. He is the son of a gardener, and was born in the garden, and his lineage is horticultural, for his grandfather owned a nursery at Clapham. He remembers going from Chigwell to Clapton and "crossing the common" with his father to see the chrysanthemum show at Stoke Newington some five-and-twenty years ago. He has the hardihood to say that the blooms he then saw with astonishment are now far surpassed, which, after all, is only a generous admission that the world moves, as Galileo declared it did in his time, and narrowly escaped burning for the shock he gave the church. And he remembers the Rochester and the rosy James, and the fuchsias and tulips that were grown at Clapton then, for it was one of the homes of the florist, and Mr. Williams, of Stamford Hill, and his brother, of West Green, were two of the greatest amateurs of tulips in the south.

But oh! the links, the links, the links that burn, and the links that fade. This Epping Forester was a pupil of the blessed Adam Forsyth at the Brunswick Nurseries, and no wonder that at Impney, where Mr. Parker smiles, the mums are a wonder unto many. From Stoke Newington he went to the garden at Wombersly House, Hornsey, to be drilled in kitchen garden and general outdoor work under Mr. Douglas; then went to Messrs. Veitch and Sons' Nurseries; next to Mr. Smith, at Mentmore; and wound up his peregrinations as general foreman under Mr. McIndoe at Hatton Hall, a capital preparation for the government of Impney, the residence of John Corbett, Esq., M.P.

An employer has much to do with the destiny of a gardener, whether to fetter him, and so restrain the development of talent, or encourage him and take advantage of his love and labour in the business. Mr. Parker has been fortunate; he has met with generous encouragement, and amongst many agreeable results, the chrysanthemums of Impney have, in the last four years, secured all the leading prizes in the Birmingham Exhibition, thus securing to the Midlands the kind of prescription that belongs to humanity, which may be summed up in "keeping the money and the power in the family." For an exhibitor from the far north or far south to carry off the chief prizes could not be so agreeable to the people of Birmingham as to see them taken by a near neighbour, of whom they could speak as "one of themselves." It should be said, however, that Mr. Parker took to growing chrysanthemums for exhibition for the first time in 1884, so that he made his conquest by a sort of *coup de main*, and not as the result of plodding. But then a man of genius makes short cuts, and it does not surprise us that in his first competition he was placed first in the large open class; although, as he once confessed to us, the sudden success took his breath away. The next year he retained his place; and the third year he again was first in all the open classes, and last year he crowned the edifice by taking the largest prize ever offered in the keenest competition ever seen in Birmingham. Three years in succession the Sheffield Society offered valuable silver cups, each of which he managed to bring home.

What he will do next we will wait to see, and having seen will prophesy. It is enough to repeat that the generous employer has contributed in no small degree to this success, and that Mr. Parker has the advantage of the best of feeling in all the men under his charge in the beautiful gardens at Impney.

MR. JAMES WESTON.

Mr. Weston, who has figured prominently in the Brixton Hill Chrysanthemum Society, began his gardening career as an apprentice to the late Mr. R. Glendinning, of Chiswick, having there to practice propagating, as well as to manage the hard-wooded and orchid houses. And he had experience also of larger work under the landscape foreman. His first appointment after leaving the nursery was in the garden of J. Allnut, Esq., Clapham Common, where he was foreman under Mr. Curtis and Mr. Mockett, who were exhibitors of pelargoniums, fuchsias, verbenas, azaleas, laced polyanthuses, and other popular subjects. His next appointment was as gardener to David Martineau, Esq., Clapham Park, whose gardens he formed, under the direction of Mr. Davidson, of Shrubland Gardens. Mr. Weston has in his thirty-four years' service been a successful exhibitor of heaths, azaleas, stove and greenhouse plants, fuchsias, orchids, and chrysanthemums. His earliest recollection of the last named subjects are in connection with a visit paid to the garden of Mr. Robinson, of Pimlico, the raiser of Defiance verbena, to see the Chusan Daisy when newly introduced by Mr. Robert Fortune, and also to beg cuttings of chrysanthemums, Drin Drin, Sacramento, Solfaterre, and others. These he grew and exhibited at the Horticultural Society's rooms in Regent Street, and also at the Horns, Kennington, then a great place of meeting for florists. Through the chrysanthemums he became acquainted with George Taylor, the author of the first treatise on the flower.

Mr. Weston was one of the happy throng, which included Mr. H. Cannell, Mr. Glover, Mr. Samuel Broome, and others, who founded the Brixton Hill Chrysanthemum Society, and he has exhibited annually in the entire run of thirty-one years of the society's existence. He was one of the committee of the gigantic amalgamated show at the Agricultural Hall; one of the early competitions at the Crystal Palace, South Kensington, and elsewhere, having to fight against such masters as George, Wiggins, Hutt, and Ward, and taking his fair share of winnings with them and against them.

Since joining the N.C.S., our friend has been a constant exhibitor at the exhibitions and an assiduous member of the managing committee. In last year's meeting he secured the first for pompons, second for nine trained specimens. As chairman at the August meeting of the Brixton Hill Society, he proposed and carried the affiliation of the society with the National, and thus Brixton throws in its influence to aid the "head centre."

MR. J. MONK.

There must be some mysterious connection between London at large and certain suburbs of London in particular with the Celestial Empire, the Nipon-Japon, and the coriaceous Corea. The explanation is, no doubt, to be found in the history of commerce, but it would suit our purpose here to find it in the region of sentiment. To make short work of it, we would suggest that Stoke Newington, in its days of intellectual ascendancy, moral perfection, and rural simplicity, must have been in sympathy with any celestial empire, and as it could find but one, it seized upon its flowers as emblems and sources of inspiration to aid it in the conflict that was impending, in the shape of the invader known as the jerry-builder, who had in view to spoil every view and whose field of labour was the field that produced the flower that hid in its breast the secret of universal and eternal happiness. We should not have ventured on so elaborate a preface, but we must appear wise even if we know we are not so, when another Stoke Newington man comes forward with his life in his hand and his portrait in his face, and we discover with gladness, threatening delirium, that he is our dear old friend Mr. Monk, with whom we have so often and so happily laboured.

This past master began to do mums at Balham and made bull's eyes with them at the Crystal Palace, the Horns, Kennington, and Brixton Hill, when the butts were put up for mum shooters. Indeed, he was one of the founders of the Brixton Society. He remembers that S. H. went over there to give a lecture on Roses, and he put on the table a fine stand of flowers to illustrate the subject. To a meeting of this society he contributed an excellent paper on Floricultural Societies. He was a frequent winner at Crystal Palace, one of his special triumphs being for pyramid pompons, and we remember well that the plants he took the five pound prize for, were the best that had ever been exhibited, and we secured a figure for one for the "Floral World." At the Horns, Kennington, he was a great performer, and beat his old friend,

Mr. Robert James, so that when the chairman distributed the prizes he asked Mr. James why he claimed so few, and he answered, "Because I allowed my left hand friend to take them." At the first Brixton show he took eight first and two second prizes.

From Balham, being a mumist, he, of necessity, went to Stoke Newington, and there became as great in standard poms and dwarfs as he had previously been with pyramids. He went into the employ of Henry Head, Esq., Stamford Hill, and there had scope for all kinds of practice. He made a feature of the large flowering varieties, and carried off first prizes four years in succession. He reminds us that at the dinner of the Stoke Newington Society in 1878 we had the honour to hand him from the chair the silver cup of that year, which he had then won for the second time. He was with Mr. Head for ten years, and had he to live a thousand as a gardener he would not expect to meet a more just and generous employer. He is now in business as a nurseryman at Dalston, and has the freshness of youth with the vigour of manhood to sustain him in the fullest enjoyment of his business. A paper by Mr. Monk on the cultivation of pyramid pompons will be found in the "Floral World" of 1861.

MR. JOHN LAMBERT.

A considerable proportion of the men who attain to distinctive honours in horticulture are in a sense born to it, or rather derive both the taste and the talent in some degree from inheritance. Mr. Lambert is an instance of this. His father was a gardener at Oakwood, Chichester, and had lived there near fifty years as head gardener and wood ranger to J. Barrington, Esq. Our present subject had his first initiation in gardening from his father, and after three years went as improver to Mr. Judd, at Hawkstone, Shrewsbury, the property of Viscount Hill. To Mr Judd he is chiefly indebted for his knowledge of the higher departments of his business, but he had other opportunities. He had a brief term of employment in Messrs. Veitch and Sons' nurseries at Chelsea, and from thence went to Mr. Jones, of Frogmore, where he was chiefly occupied in the fruit and plant and decorative departments. He returned to Mr. Judd as foreman, and remained at Hawkstone until changes occurred, consequent upon the death of Lord Hill. He was not less fortunate in his next move, which was to Keele Hall; but changes occurring here he returned to Messrs. Veitch's, who secured for him his present appointment at Onslow, Shrewsbury, the residence of Colonel Wingfield, where he has remained twelve years.

Mr. Lambert is an all-round man, great in plants, flowers, fruits, and vegetables, and yet finds time and strength to handle chrysanthemums in grand style, and make impressions on the prize lists. We have many times admired his contributions to the great exhibition that draws so many to Shrewsbury in the later days of summer, when fruits and vegetables form a considerable feature of the attractions there.

MR. GEO. STEVENS.

The portly figure and jovial countenance of Mr. George Stevens, of St. John's Nursery, Putney, are rarely missing at the meetings of the National Chrysanthemum Society. He is one of the few members who can date back their membership to the time when the society was only a local one. During the whole period over which he has been connected with the society Mr. Stevens has contributed, both at the shows and floral meetings of the society, to their success by his numerous excellent exhibits, and has frequently carried off prizes of importance.

Mr. Stevens commenced business as a nurseryman, landscape gardener, and contractor in 1865 on the Lime Grove Estate, Putney, but did not begin growing chrysanthemums until he went to his present premises in 1870. Seven years after that date he commenced to exhibit, and has won many prizes at the Putney, Wimbledon, Richmond, Kingston, Surrey, Crystal Palace, National, and Royal Horticultural shows. His new varieties have also been the means of bringing him many first-class certificates and five silver medals.

Nine years ago Mr. Stevens started on a new road, and one which, so far as his reputation is concerned, is of great importance, viz, the raising of seedling chrysanthemums. He is one of the very few English chrysanthemum cultivators who have taken up that specialty, and his new flowers thus obtained will compare not unfavourably with many of the best from other sources. Most of them are, however, Japanese sorts, but we look forward with interest to the time when new seedling incurves will once again become a favourite subject with English raisers.

The best of Mr. Stevens' new varieties are Maiden's Blush, Miss Stevens, William Stevens, Annie Stevens, Emma Stevens, in the Japanese section; Magenta King, Snowflake, and Lily Stevens, in the pompons; together with some reflexed and single varieties, most of which are very well known.

MR. CHARLES GIBSON.

The talented gardener at Morden Park, near Mitcham, belongs to rural England, having been born at Dunchurch, near Rugby, Warwickshire, in the year 1843. He began to work in a garden before he was twelve years of age, and soon came to believe there could be no occupation so delightful as that followed by Adam, the first of gardeners and of gentlemen. But he became a quite serious gardener when, by trust funds in connexion with the village school, he was apprenticed to the late Mr. George Battey, of the Rugby nurseries, where he learned the first elements of the business of a provincial nursery. Having finished his apprenticeship he passed a short time in the nurseries of Messrs. Low and Co., of Upper Clapton, and from thence went as second gardener to S. Wilson, Esq., of Stamford Hill. The garden being soon afterwards swallowed by a railway, he went to the nurseries of Messrs. Cutbush at Highgate. But this was only a stop gap, and his next move was to the gardens at Ashgrove, Sevenoaks, where he was appointed foreman.

After two years we find Mr. Gibson in the Botanic Garden, Regent's Park, a most excellent school for a season and a good preparation for his transference to Glenville Gardens, Co. Cork, where he was second gardener. His next move was to England again, to the garden of R. C. Driver, Esq., Highbury Grange. Three years of this employment terminated in his transference to the service of J Wormald, Esq., then at Highbury Lodge, and on this gentleman removing to Morden Park Mr. Gibson made another move, and in his new quarters began to take an interest in chrysanthemums. He has been affected with the mum fever or kry fancy, whatever it may be called, since 1875, but did not enter into competition until 1879, when he obtained three firsts at the Borough of Hackney exhibition. Since then he has had a fine run of winnings, and he considers his best year that in which he won the Kingston Challenge Vase, the ten-pound prize at the Crystal Palace, the ten-pound at the Aquarium for 48 Japs, and the ten-pound for the 48 incurved at the same show. He had the misfortune in this case to put in a bloom too many of Golden Queen, and learnt thereby that in exhibiting the turn of a hair will tell for weal or woe as the case may be.

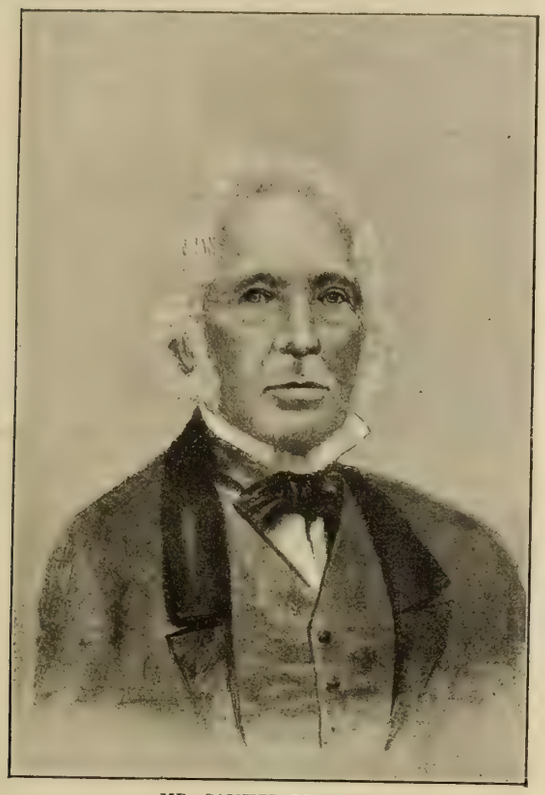
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PETERBOROUGH CHRYSANTHEMUM EXHIBITION, NOVEMBER 17, 1874.

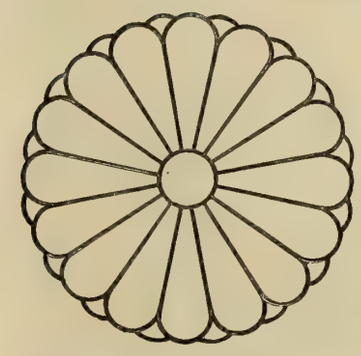
The Later History of the Chrysanthemum.

BY C. HARMAN PAYNE.



MR. SAMUEL BROOKES.

Chapter I.



The Kiku-mon.—The Imperial Chrysanthemum Crest or Arms of Japan.

THERE is little need to remind the readers of the GARDENERS' MAGAZINE that about this time last year an attempt was made, in the Special Chrysanthemum number then issued, to give, in a popular and readable form, a rapid yet comprehensive sketch of the history of the chrysanthemum, from the date of its first introduction into Europe down to the present time. It was but natural that this journal should, on the celebration of so important an event as the centenary of the introduction of a flower like the chrysanthemum, endeavour to keep pace with the times, and offer to its readers an extra number, dedicated purely and simply to Queen "Mum." There was, however, one difficulty to contend with, and it was that there existed so many valuable and interesting records to consult, so much material to use, that even the issuing of a double number did not, and could not, exhaust all that had been collected in the desire to instruct and interest the ardent lover of a flower whose popularity still seems to be increasing, not only in Europe and America, but even in our far distant colonies in Australasia.

The year 1890 is generally considered by those who are supposed to know anything of the subject to be the hundredth anniversary of the introduction of this flower into England. On that account, it has been resolved, principally, perhaps, by that most successful of horticultural societies—the National Chrysanthemum Society—to hold a great centenary show, festival, and conference to celebrate the event. So far as its European reputation is concerned, centenary celebrations were held last year at Edinburgh, Chiswick, Birmingham, Lille, Antwerp, Nantes, Marseilles, and Ghent, with in most cases brilliant results. But this year, however, it may be taken for granted that all our efforts are essentially for the purpose of fêting our favourite flower from an English point of view, and while fully conscious of having extensively dealt with the early history in the last year's special number, and because want of space prohibited anything more than a quite brief mention of the events of the last twenty years, it does seem that much of the matter necessarily excluded from our former issue, together with portraits of celebrities of English reputation, some of which we had not been able previously to obtain, may usefully be made the subject of another special chrysanthemum number, and thus do ample justice to our English readers and friends who are making ready to rejoice over a truly national event.

Our former narrative may be said to have practically closed with the year 1870, a twelvemonth after the retirement of Mr. John Salter from the Versailles Nursery at Hammersmith, and it is not astonishing that for some few years after this event the craze for the chrysanthemum gradually died down, until it seemed probable that it would become extinct altogether.

That such a calamity was averted is due to several reasons, the principal one being no doubt the regularity with which the annual shows at Stoke Newington, the Temple, and other places were held; the exhibitions, too, of Mr. Adam Forsyth at the Brunswick Nursery contributed their quota, and the fact that the continental growers were beginning to come forward with a multitude of novelties in all sections, the first-fruits of which were destined to appear before the enthusiasm could thoroughly cool down.

The seedlings remaining in Mr. Salter's hands undistributed by him when his tenure of the Versailles Nursery expired were acquired by Mr. William Bull, of Chelsea, who does not appear to have followed in Mr. Salter's footsteps by holding an exhibition, but merely sent the varieties out in the ordinary course of trade. The new flowers for the year 1870 from this source were in the incurved section, Beauty of Stoke, Globosum, Meyerbeer, Mrs. Moggridge, and Renown; in Japanese, Colonel Hemery, Gloriosum, Helen Macgregor, Jane Salter, Meg Merrilies, Oracle, Plantagenet, Rob Roy, and Sol were announced. Mr. Forsyth's list of novelties consisted of Duchess of Roxburgh, Mr Cole, Mr. W. H. Morgan, and Robert Bruce; and Messrs. Henderson and Son, of Maida Vale, introduced two Japanese, Bismarck, and Erectum Superbum, a total of new varieties far less than we can imagine in these later and busier times.

The Liverpool Chrysanthemum Show had by this time acquired a considerable reputation among provincial societies, and it may not be out of place to quote an instance of the way in which its members were regaled on the occasion of the show. In this magazine for December 3, 1870, under the heading "The Exhibitors Conversazione in Connection with the Liverpool Chrysanthemum and Fruit Show" we read, "On the first evening of the exhibition the exhibitors, judges, and others concerned in the actual labours of the day were invited to tea at half-past six o'clock. . . . One hundred and fifty sat down in a comfortable room." Another chrysanthemum society which occupied a foremost position at this period was the Woolwich, Charlton, and Plumstead Amateur Chrysanthemum Society, and its shows are usually described as being of high merit. To turn to another point of the compass, we find the North-Western Amateur Chrysanthemum Society holding exhibitions



MR. GEORGE GLENNY.

at Kentish Town, and the number and quality of the exhibits there are generally very highly spoken of in the gardening press.

Reference has already been made in the former contribution to a series of melancholy events happening about this time. One which seems to have escaped attention before was the demise of Robert James, the worthy landlord of that cradle of chrysanthemum societies,

the "Rochester Castle." He passed away on November 28, 1871, having been for thirty-two years the landlord of that hostelry, which has justly acquired renown in the history of a flower with which it is so intimately associated. Robert James was a Gloucestershire man, born at Downhampton in the year 1801.

Whether it was that some of the admirers of the chrysanthemum began to fear that their favourite was going steadily down the hill



MR. JAMES BUTCHER.

and never likely to return is difficult to say; but Mr. Adam Forsyth, towards the close of 1871 and beginning of 1872, contributed a good deal of information on the culture of the chrysanthemum. Many of his papers may be found in the GARDENERS' MAGAZINE of those years.

In 1872 Mr. Forsyth distributed Duchess of Manchester, Duke of Roxburgh, Laurinda, Mr. Howe, and White Venus, all incurved varieties. His catalogue also included two new flowers, named Elaine and Fair Maid of Guernsey, still favourite Japanese varieties, as to the origin of which the reader is referred to page 669 of the GARDENERS' MAGAZINE for last year. There is scarcely any need to repeat the decided aversion which the old school of chrysanthemum growers had for the then recently introduced Japanese flowers. It is easy to imagine that after the eye had been long trained to look upon the incurved chrysanthemum as all that was perfect from a show point of view that the apparently disordered, ragged-looking Japanese flowers caused a revulsion of feeling in the minds of the leading lights in the chrysanthemum world, much the same perhaps as many of us are inclined to regard the varieties of the single flowering section to-day. But all the prophecies of their extinction were doomed to prove false, and a few growers in spite of the prevailing opinion, steadfastly held the view that there was a great deal more in the much-abused Japanese chrysanthemums than was generally thought. It is curious how prejudice even in floral matters survives. It may not unfrequently happen that the reader will find himself in company with an old chrysanthemum grower, who, if questioned, in nine cases out of ten will, while admitting that they have caused a revolution in the chrysanthemum world and increased its popularity, frankly own that after all he cares but little for the Japs.

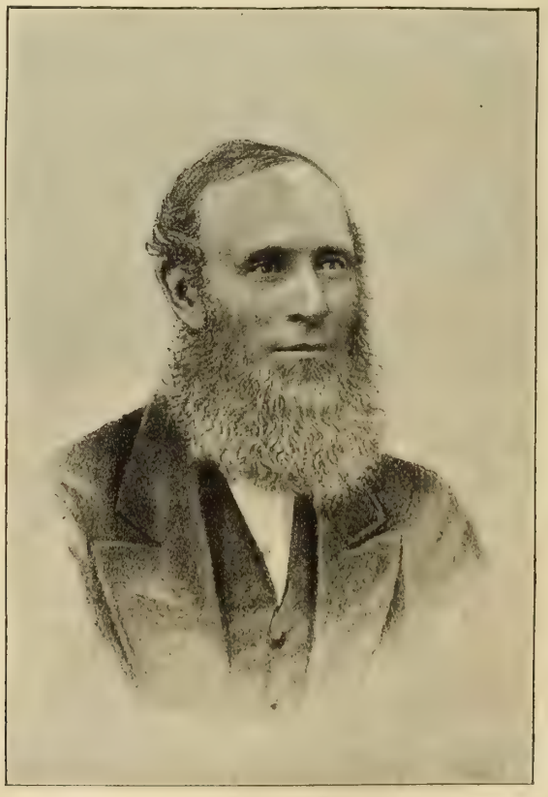
Mr. Forsyth has himself complained in the columns of the GARDENERS' MAGAZINE within recent years of the great prominence given to the Japanese flowers, and one of the oldest members of the N.C.S. but latterly was heard to declaim against them, saying that the more he saw of them the less he liked them. "An Admirer of the Chrysanthemum," in December, 1872, under the heading "Japanese Chrysanthemums as Exhibition Plants," draws attention to this dislike very prominently in the following terms: "The South Essex growers of chrysanthemums appear to have a thorough dislike to the fantastic Japanese chrysanthemums, and at their annual exhibitions, held in the Artillery Hall on Stratford Green, appear to do their best to hold them up to the ridicule of the visitors. . . . I have no doubt that when the capabilities of these varieties as exhibition plants are once demonstrated a proper place will be allotted to them at all exhibitions . . . but at the present moment the question is who will earn the credit of demonstrating these capabilities?" It is, perhaps, beyond the task of the chronicler to advance reasons for or against the varieties of any particular section of chrysanthemums, but the mere recording of facts must necessarily betray a leaning one way or the other. The compiler has no hesitation in saying that he is proud of having been a member of the society, an amateur one, which soon afterwards did more to popularise the Japanese chrysanthemum and give an impulse to its cultivation than any other chrysanthemum society then existing, and thus indirectly contribute at an early date, when such flowers were almost wholly despised, to bring about the vastly increasing love for a flower which he has ever laboured to spread abroad.

The year 1873 was signalised by the appearance of the last list of novelties distributed by Mr. Forsyth. They were inconsiderable in numbers—Countess of Dudley and Hero of Stoke Newington being the only incurves, and Dick Turpin, Louisa, and Model of Perfection, the only pompons. Messrs. Dixon and Co., of Hackney, who were shortly to take Mr. Forsyth's place as leading chrysanthemum distributors, give no new names in their catalogue for this year save those of Mr. Forsyth's varieties for the preceding one. It begins to look somewhat ominous for the future of our favourite when we find in the number of this magazine for December 29 an article headed "Has the Chrysanthemum had its day?" The writer, who apparently had the germs of an idea concerning a National Society, although as yet it had not assumed even a name, recommends the growers to organise at once and prepare for a demonstration the following year in conjunction with some fruit show in London, to the advantage, as he enthusiastically writes, "of the public and the restoration to its proper place of the glorious flower we are accustomed to designate the Queen of the Autumn." It does not appear that the suggestion was acted upon to any extent, and the records for the year 1874 are not conspicuous for any monster gathering of enthusiastic chrysanthemum admirers and exhibitors.

It would seem that the organisers of chrysanthemum shows were obstinately conservative in their ideas of what subjects should be admitted for exhibition. Most of these shows were limited to chrysanthemum blooms only; being framed almost always on the same model there was a monotony about them, and the editor of this magazine frequently urged the advisability of admitting other subjects and thus give some opening for originality.

Although Mrs. Rundle sported to George Glenny in the autumn of 1872 it was not till the close of the following year that it was exhibited by its owner, Mr. Waters, and certificated by the Royal Horticultural Society. The name originally given to this excellent variety, one of the most perfect incurved chrysanthemums it is possible to find, was Golden Mrs. Rundle, an appellation scarcely justified by the colour, which, as is well known, is a pale straw yellow, and it was soon deemed advisable and properly so to alter the name to that by which it is now so universally known. The stock of George Glenny passed into the hands of Mr. H. Cannell, then of Woolwich, who may well be proud of having distributed so charming a variety which has almost every good quality to recommend it to our esteem except hugeness of size.

Messrs. Dixon in the spring of 1874 may now be said to have stepped into a leading position, and one which they retained for some years. For a short time, at any rate, they exclusively held the secret



MR. J. MONK.

of where to obtain the new continental varieties that began to be distributed; but we are anticipating events by five or six years, and must return to the year first mentioned in this paragraph. In their catalogue they say: "S. Dixon and Co. beg to inform their friends and patrons that they have purchased the whole of the collection of chrysanthemums formed by Mr. Forsyth, of the Brunswick Nursery, Stoke Newington, who has long been known as the largest grower of

the chrysanthemum, including the eight varieties as enumerated below." It is worthy of note that all the new varieties of large flowering chrysanthemums are offered at 5s. each, and that at this period there were no Japanese flowers of French origin catalogued. The four new Japanese flowers offered by Messrs. Dixon this year were seedlings raised by Major C. le M. Carey, of Guernsey, whose portrait was given in the special chrysanthemum number last year.



F. W. BURBIDGE, M.A.

In February, 1874, Mr. Henry Taylor, who had already written on the subject of early flowering chrysanthemums in this magazine, contributed what may be considered one of the first articles of importance concerning that section; and for some time, Mr. Taylor, at stated intervals, kept the reader informed of his experiments and discoveries in much the same way as our valued friend and coadjutor Mr. W. Piercy, of Forest Hill, does now. The Rev. Mr. Freeman, of Middleton Vicarage, near Leeds, was also, and probably still is, a great admirer of this section; and it is owing to the three gentlemen just named that the early chrysanthemums have of late years come into so much request. Mr. Salter, Mr. Broome, and Mr. Shirley Hibberd, in their works on the chrysanthemum, have all given lists of early-flowering varieties known to them; but it is probable that by the year 1874, those which they mentioned and described as being of use in their time, had mostly been supplanted by newer and improved sorts. Mr. Taylor, in his article before alluded to, tells his readers that the season of 1873 was not a good one for growing chrysanthemums in the open air; and that shortly after his first report was published, he received a considerable number of letters from persons, like himself, desirous of growing outdoor chrysanthemums. He therefore appended to his article a list, and he adds: "I certainly did succeed satisfactorily with six varieties, the names of which it may be serviceable to record; they were Jardin des Plantes, Little Bob, Illustration, Scarlet Gem, Golden Button, and Mexico. There is no need to observe that steadily from this period, no matter what may have been the merits or demerits of previously existing early varieties, or the attempts of other persons anxious to cultivate chrysanthemums of this class, the Earlies made continual progress, a climax of satisfaction being undoubtedly reached when through the agency of the National Chrysanthemum Society their September Show of early varieties was instituted in 1886.

There is a curious fact in connection with chrysanthemum sports, and one which requires some elucidation from a competent authority, and it is that a variety will occasionally sport in places simultaneously producing the same kind of flower in each case. To the florist who does not happen to be in touch with headquarters, such an event may prove to be unsatisfactory, because after taking the necessary pains to fix, propagate, and distribute his new acquisition, he may discover that some one else has already done the same thing, and that the two sports while being identical, have been given two different names, whereas in justice to the public they ought properly only to bear one. Mrs. Hawkins is perhaps the latest and most notorious of such cases. Prince Alfred, about eight years ago narrowly escaped being sent out in like manner, but this was averted owing to the good sense and friendly arrangement come to by those in whose possession it was. The history of the well-known incurved Golden George Glenny (syn. Mrs. Dixon), is something akin to the first-named case. In the autumn of 1874, according to a well-known and valued correspondent of the GARDENERS' MAGAZINE at Oxford, Mr. W. Greenaway, the then recently-introduced variety, George Glenny, gave to two different growers in that city a golden-coloured sport. This variation was not, however, confined to Oxford, for shortly afterwards it was discovered that the plant had sported very freely in other parts of the country. By some the new flower was named Golden George Glenny, and the same thing having occurred in the collection of Messrs. Dixon, they probably, without having knowledge of the occurrence, bestowed the name of Mrs. Dixon upon theirs, a thing that would most likely not have happened had there been in those days a central body of chrysanthemum experts like the Floral Committee of the National, to whom almost all the new flowers of any importance are submitted, and much possible confusion thus reduced to a minimum.

Although of recent years the history of the chrysanthemum has been dealt with at greater or less length by several writers, it is appropriate to place on record the fact that Mr. Greenaway, of Oxford, was one of the first horticultural writers of the last quarter of a century to discourse upon the subject. A short note in this magazine for July 25, 1874, announces that he read a paper before the last general meeting of the Woolwich Chrysanthemum Association upon the chrysanthemum from an historical point of view, but, it is to be regretted, that it was not reported even briefly.

The pages of the horticultural press for this period offer a strange contrast to those of the present time, so far as accounts of the shows are concerned. During the chrysanthemum season we are now so accustomed to see a great deal of space devoted to reports of metropolitan and local chrysanthemum shows, that when we turn to the gardening journals sixteen and twenty years ago, the same sort of matter appears to be very meagre indeed. Those societies worthy of finding a place in the papers then numbered about a dozen. Chief among them, of course, were the old Stoke Newington Society, Liverpool, Bristol, and Woolwich, probably running the parent body tolerably close. Among others ought not to be forgotten Brixton, South Essex, South London, Oxfordshire, the Crystal Palace, and the meetings of the Royal Horticultural Society. We have now become so accustomed to the Japanese anemone section for nearly all the varieties of which we are indebted to continental growers, that it will be interesting to relate the appearance of one that must certainly be considered the precursor of a quite modern section. Duchess of Edinburgh, still in cultivation, was introduced by Messrs. Veitch in the autumn of 1874, exhibited at the meeting of the R.H.S., and awarded a first-class certificate. The description given of it then was "a Japanese variety with anemone centre, the ray florets drooping in a singular manner, giving the flowers a very novel appearance; colour delicate blush, valuable for its distinctiveness." It is a curious historical circumstance that for some six or seven years Duchess of Edinburgh was the only variety of the sort, and that for almost all the others in this section we are indebted to French raisers. There is great room for improvement so far as colour is concerned, the majority

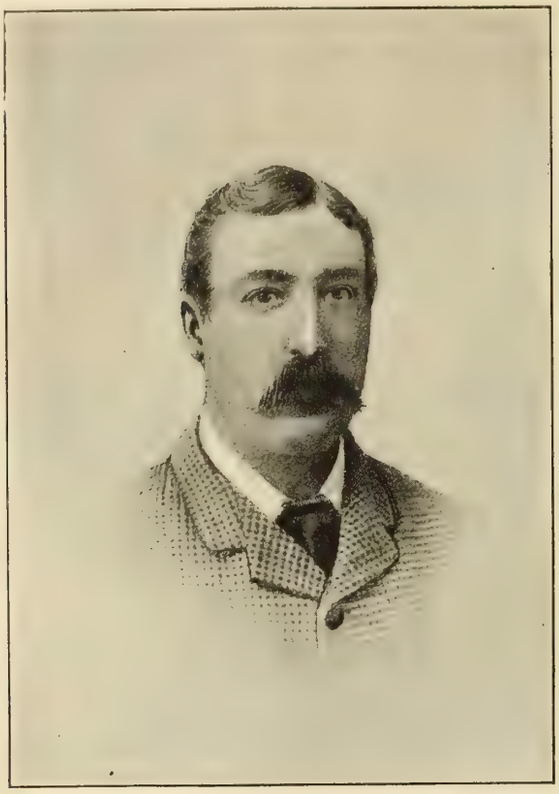


LORD BROOKE, M.P.,
President of the National Chrysanthemum Society.

of the Japanese anemones having a tendency to run to a lilac or mauve shade. A clear decided yellow or crimson would be an acquisition much appreciated by exhibitors.

The year 1875, gives us very little material for the matters in hand —Emily Dale, the yellow sport from Queen of England, the previous season was distributed, and Golden George Glenny was beginning to make its reputation.—As the reader will already have noticed during

the past five or six years the growers had no occasion to complain as they do now of the superabundant importation and distribution of new chrysanthemums, for they appeared in numbers far too limited after the retirement of Mr. John Salter, and it was not until about ten years after that event that any real revival of activity in the work began to manifest itself. The old Stoke Newington Society was however beginning to enter upon its career of expansion, and advance.



WALTER FURZE, ESQ.

Its original name was given up, and the new title Borough of Hackney Chrysanthemum Society, adopted. Its shows were now held in the new Town Hall, Hackney, that for the year 1875, being the second of the series that was to lead them still further on towards renown. The show for the year in question is reported to have been a very great advance on those previously held, and the progress being upheld it was found necessary to remove the shows permanently to the Royal Aquarium, Westminster, where they have ever since been.

Several new chrysanthemum societies were formed about this period in our story, one of the most useful in its sphere being the Borough of Lambeth Amateur Chrysanthemum Society, upon which a few observations must be made a little later on.

CHAPTER II.

The chrysanthemum, although not flourishing to so great an extent as its admirers could wish, possessed a vitality that nothing could extinguish. In our previous paper, it will have been noticed that there were periods when the popularity of it declined and seemed to languish for a stimulating cause. Such was always forthcoming sooner or later, and we are now approaching a time when a little more attention was destined to be given to not only seeding, growing and exhibiting, but when matters of minor importance began to be taken up eagerly by the earnest cultivators of the rising favourite.

Mr. George Rundle sounds a warning note at the beginning of 1876. In an article entitled "Raising Seedling Chrysanthemums," he writes: "Not having seen any account in your magazine of any new chrysanthemums of this year's production (1875) I am led to imagine that growers have not been fortunate enough to raise any worth exhibiting, or that no one has taken the matter in hand in England to try and improve this flower by raising seedlings. . . . For twenty-five years I have grown a very large number of plants and have made the flower my speciality. . . . Finding, however, about twelve years since that I could raise new sorts from seeds, I have, with the exception of the last three years done so."

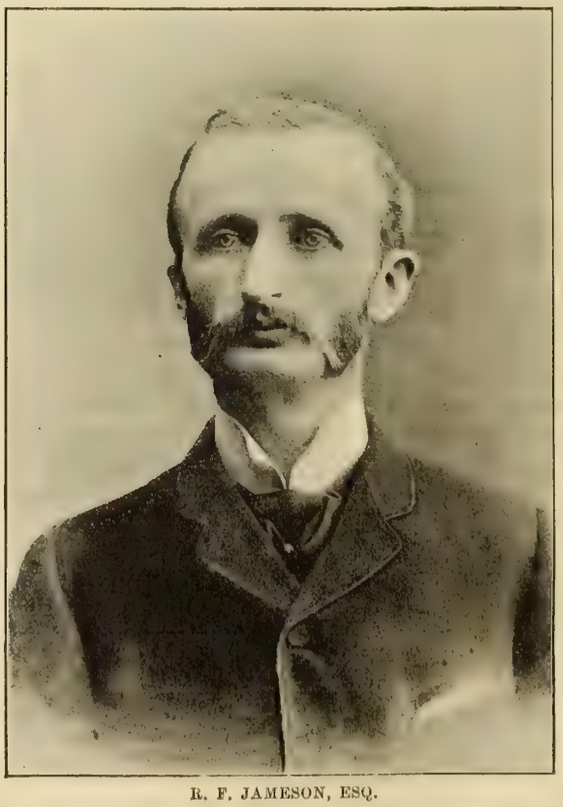
It was not then generally known in this country that Mr. Simon Delaux in France had already begun to devote his attention to the chrysanthemum, and that Mr. Boucharlat had also been the means of distributing some new sorts. There were no English importers at the time we are speaking of, probably for the very excellent reason that the demand for novelties was practically confined to very narrow limits. Guernsey at this date was the only place outside the United Kingdom where seedlings were procurable, and Major Carey for several years supplied through the medium of Messrs. Dixon almost all our wants. The new comers from this source were Bijou of Guernsey, Diamond, Peter the Great, Red Gauntlet, and the Khedive.

Early flowering varieties still occupy some attention, and Mr. Henry Taylor expatiates frequently upon the utility and beauty of his favourites. Up to the autumn of 1876 it would appear from the references to these varieties in the various gardening papers, that all the earlies were limited to the pompon section so far as English cultivators were concerned; but in France Mr. L. Boucharlat, aîné, had already distributed a set some two or three seasons previously that had not for good reasons then become known here, and of this set our famous flower Madame Castex Desgranges, belonging to the Japanese section, was one. Mr. Piercy, of Forest Hill, who had likewise taken up the subject of early-flowering chrysanthemums for some time, seems to have become very much more interested in them about the period now referred to, and for fuller details as to their early history and cultivation the reader must refer to Mr. Piercy's excellent papers on his favourites that have so often appeared in the columns of this magazine and to his papers read at the National Chrysanthemum Society's Conference in September last year, and at the Chiswick Conference in the following November. It will suffice for present purpose to quote Mr. Henry Taylor's article in the GARDENERS' MAGAZINE in reply to the Rev. F. Freeman's inquiry in November, 1876. He says, "It so happens that a few years ago I was with much trouble enabled to form a nice little collection of varieties that bloomed early. The varieties were picked up from various parts of the country. The collection was handed over to Messrs. William Clibran and Son, Oldfield Nursery, Altrincham, Cheshire, from whom these really early blooming varieties can in all probability be obtained." Those enumerated in the list following Mr. Taylor's paper were Argentine, Beauty of Rhyl, Hendersonii, Illustration, Jane Elizabeth, Little Bob, Mexico, Scarlet Gem, Ann Mitchell, Sœur Melanie, Mrs. Atkinson, and Mrs. Hull.

The list is a useful one, for it proves that in one instance at any rate, viz., Sœur Melanie, that new chrysanthemums raised abroad were a very long time in becoming known here. The variety so named was figured in the "Illustration Horticole" so long before as March, 1869, and therefore must have been raised and flowered at least the previous year. The editor, in his description, says nothing on this point, nor does he mention the raiser's name. It was probable, from contemporary record, that it was one of the many varieties sent out by Lebois.

Twelve months after Mr. Taylor's article cited above, we find a contribution by Mr. Freeman, from which it appears that the number of early and semi-early varieties known to be in cultivation had increased to thirty, and a list was drawn up and published by him giving the colours and the dates of their blooming.

The Japanese chrysanthemums were now beginning to become somewhat more widely known and a little more appreciated. Their cultivation too seems to have become better understood, for it was generally admitted about the close of the year 1877, that this new section had not previously been seen to greater advantage. Up to that time their period of flowering had been much in arrear of the other varieties, but they were soon to prove themselves capable of not only blooming at the same time of the year as the incurved and reflexed, but even in advance. When the season of 1877 opened, the Japanese chrysanthemums numbered a little over fifty different sorts,



R. F. JAMESON, ESQ.

of which it is but natural many have since disappeared to give place to newer, and let us hope, far better forms.

Quoting from Messrs. Dixon's catalogue of the year 1877, it is interesting to notice that among the number catalogued Bismarck, Comtesse de Beauregard, Criterion, Chang, Elaine, Fair Maid of Guernsey, Grandiflorum, James Salter, Meg Merrilies, and Peter the Great are still capable of holding their own against the multitude of

new-comers which have unceasingly appeared on the scene ever since.

On November 14 and 15, 1877, the first exhibition of the Kingston and Surbiton Chrysanthemum Society was held. The society very soon occupied a foremost position amongst kindred associations, and the work of the society continued to be for many years of paramount importance in the extension of chrysanthemum culture, bringing to-



MR. J. NEWTON.

gether year after year competent cultivators from all parts of the kingdom.

For some few years the new flowers were obtained from the Channel Islands, the labours of French florists being since Mr. John Salter's death in 1874, almost wholly unheard of and ignored. One or two varieties at times seem to have come over in a quite promiscuous way, but the business of regular importation was neither attempted nor understood. It is questionable whether it would have been really profitable to English nurserymen at that time, and their catalogues show but little indication of any great stir in the chrysanthemum line. This was to come, however, in a few years time, and the Borough of Lambeth Amateur Chrysanthemum Society, under the secretaryship of the late Mr. Summers, played a conspicuous part in the cultivation and development of the Japanese varieties, thereby contributing in a not inconsiderable manner to the popularisation of a class of chrysanthemum which has done more than any other to charm and attract those who would in all probability have never otherwise thought of growing the chrysanthemum at all. It is certain that the show of the Borough of Lambeth Society in November, 1877, caused some greater interest in the Japanese than had till then existed. At this show the Japanese had been staged in excellent condition, a very infrequent occurrence thirteen or fourteen years ago; and it is with much satisfaction that the writer of this paper acknowledges his indebtedness to a fine display of Japanese varieties at one of the exhibitions of this, now the only amateur society in existence, for the enthusiasm for the chrysanthemum which he has so unceasingly experienced these past few years.

In a leader in this magazine about this time we still find complaints of the comparative scarcity of new flowers. Indeed, the "Garden Oracle," if consulted, will show that for the years 1874 to 1880, both inclusive, only fourteen large flowered varieties had been distributed. The total number, however, had been much larger, but the presumption is that the remainder were scarcely worthy of recommendation. In the leader just referred to the writer deprecatingly says:—"From the time of John Salter to this present new chrysanthemums have been very sparingly produced, and it appears that this part of the cultivation has come to a dead stop. Now to many this will appear a matter of no consequence; they will say we can do without new varieties so long as we can keep the old ones and grow them well, but that is too narrow a view of the case. There is a certain power in novelties to create and sustain the interest of the public in any particular flower. . . . . Whoever shall succeed in producing and properly presenting to public notice new and meritorious varieties will surely add to the popularity of the chrysanthemum, and enlarge the number of its cultivators as well as of its admirers." This opinion, viewed in the light of subsequent events, proves the prophetic wisdom of the editor, for the widespread growth of chrysanthemum culture can only be attributed to the extraordinary yearly influx of novelties of every form and colour, which may be said to have commenced about three years after the above observations were penned.

Grafted chrysanthemums have now and then been the subject of inquiry. Mr. Charles Turner, of Slough, had at one time more than 200 plants worked as standards on stems three feet high. It was not a new idea, for Lady Gordon Cumming, so far back as 1825, intended to try the experiment, which was, however, frustrated by a change of gardeners in her establishment. It is not surprising to find occasional allusions in the gardening press about this method of cultivation. The Chinese and Japanese are skilled in it, and between the years 1873 and 1877 plants of the chrysanthemum grafted on to other varieties were exhibited, principally at the Oxfordshire shows. Mr. Greenaway, writing on the subject, tells us that at the 1877 show of his society grafted plants appeared in profusion, and his remarks are usefully supplemented by a list of those varieties considered best suited to the treatment.

Admirers of early chrysanthemums are still extolling their usefulness. In the "Florist and Pomologist" for November, 1877, may be found a reference to Mr. Parker, who is said to have got together a fine collection of them, from which the writer adds good varieties of different colours would be found in Delphine Caboche, Illustration, Cassy, Frederic Pelé, Jardin des Plantes, Madame Peccol, Nanum, Scarlet Gem, and Precocité.

Besides Messrs. Dixon, of Hackney, there was an introducer of new chrysanthemums at Plumstead, a Mr. F. T. Davis, who helped considerably to keep the flower well before the public, although the work must have been still somewhat difficult. He was the secretary of the Woolwich and West Kent Chrysanthemum Society, and the raiser of a few good flowers. He appears to have been one of the first English nurserymen of quite recent times to have direct communication with the French raisers such as Delaux, Lemoine, and Boucharlat. Although there were, perhaps, many firms who dealt in chrysanthemums in a general way at the time we are now speaking of there were certainly no specialists like we have now but Messrs. Dixon and Mr. F. T. Davis. The latter, in the spring of 1878, distributed two incurved varieties which were stated to have been selected from an enormous number of seedlings raised by him. They were the Rev. C. Boys and Mr. James Lang. Among varieties of the other sections may be found in Mr. Davis's catalogue a fair sprinkling of new chrysanthemums with French names, showing that he was beginning to anticipate the somewhat larger demand for novelties in after years. Mr. Davis was the author of a small treatise on the subject of dressing blooms for exhibition, which, although published only twelve years ago, is probably one of the rarest pamphlets now, in the whole range of chrysanthemum literature.

The dressing of chrysanthemums is, and has been practised to so great an extent, that as much can be said on one side of the question as on the other, and this is not the place to discuss the propriety of such a proceeding. The subject has been discoursed upon by most of the eminent chrysanthemum cultivators at one time and another. It is briefly referred to here simply for the purpose of noticing Mr. Davis's work on the all-important question to exhibitors, who, if debarred



MR. JOHN LAING.

from manipulating their flowers, and especially those of the incurved section, would present boards of blooms of very different appearance from those usually set up.

Besides the two seedlings sent out by Mr. Davis already mentioned above, there does not appear to have been anything worthy of mention in any section.

Towards the close of the year there are slight signs of an

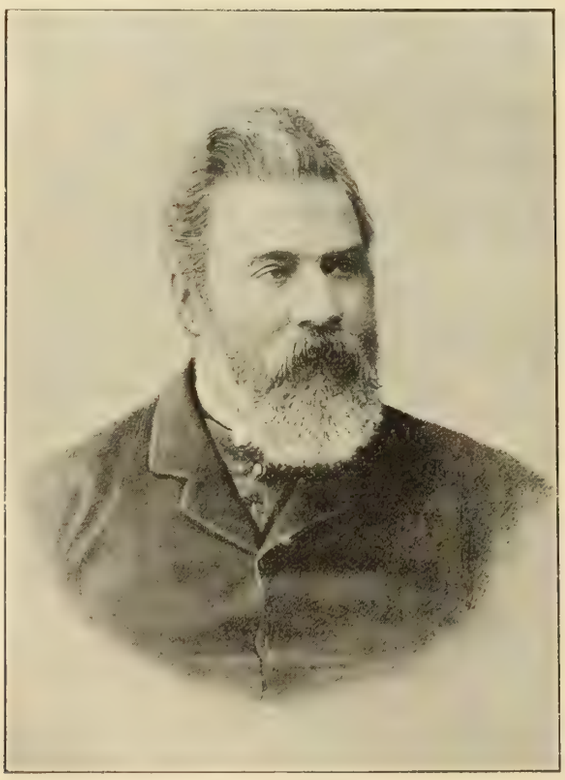
increase in the popularity of the chrysanthemum. A new society had been formed at Putney, holding its first exhibition this season, and several other quite recently formed shows are reported; while among the older ones may be noticed the Borough of Hackney, South London, Birmingham, and Brixton.

The Kingston and Surbiton Chrysanthemum Society had now held their second annual gathering, when the executive resolved to give a stimulus to the show by a new departure from the ordinary run of chrysanthemum prizes. It was, therefore, announced that at the third annual show of the society in the autumn of 1879 a silver challenge vase of the value of 25 guineas with £3 cash should be offered as a first prize, the competition being limited to subscribers of a guinea. The conditions were also laid down that it must be won twice to constitute ownership, and if won by different exhibitors in the first three years those exhibitors only would be allowed to compete for it in the fourth. But with regard to this competition, already well known to every grower of a few years' standing, a few words must be devoted in another place.

The Lambeth amateurs, conservative as they were in their circumscribed radius of one mile from the Elephant and Castle and rigid adherence to the non-dressing theory, open the season of 1879 with their usual three-day show. The flowers that year were rather behindhand, but Mr. Summers, the indefatigable secretary of the Lambeth Society, had made efforts to ensure a very excellent display of the Japanese varieties, which were now making up for lost time, and a few continental varieties had drifted into general cultivation, only to pave the way for further importations of much more striking characteristics.

The ambitious project of forming a really National Chrysanthemum Society does not up to this date appear to have entered the mind of the chrysanthemum enthusiasts. Kingston perhaps ran the Borough of Hackney hardest in the race for pre-eminence within a reasonable distance of the metropolis, but an inkling of such a desire appears in an announcement in the spring of 1879 that the Birmingham and Midland Counties Chrysanthemum Society were to give £10 towards extra prizes for a national contest of cut blooms at their next show, conditionally upon £40 more being subscribed by others in the country.

Following this announcement an article appeared in this magazine headed "Wanted a National Chrysanthemum Society," signed by a contributor calling himself "Promoter," in which the project is approved of rather warmly. Those who look back now after being connected so long with the National Chrysanthemum Society must wonder greatly at the delay which took place in its formation, for nearly five years elapsed before the suggestion became a *fait accompli*. At one time it was considered by a large section of the chrysanthemum growing community that the Kingston Society was the proper one to develop itself into the national society, but, of course, contrary opinions prevailed, and the Borough of Hackney Society was looked upon by others as the proper one; and there is but little need to say that the committee of the Borough of Hackney Society



MR. G. STEVENS.

ultimately, though not without some dissension, decided upon expanding into a wider association, and adopting the title of "National." To show how keenly alive the late honorary secretary, Mr. W. Holmes, was to the suggestion, it is worthy of notice that he fell in with the idea put forth by the Birmingham Society, but suggested that the opportunity of a national contest would occur at the Royal Aquarium on the occasion of the Hackney Show. As a tempting offer to would-be exhibitors, Mr. W. Holmes explained that there would be eight silver cups and upwards of £57 in money prizes offered for competition, four of these cups, value of £5 5s. each, and £40 of the money being open to all comers. Attractive as such an announcement as that may have been eleven years ago, to those of us accustomed to the perusal of societies' chrysanthemum schedules it seems of the utmost insignificance, the same society now having a total prize list expenditure of



MR. HENRY CANNELL.

several hundred pounds in cash, besides numerous valuable offers of medals and special prizes.

There is not the least doubt that a need for some central body of adjudicators was soon to arise. Questions of classification and nomenclature were arising from time to time, and very often such matters had to be left in the hands of the judges. Sometimes a society would decide a disputed point for itself, and this, of course, could only have but a local effect, as others who differed with the decisions were under no obligation to accept or be bound by them. As an instance of this, some difference of opinion existed at this time concerning the proper position of Triomphe du Nord, a flower of which nobody apparently knows the origin or the date of its actual appearance in this country. Some asserted it to be a Japanese, while others, equally confident, pronounced such a decision to be unreasonable, as it had been cultivated long previous to Fortune's introduction of the Japanese varieties in 1860-2. These latter disputants relegated the questionable variety to the reflexed section. So far as the Kingston Show was concerned, the committee of that society decided that Triomphe du Nord could only be exhibited in Japanese classes. Of course, it was optional for others to disagree, and there was ample room; for, as Mr. Summers, the secretary of the Lambeth Society, clearly pointed out, there were no rules laid down by competent authority deciding what a Japanese chrysanthemum really was. Furthermore, he suggested that a meeting be arranged at a central point, at which one or two members or delegates of each society in the metropolis and of any country ones who cared to be represented be present. This committee were to be deputed to take the whole question of classification into consideration, and report the result of its labours, which was to be binding on all societies.

1879 must certainly be regarded as a year of awakening in matters concerning the famous flower of autumn. Mr. George Gordon, in a lengthy article extending over four columns, deals very exhaustively with matters of classification, and establishes seven distinct sections, as follows: 1, large incurved; 2, large reflexed; 3, large anemone flowered; 4, large tasselled; 5, pompons; 6, anemone-flowered pompons; 7, intermediate.

Who, then, can wonder at the want being felt of some central body to give authoritative decisions and definitions on subjects of such interest to the cultivators? The only wonder is that some other society did not more readily accept the responsibility.

The fame of the Temple chrysanthemums is still maintained, and the number of plants somewhat greater than in Mr. Broome's time. Mr. Newton, who succeeded him, continues the work, and the visitors are perhaps at this period as numerous as ever. The readers of the GARDENERS' MAGAZINE will find a full-paged illustration of this classic show in the volume for 1879, page 554.

CHAPTER III.

When the chrysanthemum season of 1880 began it may confidently be asserted that the flower had passed through its period of decline,

and had begun to rise again to a pitch such as was never known in the palmy days before the death and retirement of Mr. Salter.

The Lambeth Amateur Chrysanthemum Society, jealous of admitting outsiders, and desirous of maintaining the reputation they had gained for the excellent results of their cultivation in one of the most thickly-populated districts in the Metropolis, relax their stringent rule a little, and extend their radius in which flowers staged at its shows shall be grown to a mile and a half from the Elephant and Castle. Japanese chrysanthemums continue to form a leading feature at this Society's show, and are highly spoken of by the press reporters.

The competition for the Kingston Challenge Vase is again an event of considerable interest, and attracts fresh competitors.

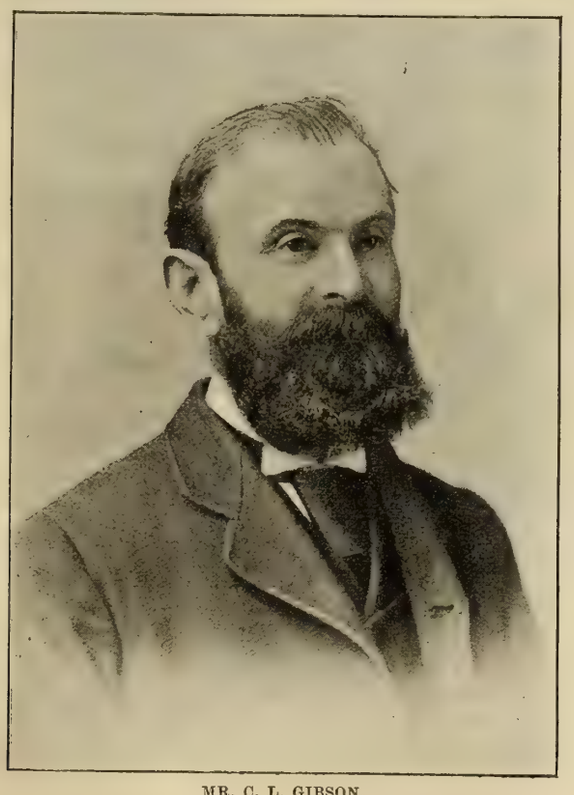
Among remarkable flowers of the year, Lady Selborne, a sport from James Salter, was exhibited at the Brixton Hill Chrysanthemum Show, and was much appreciated. It was in this year that the systematic importations of Continental chrysanthemums commenced. Messrs. Dixon, of Hackney, appear to have entered into business relations with Messrs. Delaux and Son, and from that time till now not a year has been allowed to pass without large numbers of new varieties being sent over by them and other French growers.

Among the new introductions of 1880 and the few years previous, Mr. Bunn, the incurved sport from Golden Beverley, must not be forgotten, as the incurved varieties had been few and far between. Japanese chrysanthemums were now to become the fashion, and the demand for them almost beyond bounds. Major Carey's last batch of seedlings were distributed by Messrs. Dixon the following year, and then for a long-continued run we were dependent almost entirely upon the French.

Casting a glance over the lists for 1880, the principal novelties were Bouquet Fait, Bertier Rendatler, Hiver Fleuri, M. Crousse, M. Ardene, Orphée, La Charmeuse, Madame C. Audiguier, Père Delaux; most of them, if not all, being still well known to the merest beginner in chrysanthemum culture.

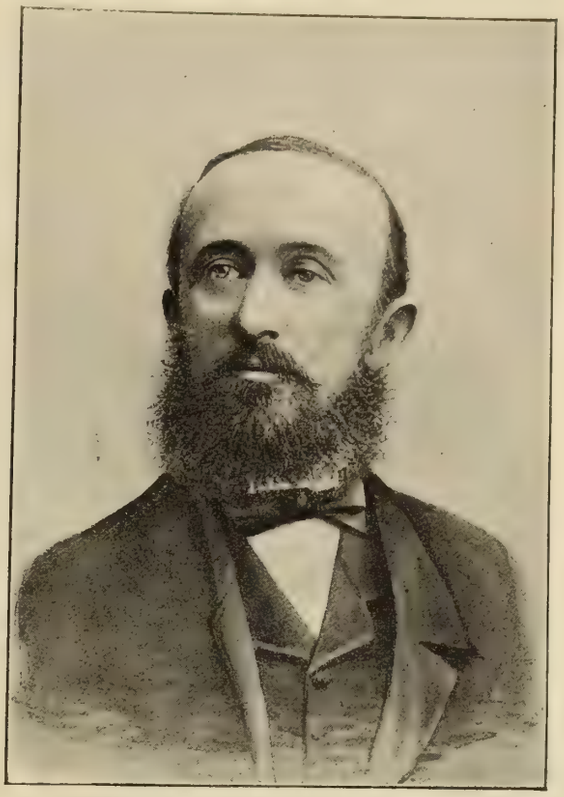
The year 1881 opened with a long list of new varieties for distribution. Nineteen new Continental Japanese flowers, three by Major Carey and two incurved, formed the first instalment of an annual series that has never since been fewer in number. To attempt to enumerate them year by year would be useless, for it is curious how rapidly the new flowers appear and then pass away after a few seasons, never to be heard of again.

The pages of this magazine afford proof of the increased interest in the chrysanthemum now making itself manifest. More than twenty shows are reported for the season of 1881, but the chief show seems to be that held at Kingston. It is recorded that upwards of £70 was taken at the door on the occasion of the 1881 show. The competition for the challenge vase being undoubtedly the source of attraction. Briefly, the facts concerning the first Kingston challenge vase are these: Three entries were made the first year, when Mr. Harding was declared the winner. In 1880 there were seven competitors, and Mr. Tunnington gained the premier place, Mr. Harding coming in second. The



MR. C. L. GIBSON.

next year, 1881, six exhibitors competed, and it was generally considered to be a foregone conclusion that Mr. Tunnington, the winner of it in the second year's competition, would again prove victorious and thus be entitled to claim the sole possession of the handsome prize. But it proved otherwise, for another north country grower, Mr. Faulkner, appeared on the scene with such fine blooms that Mr. Tunnington had to rank second to Mr. Faulkner's first. The contest, therefore, could not, in accordance with the conditions upon which the vase was originally offered, be finally decided until the year 1882, when Mr. Harding again proved victorious, and thus became the possessor of the prize for which he had so persistently struggled. The experiment having materially added to the renown of the Kingston Society, by increasing the quality of the exhibits, other vases have been continuously offered by the same society with results which are mostly known to



MR. W. MEASE.

every chrysanthemum grower of the present day, the names of Mr. Edwin Molyneux and Mr. Charles Gibson being inseparably associated with the competition for them.

It will not be surprising to find that by the close of the year 1882, increased attention is given in the columns of the gardening papers to the reporting of the different chrysanthemum shows and the discussion of many points connected with cultivation, classification, and nomenclature. New societies are constantly found being formed in various parts of the kingdom, and the progress of chrysanthemum growing is beginning to receive a considerable impetus from the introduction of the new Japanese sorts. Chief among the new sorts for 1882 were Alexander Dufour, Source d'Or, Japon Fleuri, Le Chinois, all of foreign origin; while Mr. Alfred Salter, son of the late Mr. John Salter, through the medium of Messrs. Veitch and Sons, had sent out Lord Beaconsfield, Marquis of Lorne, Mary Major, and Rex Rubrorum. The varieties introduced direct from Japan, the first importation of the kind in modern times by Messrs. Veitch the previous year, were now distributed, and bore the names of Bend Or, Delicatum, Comte de Germiny, Duchess of Connaught, Kæmpfer, and Thunberg. Further accessions to the list were shortly to be made by other enterprising plant importers a few years afterwards, and the chrysanthemum generally becomes a flower of considerable importance to all the nursery trade by the close of year 1882. The season of 1882 was terminated by a new venture on the part of the Borough of Hackney Society, who for the first time held their annual dinner within the boundaries of the City of London, thus making another step towards shaking off purely local influence and surroundings. The list of prizes and amount of cash divided among the successful competitors offer plain proof that the Society was steadily making its way towards becoming what it is now universally acknowledged to be. The number of members on the roll at the close of the year appears to have been 104, while the sum of £163 in value was awarded at the show, figures which to those who now belong to the Society seem absolutely insignificant.

The task of recounting the events of the past eight or ten years does not properly belong to a writer of the present time. They ought to be dealt with at a future date, when they can fairly be called history. But as a desire has been expressed that this paper should contain a sketch, no matter how brief, of the history of the chrysanthemum down to the most recent date, the compiler, in complying with such desire, frankly confesses he would prefer leaving the duty in the hands of another. The difficulties are obvious, many incidents considered of primary importance by some are of little moment to others, susceptibilities are apt to be wounded by omissions of names, places, and flowers of merely local interest, and quite unintentionally a chronicler of current events may seem to deal insufficiently with many details that some of his readers may consider demand greater prominence.

For the remainder of this paper the plan adopted will be so far as practicable merely to give a hasty superficial glance at the principal

occurrences in the history of the chrysanthemum since the year 1882. Noteworthy achievements by eminent growers have been so numerous in that period that, even if time allowed, it would be doubtful whether space could be spared to give anything like a minute account of every interesting fact in connection with the later progress of the chrysanthemum.

It is, however, only fair to observe that dealing in chrysanthemums was now becoming a specialty, for which a few of the principal nurserymen were to become particularly renowned. Beyond those to whom reference has already been made, Mr. Piercy, of Forest Hill, had acquired the reputation of being eminent as an authority on the early-flowering section, and in the matter of the ordinary varieties Mr. Davis, of Camberwell, and Messrs. Laing were introducers of new Continental varieties—all of them, however, shortly to be followed by rivals in the business to a considerable number, so that at the present time almost everyone of any standing in the trade can lay claim to some



A SINGLE BLOOM OF THE UTAKATA, exact size of flower (Colour the purest white).

distinction in the importation, raising, or distribution of valuable additions to the present extensive collections.

The 1883 novelties contained a fair percentage of excellent flowers. Delaux sent us Roseum Superbum, Flamme de Punch, Mastic, Margot, M. Tarin, M. Astorg; Mr. Alfred Salter added his quota to the list, and several other raisers distributed varieties of merit which could not for various reasons become widely known here for a few years.

In America chrysanthemum cultivation had recently been taken up by Dr. Walcott and Mr. John Thorpe, of the firm of Messrs. Hallock, Son, and Thorpe, and a list of some of the productions of the latter was soon afterwards given in the pages of this magazine.

Varieties of the single-flowered section were just on the verge of prominence, and some of the best sorts now in cultivation were raised in America and included in the list just mentioned above. Mr. W. H. Cullingford and Mr. N. Davis, both of whom were much interested in the new type, offered prizes for singles at the 1883 show of the Borough of Hackney Chrysanthemum Society, but with what result the compiler of this paper cannot now call to mind.

The year 1883 is noteworthy, too, for being the last year of the Borough of Hackney Chrysanthemum Society in name. Its gross revenue for that year amounted to a little over £230, with a membership of 143. The schedule comprised five classes for plants in pots and eight classes for cut blooms for open competition, amateur and borough classes, and eight other classes in which special prizes were offered, fruit and vegetable exhibits being also provided for. The constitution of the society in those days differed a good deal from the present. The president was Mr. E. Sanderson; vice-president, Mr. R. Ballantine; treasurer, Mr. J. Starling; hon. secretary, Mr. W. Holmes, assisted by a general committee of twenty-one members, an exhibition committee of six, two judges for plants, two for cut blooms, and two for fruit and vegetables.

At the society's annual general meeting in January, 1884, it was decided to adopt the wider title now borne by the society. In the society's report, as printed in the schedule for that year, it says:—"In response to the many suggestions that have recently been made that the time has now arrived when the chrysanthemum should be specially represented by a national organisation, it has been resolved that this, as the oldest Chrysanthemum Society extant, and holding its exhibitions in the metropolis, should, after the expiration of the current year (1883), relinquish its present title in favour of that of the National Chrysanthemum Society."

From that date the history of the National Chrysanthemum Society is the history of the chrysanthemum. The progress made by the flower since the adoption of the new title has been phenomenal. It has even surpassed the most sanguine expectations of the strongest supporters of the change, and the popularisation of the chrysanthemum throughout the country, and even in the colonies, is attributable in a

great measure to the readiness of the executive to accept and introduce novel features and interesting subjects of every kind connected with the famous flower.

The officers were the same in the new society as in the old, but a few slight changes in other respects were made. A list of honorary members was compiled, the general committee enlarged, and a floral committee of eight members instituted to adjudicate upon new or rare varieties and award certificates of merit. A sub-committee was also formed for the purpose of compiling an official catalogue, which appeared in the autumn of the same year.

The spring of the year was the occasion of the distribution of some good flowers. M. Delaux sent out Fernand Feral, Madame de Sevin, M. John Laing, Beauté des Jardins, in a collection comprising about a score. Lacroix's Jeanne d'Arc, raised several years before, only became generally known towards the close of 1884. The same may be said of De Reydellet's Magdaleine Tezier, and, curious to relate, these two flowers became mixed in some way in the importation, and for a time were considered synonymous. Cullingfordi, a grand acquisition to its class, was another of the 1884 novelties, and Fabian de Mediana, a new Japanese anemone raised by Lacroix, and distributed by him twelve months before, became a somewhat prominent flower, having been well grown by Mr. Edwin Molyneux, as also was Jeanne d'Arc.

The Japanese anemone chrysanthemum was even so recently as six years ago almost a new type. With the exception of Duchess of Edinburgh all those known at the time of which we are now speaking were of French origin, and were raised in the neighbourhood of Toulouse, Mr. Marrouch being one of the earliest in the field to produce them. Mr. Molyneux at the close of the season of 1884 gave descriptions of those which had come under his notice, all of which are still under cultivation. Their numbers have increased very slowly, and although their forms are varied and curious, the colours are not striking to any great extent. Those generally known at the time of Mr. Molyneux's description just referred to were Fabian de Mediana, Mdlle. Cabrol, Sœur Dorothée Souillé, Madame Clos, Madame Therese Clos, Madame Berthe Pigny, and Souvenir de L'Ardenne.



GHENT CENTENARY CHRYSANTHEMUM EXHIBITION, 1889.

It is somewhat remarkable that notwithstanding the rise of the chrysanthemum in public favour during the few years immediately preceding the season of 1884, no contribution of importance to the literature of the chrysanthemum had appeared for some time. Mr. John Salter's book had been published nearly twenty years, and was beginning to be out of date when Mr. Burbidge supplied a long-felt want in the publication of his work, "The Chrysanthemum: its History, Culture, Classification, and Nomenclature," in October, 1884. The reception accorded to that book must have been as gratifying to the author as its appearance was opportune, for a second edition was speedily called for in the ensuing autumn, and for a time it formed the only available authority on those subjects connected with the chrysanthemum with which it dealt. The value of Mr. Burbidge's treatise may also be approximately estimated by the knowledge of the fact that it has been made the basis of other works published in Germany and in Holland.

The number of new chrysanthemum societies in this country was now increasing very rapidly, and the National Chrysanthemum Society's show at the Aquarium in November proved beyond question that the



GHENT CENTENARY CHRYSANTHEMUM EXHIBITION, 1889.

new venture was amply justified. Over three thousand cut blooms were staged at that show, and the society now began to be looked upon as the fountain head.

With regard to the work of the leading provincial shows, little can be said here. The record of their successes, extending from one end of the kingdom to the other, is easily to be gathered from a perusal of the gardening papers. It was felt by the executive of the National that



MR. E. CHARLTON.

a means of combination could be usefully initiated, and the result of such was the propounding of a scheme of affiliation of local societies, the terms of which are so well known as to require no explanation here.

During the first year that the scheme was made public fifteen societies in different parts of the country entered into affiliation, each of which had the right of electing a representative to a seat on the committee of the parent society.

The Floral Committee, whose work had been performed under rather difficult circumstances by assembling in the evening at the society's meeting-place at the Old Four Swans, Bishopsgate Street, made a move to the Aquarium, where its sittings were held in daylight. The number of its members was increased to fifteen, and the meetings immediately thereupon assumed a greater importance, both as regards the quantity and quality of the exhibits staged.

It was in the spring of the year 1885 that the decision was arrived at to strike the society's medal, and the first issue of them was confined to examples in silver and bronze. They soon became looked upon as a highly-coveted prize, and the local societies were not slow to appreciate their value and apply for them under the terms of affiliation, by which they were allowed to be offered at provincial shows.

We now hear rumours about the increasing popularity of the chrysanthemum in the United States, and also in France. It is not within our present scope to say much about the doings of the chrysanthemum cultivators abroad, seeing that this year is more particularly celebrated as the centenary of the introduction of the flower into England. A few words, however, must be given upon points of importance in our favourite flower's history outside the British Isles. In America, there had been shows at New York and at Boston. Many seedlings had been raised and popular interest aroused, but as yet we English cultivators had had no opportunity of seeing any of the American flowers; most of their leading show flowers were of European origin, but the probability is that in future they will be less likely to rely upon us than we upon them.

In France a show had been already held in Paris and at Chalons, with the result that an election was shortly afterwards held of the best flowers. The published list was reproduced at the time in the columns of this magazine, and, so far as the English grower and exhibitor were concerned, it seemed to be of little value. The same year M. Ghys, an enthusiastic and capable grower in the North of France, published his interesting "Essai sur le Chrysanthème" for the benefit of the amateurs in his part of the country; and, although several other treatises in French have been subsequently written, M. Ghys' work remains the best and most authentic treatise obtainable in that country. Indeed, it is an acknowledged fact that nowhere in France but the north can chrysanthemums be grown to that degree of perfection exacted by the English grower, while in the south the chrysanthemum is cultivated more as a seedling flower, thus requiring a treatment entirely opposed to the big bloom system.

That the interest in the famous autumn flower was spreading fast can be readily seen by a perusal of English horticultural papers of the period now referred to. Show reports, special articles on culture, essays on historical matters, and queries of all sorts, are crowded into the papers, to be eagerly read by the numerous amateurs and admirers of the chrysanthemum for the last three months of the old year, and often far into the beginning of the new.

The French seedling growers are busily engaged in raising and distributing scores of new varieties, besides those of our own countrymen, who, looking out for sports from old-established exhibition flowers, secure them to add to the ever increasing demand. The former confine their attention almost exclusively to Japanese, Japanese anemones, and pompons; while our own growers, keenly alive to the perfection of form in the incurved section, pay most attention to varieties of that class.

Louis Lacroix issued his first catalogue in 1884, but since that date has published one annually. M. de Reydellet, who had formerly sent out his novelties through M. Boucharlat, in the spring of 1885 decided upon distributing his seedlings himself, and announced for sale over sixty new chrysanthemums; while Delaux, to say nothing of the other continental nurserymen, offered a long list of new varieties, inclusive of some new large early-flowering Japanese sorts, some of the best of these foreign-raised flowers being Lakmé, M. Ghys, Mdlle. Melanie Fabre, L'Adorable, M. Freeman, L'Ebouriffée, La Triomphante, Domination, Pelican, &c., &c.

In England Mr. C. L. Teesdale had obtained a goodly assortment of singles that soon got into the hands of the trade and excited some little curiosity; but the task of making merely a brief record of much that has been done in this country towards the improvement of the chrysanthemum in so many different ways is almost beyond limits, and in many cases is too fresh in the memory of our readers to be necessary. New men are continually coming forward in the work, often in a few seasons making a reputation for themselves by the introduction of some extraordinary new flower or collection of novelties.

Messrs. Veitch during the past four years had sent out about thirty new flowers raised by Mr. Alfred Salter from seed said to have been ripened and saved abroad, and there were still more to come from the same source.

Apart from the question of seedling growing, vast strides had been made in the cultivation of chrysanthemum blooms for exhibition. Flowers which a few years previously would have unquestionably carried off the leading prizes at the best shows would now stand but little chance of ranking among the first three, and the older generation of cultivators and exhibitors were gradually making way for younger and more capable growers,

CHAPTER IV.

The year 1886 may be considered as the beginning of a new era in the history of the chrysanthemum and of the National Society. It was on the 13th January of that year that the experiment of holding



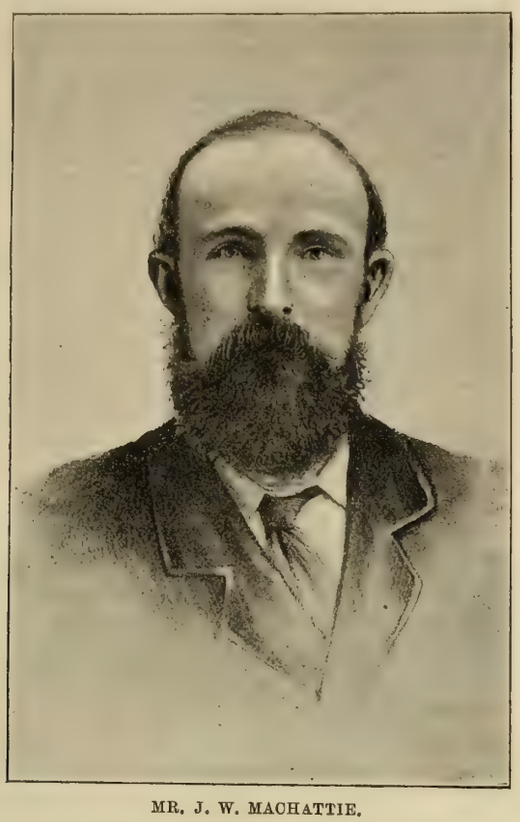
MR. J. HUGHES.

an exhibition of late flowering varieties was first tried. The success attending the venture was such as to lead to the Mid-winter Exhibition becoming a regular institution, and, with the view of still further developing the resources of the chrysanthemum, the executive decided to hold in the following September an exhibition of early varieties.

A new sub-committee of the N.C.S. was appointed in February to

revise the society's official catalogue, Mr. N. Davis, Mr. Springbett, and the compiler of this paper being selected to carry out the work, which was duly published in the following autumn.

The scheme for the affiliation of local and provincial societies seemed to meet with increasing approval, and at the beginning of the year no fewer than twenty of such societies had availed themselves of the privilege. Financially the year started well, for increased mem-



MR. J. W. MACHATTIE.

bers had augmented the society's funds for the previous year, the total income being but a few pounds short of £400.

About this time a good deal of discussion arose as to the expediency of providing separate classes for the ordinary old-fashioned large anemone chrysanthemums and the modern form of the Japanese anemone. Up to this they had been shown together, but as the number of the latter was increasing, although perhaps slowly, it was generally felt that it was desirable for the Japanese anemones to be grouped into a section by themselves, and the Society's Catalogue Committee received instructions to keep the two types distinct in the then forthcoming issue. Opinions even as to the name differed, and it was resolved that, instead of being termed Japanese anemones, the varieties should be classed as large hybrid anemones—a definition which, whether right or wrong, only remained in force until the next edition of the catalogue was published some two seasons later.

We had already received, about a twelvemonth before the time we are now speaking of, a large consignment of chrysanthemums from Japan, principally through Messrs. Carter and Co., of Holborn, and Messrs. Cannell; while Mr. Davis, of Camberwell, had also been the means of importing some of the earliest raised American varieties, and these were but the first-fruits of many other excellent introductions. The best of the American sorts at this period were Bicolor, Christmas Eve, David Allan, Delicatum, Dr. Walcott, Duchess, Fimbriatum, F. L. Harris, George Walcott, Gloriosum, Golden Gloire Rayonnante, Golden Prince, Golden Queen, Gorgeous, Hon. John Welsh, H. Watered, J. Collins, Jessica, J. Lovering, Lord Byron, Minnie Miller, Moonlight, Mrs. C. W. Wheeler, Mrs. G. W. Childs, Mrs. Jas. R. Pitcher, Mrs. N. Hallock, Mrs. Robertson, Mrs. Vannaman, Mrs. Wm. Mencke, Perfection, President Arthur, President Cleveland, President Garfield, Snowstorm, Syringa, White Dragon, and W. K. Harris, the majority of which had been tested at the Lilford Road Nurseries, while the others from Japan were to flower with equal success at the Swanley establishment and at Messrs. Carter's in November, 1886.

Mr. George Stevens and Messrs. Mahood had also by this time begun the raising of seedlings, and had succeeded in obtaining some good varieties which are still well known.

The number of new flowers sent out during the course of the year was considerable, surpassing anything that had previously taken place, and it is not improbable that at the beginning of the season of 1886 there were at least two thousand varieties of chrysanthemums actually catalogued in the lists. The best Japanese varieties of the year were Mons. Wm. Holmes, Miss Stevens, Mdlle. Paule Dutour, Wm. Clark, Charlotte de Montcabrier, Carew Underwood, A. Villatte des Prugnes, Buttercup, Phœbus, Edouard Audiguier, La Triomphante, Roi des Japonais, Moonlight, Mrs. H. T. Jones, and Mr. Ralph Brocklebank. Among the new pompons the charming Mdlle. Elise Dordan was first staged this year, and others, such as Alice Butcher, Wm. Bealby, and Precocité attracted attention. It ought not to be forgotten that large anemones were favourably shown, Madame Ghys, Jeanne Marty, La Marguerite, Citrinus, and Cincinnati being particularly worthy of note.

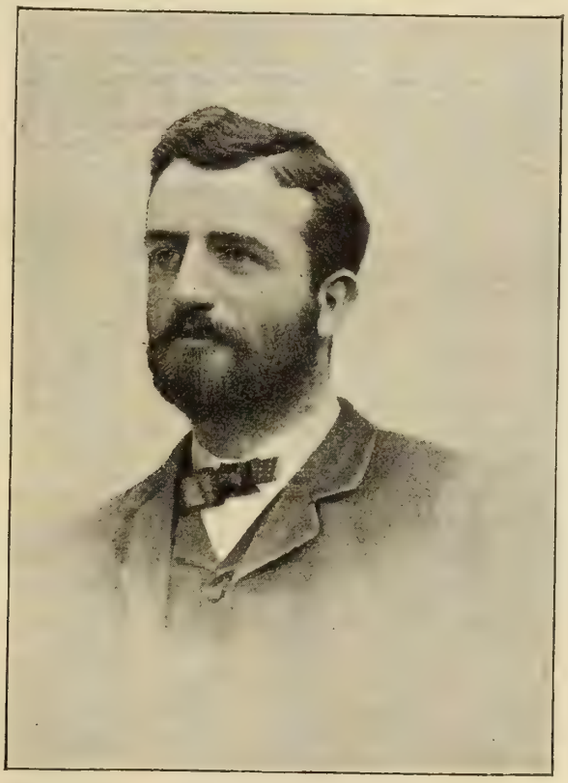
In the United States of America the chrysanthemum had acquired its place as the leading autumn flower, and, apart from the other exhibitions in the States, the New York Horticultural Society held a six days' show, beginning November 2nd. A special illustrated catalogue was published by the society on the occasion from which the following interesting details are reproduced :—

"It is now more than five years since a small exhibition in Republican Hall created quite a furore. The whole exhibition consisted of not more than fifty plants, and they of ordinary cultivation, yet the fire had started, and with it the interest grew. Our next exhibition being much better and well attended, encouraged the society to take the "Queen of Autumn" by the hand and hold exhibitions each year for her specially. The result has been more than satisfactory, for not only have they been well attended and afforded much pleasure, but they have been a financial success. A feature of previous exhibitions has been the sale of plants by auction, some of the plants realizing remarkable prices, notably, a specimen of the Golden Gloire Rayonnante, which last year sold for 105 dols., and was used in the garden scene of the famous Mikado opera. Others realized 45 dols., and the net sales reached for less than 300 plants 1,000 dols. The society, therefore, has helped the popularity of the chrysanthemum in a material degree by its support and encouragement. The exhibition of 1886 will long be remembered as the most remarkable in the annals of the society. Never before in any country have such magnificent preparations been made for the "Queen of Autumn" prize list of 2,700 dols. The grand prize of 500 dols."

In France chrysanthemum shows were also held the same season at Pau, Troyes, St. Etienne, and Paris. In Belgium the chrysanthemum had somewhat fallen into disfavour, but the ever-increasing popularity of the flower in all quarters having induced the executive of the Royal Agricultural and Botanical Society of Ghent to hold a show in the month of November, 1886, a decided impetus to its cultivation was thus given in that country, and from that time till now chrysanthemum shows have been regularly held in Ghent and in other towns in Belgium.

Great as had been the achievements of the National Chrysanthemum Society, all previous efforts were put in the shade by the November show of this year. In the cut bloom classes provided for incurved and Japanese sorts, without taking into account the classes for other large-flowered varieties and pompons, upwards of 2,100 cut blooms were staged, or nearly five hundred blooms more in the two leading sections than had been set up at the previous show. As to plants in pots, such as trained specimen plants, groups, &c., no comment is needed. The society was yearly making vast strides in numbers of members, exhibitors, in quality of exhibits, and in increase of its financial resources.

The new catalogue came in for a fair share of criticism soon after its publication, but the general impression of growers appeared

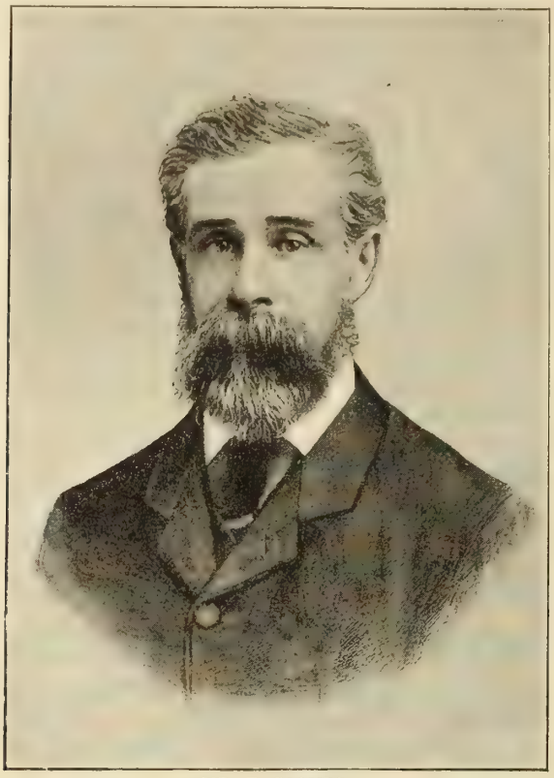


MR. RICHARD PARKER.

to be that it was an authentic and trustworthy guide, and it soon took its place, which it has ever since continued to maintain of being a standard work of reference on all questions connected with classification and nomenclature.

An event of primary importance which occurred this year must not be passed over in silence. Mr. Edwin Molyneux, gardener to

W. H. Myers, Esq., of Swanmore Park, Bishops Waltham, whose long continued run of successes in growing and exhibiting chrysanthemums at Southampton, Kingston, Winchester, and the Crystal Palace during a period of six years in competition with almost all of the most eminent growers of the day thus deservedly earning the reputation of champion chrysanthemum grower of modern times, issued his practical treatise entitled "Chrysanthemums and their Culture." This work,



MR. E. COOMBS.

which speedily ran through four large editions, is already too well known to every reader interested in chrysanthemums to require further mention here beyond saying that his Royal Highness the Prince of Wales was graciously pleased to accept a copy of it, a fact of which no doubt the distinguished author was particularly proud.

The mention of the Prince's name at this juncture reminds us that it was on December 7 in the same year that Prince Komatsu, the uncle of the Emperor of Japan, invested his Royal Highness with the Imperial Order of the Chrysanthemum, a similar ceremony being performed a month afterwards at Potsdam, when the present Emperor of Germany was likewise the recipient of the insignia of the order.

At the annual dinner of the National Chrysanthemum Society, held on December 13, one hundred and thirteen members were present. Amongst the presentations on that eventful evening two deserve particular notice. Mr. Charles Gibson at the November show had unfortunately and unintentionally staged too many blooms of one variety in the class for 48 cut blooms of incurves, and consequently was disqualified. His exhibit was of such exceptional merit that a few friends subscribed for a handsome silver cup in appreciation of the quality of his flowers, and the cup was presented to him by Mr. E. C. Jukes at the dinner. At the same time Mr. William Holmes, whose secretarial duties had involved a vast amount of time and labour, was the recipient of a testimonial presented by many of the members of the society and others, which took the form of an address on vellum and a set of dinner-table epergnes, in recognition of the excellent way in which he had performed his duties towards the society. Progress was still being made, the gross revenue for the year was £594 odd, with a membership of 353.

Altogether the year 1886 was the most remarkable one in the history of the chrysanthemum during the past quarter of a century. The shows at the Aquarium, Kingston, Hull, and Portsmouth were visited not by hundreds but by thousands of admiring friends of the chrysanthemum, and the prizes offered were of far greater monetary value than had ever been the case before, while the societies were continually increasing their strength by large additions to their lists of members.

Among the eminent growers of the day not already mentioned such names as Mr. Harding, Mr. Tunnington, Mr. Faulkner, Mr. Mease, Mr. Lindsay, Mr. W. K. Woodcock, Mr. Jameson, Mr. Edwin Beckett, Mr. Flight, Mr. Garnett, Mr. Herrin, Mr. Lyne, Mr. C. Orchard, Mr. R. Parker, Mr. Ridout, Mr. E. Sanderson, Mr. Shoesmith, Mr. Sullivan, Mr. Udale, Mr. Woodgate, with others not perhaps so easily called to mind for the moment, will long remain closely identified with the cultivation of the chrysanthemum at a period when that flower had almost reached the zenith of its popularity and glory in England. The excitement of the past few years cannot it is thought last much longer, and then the fever will subside for a time probably to break out again in another form in the course of a few years later. That the chrysanthemum will never be wholly extinguished no matter to what degree its cultivation may decline is apparent. The season of the year at which it blooms practically ensures us against such an untoward occurrence. The large influx of new varieties which was now yearly becoming customary contributed in a great measure to the extension of chrysanthemum cultivation. Many of these novelties were presented for adjudication at the fortnightly meetings of the Royal Horticultural and National Chrysanthemum Societies, when the floral committees were assembled for the purpose of making awards to meritorious exhibits. This, too, had much to do with bringing the merits of the new flowers prominently before the public, and was of great service to exhibitors in establishing the value of their importations, sports, and seedlings. The principal exhibitors at such meetings up to the end of 1886 were: Messrs. Veitch, Messrs. Laing, Messrs. Cannell, Mr. Boyce, Mr. N. Davis, Mr. H. J. Jones, Mr. George Stevens, Mr. T. S. Ware, Mr. Wright (Temple), Mr. Owen, Mr. Forbes, Mr. Kendall, Messrs. Drover, Mr. Beckett, and Mr. W. Holmes, while since that date the number has considerably increased, and the standard of excellence in which the examples are presented has been raised very much.

English nurserymen, keenly alive to the necessity for keeping pace with the requirements of the chrysanthemum novelty hunter, had been for a short time previous to the year 1887 actively engaged in the raising of seedlings, although in all cases the seed used was of foreign growth. A few English-raised chrysanthemums had been exhibited in some of the winning stands in the previous autumn with a slight degree of success, and several had received first class certificates. Messrs. Laing and Co., of Forest Hill, made a selection from their productions, comprising ten of the best, and announced them for distribution this year. Messrs. Cannell, too, contributed to the number, and those who saw them on the first occasion had but little idea of the popularity some of the most recent acquisitions were destined to excite later in the year.

The National Society this year introduced their guinea fellowship, and also varied the conditions of the election of the members of the General Committee, by which it was provided that only one-third of the committee retired annually. The affiliation scheme still received the support of the local societies, twenty-eight of them having at the beginning of the year been admitted. The Veitch Memorial trustees, no doubt fully appreciating the work of the society, generously made a grant of medals and cash, which were allotted to classes for twenty-four cut blooms in incurves, Japanese, reflexed, large anemone, hybrid anemone, and pompons.

The progress of the chrysanthemum was now triumphal, and in the month of April the Royal Horticultural Society, probably desirous of taking some part in the work, announced that they would hold a conference in the following November, but this was subsequently withdrawn, and the intention not carried out until two years later.

On the Continent more shows were springing up. In Belgium, the towns of Ghent, Tournai, and other places had them. In Germany one was held at Dresden. In France, besides those at Paris, Grenoble, Roubaix, &c., Mr. Anatole Cordonnier's fête des fleurs, which was reported in this magazine (March 3, 1888), gave a decided impulse to chrysanthemum culture, from an exhibition standpoint, in the North of France, which left its mark there to remain perhaps for many years.



MR. JAMES WESTON.

Across the Atlantic the exhibitions of chrysanthemums had created a perfect furore, and it is curious that, vast as was the extent of ground over which they were grown, almost every show in the States was held the same week. The most important of the exhibitions occurred at New York, Chicago, Baltimore, Philadelphia, Indianapolis, Columbus, New Haven, San Francisco, St. Joseph, Orange, Hartford, Springfield, Syracuse, and Boston. In the report of the latter, as

given in the "American Florist," we read: "Edwin Fewkes and Son showed a collection of twenty-one new varieties which they recently imported from Japan, and which are now flowered for the first time in this country." This is the collection in which Mrs. Alpheus Hardy, the now well-known hairy-petalled white Japanese chrysanthemum first made its appearance, and in a report of the same show in the "American Garden" its advent is spoken of in the following way:



MR. PETER BLAIR.

"It comprised a number of varieties recently imported from Japan, and some of the most strange forms ever introduced, the most distinct of which is a full double, pure white flower, having broad and long petals with incurved tips and backs covered with a peculiar hair-like growth. This is undoubtedly the variety spoken of by Fortune as being beautifully edged with hair-like fringe, and which he tried to bring home with him, but was unfortunately lost on the way. A silver medal was awarded to the exhibitors for this variety, and it will be known by the name of Mrs. Alpheus Hardy." The novel flower was figured in the "Garden and Forest" (Feb. 29, 1888), and a further account of its introduction, with which English readers are already familiar, was given.

The National Chrysanthemum Show at the Royal Aquarium on the 9th and 10th November, 1887, will long be remembered by every one present. Over 10,000 visitors were present on the first day, and one of the great centres of attraction was the class instituted by Messrs. Cannell to be judged by ballot. The system of ballot can scarcely be said to have given general satisfaction, rather the contrary, and the experiment has never since been repeated. The reader needs no recapitulation of the varieties then shown: the best on that occasion were Lady Lawrence, C. Orchard Edwin Molyneux, Mr. H. Cannell, and Mrs. H. Cannell.

At Kingston this year Mr. C. Gibson carried off for good the challenge vase, and at Portsmouth Mr. Molyneux scored a like success. The Hull Society's, after some little difficulty occasioned by the death of a competitor, was won by Mr. Mease.

Some of the finest flowers of the year were Macaulay, Duke of Berwick, Mr. Garnar, Feu de Bengale, Anna Roudière, Othello, C. Wagstaff, Hamlet, O. J. Quintus, and William Cobbett. They need no description here, being all Japanese varieties of well-known qualities.

At one of the floral meetings this season some new seedlings were staged, said to have been raised from seed in Jersey, a somewhat noteworthy incident, as the Channel Islands during the past six years had contributed in no way to our stock of show flowers. At another floral meeting blooms of the old tasselled lilac were sent for identification. They were stated to have been growing forty years in an old Cornish garden, and no doubt was entertained but that they were the same as the tasselled lilac imported from China sixty-three years before, thus being the oldest surviving Chinese chrysanthemum known to be in cultivation in this country.

This was the first time the annual dinner of the National Chrysanthemum Society was held at Anderton's Hotel, and it was shortly afterwards arranged that the ordinary business meetings of the Society should likewise be removed there. It is perhaps superfluous to add that the September and January exhibitions have been continued from their inauguration. All this and much more beside is only too fresh in the mind of the reader to require more than the briefest mention.

There are but two years remaining to complete our narrative, and the events which have happened during that period rank as high in the history of the chrysanthemum as those in any previous term. If space were unlimited a volume could easily be compiled on the progress and extension of the chrysanthemum growing mania during that time. Throughout the length and breadth of the United Kingdom it has been increasing at an extraordinary rate. New Shows and Societies have been started with wonderful rapidity, and there is perhaps not a town of any importance throughout the length and breadth of the land which has no annual Chrysanthemum Show. All this, however, is well known, and the year 1888 contributed to the accomplishment of it in a marked degree.

In order to keep up the cultivation of our famous flower to as high a standard as possible the National Society decided, in addition to holding its own three shows, to institute exhibitions in the provinces in conjunction with local societies, and it will be remembered that the first of the series was held at Sheffield in November of the year last mentioned.

Another attractive inducement to high-class cultivation in the provinces was the establishing of a national competition of Chrysanthemum and Horticultural Societies at the Aquarium Show the same autumn. The class was for forty-eight cut blooms, consisting of half incurves and half Japanese, and the challenge trophy offered was a handsome shield, with a cash prize of £10 to accompany it. The conditions of competition are well known to chrysanthemum growers, and each winning society has its name engraved upon the shield each year. It will be remembered that the society which carried off this handsome prize the first time was the Weald of Kent Chrysanthemum Society, with the somewhat extraordinary result that one of its members, Mr. Doughty, grew the whole of the blooms staged in the exhibit of his society. It was in this year, too, that the first gold medals of the National Chrysanthemum Society were struck and offered for competition. Three only were offered; the first, with £4 in cash, was allotted to the best group, another being scheduled as the first prize for forty-eight incurves, and the third went to the class for forty-eight Japanese. As a matter of record, it is only proper to observe that Messrs. Davis and Jones, Mr. Doughty, and Mr. Mackenzie were the respective winners of these valuable prizes in the order named.

Besides the innovations previously referred to, the N.C.S., whose vitality must be surprising to those who are outside the sphere of its direct influence, decided to issue an entirely new edition of its official catalogue. A special committee of thirty eminent chrysanthemum specialists was appointed to proceed with the work, and it was published in August. As a recognised standard of reference the catalogue speedily occupied the first place, and its circulation, not restricted to this country, has attained numbers far beyond the most sanguine expectations of the executive. In a few months applications for copies came in from all parts of the world, so that apart from the sale in the British Isles, copies were despatched to America, France, Belgium, Germany, Turkey, China, Japan, New Zealand, Australia, and

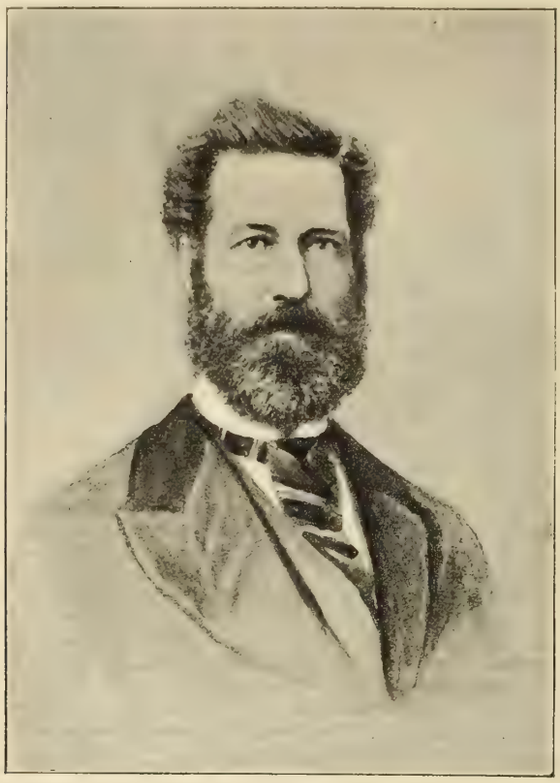


MR. J. LAMBERT.

Tasmania, a fact full of significance to the chrysanthemum grower, and complimentary beyond measure to those engaged in the compilation of the work. A special vote of thanks was accorded to all those persons engaged in the work, and the Society, in recognition of the labours of the three members forming the Revision Committee, awarded to each the silver medal of the Society, with a suitable inscription engraved thereon. At the same meeting of the Society, it

was decided that the Members of the Revision Committee should form a permanent Catalogue Committee, by which means the work would be constantly kept up to date, and much time and labour saved whenever a future edition should be called for.

At the Crystal Palace Show on November 9th, 1888, an influential meeting of judges, growers, and others interested in chrysanthemums was held, which resulted in a request being made to the National



MR. T. S. WARE.

Chrysanthemum Society to make some arrangements for properly celebrating the hundredth anniversary of the introduction of the chrysanthemum into Europe in 1889. When the subject was brought before the governing body of the National, the proposal was fully discussed, and the opinion appeared to be unanimous that it was more desirable to celebrate the centenary of its introduction into England, which would be in 1890.

The principal foreign shows this year were held at Marseilles, Antwerp, Valenciennes, Roubaix, Ghent, Liège, and Paris.

In America, Mrs. Alpheus Hardy, the wonderful new Jap, upon which, perhaps, more eloquent language has been bestowed than upon any other chrysanthemum in the world, was freely shown, and several other kinds which growers here now possess. Messrs. Peter Henderson and Son distributed a collection received from Japan, but only one of these varieties, Volunteer, seems to be any good from our point of view. Mr. Spaulding, Mr. Waterer, Mr. W. K. Harris, and several other well-known American plant dealers and importers began now to become familiar to English readers by their successes in the introduction and distribution of novelties.

Exhibitions in the States were held this autumn generally with great success at Orange, New York, Chicago, Cincinnati, Boston, Philadelphia, Indianapolis, Baltimore, Germantown, New Bedford, Worcester, New Haven, Springfield, Hartford, and many other cities. The editor of the *American Florist* adds, "The chrysanthemum craze, instead of being on the wane, seems to have gained a fresh impetus. The shows in the larger cities all equal, and some exceed, those of former years, while a large number are being held this year in places where the chrysanthemum has heretofore been but little known to the general public."

Some idea of the anxiety to secure the holding of the N.C.S. provincial shows in other towns may be gained from the fact that after the one at Sheffield representations were made by local authorities to induce the N.C.S. to hold their next provincial show at Hull, York, Leeds, Derby, and Brighton, the first-named town succeeding in the endeavour.

CHAPTER V.

THE CENTENARY YEAR.

AFTER all that has been hitherto recorded there will be no surprise on the part of the reader to be told that the year 1889, as the centenary of the introduction of the first large flowering chrysanthemum into Europe, was from beginning to end a very engrossing one for all closely associated with the chrysanthemum.

The efforts on the part of the French horticultural societies to commemorate the important event were conspicuous by their absence until the year was well advanced. The first society in the field to announce a Centenary Show was the Royal Agricultural and Botanical Society of Ghent. Then our own Royal Horticultural Society published a schedule of arrangements of a Centenary Show and Conference at Chiswick. The Scottish Horticultural Association did the same with regard to one at Edinburgh, and the Birmingham and Midland Counties Fruit and Floricultural Society offered money prizes in a special centenary class for cut blooms, amounting in the aggregate to £54 10s., a sum till then never before offered in one class for chrysanthemums.

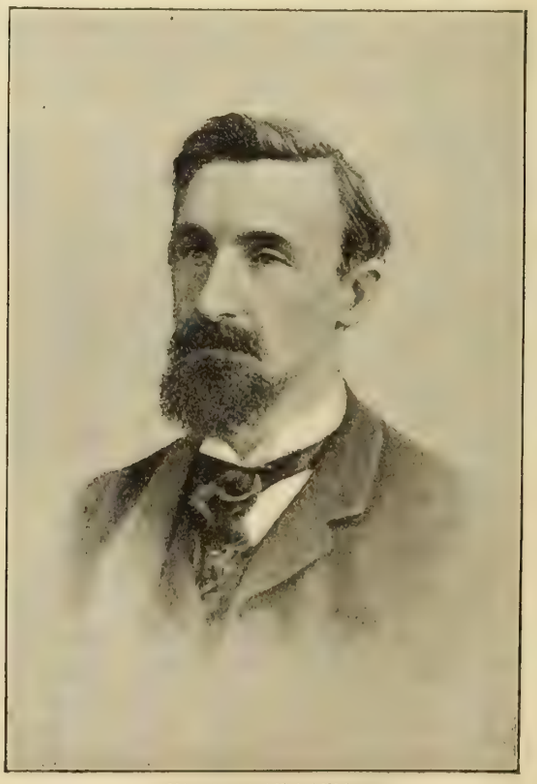
Minor centenary celebrations, specially so-called, were successively announced at Lille, Marseilles, Nantes, and Antwerp. In Germany one at Berlin was advertised with the somewhat scientific stamp of novelty in the way of a Japanese botanist to give a lecture upon the flower in his country.

At an early period of the season some disappointment was felt at the rumour of the probable discontinuance of the Temple show. Those formerly held at the Middle Temple, where Mr. Wright officiates as gardener, had already been done away with several years, and the only chance of seeing chrysanthemums within easy access of the City was the display annually provided by the Benchers of the Inner Temple, Mr. Newton, their gardener, being somewhat more fortunate in this respect than his neighbour. Mr. Newton, however, was permitted to hold the usual show, much appreciated by many, because of the admission being free, and rather late in the year the false rumour, as it proved to be, was contradicted, to the relief not only of the regular visitors but also to those who had the love of the flower at heart. After celebrating his twentieth show, in which the quality of the flowers was rather above than below the average, it would, indeed, have been discouraging to Mr. Newton to have been compelled to shut the doors of his greenhouse for ever. No such calamity was yet to happen, and with such a conservative class of professional men as the Benchers of the Temple are generally supposed to be, it would, indeed, be strange to find that after the great reputation that this classic chrysanthemum show had justly acquired, the decision to discontinue it should be arrived at.

The keen contest for supremacy was not strictly confined to exhibitors, but even among the trade a struggle has been for a long time manifest. A striking example of this was found in the case of the Japanese early-flowering variety, Mrs. Hawkins, which led to the well-remembered law-suit and subsequent arbitration between Mr. Ware, of Tottenham, and Messrs. Hawkins and Bennett. A full account of the proceedings was given at the time in the columns of this magazine, and the arbitrator's award seemed to be quite in accordance with the views on the disputed question held by the vast majority of the chrysanthemum growers.

To have kept strictly within chronological order, mention should have been made rather earlier in this chapter of a complete reorganisation of the National Chrysanthemum Society, consequent upon the resignation of Mr. Edward Sanderson, who, after services extending over forty years, and his advancing years, deemed it necessary to retire.

The rules of the society were amended and codified, a new president in the person of Lord Brooke was secured, and a list of titled



MR. NORMAN DAVIS.

vice-presidents elected. Other changes unnecessary to be recorded here, because of their date, were also effected, and the schedule for the year gives every sign of increased prosperity, financially and numerically, and a wider sphere of operations. Affiliated societies at the beginning of the year numbered 43; the Provincial Show to be held at Hull was of the most promising nature, the prize-list of which com-

prised valuable offers in money and in kind, there being a silver challenge cup, valued at 15 guineas and £15 in cash, with a second prize of £10, and a third of £5, for 48 cut blooms; several five guinea silver cups, National medals, and other attractions.

The summer and early autumn of 1889 passed away without much requiring mention here. The first event of importance in connection with the season was the publication of the National Society's supple-



E. JUKES, ESQ.

ment to their catalogue, which was issued just in time for the early flowering show.

On account of the extra interest likely to be taken in the chrysanthemum by the general public, the authorities of the Natural History Museum, South Kensington, early in the season placed on exhibition a number of books, specimens, and drawings relating to the chrysanthemum in their possession. Most, if not all, of the drawings were made by Chinese artists for the late John Reeves, Esq., of Canton, between 1812 and 1831. The total amounted to forty-four drawings on paper, some having two distinct varieties on a sheet. The flower-heads were clear and well executed, and comprised varieties ranging in colour from white, yellow, pink, light and dark purple, crimson and bronze. A noticeable feature in these drawings is the attention paid to a careful delineation of the foliage. Most of the Eastern artists are particular to a degree in this respect. The flowers thus depicted represented almost all the types known to us of later days, the single flowered race not being omitted. Miller's specimen, cultivated in the Physic Garden at Chelsea, in 1764, was among the number, and some of the principal works of the old botanists, like Breynius, Rheede, Plukenet, and Rumphius, were displayed for the chrysanthemum admirer who was likely to have a taste for a dip into botanical research.

The Aquarium Show was, as usual, on a vast scale, and visitors poured into the building in thousands. The actual number of cut blooms was not so great as on some previous occasions, for the season was an early one, and had the date been fixed a week before the show would, in all probability, have been twice as extensive. On this occasion the opportunity occurred of English growers seeing the famous Mrs. Alpheus Hardy, which the American introducers, Messrs. Pitcher and Manda, staged in good condition, although the examples were, so far as size was concerned, not to be compared with any ordinary show varieties. There were, of course, many other objects of interest at the show, but the reader is aware that it was fully reported in these columns at the time.

The Centenary Show and Conference, held under the auspices of the Royal Horticultural Society, at Chiswick, opened on November 5, and was continued the following day. The whole of the arrangements were nominally conducted by a committee of upwards of fifty well-known horticulturists specially interested in chrysanthemum matters, with Mr. T. B. Haywood as chairman, and the secretarial duties being performed by Mr. Edwin Molyneux. It speaks volumes for the influence of that society that, independently of the conference, the exhibition was held without the slightest recompense being offered to exhibitors in the shape of money prizes, medals, or any inducement of a pecuniary nature. The results of the Chiswick gathering appear in the society's journal for March, 1890, and the first day's proceedings consisted of the opening address by Mr. T. B. Haywood, followed by papers by Mr. W. B. Hemsley, the compiler of this narrative, Mr. Edwin Molyneux, Mr. John Wright, Mr. Shirley Hibberd, on various interesting subjects. The second day Mr. Shirley Hibberd presided over the meeting, at which Mr. Burbidge, Mr. C. Orchard, Mr. C. Pearson, and Mr. W. Piercey discoursed upon points of special interest.

At Edinburgh the Scottish Horticultural Association feted the chrysanthemum to a great extent. This centenary celebration consisted of a three days show, beginning November 21, accompanied by a conference. Professor Balfour presided, giving an excellent history of the chrysanthemum from the earliest times. Other contributions on Early chrysanthemums, Chrysanthemums for decorative purposes, Specimen chrysanthemums, the Chrysanthemum for show purposes in Scotland, and the Taking of the Bud were read by such authorities as Mr. Robertson Munro, Mr. A. Mackenzie, Mr. S. W. Fulton, Mr. J. W. M'Hattie, and Mr. T. B. Morton.

The Scotch Show was undoubtedly a very grand success, and no expense seems to have been spared to ensure the most satisfactory results, for the item for music alone amounted to £234. Bands of the Royal Engineers, Cameron Highlanders, and the original Industrial School, with pipers to boot, joined in the floral festivities. The competition in all the classes was severe, and the prizes well worthy of the event. In Class 49, for 48 Japanese varieties, in 36 varieties, the City of Edinburgh cup, value £20, open to all comers, formed the premier prize. The Scottish challenge cup, value fifteen guineas, and £5 5s. in cash, was offered for competition among Scottish gardeners and amateurs only, as the first prize in Class 20 for 36 cut blooms, consisting of 12 Japanese, 12 incurved, and 12 Japanese reflexed. Other proportionately valuable prizes in money and specific objects were included in the schedule, and it is not, therefore, surprising to find, from the balance-sheet, that the total income amounted to close on £1,400, of which sum £1,147 3s. 7d. was taken at the doors, leaving in the whole the splendid balance of £440 odd as profit on the Edinburgh Centenary Chrysanthemum Show.

The committee of the Royal Agricultural and Botanical Society of Ghent, desirous of making their great centenary fete rank high in the annals of the famous autumn favourite, left no stone unturned to ensure the desired result. A supplement to their schedule was issued, incorporating classes not previously provided for, and an international jury to award the prizes was decided upon.

Invitations were sent to English, French, Austrian, Dutch, and Belgian horticultural celebrities. Several prominent members of the National Chrysanthemum Society also received invitations, in consequence of which the society, at one of its committee meetings, resolved that they should form an official delegation to the Ghent show. Those who were actually present were Mr. John Laing, sen., of Forest Hill (who was elected the president of the first section of the jury), his son, Mr. J. H. Laing, Mr. Edwin Molyneux, Mr. A. J. Manda, and the compiler of this paper. It is only needful for the inquiring reader to refer to the GARDENERS' MAGAZINE for November 30 last year, for a full report of the show and banquet, at the latter of which the writer

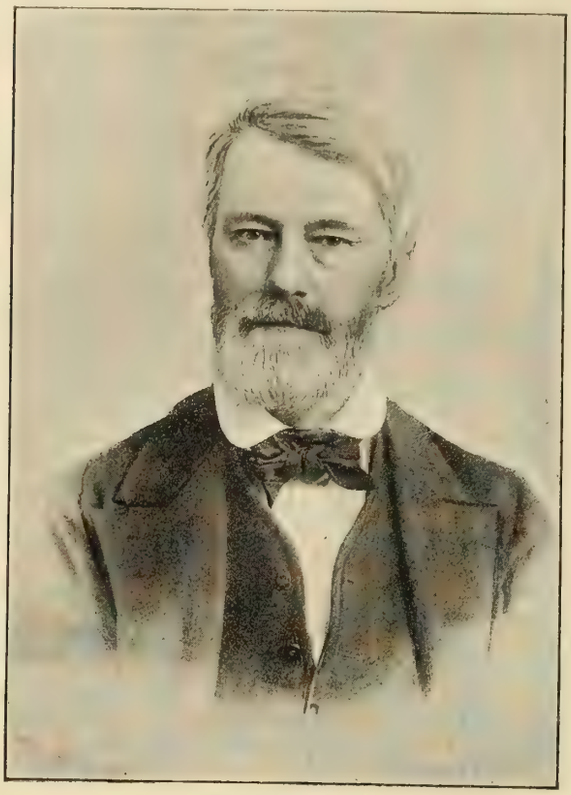


MR. E. BECKETT.

on behalf of the National Chrysanthemum Society, was the honoured recipient of a gold medal of the Royal Agricultural and Botanical Society, to commemorate the pleasant international exchange of good feeling.

The provincial show of the National Chrysanthemum Society, held in conjunction with the Hull and East Riding Society, fully carried out the expectations of the promoters, and another interesting con-

ference was also held there; and so we might, perhaps, continue to expatiate upon many other almost equally interesting matters relating to the year 1889. But the necessity does not exist, and our eyes are not yet to be turned backward, for ere long the business of a new season will be upon us. A greater attempt than ever will no doubt be made in this present November. The hundredth anniversary of the introduction of the flower into England demands all our energies, and there are prospects of far greater shows, more marvellous blooms, enthusiastic banquets, interesting conferences, and a great rejoicing over



MR. W. PIERCY.

this protean Eastern flower, that will probably put all previous efforts in the shade.

What the consequence will be no man can tell, but a few have ventured to predict. After an extraordinary effort, like the one contemplated, a reaction may set in, and Queen Mum take her place with other long-neglected favourites. We will refrain from speculating about uncertainties, and are content to wait and see.

CHRYSANTHEMUMS IN THE GARDENS OF THE EMPEROR OF JAPAN.

EVERY intelligent cultivator of chrysanthemums in Europe and America, who has devoted a little attention to reading about his favourite flower, has heard at some time or another of the Imperial chrysanthemum fête annually held in the gardens of the Palace near Tokio. Until quite recently the accounts received were vague, and but little was known concerning the method of cultivation adopted by the ingenious gardeners of the Far East to obtain such a splendid display as that with which they were usually credited.

Travellers from the time of Engelbert Kæmpfer to Fortune have long delighted us with stories of the popularity of this winter flow r in the islands of Japan, and exhibitions there are said to have been instituted about a thousand years ago. Whether the allusion was intended to apply to the Imperial show can scarcely be determined, but the probability is that it was, for the originator is said to have been the Mikado Ouda.

Japanese exclusiveness in the old sense of the word no longer exists, and our former meagre knowledge as to the manners and customs of this charming people is a thing of the past. Apart from the writings of European visitors to that country, many of the natives have left their homes to study the arts and sciences of the West, and it is to such that we are indebted for a good deal of our present knowledge concerning the flower, which has admirers quite as devoted here as those in the empire of Japan. Several Japanese botanists resident not only in Europe but in the United States of America have latterly contributed to swell our store of knowledge to a considerable extent. Dr. Watanabe, Mr. Miyabe, Mr. Tamari, Mr. Foukouba, and Mr. Yoshida are those whose names occur most readily as having been the means of distributing original Japanese chrysanthemum lore among us, and during the past three or four years it has been a not uncommon occurrence to find those gentlemen inditing articles of considerable interest in the organs of the German, American, and French horticultural press.

But at the present moment our chief concern is to say what we can about the famous Imperial chrysanthemum fête. The best account of it by a European writer is perhaps that given by M. Pierre Loti, the author of "Japoneries d'automne." In that work he tells us that the empress is only visible on two occasions during the year, one of which is the fête of chrysanthemums. Having been honoured with an invitation to take part in the festival, he says that the ticket bears upon it the heraldic chrysanthemum in gold, bordered with a garland of ordinary chrysanthemum flowers and golden foliage, within which is inscribed the text of the invitation. As a wise precaution the guest is told that if it rains on the 9th the fête will be held on the 10th; if it rains on the 10th then the fête will not take place at all. The following is a roughly condensed translation of M. Loti's experience.

We stand at the cross-roads, and all around are built slight bamboo structures draped and veiled with a silken crepe-like material of light violet hue, upon which the white heraldic form of chrysanthemum is profusely displayed.

Under these Imperial awnings and tents there are collections of chrysanthemums quite natural, but which do not look as if they were—wonderful chrysanthemums, in the honour of which their Majesties have invited us—marvellous chrysanthemums, of which our autumn borders can give us not the faintest idea. With geometrical regularity they are planted in quincunx form on sloping ground covered with moss; each plant has but one stem, and each stem but one flower. But what a flower! Larger than our biggest sunflower, and always of such a beautiful tint, and of so rare a form. One has broad, fleshy florets arranged with such regularity as to resemble a huge pink artichoke; another imitates a curly-leaved cabbage of bronzy buff; while yet another of the most dazzling yellow has thousands of fine, little florets, which spread out and droop like a sheaf of golden wire. Some there are of an ivory-like white, others of pale mauve, or else of the most splendid amaranth. There are striped ones, and shaded ones. And some idea of the work that it takes to produce these enormous flowers can be gained by looking closely at the supports which are scarcely visible alongside the stems holding up those which are too heavy, or else pinching and arresting the sap of those which would open too quickly.

We are told that we must not tarry here, but go further on to see still finer blooms.

We make our way down a shady road, between a hill covered with large cedars, forming a grove over our heads, and a still pond full of lotus plants. The cedars are very old, and covered with moss, and their drooping branches come so close to the ground as to sweep the turf. We are led to a bed of rose-coloured chrysanthemums, from which the eye can look in all directions upon the well-wooded distant views of the park. The place is delightfully peaceful, and we are unconscious of what is going on round about.

Along the sides of the beds, and always under the same long violet silk awnings decorated with the heraldic Kiku crest, are more flower shows; we might say more fantastic chrysanthemums, executed in the most extraordinary manner. Here are some enormous bouquets as big as trees, and instead of having only one stem they have a hundred, arranged with perfect symmetry around a central trunk, and at the end of each branch a bloom, quite open, never past its best, never a bud, but always at the same degree of perfection the same day. Still, all that which has cost so much trouble must fade and pass away. Each one of these chrysanthemums bears upon a slip of paper its name, written in those curious learned characters, enabling it to be read in two different languages—in Chinese as well as Japanese.

It would appear that the show that M. Loti attended was the last at which the Empress and her native lady attendants were attired in their national dress, for in 1887 European costume was, by an Imperial edict, made *de rigueur*, and has since been continued. Sir Edwin Arnold, who was present at last year's show, related his experience in the *Daily Telegraph* a few months afterwards, and thought the spectacle had lost much of its charm by the innovation.

To be the recipient of an invitation to the Emperor's chrysanthemum fête is an honour to which only a limited number of officials and foreign residents can aspire, and it is always eagerly sought after. Last year, owing to the indisposition of his Imperial Majesty, the annual gathering and banquet were not held, although visitors were allowed to view the flowers in the usual way. Sir Edwin Arnold was among them, but in his account of the show gives us little information concerning the flowers. A Japanese writer, however, has placed on record something like an interesting description of the best of them, which is reproduced below in an abridged form.

According to the yearly practice, the gardeners in Tokyo and Saikyo raised many rare and splendid varieties of chrysanthemums for the Imperial Garden by special order. The following is from one who enjoyed the privilege of being present at the fête: The first bed, 18 by 120 feet, was placed just behind the Senkinkaku (arbour). The entire bed was roofed with screen mats made of reeds, in order to protect the flowers from frost and sun. From post to post on three sides of the bed a curtain or screen, made of purple silk, with the imperial badge, the chrysanthemum, relieved in white, was tied round with crimson-tasseled ribbon. The flowers were of different colours, and their diameters seemed to be about three or four inches. Several hundred of these plants were arranged without any regular order in the bed. Among them, one called the "Sugawara," with petals red inside and yellow on the outer sides, and the "Kagaribi," with its crimson flowers, attracted a great deal of attention. The next bed to the left was roofed with oiled-paper screens, the rest of the surrounding structures being just the same as the first. In this bed all those varieties having the filiform petals were arranged. A white flower called the "Aunobiki" is worthy of note; the petals were fine as threads, drooping down in tassels like a waterfall. One variety with crimson petals tipped with yellow was very conspicuous. To the right of Shuhotei there was one bed 12 by 60 feet, planted with thirteen different root-stocks, each supporting numerous grafted branches, rising from the stem a little above the ground, and crowned with flowers of different colours and shapes. Next, to the right, was a bed (18 by 60 feet) for large-flowered varieties. Parallel to this was a bed in which only three plants were set out. The first one, called the Golden Dew (Ogonno Tsuyu), was decked



W. H. and L. Collingridge, London.

THE EMPEROR OF JAPAN'S CHRYSANTHEMUMS.

From a Photograph taken, by command of the Imperial Household Department, in the Emperor's Gardens, in November, 1889, by Mr W. K. Burton.



W H. and L. Collingridge, London.

THE GREAT SPIDERKRY OR KARAKWMI.

Exact Size of Life, from a Photograph taken in Japan.

with 338 blossoms, all golden-yellow. The next named, the "Hanakai," had 253 blossoms of red colour. The last, "Sanono Watari," was covered with 173 white blossoms, and impressed one as the best. The next bed contained about 420 plants of about sixty different varieties. Each plant was allowed to bear only one flower, and the diameter of the flowers was mostly about 15 or 16 inches. This bed seemed to be the crowning show of the day.

The greatest possible assistance we have received in this matter, however, has been rendered most generously by Mr. W. K. Burton, professor of photography at the Imperial University, with whom it had been our pleasure to be in communication for some two years past. Having been honoured with the command of the Imperial Household Department to attend the fête to photograph the show—the first time, we believe, that a camera has ever been allowed within the grounds of the Palace—he was so fortunate as to secure permission for the reproduction of such of his photographs as we might wish to offer to the readers of the Gardeners' Magazine. Mr. Burton, alluding to the select Kiku Fête not being held last November, on account of the Emperor's indisposition, says he had already had the privilege of seeing it on two previous occasions, and that even to one not much acquainted with the chrysanthemum it is a sight well worth seeing. The gardens are very large, and there is always a great assembly who have an hour or two to roam about and see the gardens in general, and the Kiku in particular. Bands play all the time, and the arrival of the Emperor is announced by the playing of the National Anthem. He appears walking in military uniform, followed by a considerable retinue. He addresses a few words of welcome to each of the representatives of the Treaty powers, who are congregated in a little group to await him, then all follow in a sort of irregular procession round the gardens to a large tent, where a banquet is held. The Emperor and his suite sit at a table at the end of the tent, whilst the guests stand at a long table that extends the whole length, or sit at little tables placed on the grass in front. When the Emperor and his party have finished they form a procession out of the gardens, again to the sound of the National Anthem, and then the visitors are allowed to enjoy themselves as they please till sunset.

Among the photographs which Mr. Burton has been graciously permitted to send are some of very great interest to English growers, for they exhibit evidence of the ability of his Majesty's gardeners to cultivate chrysanthemums to an extraordinary extent. The readers of the Magazine will be better able to appreciate the three which we have selected for their edification, when it is explained that one of the conditions imposed by the Imperial Household was that no prints were to be sold, and that the writer of this article was the only person in this country to whom a set was allowed to be given; but he being conscious of the great interest they would excite here, requested Mr. Burton to make special application for permission to reproduce them, which was very kindly granted.

Chrysanthemum growers who subscribe to the Gardeners' Magazine will therefore be pleased to know that although the privilege was originally entirely exclusive, an opportunity has been sought to render the new chrysanthemum double number as highly interesting, if not more so, as the one issued this time last year; and that, instead of our resources being exhausted, we are enabled to furnish additional matter of such an interesting nature on the chrysanthemum as has never hitherto been published in any gardening paper.

The following is a list and short description of the photographs received but not illustrated in this issue, viz., A view, showing several different varieties grafted on to single stems with the heads trained fan-shape.

Several plants of a peculiar white, thread-petalled flower, trained in bush form, remarkable for the spiral arrangement of the petals.

A view of a single pyramid specimen plant, called Hanakai (alluded to also in the earlier part of this paper). The plant is growing in a large curiously shaped wooden box, and has 346 fully developed flowers upon it. It measures about 10 feet across.

A pure white-flowered plant with long incurving petals, grown from seed, a single bloom of which is shown in one of the engravings forming a part of this number. Its Japanese name is Utakata, the meaning of which we are not told.



OXFORD CHRYSANTHEMUM AND FRUIT SHOW, NOVEMBER 20, 1879.

The interior of a spacious bamboo constructed glass building with several hundred plants grown on single stems and one bloom only on each. The diversity of form and colour is excellently shown by the photo. Nearly every type of Japanese chrysanthemum known to us is here, while there are some which do not appear to have reached us. Huge flowers of the Comte de Germiny and Edwin Molyneux kinds are numerous, erect and drooping petalled Japs, others like Bouquet Fait and hairy petalled chrysanthemums are dotted about here and there, while a large proportion seem to be of the single-flowered kinds showing large seedy centres.

Another of this interesting series comprises the two front rows of some single stem plants surmounted with huge blooms of different kinds. The flimsy petalled varieties are held up by a twisted wire support. The names are written in Japanese characters on long labels about 15 inches in length. One variety in particular resembling Boule d'Or in shape is specially indicated as being grown from seed, and the colour described as of a bright yellow. Its Japanese name is Chikiwgi.

C. H. P.

MR. JOHN LAING.

We confess that we find a kind of relief in meeting with a master of the chrysanthemum who was not indoctrinated at Stoke Newington. The village of which the flower was evolved is certainly dear to us, but it is a little refreshing sometimes to go out of the family for a friend, as an honest man might go for a wife, or a beggar to borrow a pound. Mr. Laing is no Londoner, for his native heath is at Carriston, near Brechin, where he piped in the year 1823, and in due time became a gardener in the gardens of Old Montrose; then under Mr. Reid, a man of high ability. He did as many other young gardeners of the north have done; he studied botany, collected mosses, and soon became an expert in the native flora. He went to Kinnaird Castle, the seat of the Earl of Southesk, which place he left after two years, and went to the Botanic Gardens, Edinburgh, where, under Mr. McNab, he had sound training. For finding of Dianthus cæsius on Salisbury Crags, he was rewarded by being made an associate of the society.

In the year 1847 he became manager of the Oncham Nursery in the Isle of Man, which had been badly managed. But he put it in order, made it pay, and then went to Chester to take charge of the indoor department of Messrs. F. A. Dickson's Nursery. His next move was to Dysart House, where he took charge of the gardens of the Earl of Rosslyn, and, though passionately attached to the study of ferns, mosses, and liverworts, he wisely turned aside from those subjects to give his mind to hollyhocks, rhododendrons, and other materials of the gardenesque. He was the first in Europe to flower Rhododendron Dalhousianum, and he became famous as an exhibitor of florists' flowers at the meetings of the Caledonian Horticultural Society.

After twelve years at Dysart Mr. Laing left to become a partner in the firm of Downie, Laird, and Laing, and he started for the firm the nursery at Stanstead Park, Forest Hill. The firm was dissolved in 1875, so far as regards the Forest Hill business, and after being in partnership with Mr. Box for a time, Mr. Laing became sole occupant, and has there, with the aid of his two sons, Mr. John A. and Mr. James Henry, built up a splendid business, in which the chrysanthemum makes a large figure and shows its power as the tuberous begonias—which appear to have been created for the Laings—go out of flower. The prizes he has won mostly with flowers, and not the least important among them, chrysanthemums, might count a thousand, but we have not asked him to count them, for we were so struck by a remark he made that to have said another word about prizes would have been as out of season as an oyster in July. He said he prized none of his honours so highly as being made an associate of the Edinburgh Botanic Society, and that revealed the love of nature no less than the love of usefulness and a just pride in obtaining distinctions, for he had obtained that position through finding a rare plant, and it was a kind of key to him to unlock palaces of delight such as he had found on the rugged heights of the Grampians—palaces open to the sky, tenanted by wild flowers, and accessible only to the true devotee of the goddess Flora.

MR. N. DAVIS.

The name of Mr. Davis as a chrysanthemum specialist has long been familiar to most of us. The subject of this notice was born in 1850, and inherited a love of flowers from his father, who was a devoted admirer of carnations and other florists' flowers, including a collection of named varieties of chrysanthemums, which were grown without the aid of glass in his garden at Brixton. On the death of his mother, and his father having failed in business, Mr. N. Davis, then a boy of 14, was put into a city office, to earn his own living, where he followed the occupation of a clerk for seventeen years.

About that time, he, with his father, entered lodgings at Walworth, and it was there that Mr. Davis first contracted the chrysanthemum fever, for the landlord of the house, having a moderate-sized garden, had planted it entirely with chrysanthemums, the culture of that flower being his sole hobby. Young Davis spent a great deal of his leisure time in the garden, helping his father's landlord, and in 1872 became the possessor of a garden of his own; and it is not surprising to find that he speedily put himself into possession of an extensive collection of "mums."

Like many others before him, finding gardening an expensive hobby, and having a family rapidly rising up, Mr. Davis began to try and recoup himself a little by selling cuttings. In this he was especially successful, soon finding more work than he could do, and, his health being somewhat indifferent, he decided to give up City life entirely and establish himself in business as a chrysanthemum importer and dealer, for the past seven or eight years carrying on business at the Lilford Road Nurseries, Camberwell, S.E.

Mr. N. Davis was one of the first to import the new varieties direct from the foreign raisers. He was one of the members of the old Hackney Society, and an early supporter of the project to convert it into a National Society. He is a member of the R.H.S. and many local chrysanthemum societies, in the work of which he is much interested. As a judge at shows his services are much sought after, and he has won many leading prizes for large groups at different metropolitan exhibitions, one of the best of which was probably the group he staged, in conjunction with his late partner, Mr. H. J. Jones, on the occasion of the first Kent County Show at Blackheath. It was during his partnership with Mr. Jones that the firm was awarded the first gold medal ever offered by the National Chrysanthemum Society for a group of chrysanthemums.

MR. J. NEWTON.

The fame of the Inner Temple Chrysanthemums is such that the daily press annually announces the opening day as an event of public importance, and thousands of our country cousins make a special pilgrimage to town to see Mr. Newton's flowers.

The Temple Show is probably one of the most popular we have, and it is the oldest metropolitan one of its kind. It is held by the kind permission of the Benchers of the Inner Temple, and in spite of the rumour last year that it was to be abolished, we are pleased to chronicle the fact that it is being held once more. Mr. Samuel Broome's name will long remain identified with the Temple Show, for he did much to popularize the cultivation of the flower at large, besides doing his best for the Benchers.

On Mr. Broome's death, Mr. John Newton took up and continued the work. He began his gardening career at Woburn Abbey, under Mr. Forbes, gardener to the Duke of Bedford; then he went to Overstone Park, where he stayed two years as assistant to Mr. Chapman, Lord Overstone's gardener. For five years he remained in the service of John Shaw Leigh, Esq., of Luton Hoo Park, being promoted from foreman to head gardener during that time. Mr. Newton for some time previous to his coming to the Temple, was at Kew Gardens, and in February, 1870, was appointed gardener to the Honourable Society of the Inner Temple. His present display of chrysanthemums is the twenty-first consecutive show held by him.

MR. W. PIERCY.

The name Piercy has the legend thus:—Malcolm, the third king of Scotland invaded the English borders, and so reduced the Castle of Alnwick that the besieged were obliged to surrender. They only requested that the king would receive the keys in person. They were brought by one Robert de Mowbray, Earl of Northumberland, who, standing within the walls, extended them on the point of a lance with which, on the king advancing to take them, he pierced the king's eye. For this gallant exploit he received the name of Pierce-eye, since corrupted to Percy, and which still continues to be the family name of the Dukes of Northumberland.

Our friend was born on the 27th of June, 1825, and spent the earlier years of his life in the parish of Islington in the north of London, and was educated at the school of Mr. Henry Butter, author of the well known Spelling Book. He says, "my earliest recollections of chrysanthemums are that we had a little yellow one at the bottom of the garden which I admired, but my father did not like it to be there because he said it 'was a nasty little yellow thing, taking up the ground all the year round, and was not so good as a marigold,' which it certainly was not. But I liked it notwithstanding. The first flowers of any good sort I ever remember to have seen were some white ones in the back yard of the Rochester Castle at Stoke Newington on a Sunday morning, which a friend of my father's took us to see, and I well remember at that time thinking it was a wicked sort of thing to go and look at flowers on a Sunday morning. But have since spent years in the study of the Sabbath and think differently now." W. PIERCY.

MR. EDWIN BECKETT.

This excellent man has the advantage of many of us in having been born so late as 1853, and he consequently is at the dreadful disadvantage that he did not "assist" in brewing the germs of the favourite fever. His father was a gardener at Henley-on-Thames, and he was put to the work of the garden at an early age. His first head place was Esher, whither he went in 1877, and in that year the Kingston Society was started, and Mr. Beckett made a fling, and carried off prizes, amongst them firsts for twelve Japs and six trained specimens. The Japs became his favourites, and he has carried the cards with them at Kingston, National, Twickenham, Watford, and St. Albans. He has also taken seven first-class certificates at National and Sheffield. But it must not be supposed that Mr. Beckett ignores the incurved, for he grows them well, and has been a winner with them as well as with specimen plants of these and pompons. The gardens at Aldenham House, Elstree, where our friend is the responsible manager, are too extensive, and at the present time make too much work to leave any great margin for the time required to prepare for exhibitions, but the collection of chrysanthemums is a good one, and the home show of this season will be one of some extent and much beauty.

MR. ERNEST CHARLTON.

The able representative of the flower at Tunbridge Wells is one of the Stoke Newington school, having commenced the cultivation when in the service of Mrs. Dixon, of the Anton Street Nurseries, Hackney, and in some sort a pupil of Mr. Howe, the secretary of the S.N.S., whose name is embedded in the chronicles of the classic period of the flower. At that time Mr. Adam Forsyth was the only trader who had a complete collection, and on his leaving for New Zealand Mrs. Dixon purchased his entire stock, which gave the Anton Street Nursery an important position. Mr. Charlton then took to exhibiting at the metropolitan shows and with a fair measure of success.

On leaving London to join his father, he made the chrysanthemum a feature of the business at Tunbridge Wells, and the novelty of the thing caused quite a sensation, for many lovers of flowers and owners of gardens had scarcely seen a chrysanthemum, or, at all events, knew nothing of the grandeurs that pertain to an exhibition. The local show was started. At the present time the Tunbridge Wells exhibition is one of the best in the country, and to Mr. Charlton belongs the chief honour of its inception and brilliant success.

MR. HENRY CANNELL.

Mr. Henry Cannell, the senior partner of the Swanley firm, was born at Swendestone, near Norwich, on March 3, 1833, where his family have been known for at least 500 years. He inherited a great love for gardening, and at the early age of from between eleven and twelve years ventured up to London, and after several rebuffs was, at the age of sixteen years, recommended to have the charge of several greenhouses, pleasure and kitchen gardens at Brier House, Stoke Newington, at the time the chrysanthemum was strong at the Rochester Castle. His employer was a great supporter of the show then held at the old Manor Rooms. Here the then young Cannell saw the second show held by that old society. Unfortunately, his employer died soon afterwards, and he returned home to his native village. His friends then decided that he should follow the nursery trade, and he was engaged by the late Arthur Mackie, who at that time carried on probably the largest nursery in the country. After four and a-half years he again came to London, and was engaged at Oak Lodge, Nightingale Lane, Clapham. After a stay of four years it was arranged for him to leave there, and take charge of the new garden at Bury House, Tulse Hill. In those two places he distinguished himself in growing the finest fuchsias ever seen in London, and carried all prizes before him for several years. During the time he held this latter appointment the first chrysanthemum show was held at the Crystal Palace, the Stoke Newington cultivators carrying everything before them. It was here that Mr. Cannell secured the first prize for a large plant of "Drin Drin," and he is the recipient of the first prize south of the Thames for chrysanthemums.

The Brixton Hill Society came into existence about this time, and it was a great advance that the classes included primulas and other flowering plants, fruit, vegetables, &c. A contention took place as to whether the Society should be under the auspices of the public house or the church schools. At last, with the aid of the Vicar of Trinity Church and the late Mr. Broome, of Temple Gardens, he induced twenty-eight of the members to come over to the parish rooms, and up to this day this model society has had uninterrupted prosperity for upwards of thirty years.

In 1860 he undertook the charge of the very extensive gardens at Portnall Park, Virginia Water, where things did not go on very satisfactorily, particularly the vines, which were thoroughly worn, or rather pruned out. He relinquished this situation, and started in business for himself at Woolwich. When Mr. Moore, then joint editor of the *Gardeners' Chronicle*, solicited through its columns information as to the failing of the once renowned prize-taking vines, Mr. Cannell first proved the fallacy of a hard restrictive pruning, which resulted in, perhaps, the most exciting and valuable discussion that ever occurred in that paper. We need not say Mr. Cannell had the best

of the argument, and wrote a work on the extension system of grape-growing, which did much towards the now plentiful supply of that most necessary fruit.

At this time the bedding system had just commenced, "Viola cornuta" was the lion of the day. Mr. E. Bennett, then gardener at Osberton Hall, sent to Mr. Cannell a large quantity, who advertised and sent it far and near by sample post, which was just then instituted. Nurserymen condemned the system. However, he determined to send his plants all over Europe, and at last he has so perfected his system that thousands of his plants find their way to the furthermost parts of the world. His establishment at Woolwich grew at such a pace that at last he found himself surrounded with eight landlords and a landlady, neighbouring smoke beginning to rise high and blackness in that town. He determined to make a bold stroke, and so leased seventeen acres at Swanley, then a purely agricultural and comparatively unknown spot. Here his plants and place again grew apace, so that after fourteen years more ground was needed, and a farm of 300 acres, at the next railway station, Eynsford, was secured by him, and is now in grand working order.

He has from the first year of the shows of the Borough of Hackney, held at the Royal Aquarium, Westminster, made large displays, and it is he, and he alone, who first suggested (and we believe the late Mr. Holmes preserved his first letter on the subject) that the society should assume the title of NATIONAL CHRYSANTHEMUM SOCIETY; and although the then president strenuously opposed any new title, it was eventually adopted, and the members soon doubled their number.

Mr. Cannell is the inventor of the top pipe system of heating, which is entered on the records in the British Museum as a valuable invention.

MR. JOHN HUGHES.

After being under-gardener at Clent Grove, near Stourbridge, and afterwards gardener at Bellbroughton Rectory, Worcestershire, Mr. Hughes came to Birmingham in 1868, and for a time took a situation at Park House, Edgbaston, under the late Mr. Gallier, a well-known chrysanthemum grower and practical gardener. Here Mr. Hughes got an insight into successful chrysanthemum culture, and from that time he has taken great interest in the subject. For nine years he has been head gardener to A. F. Osler, Esq., South Bank, Edgbaston, where chrysanthemums are well grown, but as Mr. Hughes is the secretary of the Birmingham Chrysanthemum Society, he refrains from exhibiting. South Bank is a model garden, and Mr. Hughes may be safely written down a good all round gardener.

The Birmingham Chrysanthemum Society, and its November exhibition, have a well-deserved reputation, and Mr. Hughes has been associated with the society as a subscriber, committeeman, and secretary for twenty years, holding the secretaryship for about ten years. He has also been the secretary of the Birmingham Spring Flower Show Society since its formation, nine years since. Last year, in order to commemorate the centenary of the chrysanthemum, he obtained subscriptions for a special prize fund for forty-eight chrysanthemum blooms, the first prize being £25, with liberal prizes following, and these were well competed for at the last November exhibition.

Between four and five years since it was determined to organize a Gardeners' Mutual Improvement Association for the Birmingham district, and Mr. Hughes was elected honorary secretary, and here was another field for his energy, and it was brought into full play. The association now numbers 300 members, and possesses a good library, under the supervision of a librarian. In addition to numerous presentations of books, the sum of nearly £100 has been subscribed towards the library fund, of which the greatest portion has been obtained through Mr. Hughes's instrumentality. The success of the association was so marked, and so much of it due to the secretary's energetic action, that a handsome gold watch was presented to him by the members of the association some three years ago.

As the local secretary to the Gardeners' Orphan Fund Mr. Hughes has done good work, and is one of the most energetic workers on behalf of that noble institution.

OUR ILLUSTRATIONS OF CHRYSANTHEMUMS FROM THE GARDENS OF THE EMPEROR OF JAPAN.

THE tinted plate representing the three large pyramid specimen plants gives an excellent idea of one method of cultivation adopted by the Emperor's gardeners. The view is taken from one of the tents with purple silk stretched on bamboo supports. The first plant on the left is the variety Utakata, a white flowering chrysanthemum, of which we also give a portrait of a single bloom. On that plant at the time of Mr. Burton's visit were 417 fully-developed blooms. The middle one, the name of which is Hanakai, bore 346 flowers, and the remaining plant to the right had 243 flowers. To convey some idea of the dimensions of these enormous plants, Mr. Burton placed a two-foot rule by the side of the middle one. We should calculate by that means of reckoning that these specimens would be about ten feet across.

KARAKWMI.—This is a portrait of an extraordinary looking long-petalled bloom the exact size of the original. From an English exhibitor's point of view it can hardly be considered a beauty, although it is eccentric. From tip to tip the petals measured fully sixteen inches. The centre was of a bright deep yellow, and the tubular florets, which are sustained in their proper position by a circular wire support, were of a deep bronze-yellow tinge.

UTAKATA.—This is a flower more closely approaching our standard than the preceding. It was photographed from the plant represented on the left hand side of the tinted plate, and, considering the large number of flowers it bore, Utakata may be looked upon as a fine example of a pure white Jap. The illustration is exact life size.

A GARDEN OF PAMPAS GRASS ten acres in extent is reported by the *Garden and Forest* to be one of the chief objects of interest to visitors to Anaheim, California. This year about forty thousand plumes will be harvested, and it is estimated that when the plants are well established the average crop will be one hundred thousand plumes. The plumes are worth about five cents each.

THE BIBLIOGRAPHY OF THE CHRYSANTHEMUM.

By C. HARMAN PAYNE.

NOT many years ago, it would perhaps be difficult to say exactly, I was loitering round the N.C.S. Show at the Aquarium early in the evening, when a gentleman, who was evidently a connoisseur in chrysanthemum matters, entered into conversation with me upon the merits of certain cut blooms we had just been examining. Most of them were wrongly named, and the labels bore evidence of such queer spelling, that we both found ourselves smiling at the comical attempts of the exhibitor to enlighten the visitor as to the varieties staged. There was, I fear, much reason at that time to excuse any chrysanthemum grower for curious orthography in chrysanthemum names. I believe it was the year before the issue of the first edition of the Society's official catalogue, and without any authentic and authoritative work of reference, what could be expected but that each exhibitor would have his own idea of what was right and proper, or else no idea at all, in regard to the spelling of the names of his flowers.

The conversation upon those examples actually before us, led to a wider interchange of thought, and a remark was made to me during the progress of our friendly talk, that set me thinking for many a long day after. Let me quote it. "Do you not think," inquired my unknown interlocutor, "considering the extraordinary popularity of the chrysanthemum, that it is a wonderful thing that it has no literature." I agreed with him, for at that time the only treatise on the subject with which I was acquainted was the little pamphlet by Mr. Newton, of the Temple. The more I thought of the observation the more inconceivable it appeared. Here was a flower that had been in cultivation for many years, and a rapidly rising favourite to boot, without scarcely a book on its cultivation known to its most ardent admirers. There were dim recollections of something by Mr. Broome and Mr. Salter, but they were mere shadows, nobody appeared to know much about the works of those two gentlemen, and concerning anything else on the subject plenty of the rising generation of cultivators confessed their utter ignorance.

I had only recently begun to collect coloured illustrations of the chrysanthemum, and had been made happy by several good finds, and after turning over the subject a good deal in my mind, came to the conclusion that there was a great want of knowledge as to chrysanthemum literature generally, and that its existence in a greater or lesser degree must be certain. A determination to leave no stone unturned to learn more about the matter was gradually taken. It is not needful to recount the many hours that were spent prowling around the neighbourhoods where second-hand booksellers most do congregate, nor the eager scanning of old magazines and catalogues to obtain a glimpse of an advertisement or review of any such work as I was in quest of. The result is sufficient, and is appended to this paper.

It is proper to observe that from the day when I first embarked upon the undertaking till now I have succeeded in adding to my Chrysanthemum library every independent work I have ever heard of, with save two exceptions, and as regards one of these exceptions, it is extremely doubtful whether the work was published at all. Knowing the difficulties to be encountered—for I have been omnivorous in the hunt, I have not been content to limit my searches to English books and pamphlets, but have sought for works in the languages of all countries where chrysanthemums are grown—entitles me to say that the bibliographical list which follows is of the highest importance to students of the literary history of floriculture. To say it is the best list ever published is superfluous for it is the only one of the kind that exists in any form whatever, and there is no other individual or public institution of any sort, either here or abroad, that can claim to possess the same number of treatises on the chrysanthemum.

To the ordinary cultivator many of them are out of date, and absolutely worthless, but to the mere book collector there are some that are extremely rare, and consequently valuable. It is impossible to say that every work on the chrysanthemum extant is mentioned, because it is highly probable that small, insignificant-looking paper covered pamphlets have from time to time been printed and circulated in the provinces, and thus had only a local repute. Such works have, as a rule, only an ephemeral existence; the moment they lose their flimsy paper covers they become dogeared and disfigured, and more often than not are thrown away as waste; but whether their contents are of value or not, it will readily be conceded that they should properly be recorded in a catalogue of this nature, and the loan of any such apparently insignificant pamphlet would be highly appreciated by me if any reader of this article should happen to possess one not alluded to here.

Very early in my inquiries I chanced to meet with an announcement of a work that has never come under my notice at all. About forty years ago a Mr. William Ivory, gardener to the Rev. George Chetwode, is reported to have written a treatise on the cultivation of the chrysanthemum, but every effort to obtain a glimpse of this work has been futile. To be referred to the reading-room of the British Museum is of no avail for the number of chrysanthemum books there is of no importance, and the few they have are of quite recent date.

Another book, advertised three years ago, but which I am, credibly informed, was never published, was entitled "Le Chrysanthème Culture et Multiplication, par un Amateur; revu par M. Hariot." This is the second instance already cited above.

England, of course, as the land in which the love of the chrysanthemum has been the longest in existence outside the far east, heads the list numerically, although an Austrian author will be found to have earned the distinction of being the first in the field. France does not contribute so largely as we might expect; Holland, Belgium,

Germany, America, and even New Zealand add their quota, small as it may be.

To include the names of the numerous horticultural works in which valuable articles on the chrysanthemum have appeared was not needful. Much of the best chrysanthemum literature is of a fragmentary kind, leading a sort of hide-and-seek existence in the organs of the periodical gardening press. The object in view was to obtain the fullest information concerning those books, pamphlets and treatises dealing exclusively, or almost exclusively with the subject of chrysanthemums, and published independently. Here, however, a difficulty in selection occurs, for some trade catalogues might almost claim a right to be admitted on those grounds. The question as to their being charged for or not does not properly decide which should be included in a bibliographical list of independent works, or which should be excluded. The literary matter alone can be the test, and the two or three works of that sort which find a place in the undermentioned list are worthy of a higher title than mere nurserymen's trade lists.

A glance will show that chrysanthemum bibliography extends over a period of fifty-seven years. Its progress has been very marked since the beginning of the past decade, but comparatively insignificant before that time. Of course from the earliest times valuable papers have been written by eminent growers, and the chief of the earlier ones are to be found in the pages of such books as the "Botanical Magazine," "Botanical Register," Sweet's works, the Horticultural and Linnean Societies' "Transactions."

It has often been a matter of surprise to me that no chrysanthemum society has taken up the work of forming a library. Such an item in the programme of its operations would be perfectly legitimate, but, taken as a rule, suggestions to spend a portion of the funds on books would almost invariably lead to opposition on the part of exhibitors. They are generally inclined to consider that all the available cash ought to be laid out in providing prizes for the flowers. But there are, however, a few ardent chrysanthemum growers of my acquaintance who do consider that a library is an essential adjunct to any society. Some of the local horticultural societies possess one, and to those members accustomed to read papers and write for the press the advantage of having easy access to standard works of reference is inestimable.

The following, then, is a list, arranged in chronological order, of such works on the chrysanthemum as I have been enabled to collect:—

"Ueber das Chrysanthemum Indicum Seine Geschichte, Bestimmung und Pflege." Ein botanisch-praktischer Versuch von J. B. Rupprecht, mehrerer gelehrten gesellschaften mitgliede. Wien, 1833.

"On the Cultivation of the Chrysanthemum: with plain instructions for its propagation." London, n.d.

"Tyas's Popular Flowers. The Chrysanthemum: its propagation, cultivation, and general treatment in all seasons." With a coloured frontispiece. London, 1843.

"A Treatise on the Cultivation of the Chrysanthemum for the Production of Specimen Blooms:" with an enumeration of the best varieties founded on the experience of G. Taylor, to which is added a list of the best sorts of those let out in 1851 and 1852, with cultural hints and descriptions of a selection of pompon and anemone varieties. London, n.d.

"Culture du Chrysanthème de l'Inde et de la Chine Par Lebois." Paris, n.d. (1854)

"On the Chrysanthemum: with particular reference to its cultivation in or near large towns, to which is added a suitable selection of large and pompon varieties." By J. Dale, gardener to the Honourable Society of the Middle Temple, London. London, n.d. (1856). Frequently reprinted.

"Culture of the Chrysanthemum as Practised in the Temple Gardens, to which is added a list of plants suited to the atmosphere of London and other large towns, with hints for their management." By Samuel Broome, F.H.S., gardener to the Honourable Society of the Inner Temple. London, 1857. Frequently reprinted.

"Garden Favourites—The Chrysanthemum: its history, properties, cultivation, propagation, and general management in all seasons." By Shirley Hibberd. London, 1857.

"The Chrysanthemum: its history and culture." By John Salter, F.R.H.S. With coloured illustrations and engravings on wood by Andrews. London, 1865.

"The Chrysanthemum in Jersey, and how to grow it." Dedicated to the Jersey Agricultural and Horticultural Society. Jersey, 1866.

"Culture of the Chrysanthemum as practised in the Inner Temple Gardens, with a list of plants including all the newest varieties." By John Newton, M.R.H.S., gardener to the Honourable Society of the Inner Temple. London, 1871. Frequently reprinted.

"The Art of Dressing Chrysanthemums for Exhibition." By F. T. Davis, F.R.H.S., Park Nursery, Plumstead, S.E. Woolwich, 1878.

"The Chrysanthemum: its varieties and cultivation." Illustrated by D. T. Fish. London, n d. (1881).

"Culture of the Chrysanthemum: With select list of large-flowering, Japanese, and pompone varieties." By John Wright, gardener to the Honourable Society of the Middle Temple. London, 1883.

"Culture and Exhibition of the Chrysanthemum: With select list of plants." By W. Jupp, gardener to G. Boulton, Esq., Torfield, Eastbourne. Eastbourne, 1883.

"The Chrysanthemum: Its history, culture, classification, and nomenclature." By F. W. Burbidge, Curator of Trinity College Botanical Gardens, Dublin, &c. London, 1884. Two editions.

"Catalogue of Chrysanthemums." Prepared by the Committee of the National Chrysanthemum Society. Price sixpence. n.d. (1884).

"The Chrysanthemum for Exhibition and Decorative Purposes: With cultural details, useful hints, and reliable selections of varieties for all purposes." A lecture delivered at Yeovil on February 27, 1885, by William Iggulden, &c. London, 1885.

"A Short History of the Chrysanthemum." By C. Harman Payne. London, 1885.

"Essai sur le Chrysanthème: Comprenant son histoire, sa classification, ses différents types, sa culture détaillée, et la description des 400 plus belles variétés." Par M. B. Ghys, pharmacien. Anzin, 1885.

"The Cultivation of the Chrysanthemum for Decoration or Exhibition Purposes." By Geo. Kidson, Principal of Lansdown School, Hull. Hull, n.d. (1885).

"Chrysanthemums and their Culture: With a list of select varieties for exhibition and for conservatory decoration." By John Bradner, of Arley Hill Nursery, Bristol. Yeovil, 1885.

"Prize Essays on Chrysanthemum Culture and Rotation of Vegetable Crops." By John Breen, Broomborough, Birkenhead, Cheshire. Awarded by the Liverpool Horticultural Society, 1884-5. Bolton, 1886.

"Chrysanthemums and their Culture (illustrated): A practical treatise on propagating, growing, and exhibiting; from the cutting to the silver cup." By Edwin Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishops Waltham. London, 1886. (Five editions.)

"Notice sur la Culture des Chrysanthèmes." Par P. Valette, aîné. Lyon, n.d. (1886).

"A Catalogue of Chrysanthemums of the New York Horticultural Society," containing over 1,000 varieties. New York, 1886.

"How to Grow Chrysanthemums." By John Thorpe. Queens, New York, 1886.

"Catalogue of Chrysanthemums: Prepared by a specially selected Committee of the National Chrysanthemum Society." Price sixpence. London, n.d. (1886)

"The Chrysanthemum Annual." Edited by L. Castle. London, 1887-1890.

"Culture du Chrysanthème." Par V. Cuvelier, membre effectif de la Société Royale d'Agriculture et de Botanique de Gand. Avec vignettes. Gand, 1888.

"Les Chrysanthèmes (Extrait du Moniteur d'Horticulture):" Revu et augmenté, orné de nombreux clichés dans le texte. Par F. Brassac. Toulouse, 1888. (Three editions.)

"Chrysanthemums for Small Gardens:" A simple and complete guide to chrysanthemum culture. London, 1888.

"Catalogue of Chrysanthemums." Prepared by a specially selected Committee of the National Chrysanthemum Society. Price one shilling. London, 1888.

"Supplement to the 1888 Edition of the Catalogue of Chrysanthemums." Prepared by a specially selected Committee of the National Chrysanthemum Society. Price threepence. London, 1889.

"De Chrysant hare Geschiedenis, Kultuur, Groepeering en Benaming Door F. W. Burbidge. Voor Nederlandsche Kweekers en Tuinlieden bewerkt door." G. A. Kuyk, Bloem Kweeker te Arnhem. Tweede druk. Bolsward, 1889.

"Emploi des Chrysanthèmes d'Automne pour Plantation de Massifs." Par Louis Henry, &c. Versailles, 1889.

"Chrysanthemum Indicum und seine Kultur." Auf Grund der eigenen Erfahrungen und unter Benutzung der Veröffentlichungen der bedeutendsten Züchter bearbeitet von A. Credner. Mit 50 Abbildungen und einem Verzeichniss aller bekannten chrysanthemum indicum-spielarten. Erfurt, 1889.

"Successful Chrysanthemum Culture," by Samuel Ryder, jun., &c. Sale, Manchester, n.d. (1889)

"Directions for the Culture of the Chrysanthemum, with Hints on Exhibiting." Compiled and issued by the Standing Committee. Auckland, New Zealand, 1889.

"Chrysanthemums and How to Grow Them: With notes on all practica and important details in connection with their successful cultivation, together with carefully-compiled lists of the very choicest varieties for every purpose." By Wm. Falconer. Queens, New York, n.d. (1889)

Chrysanthemum Number of the "Gardeners' Magazine," October 26, 1889. Double number containing a history of the Chrysanthemum in Europe, a Chrysanthemum Portrait Gallery, &c.

"Album et Catalogue des plus belles variétés de Chrysanthèmes cultivés à ce jour dans l'Etablissement d Horticulture." R. Sautel, &c. Ten chromolithographs. Marseilles, 1889.

"Le Chrysanthème: Methode pratique de culture pour grandes fleurs, grandes plantes d'Exposition, plantes naines, plantes tiges, les meilleures variétés à cultiver. Abrégé de la culture en pot du pécher et de la vigne." Par H. Phatzer. Roubaix, 1889.

"Chrysanthèmes: Catalogue de la Collection de Chrysanthèmes de M. Etienne Lacroix, &c." n.d. (1889)

"The Journal of the Royal Horticultural Society." Part I, vol. XII. March, 1890. Containing papers read at the Chrysanthemum Centenary Conference at Chiswick, November 5 and 6, 1889. Lists of varieties, statistics, &c.

"Liste Descriptive des Chrysanthèmes d'hiver." Par O. de Meulenaere, membre effectif de la Société Royal d'Agriculture et de Botanique de Gand., M.N.C.S. Gand, 1890.

The Official Catalogue of the National Chrysanthemum Society. Centenary Edition, enlarged, revised and corrected to the present time. Price one shilling. London, 1890.

NORTH OF SCOTLAND ROOT, FRUIT, AND VEGETABLE ASSOCIATION.

Among the societies in the North of Scotland established for the purpose of improving the quality of fruit, roots, and vegetables, none probably has done better service than this widely-known and spirited association. The object and aim of the society has been to encourage and stimulate the cultivation of the best descriptions of roots and vegetables, and also the propagation of new varieties. Its success hitherto has been very marked, and the good that has been effected by it is strikingly noticeable, especially in the improvements that have taken place in turnips and potatos, particularly the latter, alike as to improved kinds and better crops. The annual show takes place at Inverurie, N.B., to-day (Saturday, November 1). Seldom can a better display be seen than that which is annually witnessed at Inverurie. As in former years, considerable encouragement is held out to the competitors in the shape of two handsome prizes in plate and money, offered for field and garden produce, including turnips, potatos, carrots, cabbages, parsnips, beetroot, onions, leeks, apples, and pears; and a most interesting exhibition may be looked for.

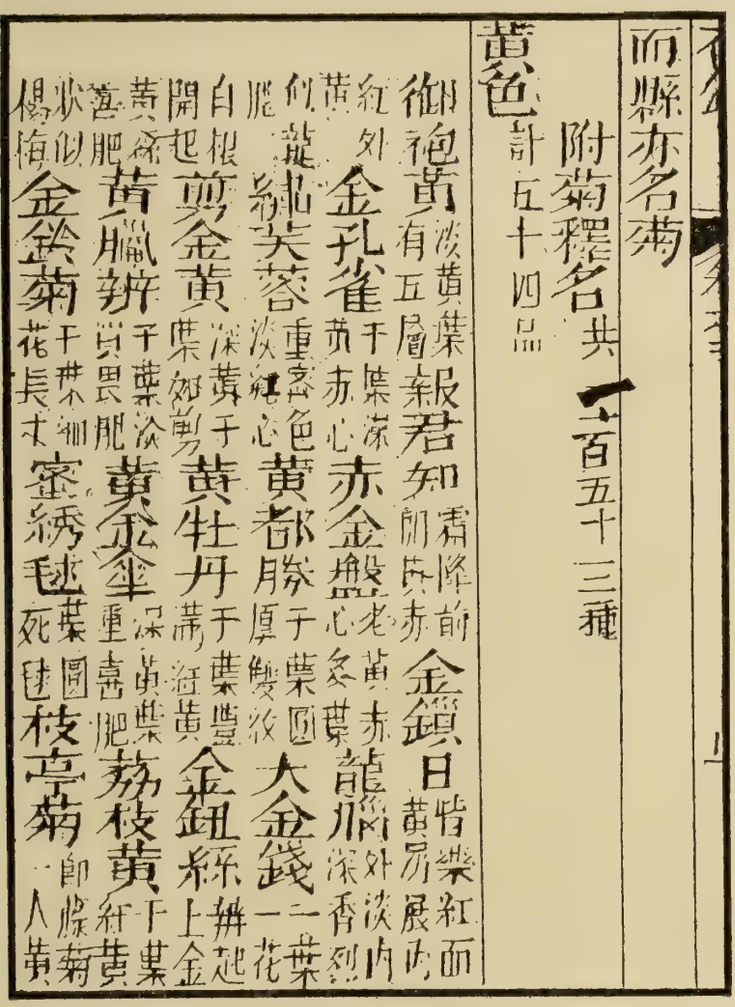
"ANY DOCTOR WILL TELL YOU" there is no better Cough Medicine than KEATING'S LOZENGES. One gives relief; if you suffer from cough try them but once; they will cure, and they *will not* injure your health; they contain only the purest and simplest drugs, skilfully combined. Sold everywhere in 1½d. tins.—[ADVT.]

A CHINESE TREATISE ON CHRYSANTHEMUMS.

Among the chrysanthemum curiosities that Mr. Harman Payne has at different times received from the Far East is an old horticultural book, a page of which is reproduced. The work, dated 1783, was published in six volumes, and entitled, "The Flower Mirror; or, Lessons in Horticulture." By Ch'eng-Fu-iao. A large portion of one volume is devoted to a treatise on the history and cultivation of the chrysanthemum in China at a period, of course, when it was quite unknown here. Of this treatise, the Rev. G. F. Easton, an old acquaintance of Mr. Payne's and a resident in the interior of China, has furnished an interesting translation into English. Space is too valuable to give anything more than a brief summary of the contents of the paper by the Chinese author, a fact which will be readily recognized when it is said that the translation of it occupies seventeen closely-written quarto pages.

Ch'eng-Fu-iao begins by giving the various names by which the chrysanthemum is known in his country, the names of some of the most eminent cultivators in the Celestial Empire, and a list of synonyms, for the perfecting of which he asks the assistance of his readers.

As an indication of the language employed by the Chinese author, we transcribe the first two paragraphs of his treatise—*The Chrysanthemum.* "The chrysanthemum (*Chu-hwa*), also called Tsieh-hwa season's glory; and again, nü-hwa, ladies' beauty. Fu-ien-nien called it in-ch'eng-Keng seng perfected and propagated in the shade. Chu-in called it Nu-hwa Kin rui, ladies' beauty, with golden stamens; but these are all general names of the Chu-hwa, chrysanthemum. Spring, summer, autumn, and winter all have their chrysanthemums, but only those that flower in the autumn are regarded as the proper flower, and of these, yellow is the colour most esteemed."



Concerning cultivation, the author says: "Of all the difficult things to grow, the chrysanthemum is the most difficult;" and he then goes on to give the details necessary for producing satisfactory results. Enemies of the chrysanthemum come in for a share of attention, and are enumerated as follows: The head-cutting insect, the chrysanthemum tiger, the small ant, earthworms, and caterpillars.

Staking is recommended when the plants have grown a foot high: and particular care is enjoined upon washing the leaves when they become mud-stained, if not, they are, says Ch'eng-Fu-iao, sure to wither.

Grafting is touched upon; and when we remember that it was originally from Chinese gardeners that we first learned to apply liquid manure, it will not astonish the reader to find directions concerning a proper application of what the English cultivator colloquially refers to as "the physic." The Chinese chrysanthemum fancier is recommended at the summer solstice to use strong manure, but after then to apply merely water in which geese and fowls have been scalded, cocoons, or meat washed.

After flowering, the plants are to be cut down to within an inch of the soil, and directions follow as to the best method of obtaining strong healthy cuttings, and preserving the old stools through the dead of winter.

The historical and cultural matter having received due attention, the author completes his work by adding a descriptive list of 153 varieties, which the obliging translator has given in tabular form; the name in Chinese character, the name Romanized, the English translation of the name, and a description of the bloom. The list is arranged in 4 sections, the first one comprising all those varieties of a yellow colour, numbering 54 in the aggregate; white comes next with 32 varieties; then red; and, lastly, purple.

In our illustration we have selected for reproduction the first page of this descriptive list, and, to satisfy the curiosity of those of our readers who would like to know what a century-old Chinese chrysanthemum catalogue is like, we give a translation below of the first three entries:—

U-pao huang ..Royal Robe yellow .....Pale yellow, five layers of leaves.
Pao chuin chi ...The Prince's Informer...Precedes the frost yellow, and red.
Kin so rih ..... Golden Sun lock.. ..... Deep red surface, yellow exterior.

In these cases the varietal names are not particularly strange, but in some parts of the descriptive list the appellations by which the flowers were known are whimsical to a degree not easily imaginable by us outer barbarians. Golden Umbrella, Yellow Buddha's Head, Full Heaven of Stars, Dragon's Brains, and the Heavenly Interview chrysanthemum are but a few instances out of many.

Much other interesting matter has been supplied by our kind friend in China, but we must leave the subject for the present in the hope that at no very distant date we shall be able to do ample justice to his invaluable aid in collecting and translating a lot of ancient chrysanthemum lore on our own account.

MUMCHANCING.

Thou who stealest fire
From the fountains of the past
To glorify the present; oh, haste,
Visit my low desire!
Strengthen me, enlighten me!
I faint in this obscurity,
Thou dewy-dawn of memory.

* * * * *

My friend, with you to live alone,
Were how much better than to own
A crown, a sceptre, and a throne!
O strengthen me, enlighten me!
I faint in this obscurity,
Thou dewy-dawn of memory.

To be "mum" is to be silent when speech might be expected, as in the words of Buckingham, in Richard III., "The citizens are mum, say not a word." There was a German beer called "mum," after one Christian Mumme, who brewed it at Brunswick in 1492, using the malt of wheat for the purpose. This carried its fame down to the time of Pope, who celebrates its virtues:—

The clamorous crowd is hush'd with mugs of mum,
Till all, tun'd equal, send a general hum.

This mollifying mum could not have greatly differed from the "reaming swats" that tempered "Tammy's noddle" until he was too far gone for fear, so that the poet is enabled to apostrophize:—

Inspiring bold John Barleycorn,
What dangers thou canst make us scorn,

Philips mentions the love of the Belgians for "fattening mum" in "Cider" b. 2, and the "bock" that we now tipple at Antwerp, the fullest-bodied amber-coloured beer in the world, may represent them both in a better way than any of the thin "bitters" that beguile an age incapable of digesting a liquor that has "something in it." The bard of abandonment saw all that was coming when he sung

'Tis pity wine should be so deleterious,
For tea and coffee leave us much more serious.

To speculate in "Mum" at this day means that a certain dry champagne that may be likened to bad brandy and water (and a dry wine is little else unless it be the addition of a sour element that is bad for the temper), is to be imbibed. This wine is made by Jules Mumm, of Reims, who has hit the taste so well with his sour stuff, that he could provide a donkey cart any day for every one of his customers, and he need not, of course, provide donkeys, for they are ready, and, in exchange for his drink, will hand over to him their nosebags. The late Joseph Dale, of the Middle Temple Gardens, was a man of sober sense, few words, and much discretion. When I presided at the dinner given him on the occasion of the presentation of a testimonial, I said, "We shall drink your health in Mumm, for that will be appropriate," and he answered, "I don't see any occasion for it; let every man drink as it suits him." I was properly rebuked, but I would have Mumm for my own elevation and solely for the name of it. To such trifling do we come after long traffic in words that have no sound, phrases that have no sense, and all the other rubbish mixed up with what is called "journalism." Fault was found with me last year for discoursing on the "glorious company of mummers," for the critics actually knew—may the Lord bless them—that once upon a time a mummer was a performer in a mask. But that kind of mummer passed away, as the critics now in view will pass away, leaving "not

a rack behind." It happens that according to proper dictionary usage, a mummer is one who makes diversion, and I will ask, does anyone at this dull season make a better diversion than an exhibition of chrysanthemums? Moreover, when one mummer is gone another mummer is wanted, and the trifling with words and names that adds so much to the enjoyments of life leads us directly to the transference of the word for an ancient entertainer who appeared in a mask and the modern entertainer who holds a flower before his face as the sign that he has discovered and would advertise to the world "a thing of beauty and a joy for ever."

A mumchancer is one who has nothing or but little to say, and one who answers incoherently is admonished "not to stand mumchancing there." You see this is exactly what I am doing. They said, "We want something from you about the 'light of other days,'" and I can only mumchance about it. You may happen to know that the word is respectable, and far removed from the colloquial slang that finds favour with writers who make no study of words. There was a game of hazard with cards or dice so called, and it obtained its name from the necessity of a quiet demeanour in those who played the game, as a kind of intimation that fools should avoid it, for only wise men know when and how to hold their tongues. To be mum is to be wise in the first hypothesis, because you cannot be condemned for what you do not say, and there is a prudential proverb advising that "the least said the soonest mended," which means that words darken counsel, and silence makes a clear field for the exercise of thought. The rose is an emblem of silence, and words spoken "under the rose" are not to be repeated. Henceforth, when the rose goes out of flower, and the babblers are looking for a new age of clack, we will bring forward the chrysanthemum and cry "mum." Who then will answer "budget," or have any claim to speak except the mummers themselves, indoctrinated in the high and sublime philosophy of the golden silence when fools are near and diamond speech is heard only in the company of the wise men? Who? Not the critics aforesaid; they are dismissed from the sitting. Let them sit in the street, and there take heed not to put themselves in the way of our triumphal car.

They asked me where I should begin, and I answered, "with Adam." He named the creatures, and had command to cultivate a garden, and his far-off but true lineal descendant was an adornment of Stoke Newington, and gave to the glorious company a key to unlock mighty mysteries. The learned ones who ask how seeds are to be obtained may be referred to an essay on the subject by Adam Forsyth, in the pages of the immortal and infallible "Mag.," to be found in the issue for April 20, 1872. He there discourses, as was Adam's wont, in a learned way on the philosophy of things he had seen, more especially as to the influence of heredity and the characters of sports, his object being to throw new light on the subject of obtaining seed. The article is worthy of such a man—one of the sweetest of the happy throng in the days that time has hallowed—for he says if you want seed, wait on nature. You have therein a code sure and unchangeable for any and every end you may have in view. Wait on nature. And you cynically say, perhaps, that there is not much to be got out of words! Ah! it all depends on the faculty for translating them. When translated, it will be found that Adam had observed first that November flowers appear at a season when the solar light is too weak to promote seed production. Or, should seed be formed, as it often is, the flowers are cut away, and the seed is lost, or, the continued diminution of solar influence renders it impossible for them to ripen. But if you only manage to secure a bloom in February, March, or April—and Adam explains how it is to be done—you have a light suitable for fertilization and advancing light and warmth for the maturation of the seeds, and "there you are" for a first start in systematic raising of new varieties.

"There is always a drawback to one's enjoyment," said the young lady with a sigh, when the clock struck twelve and the gentleman who was to marry her had not arrived. And so it is in this case, for probably not many readers can turn to the G.M. of the date named, and as it shall not be said that I set traps, I will give the pith of a portion of the paper, and preface it with the assurance that it demands careful perusal through. Our much beloved Adam says, You are to select your seed bearers, and as they go out of flower you are to clip off the dead blooms and *nothing more*, and then pack the plants away in a good light, with a reasonable amount of air, and keep them going quietly with moderate supplies of water. In the course of the month of March following, these same plants, if taken proper care of, will produce flowers from buds that were concealed at the usual flowering time, and from these March or April flowers you may hope to obtain seed. And to enlarge the prospect, he says, strike cuttings in June, and get the plants into 32-size pots by the middle of August. Let them flower without being stopped, and keep all the growth through the winter, and you will be pretty sure of flowers in the spring from buds that were dormant in November, and from these flowers you may have seed if you but manage prudently.

The days of A. F. in the Brunswick Nursery, may be called the silver age of the chrysanthemum. A sufficient number of first-class varieties were established, and the exhibitions were in process of formation to the standard that now prevails. No man contributed more directly to this end than brother Forsyth. It was my good hap to be from year to year engaged in some public work that made a place for flowers. At Abney there were four festivals in succession in four years, and each occurred in the month of November. One word from me was sufficient to secure the generous aid of A. F. He sent exhibition specimens, and made banks of flowers; in fact, what with his chrysanthemums and my own pot ivies and miscellanies, we made school-rooms and assembly-rooms, and other places in which bazaars and conversaziones were held, as much like horticultural exhibitions as might be, and we had to be careful not to swamp contributions of other kinds, for our combined forces made a formidable aggregate. Happily the thing was in no case overdone, and it sustained the fame of Stoke Newington, as one of the favoured retreats of the Goddess Flora, and a school of art for florists of all denominations.

Another of the pioneers in the way of exhibitors was my dear old friend and ofttimes coadjutor in good work Mr. James Crute, then residing in Holloway, and reaching out from thence as a worker and watcher of events, to Stoke Newington one way and to the City in another. In almost every suburb of London an exhibition was started, and each became a school for the training of cultivators, and to spread through the public mind a taste for the golden flower. In about ninety per cent. of all the instances the beginning was made in the parlour or club room of a tavern, in precisely the same way as the first classic venture in the parlour of the Rochester Castle, Stoke Newington. One of those that I watched closely was started by one of the best of florists this world has produced, the late James Butcher, of Camberwell, who kept a modest "pub" in a quiet street, where a few florists met to discuss dahlias, auriculas, and mums, Butcher being a careful cultivator of the auricula, and a frequent exhibitor at the "park," where at that time the auricula had its *one* place of public reception. The R.H.S., and all other such centres ignored it, and the park had a monopoly of the flower, so far as a class for a dozen might secure it. Dear old Butcher secured a capital first show in his club-room above stairs and many who came from afar to see it, went home to "do likewise;" and thus the exhibitions multiplied and spread into every considerable suburb of the great metropolis.

While things progressed in this way, the provinces were making similar advances, the great towns making great shows and the little ones often accomplishing more than would have been predicated from a consideration of their extent and general resources. Soon after 1860 it was my fortune (or otherwise) to be a frequent visitor to provincial shows to judge in any or all of the classes, and great was my surprise on first beholding the magnificent displays in St. George's Hall, Liverpool; the Drill Hall, Clifton; the Corn Market, Oxford; and fifty more such places farther north and farther south. Probably no exhibition in the early days gratified me more thoroughly than the one annually held at Brixton, where Mr. Glover, Mr. Weston, Mr. Coombes, and Mr. Hall were among the leaders of the show, and were not less assiduous in promoting intellectual intercourse amongst the members, a pleasant business in which I, once certainly, and possibly more than once, assisted in the capacity of lecturer. It was an eye opener to turn from Stoke Newington, that some of us thought unsurpassable, to find things better done at Brixton, and as well done at Peterborough and Oxford, soon after the sixties, and in very high tone in the seventies, so that the standard of high class showing, and the breadth of purpose I have never ceased to advocate, may be considered to have acquired fullness of plan fully twenty years ago; what has been accomplished since then being not enlargement of plan, but multiplication and enrichment of details.

A number of the leading cultivators of the metropolis were drawn into the net cast by Jefferies for the "Amalgamated" Exhibition in the Agricultural Hall, in 1863, which was by no means a happy affair. But right happy was the combined effort of 1865 in the Guildhall of the City of London, when an appeal was made in behalf of the newly-formed United Horticultural Benefit Society, with the result of establishing it on firm foundations that subsequent years of—what shall I call it?—management without meaning, could not shake, and from which it has now recovered by the accession to it of men who mean and can transact business. It was the *breadth* of the plan that made the success. Not many of our beloved colleagues of the mum persuasion can carry back remembrance to days when nothing save mums were admitted within the hallowed portals of the club-room governed *pro tem.* by the local chrysanthemum society. Not an apple, nor a primula, nor a poinsettia, nor a cyclamen was admitted, and eminently self-satisfied were the managers who proudly prohibited "extraneous" presentations. But in the provinces miscellanies had forced their way, and you will observe in the figures now given of a few early shows that palms and other fine foliage plants were recognized on these occasions as relief agents—a fact I would not venture to mention were it sufficiently known that these things were stoutly opposed for a length of time in certain quarters, and were actually forced at last upon most reluctant managers who carried the conservative spirit to the verge of frivolity. The Guildhall Show, in November, 1865, was a grand demonstration of the broad gauge plan of a chrysanthemum show, and was, in fact, about the very first great exhibition held in London, in which all the horticultural features proper to the third week of November were brought together, the chrysanthemums taking the lead amongst them. On my own share in the business I say nothing, save that, although the task was tremendous, all the workers worked with such a will that probably all enjoyed it as I did, for we were of one mind that no obstacle that effort might overcome should stop our course to complete success. The life and soul of the concern was Mr. James Crute; he initiated; he insisted on broad foundations. There came into the field a splendid band of practical men: Messrs. Rhodes, Baker, Wheeler, Heale, Howard, Glendinning, claim special mention for their spirit and sacrifice in this great undertaking, and all but one survive to this day to remember the event and tell the tale. With Mr. Crute and myself rested the whole of the negotiations with the Lord Mayor, the Common Council, the Guildhall officials, and all the parties concerned in the decoration of the Guildhall for the mayoralty banquet; from the Ordnance Office that supplied armour and banners, to the Gas Company that arranged with us that we should burn any amount of gas and it should not intrude its value upon the account with the Corporation. I remember that we paid the company thirty pounds for

the gas we consumed, and the charge was founded on an estimate of consumption, for there were no means of measuring it, the Corporation being supplied by contract without the intervention of a meter.

Having spoken of Mr. Crute's chrysanthemums I shall make an extract from the *Floral World* of December, 1866, in which there is a report of the *second show in the Guildhall* in November of that year. And thus it reads:—

Mr. Forsyth, of the Brunswick Nursery, Stoke Newington, exhibited an enormous collection of superbly-grown chrysanthemums; Mr. George, of Stamford Hill, a group unequalled amongst all the competitions of the season in size, finish, and splendour of bloom. Mr. Crute, of Tufnell Park, not only made a gorgeous bank of "long-rod" chrysanthemums, but in the centre of the hall constructed a beautiful flower bed. This was made on a convex mound of grass mowings, enclosed in a stone moulding supplied by Rosher and Co., and encircled without by a gravel path. The bed had for centre-piece a noble fern, then a broad circle of chrysanthemums, trained down to fit the regular convex surface of the bed, next a circle of Iresine Herbsti, next a circle of Centaurea plumosa, and outside of all a lovely margin of white and crimson Chinese primulas.

But while the world moved at a fast pace, Stoke Newington hugged its conservative notions and moved but slowly. While the exhibitions were held in the barn in Church Street that bore the dignified title of "Manor Rooms," expansion of plan was well nigh impossible. But the split made a difference. The forward party, consisting mostly of men resident eastward of the old centre, fixed their eyes on the new Town Hall at Hackney, and there they inaugurated an exhibition of the advanced type with the aid of all available accessories, recognizing the incontestable fact that a show of chrysanthemums, with a moderate addition of fine foliage plants, fruits, and other flowers of the season, is far more attractive, and certainly more instructive and generally useful than one consisting solely of chrysanthemums, no matter what the quantity or quality. The sketch given of the show at Hackney in 1876 will indicate the nature of the advance that had been accomplished, and we are bound to keep in respectful remembrance the men who laboured long and under many difficulties to enlarge the sphere of our autumnal meetings. If at this moment I had to say offhand which of many examples has proved most potent for good, I should say, for local influence, Brixton; for universal influence, the Guildhall show, when, it may be well to remember, Messrs. Low and Co., of Clapton, adorned the beautiful hall with the finest lot of tree ferns ever exhibited in this country; they and all other exhibitors having in view to captivate the civic mind with the delights of horticulture, and at the same time find means to float a new scheme for the special advantage of practical gardeners.

It has passed out of the remembrance of the oldest inhabitant that once upon a time there was a Stamford Hill Horticultural Society, the very last of the meetings of which was held on the grass land adjoining the site of the ugly pool on the hill, at the point where the tollgate formerly stood, in later times known as "Morley's Pond." It was the chief school for thought and mutual help in the northern suburbs, and great names may be found in its roll of members and lists of prize winners. Not a few chrysanthemum men came out of that school; and Mr. William Chitty, who still keeps a cheerful face to maintain the traditions of old times over there, can tell you that the society was a proper forerunner of the now famous floral conclave of the Rochester Castle. One of the best of the throng was Mr. Monk, of whom Chitty speaks as "a bright record," and of whom I can speak as a bright and shining light both at Stoke Newington and at Brixton. A more courteous and genial gentleman I have not known, but this is no special praise for Mr. Monk, for where shall we find men to surpass in kindliness of heart, in gentleness of manner, in generosity of view, even when tinctured with prejudice; where and how, indeed, shall you surpass them out of the ranks of the florists. When I said in my speech at last year's dinner of the National that a florist could not be a bad man, and that a bad man could not possibly grow flowers, I intended my words to be taken in all seriousness, for they are true. Long observation, aided by familiarity with all the needful facts, have convinced me that only kindly natures take to floriculture, while the art once entered upon with any degree of earnestness, expands the mind in sympathy with universal intelligence, quickens curiosity, represses sordid thoughts by pushing into their place the manifold suggestion of vegetable life and beauty, so that a nature kindly in the first instance ceases not to be kindly, but grows in warmth and wisdom as experiences are accumulated from the world of flowers and the men who love and cultivate them. It is no marvel that our constituency has a fine flavour of intellectual and moral rectitude in all the habitudes of life moving towards the eternal principles of truth and justice. When I once said in print there was never a gardener hanged, one very dear to me whispered of Cain, and I said, Cain was no gardener, and Cain was not hanged, and I still wait for, although I do not want, an instance. Flowers will certainly not prosper under the eye of a bad man, and for such excellent reasons that I will not venture to offend by stating them.

Brixton has been extolled, but more might be said of its peculiar self-contained consistency. It is all itself, to itself, for itself; and yet is essentially unselfish, for the whole scheme is liberal and large-minded, and it simply does not go beyond its own proper boundaries because it has sufficient strength within them. And something like that may be said of Kingston, one of the earliest, one of the usefullest, and one of the most exemplary societies. Be not dismayed, oh ye of the National, when I assure you that you were all born at Kingston, for out of that Nazareth went the spirit that created a wholesome floral atmosphere in Westminster. Kingston popularized the chrysanthemum in a greater degree than any other society in or near the metropolis, until the National sprang forth as the new phœnix out of the ashes of the Stoke Newington and Hackney societies. Nay, more; Kingston projected a catalogue before the National attained to the status of a germ in the nest of the immolating phœnix, and an accident that I will not describe, and for which the society was but in part, and that a small part, responsible, alone prevented the consummation of the idea. Not until now have I ever hinted at an antagonism of the National against the Kingston society, but who will say that there was none, or that the coincidence of dates for exhibitions was in the position of the results of a fortuitous concourse of atomies? But for all the antagonism, Kingston lives—ask the mayor; ask the A B C guano company; ask the cabbies at the railway station; ask the chairman at the next agreeable luncheon that will follow upon the next exhibition; or trust to the evidence of the exhibition, and ask nobody, and you shall have a picture of the show next week to reward you for doing as you are bidden.

It would be no wrong to the truth at large to say that the Kingston groups, which used to be singularly good, but have of late years suffered by the competition of the National, gave the impulse that resulted in the Finsbury Park display under the wise guidance of Mr. Cochrane, the practical part of the work being Mr. Mardlin's, who, as regards the teaching a successful cultivator may give to thousands willing to learn, has certainly not hidden his light under a bushel. And as pioneers are now in view, Mr. Cochrane must have the praise of leading the way in the establishment of free displays of chrysanthemums in the public parks of London. But the Temple exhibitions of Broome and Dale undoubtedly furnished example and encouragement for this same thing, and we know not how many other influences were concerned in it. But what a testimony is it to the usefulness of this flower of ours, what an evidence of the sure place it has in the universal heart that it has no rival in this particular sphere of display; it is, in fact, the only flower for which municipal bodies make special provision that the general public may enjoy an annual feast free to all, and of a kind that provokes no ungenerous comments or comparisons. We occasionally awaken in a kind of surprise in recognizing the free spirit that prevails in certain Continental cities in respect of floral displays and free exhibitions. But the awakening is sometimes from a sleep in which we have forgotten some of our own virtues—wonderful self-abnegation!—for while these free fetes are open in the London parks, all the cities of the Continent may be challenged to beat or even equal them. See Hotel Cluny on a sunny autumnal Sunday, and you feel that a day may be quiet without being sad. See the Finsbury Park show to-morrow, should the weather favour the seeing, and you will own that even a London Sunday need not be sad. What the theologians say is just what no good man should consent to hear, for theology never saved a soul, but has burdened many a one in its struggle to attain to light and love, and has made a foundation for events that make the reddest and the blackest lines in human history. The time has come when every considerable parish should have its free chrysanthemum show, open on Sundays and weekdays alike, and, when possible, it should be installed in a place of assemblage connected with some important place of public worship, both to be easy of access immediately following upon the morning service and to have the imprimatur of an influential body of Christians. Let it be as quickly and as emphatically as possible denied that sour sabbaths are essential to salvation.

In my desultory notes on the "Glorious Company" last year, I made a brief remark on the average of time a man could keep himself to a high mark in exhibiting. How I came by the notion I do not know, but probably as a deduction from facts in a speculative hour; but my notion is that seven years is a fair average for an exhibitor to keep a top place in any large class or classes for plants. To strike an average is probably impossible. It is likely the idea was first evolved as a result of brooding on what Mr. Wotley, of Stoke Newington, once said to me. He said "seven years is enough of it," and it was about that space of time that he kept at the top of the tree in our Manor Rooms exhibition. We have an example of long continued devotion *with success* in our right jovial, ever victorious, generous-hearted Mr. E. Sanderson, the Doyen of the Chrysanthemum, who was in the family in 1847 when the S.N.C.S. laid foundations, having no dream of the fabric that would arise thereon, and continues to this day to exhibit, advise, and assist in any way that occasion may suggest as desirable; who was for long years president of the primal corporation, the S.N.C.S. aforesaid, and again president of the Boro' of Hackney C.S.; and again president of the National, and cleared out from that to make room for Lord Brooke, the thing having grown too great to be consistently (as certain wise men thought) presided over by a commoner. It happens that Lord Brooke is a commoner, but the coronet of an earl is in his knapsack, and doubtless was an adornment of the coral that amused his infant gums. Can anyone name an instance of longer years with equal honours, and the Doyen still full of health and activity, and enjoying his flowers after nearly fifty years of triumphal progress with them.

An extreme case the other way is that of Mr. Hutt, formerly of Hackney, who "rose like a meteor and dazzled the world" with specimen pompons, a class of subjects that were leading features in the sixties when we had Duruflet, Drin Drin, Canrobert, Bijou d'Horticulture, Helene, Riquiqui (purple plum), Adonis, St. Thais, Cedo Nulli, Bob, Brilliant, Aurora Boréale, Andromeda, and a few more such useful beauties. Mr. Hutt turned out specimens of these in wondrous style; none could stand against him, and he was great also in specimen blooms and all the round of the mums and their forms and fashions. But his career as an exhibitor was of the briefest; he left the pleasant old suburb and pitched his tent anew at Leyton, half a mile or so on the London side of Epping Forest, and there indulged in gardening of a different order to that he had practised in Hackney.

When I last saw him was some time early in the sixties, for he had in his garden a considerable number of the seedling zonals I had sent out, and I saw my Thomas Moore, Alice Spenser, Orange Nosegay, Golden Banner, and the rosy set that afterwards Dr. Denny carried beyond my point into purple with the same breadth of petal and size and roundness of pip that I had secured, and that gave a distinguishing character to the whole of my set save the nosegays. Contrast the two careers of the two worthies thus set before you, and to deduce a rule as to possible length of service in this cause is seen to be impossible. And if we had a hundred examples before us, to strike an average might be to lay the foundations of a fallacy; and so while giving up the question, I do not hesitate to repeat it, How many years on an average do men continue constant in this particular pastime?

Having reached by a second route the region of the high moralities, I am suddenly oppressed with a haunting thought of the possibility of the fallibility of the florists. Yes; there is a certain spice of human nature in the blessed fraternity, and the spiciness does not produce the odour of sanctity. It does happen that personal rivalries lead to personal peccadilloes, and that the aims of the contributors to an exhibition are not always of the purest. Oh! that I could be spared the confession, but things have been done that were well forgotten, and should be now; but we must have respect for truth, and they see but half the picture who take no notice of its shadows. I shall turn out of my budget only two small episodes, and I shall not name names, or whisper where. Behold, then, in days when dwarfing had not attained to the precision of a science, as, indeed, it has not now. But it happened in days when—and that is enough. And then it happened that in judging groups of plants, a group appeared wonderful for their dwarf, compact, leafy, and very flowery character, and to this group a first was awarded. Nothing more proper: nothing in the world. As the knowing ones went round they all said judging was easy enough there: such a short growth, so compact, so leafy, so rich, so complete, had never been seen before. Wonder of wonders, the exhibitor was satisfied with the first awarded him, and he went to his rest doubly comforted. He had silenced men who said he professed much and accomplished nothing; and he had made the most distinct mark ever made in the cultivation of chrysanthemums. He actually dreamed that he might in future days become the subject of a monument of gold, and yet he was not happy in his dream, for he felt he had made for himself a monument of brass already, for he had practised a most infernal cheat. And it came out thus: On the second day of the show these perfect dwarf specimens began to show signs of flagging, so that the metaphorical flag that was over them to signify triumph promised to come down to half-mast, as signal of disaster. Yes, the flagging increased, and at last, in spite of aid from the syringe, the leaves dropped, and to practical eyes they told a tale. An inquiring hand made a gentle tug at one of the stems of one of the perfect specimens, and the stem came forth out of the mould without roots, and a jolly rumpus followed. And this is just how the thing was done. The cultivator had grown his plants honestly, but when the time for the exhibition arrived they were leggy, and their lower leaves were gone. So he dexterously cut them down, then shortened the stems and inserted them to form specimens, taking care, of course, to prevent anyone seeing if each was as the schedule requires, "on one stem," for it is no uncommon circumstance that well-grown plants do most effectually conceal their one-stemmedness. If you ask what follows, I can tell you. The prize that had been awarded was withdrawn, and the exhibitor was anxious to play the fool as well as the rogue, by insisting on having it. But the committee were firm, and were, in fact, prepared for law and all other forms of dreadfulness. But the impostor had the good sense to ask advice from a certain well-known horticulturist, and he said, "You are scoundrel enough already, do not aggravate your guilt by pressing your claim; because while you may escape now with disgrace for your only penalty, the result of pushing your claim may be your complete ruin, and you are not so bad that I would wish for that. There is a place for repentance open to you now; take advantage of it, and say no more about your imaginary rights and wrongs."

The other case was of precisely the same nature, although differing in the details. In a cut flower class in a provincial show, a stand of twenty-four stood unquestionably first for size and finish. They were so wonderful in make and shape that when the judges had finished and gone to luncheon, a certain few inquiring exhibitors began to scrutinize, criticize, and open their eyes to the superior size of the gorgeous incompatibles. Yes, they were truly gorgeous, and no wonder that judges jumped at them, and during luncheon talked about them. Alas, poor men! there is fallibility, and human nature, and all that sort of thing on the judicial bench of the court of Queen Flora, and Her Majesty's Judges have to be judged by the most commonplace of standards. The judges in this case were really to blame for allowing the gigantic flowers to pass so easily. One of the inquiring ones pulled one out and analyzed it. The flower was made up by the ingenious removal of a portion of a centre, and the insertion there of another flower. Children do this sort of thing, not for cheating, but for fun; everybody has done it, and consequently everybody knows how it may be done. But what consummate rascality have we concentrated in a stand of twenty-four such blooms put up for a first, and securing it on the basis of the cheat. Many a time have I thanked my God audibly that in judging I have never fallen into any such trap, for no man is safe, and only a poor conceited thing would declare himself superior to such a trick in a moment when work presses hard, and there may happen to be in the sublime company of the judges that curse to all good work, a man with a clack, or one who will split a hair where no one else can see a hair worth splitting. The small-talk men, who dawdle over splitting unnecessary hairs, should be shunted into a gamekeeper's shop or a cook's shambles to split hares of another kind, for something akin to butchery is the proper mission for a man who gabbles when judging. As for the cheating exhibitor, we need not say more about him. Why condemn a man who deliberately labours to construct a gallows and a rope for his own exaltation? Why?

Having dropped into the doldrums I shall continue therein to the end. And first, I find it impossible to present a picture of the National Show, because it will not make a picture. It is scattered; it has no oneness of expression; it is not in such an excellent order of arrangement as the bones of the disjointed skeleton in the Fantoccini, because there we see the relationship, but here we do not perceive it because there is none. Nor has the National advanced towards oneness of expression by multiplying shows or associating itself with a general series. It has accomplished great things, and is itself a great fact. But its experiences are instructive, and the lessons they teach will not be lost, and it will be the duty of its managers to build well upon the sound foundations laid by the first honorary secretary, who overcame a thousand obstacles and secured triumphs for our flower that for ever place his name amongst those memories we will not willingly let die, but will keep green by carrying his work forward in the direction he himself intended. All great things are growths; there is nothing of value created at one effort; we build on the sepulchres of the fathers; the latest achievement of art or science is but an expansion of an idea that has already made many efforts to attain to power and completeness. S. H.

NATIONAL CHRYSANTHEMUM SOCIETY'S CATALOGUE.

THE "Centenary" edition of the National Chrysanthemum Society's official catalogue has been anticipated with so much interest that there can be no doubt a large section of the readers of the GARDENERS' MAGAZINE will welcome the announcement that it has now passed into the hands of the publishers. In some quarters it has been thought that the publication has been unnecessarily delayed, and a few growers have shown signs of impatience at its non-appearance. No doubt it would have been a decided advantage, both to the society and to cultivators had the catalogue been published earlier in the season, but those who have been inclined to grumble could not have had an adequate idea of the immense amount of labour involved in the production of a work of this description. It must also be borne in mind that the work of revision has been purely voluntary, and that the revisers are busy men, having much on their hands apart altogether from their ordinary business engagements.

The official catalogue represents in some degree the growth of the society, for it has now expanded to 107 pages, as compared with 19 pages in the first edition, 36 in the second, and 73 in the third, which, by the way, not only rendered immense service to cultivators, but has contributed in no small degree to place the society in the high position it now occupies. This expansion is in some degree due to the introduction of several new features, chief among them being the bibliography of the chrysanthemum which, as we are told in the preface, is remarkable for its completeness. The Japanese varieties have been further subdivided, and a new section designated the Japanese Incurved has been formed. In this division are included such varieties, as Comte de Germiny, Madame C. Audiguier, and Stanstead White. The select list of Japanese Incurved is not a long one, but it is interesting to cultivators generally, and of much importance to those who purpose competing in the class for incurved Japs at the centenary festival of the society. It will be observed that Ada Spaulding, which the American cultivators regard as an incurved variety, has a place in the new section, to which there can be no doubt it properly belongs. The select list of Japanese Reflexed has been materially extended, and it is interesting to note that for the first time the merits of Madame Desgrange and the best of its sports have been recognised in the official catalogue. The select lists of Japanese, Japanese anemones, and large anemones have had several important additions made to them, but the select list of incurved has been increased by three or four varieties only, Beauty of Hull (a sport from Mr. Bunn) and John Doughty (a sport from Queen of England) being the most important. Emily Dale is no longer recognized as a distinct variety, but is entered as synonymous with Golden Queen of England. In taking this step the revision committee have done well, for although there may be a difference in the two flowers the difference is so trifling that not one grower in twenty could distinguish them apart. Moreover, the stocks have become so mixed that in one collection Emily Dale is grown under the designation of Golden Queen, and in another the last-named in its true form is met with bearing the name of Emily Dale. John Lambert is also entered as a synonym of Golden Queen, but it is pointed out that as a sport from Lord Alcester it is the best stock of that variety.

In addition to the new class for Japanese Incurved, a select list of single varieties is included, and the varieties having a place in it form an important group. On the other hand the elective lists have disappeared from the catalogue, and properly so, for a list of thirty-six incurved, in which Empress Eugenie was at the top and Princess of Wales nearly at the bottom, could be of little service to the cultivator. The selections of early and late varieties have also been omitted, but that is of no consequence, as the period at which each of the selected varieties is at its best is clearly indicated. The alphabetical list has been materially augmented, and it may be interesting to mention that in the A B C and the "unvouched" list about 2,750 varieties are enumerated, as compared with 475 varieties included in the first edition, 1,300 in the second, and 2,278 in the third. This increase is, it is stated in the preface, chiefly due to the addition of some three hundred varieties of American origin, which the revisers have been able to make through the services rendered by Mr. J. N. Gerard, of Elizabeth, New Jersey, one of the society's foreign members. We are also told in the preface that "The task of compiling the present edition has entirely devolved upon Mr. George Gordon and Mr. Harman Payne, both of whom have done their utmost to ensure the appearance of it in time for this season's shows." What their respective shares of the revision may have been I am not in a position to say. But I am able to state that the work has been done so well as to entitle the revisers to the heartiest thanks of the general body of cultivators, and also of the society to which they have rendered such signal service.

PRACTICAL CULTIVATOR.

MR. A. H. HAWORTH'S CLASSIFICATION OF CHRYSANTHEMUMS.

[Taken from Loudon's Gardeners' Magazine, vol. ix., 1833. It is reproduced in the rame volume of Paxton from which we have extracted Mr. Rudge's paper. Mr. Haworth's classifications of chrysanthemums and narcissi were greatly valued in its day.]

Ranunculus-flowered.

1. *Yellow Indian*, Hort. Trans. vol. iv. p. 330, tab. 12, and vol. vi. p. 346. Of short stature (in its group), with very late and double, but small flowers, and forms, with the next, a distinct species.

2. *White Indian*, Hort. Trans. vol. vi. p. 347. Shorter than the preceding, with very late and similar, but white, flowers.

3. *Waratah Yellow*, Hort. Trans. vol. vi. p. 344. Flowers very late, with the preceding, and of similar size, but has much more entire leaves and larger flowers, which make it a distinct species.

4. *Spanish Brown*, Hort. Trans. vol. iv. p. 486, and vol. v. p. 420. Of short firm stature, and rather early and beautiful flowers, the size of the preceding, and with smallish leaves a little more pinnatifid, and probably a distinct species.

5. *Blush Ranunculus-flowered*, Hort. Trans. vol. vi. p. 328. Of short firm stature, and fine-formed early flower, of a blush colour, and peculiar neatness of form. I think I have two variations of it.

6. *Small Deep Yellow*, Park's Small Yellow, Hort. Trans. vol. vi. p. 327. Taller and weaker than the last, early and small-flowered, with small and blunt and pinnatedly lobate leaves. Perhaps it may be a distinct species, from its small leaves and flowers.

7. *Small Pale Yellow*, Small Windsor Yellow, Hort. Trans. vol v. p. 415, and vol. vi. p. 335. Also called Aiton's Yellow. Of short stiff growth, and early flowering, and but little merit.

8. *Small Flat Yellow*, Small Yellow, Hort. Trans. vol. v. tab. 17, and vol. v. p. 422. Of shortish growth, and with pure yellow and expanded early flowers, the shape and size of the three subsequent varieties, of which it is presumed to be the origin, as yellow is the most predominant colour in these plants. Their forms are very neat and regular.

9. *The Buff, or Copper*, Hort. Trans. vol. v. p. 420. Also called the Orange or Buff. Resembles the preceding in everything but colour.

10. *The Rose, or Pink*, Hort. Trans. vol. iv. p. 344. Also called the Lilac. Resembles the last in all things but colour, and is now the most common kind in cultivation, although introduced after the old purple, hereunder enumerated.

11. *The Pale Pink*, Hort. Trans. vol. vi. p. 336, raised in Mr. Colville's nursery, being a sportive branch from the last, and differing in nothing but colour. This and the three preceding doubtless sport mutually into each other, and are perpetuated by cuttings of their respective sports in the first instance, and offsets as well as cuttings afterwards; but are all liable to sport again, from pale pink through deeper pink, and copper or light orange to bright yellow; but their shoots and leaves are immutable.

12. *Expanded Light Purple*, Hort. Trans. vol. v. p. 153, and vol. v. p. 421; and Bot. Mag. tab. 2,256. Of middling size, and with flowers in the middle season (of its group) but nearly twice as large as the last, though resembling it in form, and far more handsome.

13. *Quilled Light Purple*, Hort. Trans. vol. v. p. 155; and vol v. p. 421. A sport only from the last, but now made permanent.

Incurved Ranunculus-flowered.

14. *Incurved Lilac*, Sweet, Brit. Fl. Gard. tab. 7; Curled Lilac, Hort. Trans. vol. v. p. 155, and p. 421. Also called the Quilled Lilac. Grows tall and flowers early, and is an elegant plant, allied to the preceding, and has produced the following one from a sportive branch.

15. *Curled Blush*, Hort. Trans. vol. vi. p. 326. Has been called the Double Blush, and Double White, the flowers, which are rather early, large, and showy, dying off nearly of that colour. It is of middling stature in its group, and, although a sport only of the preceding, is now an established and more beautiful variety than it.

16. *The Quilled Pink*, Hort. Trans. vol. iv. p. 350, and vol. v. page 351, 420, 421, and Bot. Reg. vol. viii. tab. 616. Of tall stature, and one of the very latest in blooming, but very handsome, and repaying by its beauty every care bestowed upon it by the gardener. It has been called the most beautiful of all, but with me it yields to the gold bordered red.

17. *Large Quilled Orange*, Hort. Trans. vol. v. p. 152, tab. 3 (upper figure), and vol. v. p. 421. A tall and large latish-flowering variety of considerable beauty, and at present uncommon.

18. *Gold-bordered Red*, the Two-coloured Incurved of Hort. Trans. vol. vi. p. 332, 333. Of tall stature, very late, with a most perfect and beautiful flower of all its genus, although only of the middle size. The red petals are striped with gold beneath, and golden-tipped there, which tips, incurving strongly and gracefully, show the gold in a front view of the flower, which is golden likewise at its base within. I consider it the most complete of all.

19. *The Superb White*, Hort. Trans. vol. iv. p. 338, and vol. v. p. 420. A late, very tall, and splendid plant, with large incurving, very double, pure white flowers.

China-aster-flowered, Often Showing a Disk, and Then Much Resembling China-asters.

20. *The Sulphur Yellow*, Hort. Trans. vol. iv. p. 341, and vol. v. p. 420. A beautiful variety of tall stature, and free and early blooming, with middle-sized aster-like flnwer.

21. *The Two-coloured Red*, Hort. Trans. vol. vi. tab. iv. and vol. vi. p. 342, 343. A very fine and showy variety, of the middle-size in stem and flowers, but rather late, which sometimes shows a disk, and is then very aster-like. The bipinnatifid flowers are far more laciniated than any other kind, and I think they constitute it a distinct species.

22. *The Early Crimson*, Hort. Trans. vol. v. tab. 3 (inferior figure) p. 151 and p. 421. Of light small stature, delicate, and apt to lose its leaves before its bloom is finished. The flowers are middle-sized, early, and very beautiful; they show a disk, and, when well managed, have ripened perfect seeds in England.

23. *The Clustered Pink*, Hort. Trans. vol. vi. p. 336. Also known by the name of the Changeable Blush. One of the tallest of its tribe; flowers in the middle season very abundantly; and although the flowers are but middle-sized, and little better than half-double, showing a considerable disk, and greatly resemble China asters, they make a very fine and durable appearance, standing the weather well, and becoming much darker by age, though less delicate. This is a very likely variety to produce seed in this country.

24. *The Early Blush*, Hort. Trans. vol. vi. p. 326. This tall and almost unequalled variety is also called the Double Blush, and Double White. It flowers very early, beautifully, and freely, and its flowers are large, and scarcely show any disk, and their colour without is light blush, but within they are exactly of that peculiar tint well known by the name of French white, and, like many other varieties, they are very durable. They have ripened seeds in England.

25. *The Paper White*, Hort. Trans. vol. v. p. 417, 422. This exquisitely white-flowering and noble variety is of tall stature, and early-blooming, and makes a splendid appearance in a general collection. Its flowers are of the middle size.

Marigold-flowered, with Well-formed Double Flowers, Resembling Double Cape Marigolds in Shape and Size.

26. *Golden Bronze-back*, Golden Yellow, Hort. Trans. vol. vi. p. 342, and Bot. Rep. tab. 4 (superior figure). Also called the Large Yellow and the King's Yellow. A very tall, handsome, and free-flowering variety. The flowers are early and of a high rich yellow colour, but bronzed or orange in the buds and on their outsides. This is one of the best to grow as a standard, and if parted at the roots and annually transplanted, succeeds very well as a herbaceous plant, especially if in a warm or sheltered situation, duly supported by a stick.

27. *The Superb Clustered Yellow*, Hort. Trans. vol. v. p. 156, and vol. v. p. 421, and Sweet's Brit. Fl. Gard. tab. 14. One of the finest and tallest of the group, being higher than the preceding, and with more clustered and more neatly formed pure yellow flowers, but they are later in opening.

28. *The Golden Lotus-flowered*, Hort. Trans. vi. vt. p. 340. A very splendid and large long-leaved variety, and nearly or quite the tallest of this genus of plants, having late, pure, and deep yellow flowers, above the middle size, and larger than those of any other yellow kind of the marigold form, and which partially endure until the heavier frosts of winter destroy them.

29. *The Changeable Pale Buff*, Hort. Trans. vol. vi. p. 380, and tab. 3; also called the Pale Cluster. This plant, when flowering as perfectly as it is represented on the above cited table, is one of the most showy and splendid of the group; but this has not been the case during the autumn of 1832; and all the flowers, and in various gardens, which met the writer's eye, being as it were degenerated into almost buff-coloured and spuriously quilled flowers, of more upright appearance than the large, expanded, flat petaled, and variegated purple-whitish and yellow-buffy ones, so charmingly depicted in the figure cited. They are of the middle season.

30. *Starry Changeable Purple*, the Starry Purple, Hort. Trans. vol. vi. p. 339. This beautiful plant is one of the most variable-flowered in the genus; its very late flowers first opening of a purple colour, with the exterior petals at first few in number, starry, and paler, especially at their spoon-shaped tips, soon, however, becoming still more pale, until the whole well-expanded and very double blossom becomes regularly more blush-coloured and white than purple, and is a very fine, well-formed, variegated flower. The stature of the plant is of a middle size, but its remarkable leaves are much more laciniated than usual, and often broader in their outline than long, which is not the case with any other in the group, and of very considerable size: wherefore I conceive it may be a distinct species from all the others.

31. *The Late Purple*, the Late Pale Purple, Hort. Trans. vol. v. p. 431, and vol. v. p. 422, and vol. vi. p. 353. Also called Large Pale Purple. This is a very late flowering, and rather tall variety, whose middling-sized and well-expanded blossoms are very neat, and resemble in shape those of the preceding, but are much smaller.

32. *The Brown Purple*, Hort. Trans. vol. vi. p. 341, 342. A tall and slender twigged very late-flowering variety, whose middle-sized flowers resemble the last in shape, but are not quite so flat and neat in expansion, and their colour in the group is very remarkable, being of a very dull brownish or reddish purple. The leaves are so small, and so bluntly lobed, and on such slender shoots, terminating in such long and graceful peduncles, that the plant is probable a distinct species from Chrysanthemum Sinense, and differs not so much in leaf as in flower from our No. 6. the Small deep Yellow, above.

Tasseled-flowered, being tall or very tall Plants in their Genus, with very large Double, and more or less conspicuously drooping Flowers, whose Petals are usually elongated and quilled, and often greatly resemble the form of a Tassel.

33. *Tasseled Flame Yellow*, the Quilled Flame Yellow, Hort. Trans. vol. iv. tab. 14, p. 349, and vol. v. p. 421. The magnificent flowers of this tall plant appear rather late, and often measure above five inches in expansion; and make, perhaps, if not a more neat, at least a more showy appearance than any other of the group, being double, and composed of innumerable chiefly quilled incurving petals, hanging more or less downwards, and when at their best resembling a flame-coloured tassel.

34. *The Tasseled Salmon*, the Quilled Salmon, Hort. Trans. vol. v. tab. 17. (inferior figure), p. 414, and 422. This is a late-flowering slender and graceful plant, with large tassel-like and half-expanded, drooping, quilled, salmon-coloured flowers, and is very common.

35. *The Tasseled Yellow*, Hort. Trans. vol. vi. p. 329. A very tall and strong-growing large-leaved variety, with numerous tassel-formed flowers of the largest and most showy kind, often measuring more than five inches over, and appearing rather early. It is one of the most desirable and free-growing of the whole collection.

36. *The Quilled Yellow*, Hort. Trans. vol. iv. p. 341, and vol. v. p. 420. This is a tall variety, with rather large flowers, of the middle season, or later, producing its blossoms in clusters at the top of the strong upright shoots. It is also known by the name of the Quilled Straw.

37. *The Late Quilled Yellow*, Hort. Trans. vol. vi. p. 343. This has been called a very late and not very desirable variety in collections. It appears to me to be of the middle size, but it has not yet opened its blossom buds with me, not having long possessed it.

38. *The Large Lilac*, Hort. Trans. vol. iv. p. 343, and vol. v. p. 420. Also called the Late Lilac, the New Lilac, and the Semi-double Purple. A very tall upright plant, bearing but few double large and clustered flowers at the

summits of the branches, and those so late in appearance, that in cold seasons they cannot expand well, and are consequently in but little repute. I have only seen one plant in blossom, and that in my own garden.

39. *The Tasseled Lilac*, Hort. Trans. vol. vi. p. 332. A middle-sized, or rather tall plant, of very great beauty, and one of the most desirable of the whole group, having very showy tassel-formed flowers, five inches or more in expanse, very numerous, early, and elegantly drooping from their weight, but they often show a disk. It is a likely variety to produce seeds of the most promising kind, but I have not hitherto heard of its ripening any in England.

40. *The Tasseled Purple*, the Purple, Hort. Trans. vol. iv. p. 334. Has also been called the Old Purple, the Old Red, and the Quilled Purple, and is figured in the Bot. Mag. tab. 327. This is a beautiful and rather early-flowering plant, of almost the middle size. The flowers are very numerous, gracefully drooping, and of middling size, and are at first of a reddish purple colour, but become paler by age, and in mild seasons will continue in succession from the end of October to the second week in January. It acquires the name of old, from being the first China-chrysanthemum that came to England in modern times, and bloomed at Mr. Colvill's nursery, in Nov. 1795, but was said to be at Kew in 1790. The great horticulturist Miller certainly had one, or more likely two, of these Chinese or Indian chrysanthemums in cultivation at Chelsea long before; but it is not yet quite satisfactorily explained what sorts they were. See Hort. Trans. vol. iv. tab. 12, p. 326, and following.

41. *The Changeable Tasseled White*, the Changeable White, Hort. Trans. vol. iv. p. 336, and vol. v. p. 419, and Bot. Mag. tab. 2042. It has also been called the Old White, being the first white-flowered variety known in our gardens. It is recorded in the Hort. Trans. to have been raised from a sporting branch of the preceding, and, indeed, resembles it in every thing but colour. It is a very graceful and elegant plant, and in warm situations its flowers are more or less tinged or dotted with purple or blush colour.

42. *The Narrow Quilled White*, the Quilled White, Hort. Trans. vol. iv. p. 337, and vol. v. p. 419. This rather slender variety is almost of the middle size, and has the slenderest and most completely quilled florets, and the earliest flowers, of the whole group, which hang in gracefully drooping tassels, and form a strong contrast to the next in almost every respect.

43. *The Great Tasseled White*, the Tasseled White, Hort. Trans. vol. iv. p. 339, and vol. v. p. 420. Has also been called the Expanded White. This large, strong and broad, deep-green, shining-leaved variety, is one of the latest of all in blooming; but its lovely flowers are larger and more showy than those of any white-flowered variety, and endured to the end of January, 1833, the date of the present paper. No flower in this chilly climate stands the cold so well, or so long continues to beguile the fancy of a florist by its protracted opening, by its hardihood in expansion, and by the soft hue of its snowy blossoms, carrying on, as it were, the flowery beauty of lingering autumn into the very bosom of winter, whose ice at length closes the temple of Flora for a time, until the herald flowers of spring appear amidst the melting snow, as if impatient of delay.

Half-double tassel-flowered, with only half-double flowers, and narrow elongated quilled petals, often drooping, and somewhat resembling a tassel.

44. *Half-double Quilled White*, Semi-double Quilled White, Hort. Trans., vol. v. p. 158. A very tall, robust variety. The flowers are among the latest varieties, and more inclining to be single than usual, yet of too late occurrence to ripen seed with us. They are very large, and the narrow-quilled petals are very singularly waved, as if pursuing each other from right to left, making a pleasing and almost animated appearance.

45. *Half-double Quilled Pink*, Semi-double Quilled Pink, Hort. Trans. vol. v. tab. 17* (inferior figure), p. 157, and vol. v. p. 422, and vol. vi. p. 351. This variety grows rather tall and flowers latish, but its flowers, although but half-double, and only of the middle size, possess a degree of graceful elegance and lovely hues peculiarly their own. It is at present a rare variety.

46. *Half-double Bronze Buff*, Pale Buff, Hort Trans. vol. vi. p. 334. Also called the Semi-double Pale Buff, and Reeve's Pale Buff, and Quilled Buff, and the Buff. It is a very tall and free-growing variety, and its half-double buff large flowers, which in their early stages are much bronzed, although of coarse hues, make a showy appearance, and stand the weather better than all others, opening rather early, and continuing late, until all the bronze is gone, having faded to a dull buff.

47. *Half-double Quilled Orange*, Semi-double Quilled Orange, Hort. Trans. vol. v. p. 412 and 422, and vol. v. tab. 17** (left-hand figure), and vol. vi. p. 352. A tallish plant, with but few large and almost single, and also some nearly half-double flowers of good size, but making a poor show.

48. *Half-double Pale Quilled Orange*, Semi-double Quilled Pale Orange, Hort. Trans. vol. vi. p. 337. Also called Semi-double Deep Yellow. Of the middle stature, with few and late flowers, of good size, but comparatively poor appearance, on loosely drooping footstalks.

Obs. The author has rejected the hybrid word semi-double throughout the paper.

SPECIAL PRIZES FOR BORDER CARNATIONS.

IT will be remembered that Martin R. Smith, Esq., offered, at the Carnation Conference held at Chiswick in July last, special prizes for border carnations, grown wholly in the open air. Mr. Smith has now issued regulations for awarding these prizes, and the sum of £21 is offered in three classes, £7 being given in four prizes in each class, as follows: Class 1—For the best border variety of self-coloured carnations, not less than twelve blooms, to be shown in bunch or bouquet, with its own foliage and buds. Class 2—For the best collection of twelve varieties of self coloured border carnations, not less than six blooms of each variety. Class 3—For the best collection of eighteen varieties of flake, bizarre, or fancy carnations or picotees; not less than six blooms of each variety. In Classes 2 and 3 the flowers are also to be shown in bunches or bouquets, with their own foliage and buds. Each exhibitor will be called upon to sign the following declaration: "I certify that all blooms shown by me for the prizes offered by Mr. Martin Smith have been cut from plants which have been wintered, without protection, in the open garden; and that they have been grown without bands or ties round the calyx; that they are staged without dressing, and exactly as they are cut from the plants." The stems, in all cases, are not to be less than nine inches in length. The blooms to be staged in bottles, tins, or glasses, and not in the usual way in boxes. No bands or ties are permitted round the calyx, nor are paper collars or wire supports to be employed. A burst calyx will disqualify. Non-compliance with the above regulations will disqualify the exhibitor.

THE CHRYSANTHEMUM IN 1828.

By E. RUDGE, Esq.

Read before the Vale of Evesham Horticultural Society, June 1828.

[Taken from Paxton's *Magazine of Botany*, Vol. I., 1834.]

LINNÆUS, in 1753, first published this plant as a species, with two of its varieties, under the name of *Chrysanthemum Indicum*, in his first edition of the "Species Plantarum;" the same plant under the name of *Matricaria*, having been given by Kœmpfer, in 1712, in his account of the plants of Japan, where it is cultivated by the natives in their gardens; and he describes eight double varieties of the genus, of various colours. It is also mentioned by Breynius, Plukenet, Rhœde, and Petiver. Thumberg mentions in his *Flora Japonica*, published in 1784, that it grows spontaneously near Nagasaki and other places in Japan; and Loureiro, in his *Flora of Cochin-China*, mentions it as one of the plants of that country. Rumphius, in his very elaborate work on the "Plants of Amboyna," published in 1750, is more particular in his information respecting this plant than any preceding author. The Chinese, by whom it is held in high estimation, pay much attention to its culture: they keep it in pots and jars, placing it before the windows of their apartments, and decorate their tables with it at their entertainments; on which occasions he that produces the largest flower is considered as conferring the greatest honour on his guests.

The varieties of this plant were introduced to Britain from France in 1790, having been brought from China to Marseilles in 1789. Before 1808, eight new varieties were introduced from China by Sir Abraham Hume and Mr. Evans. Between the years 1816 and 1823 seventeen new varieties were added to the list; and from subsequent importations and variations from culture, there are now more than fifty varieties in cultivation.

The mode of culture is simple and easy, and may be explained in the following rules:—

1. The soil most suitable for their growth is a light, rich, turfy loam, mixed with good rotten dung, sand, and leafmould, in the proportions of one barrowful of the former to one-fourth of a barrowful of each of the latter.

2. *Propagation.*—This is performed many ways, but there are four or five principal means, namely, by cuttings, suckers, division of the roots, layers, and occasionally, though but seldom, by seeds.

3. *Cuttings.*—Take off the cuttings in April, this is preferable to planting them in the autumn, which is often practised. They should be taken from the upper part of the shoot, and from four to six inches long, according to the sort and strength of the shoots. Cut them off just below a joint, and trim off the leaves from that part which it is intended to insert in the soil.

4. When the cuttings are prepared, plant them in sixty-sized pots, in a soil made somewhat lighter than the one mentioned above, by the addition of a little more sand and leafmould.

5. When potted, place them in a frame, and shut them close down with the lights, giving no air until they have begun to grow; also, whilst in this situation, they must be kept damp, and shaded from the violence of the sun by a mat. If it be not convenient to occupy a frame with them, they will grow very well, although not so rapidly, if placed in a somewhat shady situation out of doors, particularly if the pots be plunged in the ground.

6. In May, those placed in frames, and in June, those placed out of doors, will require their leading shoots stopping, in order to induce them to form handsome heads.

7. About the middle of June they will require shifting into a size larger pots, and the soil will now need to be made a little stronger than the last potting, by adding a little more loam. They must now be placed where they will have the benefit of the sun; and be well watered over head two or three times in a week, if the weather be dry. A south-east or south-west aspect we think preferable to one due south.

8. In August, again, shift them into pots from six inches to one foot wide inside measure, and the same depth, being governed by the size of the plant and habit of the variety intended to be potted. In these pots they will flower, therefore the soil mentioned, Rule 1, must now be used, and the plants well watered, to settle the soil about them.

9. Never in potting pare the roots off with a knife: this is destructive to most plants. If the roots have become matted, loosen them a little with the hand. Also give to each pot a good drainage; for although when they are in full vigour they require a deal of water, yet they always suffer injury if the water be stagnant.

10. *Suckers* are taken from the old plants in April; these may be either planted three in a pot four inches in diameter, or one in each sixty-sized pot. When potted they may be treated precisely as recommended for cuttings, shifting as often as they require it, until they are finally placed in the flowering pots.

11. *Division* of the roots is generally performed in February or the beginning of March. It consists in nothing more than with a sharp knife or other instrument dividing each root into as many parts as it will separate, allowing each part two or three shoots. These may be either planted in pots, or beds, or warm flower borders, where they may either remain to flower, or be removed, at the option of the cultivator.

12. *Layering* is performed about the beginning of July; merely peg the shoots at the third or fourth joint from the top into pots of soil; and, if watered when they require it, they will all be well-rooted in three weeks or a month. When separated from the parent plants, place them in a shady situation, repot them when necessary, and treat them in the same way as cuttings.

If it is inconvenient to plant either the cuttings, suckers, divided roots, or layers, in pots; they will do very well if planted in a bed made of light soil for the purpose.

It is always advisable where handsome plants are an object, to allow them to stand at a sufficient distance from each other, when growing, so as not to injure each others' figure.

When it is desirable to have very large flowers, their size may be increased by thinning out the small buds soon after they appear.

13. *Watering.* They require at all times a good supply of water, and during summer they are greatly benefited by being regularly watered twice a week at least over the leaves. In August begin to water the pots with soap-suds, mixed with manure water, about once or twice a week, and continue it until they come into flower, which will be in November.

14. When they have done flowering, set them in a situation where they will not be injured by frost, and occasional watering will be all the care they will require until the season again commences for propagation. It sometimes happens when the buds of plants in pots are all formed, and promise to flower finely, that shortly after the time of removing them into the house for flower-

ing, the greater part die off without expanding. This, we judge, is occasioned in a general way by the roots being allowed to grow through the bottoms of the pots into the soil on which they stood; and on being taken from that situation, the fibrous roots are broken, and the consequence is, a more sudden check to the plant than it was able to bear, the effects of which may be readily discovered by the flagging of the leaves, and the buds changing colour. This may be prevented by timely moving the pots and properly shifting into larger pots at the time required.

The sorts in cultivation are as follows:

1. Changeable white.
2. Purple.
3. Quilled white.
4. Superb white.
5. Tasseled white.
6. Quilled yellow.
7. Sulphur yellow.
8. Golden Yellow.
9. Large lilac.
10. Rose or pink.
11. Buff or orange.
12. Spanish brown.
13. Quilled flamed yellow.
14. Quilled pink.
15. Early crimson.
16. Large quilled orange.
17. Expanded light purple.
18. Quilled light purple.
19. Curled lilac.
20. Superb clustered yellow.
21. Semidouble quilled pink.
22. Semidouble quilled white.
23. Semidouble quilled orange.
24. Late pale purple.
25. Quilled salmon colour.
26. Small yellow.
27. Paper white.
28. Late pink.
29. Early blush.
30. Park's small yellow.
31. Blush ranunculus-flowered.
32. Tasseled yellow.
33. Changeable pale buff.
34. Curled blush.
35. Tasseled lilac.
36. Two coloured red.
37. Pale buff.
38. Windsor small yellow.
39. Clustered pink.
40. Semidouble quilled pale orange.
41. Starry purple.
42. Golden lotus flowered.
43. Brown purple.
44. Two coloured incurved.
45. Late quilled yellow.
46. Yellow Waratah.
47. Double Indian yellow.
48. Double Indian white.
49. Pale buff or orange.
50. Expanded salmon coloured.
51. Pale flamed yellow.
52. Old quilled pink.
53. Pale variety of pale buff.

PECULIAR VARIETIES OF CHRYSANTHEMUMS.

WHERE chrysanthemums are cultivated with a view of producing large blooms, whether intended for exhibition or for home decoration, some varieties display characteristics peculiar, perhaps, to those who do not know their vagaries in this respect. The peculiarities are of importance only when the plants are grown on the single stem principle until they break into other growth on their own accord without topping of the shoot to produce other branches.

Mrs. H. Cannell is, perhaps, the most striking variety in existence as regards the peculiar manner of its growth. Wherever I have come across this sort it has always presented the same peculiarities. Directly the cuttings are struck in December the bottom leaves commence to change colour; a few small yellow spots appear in the leaves, which gradually increase in size until the leaves die off entirely, which they quickly do. This defect in leaf retention goes on until the first break in the growth takes place, generally about three feet high. After this phase of growth has taken place, this defect in the foliage comes to an end. All leaves made after that period invariably remain green, and are stout, and of good quality. Why such growth and decay of the leaves should take place is a mystery difficult to solve. The constitution of this particular variety, no doubt, is answerable for such peculiar behaviour. How to obtain better foliage is the question, and an important one, too, it is, for it is desirable that the gaunt character of the plant may be amended, as the flowers are of capital quality, and desirable to grow on account of the massiveness of its florets.

Mrs. Alpheus Hardy.—No list of varieties coming under the above heading would be complete without a mention of this novelty, The peculiarity displayed in this kind is the hair-like appendages on the under side of the florets, which certainly imparts a novel appearance to the flower. From the present appearance of the growth of the plants, the habit is not robust, but rather inclined to be thin and weakly, a circumstance which I regard as being somewhat favourable for the presentation of the true character of the flower. Probably, if the plants were to grow very freely, it would induce the florets to reflex rather than incurve, and as the hirsute accompaniment of the flower is on the under side of the florets, the action of reflexing of the florets would hide the peculiarity of this variety.

Mr. R. H. Mudie.—This is an anemone sport from the reflexed variety, King of Crimsons, a well-known sort of brilliant colour, and one of those which truly represent the reflexed section of chrysanthemums. Whether this break from its natural order must be taken as a commencement of what is to follow in the way of a vagary of sporting I know not, or whether we must regard it as merely a freak of nature is uncertain, but most certainly did the variety, King of Crimsons, which was introduced as long back as 1845 by Mr. J. Salter, produce the anemone variety above-named, which retains the colour of its parent.

Archiviste Blanchard is certainly of a very peculiar formation in the petals, and forms quite a new race or type of the Japanese family to which it belongs. This variety has been introduced by Mr. H. Cannell, flowering this year for the first time in this country. The flower should be classed as an incurved "Jap," the tips of the florets inclining that way; each one is tubular, quite narrow at the base, widening gradually toward the extremity, each one being split and forked exactly in the same way as the points of the disc petals are in a Japanese anemone variety, which gives the flower a peculiar appearance. The colour is best described a bronze-red, each of the toothed parts of the florets being tipped with gold. When once known, this variety will be eagerly sought by lovers of "novelties." EDWIN MOLYNEUX.

WHEN SHOULD FRUIT TREES BE PLANTED?

I WAS walking through a large nursery the other day with the proprietor, when a customer came in to order some fruit trees. As I was not an intentional listener, I do not think I shall be doing harm if I record what passed between the person who had the trees for sale and the intending purchaser. The latter commenced business in this way:—"I want so many trees (mentioning the sorts required), but they must be taken up after sunset and planted the next morning before sunrise, and the work must be completed before the 21st of October." The proprietor entered the order in his book and wished his customer good morning in the most matter of fact manner, with not the least semblance of a smile on his countenance. I became interested, because to me the order to lift the trees after sunset and plant them again before sunrise the next morning appeared rather an outrageous request to make. But my guide assured me that it was not the first order by many that he had received and executed on the same conditions. The explanation appears to be, that in the district in which the case occurred to which I refer, there are many old people who think that it is the proper thing to do to plant fruit trees at the time here mentioned. What reason they have for taking such an extraordinary course I could not ascertain, but that the people who hold such views have confidence in their opinions, was evident from the cool collected manner in which they transacted their business.

It is not for me to say that they have no right to hold such views, or that they are wrong in their belief. I may, however, say that I have planted many fruit trees in my time in reversed order respecting the movements of the sun, as commonly understood, with a fair measure of success. Whether I should have had better results, had I planted the trees between sunset and sunsise, I do not care to inquire; nor have I sufficient faith in it to try.

I have no doubt some readers will feel disrespectful to this note. I cannot find fault with them if they do; at the same time I may be allowed to say that I have recorded only facts as they occurred at a certain place when I was out for my holiday a short time ago.

J. C. CLARKE.

NEW PICTURES IN THE HAYMARKET.

MR. MCLEAN'S GALLERY was opened on Monday last with a choice exhibition of pictures, mostly new, but not exclusively so, for one of the best things shown is a beautiful Diaz. "Fontainebleau" (29), is a reminder of a school the teachings of which go far and deep in the range of modern art. There are in all 67 pictures, and amongst them brilliant examples of painters of renown. Mr. John Brett's "Maiden Island" (4), Mr. H. W. B. Davis's "Fording the Wye" (7), a small version of his academy picture; Peter Graham's "Morning in Argyleshire" (13) brings us to the studies of Mr. Ernest Croft, which should have the careful attention of those who are familiar with the finished works of which these are the preparatory forms, including "Waterloo" of 1882, "Wallenstein" of 1884, "Charles on his way to execution" of 1883, "Napoleon leaving Moscow" of 1887, and others, a fascinating series of ten studies, all possessed of beauties of their own and showing Mr. Croft's painstaking mode of operation. There is a good Vicat Cole, "Mapledurham" (24), a delightful Heffner "Silvery Morn" (26), the perfection of cold colouring; but if a colder scene be wanted Mr. Henry Moore supplies it in "Squally Weather" (41). In "The Mill" of Mr. Wimperis (42), the sense of motion is conveyed in the hurrying clouds and bending reeds. A good bit of English landscape is Mr. Warren's "Harvesting" (35), the woodlands and the rolling clouds are fine features of this scene. Mr. Munkacsy in his "Reverie" (30) gives us a vase of flowers worthy of special attention for its composition and delicate details. If it reminds of Van Huysum it is because we do not often see anything so good as a mere incident in a fair example of modern genre. Mr. Bauernfeind in his "Great Mosque" (28), and Ch. Wilda in the "Fête of the First-born" (12), give us a feast of colour. Fortuny is not here, but we remember his existence.

MESSRS. TOOTH'S GALLERY gallery contains a few old friends that we are glad to see again. Here is Sir J. C. Millais "Pomona" (92) and Mr. Briton Rivières "Fool and his Folly" (50) and the new pictures include works of high character. Here is a gem from Mr. Alma Tadema "The Promise of Spring" (55), a pair of lovers with much marble and vegetation; a gem of its class. Mr. John Linnell in the "Approaching Storm" (29) presents a study of clouds above a rich tract of woodland country, and effects a triumph of no small importance. L. Neubert in "Distant Lands" (49) gives an example of masterly draughtsmanship and delightful colour. Mr. J. H. Hooper provokes comparison with Constable in "The Lock" (51) and does not come through it triumphantly. We have not seen a better Graham than the picture here entitled "Where Sea Gulls Scream" (63), nor can we say that Mr. Leader is below his own standard in his pleasing picture of the "Lugwy" (64) the point chosen being well known to the Snowdonians who are more than tourists. "The Procession of the Rosary" (77) by José Gallegos is sumptuous for colour. The two flower pictures by Ada Bell "Sunflowers" (83) and "Peonies" (99), show a gratifying advance of this gifted artist, these being true cabinet pictures full of good work.

Auction Sales for the Ensuing Week.

MONDAY, WEDNESDAY, THURSDAY, AND SATURDAY, NOV. 3, 5, 6, AND 8.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

MONDAY, NOV. 3.—Messrs. Protheroe and Morris, at the American Nurseries, Bagshot; Nursery Stock. (Four days.)

MONDAY, WEDNESDAY, AND SATURDAY, NOV. 3, 5, AND 8.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.

TUESDAY, NOV. 4.—Messrs. Protheroe and Morris, at the Hale Farm Nurseries, Tottenham; Nursery Stock and Herbaceous Plants.

TUESDAY, NOV. 4.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies.

THURSDAY, NOV. 6.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Orchids, Lilium auratum, Tuberoses, Amaryllis, &c.

FRIDAY, NOV. 7.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, OCTOBER 28.

FLORAL COMMITTEE.

PRESENT: William Marshall, Esq., in the chair; Rev. H. H. Dombrain, and Messrs. H. Herbst, R. Dean, B. Wynne, G. Nicholson, Lewis Castle, T. Baines, C. Jefferies, H. Turner, H. Cannell, C. Noble, and G. Paul.

The most important of the contributions to the meeting were the chrysanthemums, cyclamens, and hardy shrubs, and these formed, in conjunction with the orchids, fruits, and vegetables, an interesting exhibition. Mr. G. Wythes, Sion House, Brentford, and Mr. Crasp, gardener to Lord Wimborne, Canford Manor, Dorset, exhibited tastefully arranged collections of cut blooms, and were awarded the bronze Banksian and silver Banksian medals respectively. Messrs. H. Cannell and Sons, Swanley, exhibited a large collection of finely developed blooms of incurved and Japanese varieties, consisting chiefly of novelties, and were awarded the bronze Banksian medal. Mr. R. Owen, Maidenhead, contributed several stands of blooms consisting chiefly of seedlings of his own raising. They were all more or less promising, and one received the distinction of an award of merit. Messrs. J. Laing and Sons, Forest Hill, exhibited a group of novelties from which several were selected for awards of merit.

Messrs. W. Paul and Son, Waltham Cross, Herts, exhibited a large and interesting collection of cut specimens of hardy shrubs, and had the award of the bronze Banksian medal made in their favour. The silver Banksian medal was awarded to Mr. W. Taylor, Twickenham Road, Isleworth, for a collection of well-grown and admirably-flowered cyclamens. Mr. R. Dean, Ealing, contributed a large gathering of pentstemons, and received an award of merit for the excellence of the show.

From the Royal Gardens, Kew, came a small but interesting collection of cut specimens of flowering and other plants, amongst others being Solanum Seaforthiensis, Ipomæa Briggsi, and Solandra grandiflora, a very distinct species, bearing large campanulate flowers, waxy in texture, and of pale yellow colour, marked with purple. Messrs. Cutbush and Son, Highgate, exhibited an interesting collection of pernettyas, and were awarded the bronze Banksian medal.

ORCHID COMMITTEE.

Present: Dr. Masters, F.R.S., in the chair; and Messrs. J. O. Brien, C. T. Pilcher, J. Dominy, H. M. Pollett, De B. Crawshay, A. H. Smee, S. Courtauld, and J. Douglas.

The most important contribution was the group of varieties of Cattleya Warocqueana, from M. Linden, Parc Leopold, Brussels, who was awarded the silver Flora medal. R. Young, Esq., Fringella, Sefton Park, Liverpool, submitted three finely-developed spikes of the magnificent Vanda Sanderiana, and was awarded a cultural commendation. Mr. Young also exhibited flowers of cattleyas, as also did Mr. Atkinson, Aigburth, Liverpool; and Mr. Coombes, Himley Hall, Dudley. Messrs. Seeger and Tropp, East Dulwich, sent cut flowers of Lælia Perrini.

FRUIT COMMITTEE.

Present: Sir C. W. Strickland, Bart., Dr. Hogg, and Messrs. T. F. Rivers, P. Crawley, J. Cheal, J. MacIndoe, T. J. Saltmarsh, G. W. Cummins, G. Wythes, J. Hudson, and W. Warren.

The duties of the committee on this occasion were very light. Mr. Barron sent from Chiswick a large collection of curled and broad-leaved endive, and a collection of potatos. Mr. R. Dean sent excellent apples and pears. Mr. Laxton, Bedford, submitted examples of a white-skinned variety of the Jerusalem artichoke, and a distinct cabbage. Mr. Smythe, Basing Park, presented a seedling black grape, which as shown was not equal to varieties at present in cultivation. Messrs. J. Carter and Co., High Holborn, exhibited a remarkably fine head of Carter's Extra Dwarf Autumn Giant cauliflower, and were awarded a cultural commendation. Mr. Hunt, of Ashtead Park, staged a box of fruit of a seedling culinary apple, which had a promising appearance.

NOVELTIES.

A first-class certificate was granted to Messrs. W. Paul and Son for

Berberis Thunbergi.—An extremely elegant species, free in growth, and having comparatively small foliage, changing to a bright bronzy-red hue at this season of the year.

Awards of merit were made as under:—

To Messrs. J. Laing and Sons, for the under-mentioned chrysanthemums.

Viviand Morel.—A superb Japanese variety, theflowers very large andfull, with long, somewhat twisted, drooping florets, the colour delicate rose pink.

Mdlle. Marie Hoste.—An excellent Japanese reflexed; the blooms large and solid, with broad florets, white-tinted cream colour in the centre.

Miss Haggas and Miss Violet Tomlin.—Two valuable incurved varieties, now so generally known as not to require description.

To Mr. R. Owen, for the following chrysanthemums.

Duchess of Westminster.—An extremely beautiful Japanese anemone, raised by the exhibitor. The flowers are rather large and free from the slightest trace of coarseness, the ray florets rather long and drooping, white suffused with rose, the disc florets purple, tipped with gold.

Annie Hartshorne.—A handsome Japanese variety; the flowers very large and solid, the florets incurving in the earlier stages, and reflexing as the blooms acquire age.

To Messrs. H. Cannell and Sons, for the undermentioned chrysanthemums.

Eugenie Giat.—An excellent Japanese reflexed, the flowers of medium size, and good form; the colour rich magenta crimson.

W. Tricker.—An excellent Japanese variety, the blooms large and of fine formation, the florets broad, and the colour fresh rose pink.

To M. Linden, for

Cattleya Lindeni.—A distinct species, the flowers of medium size, and attractive in colour, the sepals narrow, rich cream colour suffused with rose, the petals bright rose purple, the labellum rich amethyst with deep golden throat.

NATIONAL CHRYSANTHEMUM SOCIETY, OCTOBER 29.

A meeting of the Floral Committee of the National Chrysanthemum Society was held at the Royal Aquarium, Westminster, on Wednesday, when several important novelties were submitted. E. Sanderson, Esq., presided, and the members present were: Messrs. J. Mardlin, J. Wright, G. Stevens, H. J. Jones, T. Bevan, H. Shoesmith, George Gordon, J. P. Kendal, R. Owen, Lewis Castle, C. Gibson, H. Cannell, and Mr. R. Dean. The following varieties had first class certificates conferred upon them,

William Laing.—A beautiful Japanese reflexed, raised by the exhibitor. The blooms large and of great depth; the colour bright salmon rose. Exhibited by Mr. R. Owen, Maidenhead.

Mrs. Irving Clarke.—A fine Japanese variety. The blooms large with rather narrow curled florets; the colour delicate pink. Exhibited by Mr. R. Owen.

Alberic Lunden.—A remarkably distinct and extremely beautiful Japanese reflexed variety of continental origin; the blooms rather large, and of a brilliant crimson magenta hue. Exhibited by Mr. R. Owen.

Madame Gayrat.—An exquisitely beautiful incurved variety of continental origin; the blooms of medium size and superb form; the colour blush; the florets tipped with bright rose-pink. In the way of Aimée Ferrier, but larger, and of finer bloom. Exhibited by Mr. R. Owen.

Duchess of Westminster.—A beautiful Japanese anemone, described in report of R.H.S. Exhibited by Mr. R. Owen.

Gloire de Rocher.—A distinct and handsome Japanese variety; the blooms large and full, with broad flat florets; the colour soft salmon-red. Exhibited by Mr. C. Gibson, Morden Park, Mitcham.

Viviand Morel and Mdlle. Marie Hoste.—Two beautiful Japanese varieties, described in report of R.H.S. Exhibited by Messrs. J. Laing and Sons, Forest Hill.

William Neville.—An excellent reflexed variety; the blooms of average size and good form, the colour deep orange. Exhibited by Messrs. H. Cannell and Sons, Swanley.

Miss Mabel Wilde.—A beautiful single variety; the blooms rather large and of good form, the colour rich purplish crimson, with light centre.

Frederick Boyce.—An excellent pompon anemone; the blooms of average size and high quality, the colour of both disc and ray florets light rose. This missed a certificate by one or two votes, and was commended. Exhibited by Mr. W. E. Boyce, Archway Road, Highgate.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY, OCTOBER 23.

THE anniversary dinner of this useful society was held at the Cannon Street Hotel on the above date, and proved one of the most successful of the festive gatherings that has been held under the auspices of the society. Mr. E. R. Cutler, secretary of the Gardeners' Royal Benevolent Institution, presided, and there was a large muster of members and friends, about one hundred and sixty being present. The tables were tastefully embellished by Mr. J. R. Chard, with plants and flowers, contributed chiefly by Messrs. H. Cannell and Sons, Messrs. J. Laing and Sons, and Messrs. B. S. Williams, and the dessert, which, as usual, was remarkably good, included a liberal contribution of grapes from Messrs. W. Thomson and Son, of Clovenfords. The speeches were commendably short, a fact on which those present had good cause to congratulate themselves, for the majority of the speakers, in consequence of their not fully appreciating the size of the room, failed to make themselves heard excepting to those in their immediate neighbourhood. The usual loyal toasts having been submitted and duly honoured.

The Chairman proposed the toast of the evening "Continued success to the United Horticultural Benefit and Provident Society." In doing so he directed attention to the fact that the object of the society was to provide assistance to gardeners and those engaged in commercial horticulture in sickness and old age, and in carrying out that object it had been remarkably successful. That the society would always be able to fulfil its promises there could be no doubt, and as none knew when sickness would overtake them he strongly urged those who were eligible to join with as little delay as possible. Moreover, as members were annually credited with their share of the accumulated funds it was important that they should join at an early age. Some of the members had at the present time upwards of £50 standing to their credit, which would be paid to their friends on their death. Apart from this they would receive a certain contribution during sickness, and be eligible to the benefits of the benevolent fund on their attaining the age of seventy. He was glad to learn that the society had made such rapid progress of late years, and knowing how great were the benefits of membership he hoped that before many years had elapsed the majority of practical horticulturists would be enrolled on the list of members.

Mr. J. Hudson, whose name was coupled with the toast, referred at some length to the advantages offered by the society; but, unfortunately, he spoke in too low a voice to make himself heard by more than a small portion of the company.

Mr. H. J. Veitch next proposed the toast of "The Treasurer, Trustees, and other Honorary Officers," and said the honorary officers were deserving of the warmest thanks of the members for the admirable manner in which they had performed their respective duties.

Mr. J. Wheeler, one of the trustees, acknowledged the compliment in suitable terms.

Mr. N. N. Sherwood followed with the toast of "The Chairman," who, he said, had been a great friend of gardeners. The Gardeners' Royal Benevolent Institution, which had done so much for gardeners, had been raised to its present high position chiefly by the ability and perseverance of Mr. Cutler, who had been its secretary for fifty years. The toast was heartily received, and

The Chairman, in returning thanks, said as he was now getting an old man he could not expect to do much additional work, but as long as he was spared he would do his best in assisting the society. He also announced that Mr. George Cavendish had consented to preside at the dinner next year, and expressed the thanks of the society to Messrs. H. Cannell and Sons, Messrs. J. Laing and Sons, Messrs. B. Williams and Son, Messrs. W. Thomson and Sons, Mr. Chard, and other friends, for their contributions of flowers and fruit.

Other toasts included the "Honorary Members," proposed by Mr. Cole, and acknowledged by Mr. G. Bishop; "The Visitors," proposed by Mr. G. W. Cummins, and responded to by Mr. Anderson, of Sydney; "The Nursery and Seed Trades," proposed by Mr. J. Wright, and acknowledged by Mr. Moss and Mr. J. Laing; and "The Secretary," proposed by Mr. Nutting. In reply, Mr. Collins said that since the society had taken a new departure and made itself known to the general body of horticulturists, the list of members had been materially augmented, the number now on the books being about three hundred and fifty. As showing how well able the society was to fulfil its obligations, he mentioned the fact that it has now £5,500 invested in Corporation Stock.

During the evening an excellent selection of music was given under the direction of Miss Mary Belval.

House, Garden, and Villa Farm.

THE HOUSE.

Ferns in cases will require very little moisture at this season of the year to maintain them in a thriving condition, but they must have sufficient to keep them safe. In watering from the present time until the turn of the year, take advantage as far as practicable of bright dry weather for the application of water, and exercise a fair amount of care to prevent the fronds being made very wet; some kinds will be in no way injured by the saturation of their fronds with water, whilst others, such as the adiantums, will in all probability suffer more or less. The cases ought also to be ventilated more freely to ensure a sweet and comparatively dry atmosphere, which it need hardly be said is the best preventive of mildew. As a general rule ferns in cases will not require watering between the end of October and the beginning of February.

PLANTS IN FLOWER.

Hardy Plants in bloom comprise Aconitum autumnalis; Aster concolor, A. grandiflorus; Baccharis dioscorides; Bidens procera; Caltha sagittata; Cineraria auriculata; Crocus speciosus; C. serotinus; Lobelia glandulosa; Pyrola media; Solidago glomerata, and S. lævigata; Sternbergia Clusiana.

CONSERVATORY AND GREENHOUSE.

Cinerarias have now their seasonal ordeal to pass through, and must have every proper attention, or mildew will eat them up. Sulphur them if there is the least sign of the plague, and give plenty of air. Commence to train specimen plants into shape, and put the early ones into their blooming pots; stop ten days after shifting.

Camellias dropping their buds are the subject of frequent complaints at this time of year. We have repeatedly advised the use of liberal waterings after the buds are set and the wood is as hard as necessary, and we can only repeat that in the majority of cases the buds drop because the roots are dry. But watering on the ordinary plan is not always a remedy, for while the plants were out of doors in the summer the soil about the roots may have become hard and impervious to water, and now when water is given it all runs away next the side of the pot without moistening the roots at all. The remedy is easy enough. Fill a tub with soft water, to which add a quart or so of boiling water, to make the whole nearly tepid. Then lower the plants into it a few at a time, and let them soak for an hour. The rush of air bubbles from the pot will prove what a dry state the roots had come to. After this soaking they will take water kindly until they have their next baking, which we shall suppose will not take place till next summer.

STOVE AND ORCHID HOUSE.

Orchids of deciduous habit to have little or no water, and no more heat than will suffice to keep them in health. Plants in a growing state must have enough water to prevent exhaustion. Young specimens must be kept growing freely in the warmest part of the house, and as a matter of course they should be placed in a light position.

FLOWER GARDEN AND PLEASURE GROUNDS.

Auriculas, Carnations, Picotees, and Pansies in Pots to have air frequently to prevent mildew; slight frosts will not hurt them so much as a confined and damp air. Take off the lights in the morning, and keep them off till the sun is nearly quitting the frames, then shut up, and there will be enough warmth retained to counteract the frost without. In damp dull weather tilt the lights only to admit a slight current of air through, and at every opportunity when the weather is genial take the lights off, clear away dead leaves, gently stir the surface of the soil in the pots, and give a little water if needed.

KITCHEN GARDEN AND FRAME GROUND.

Asparagus beds, if they have not already received attention, to be cleared of the dead tops, the weeds raked off, and a heavy coating of half-rotten dung laid on, over which throw a sprinkling of earth from the alleys.

Seakale may be planted now in thoroughly prepared ground in well-drained positions; where the soil lies low or damp, however, it should not be planted till the spring. In any case the ground must be deeply trenched and liberally manured, and the manure thoroughly incorporated with the soil. Begin forcing now by first placing the seakale pots over as many stools as are to be started, and then fill the spaces between and over the pots with a mixture of stable dung that has been once turned, or with leaves, straw, and other litter, beating it firm as you proceed, and leaving the whole smooth and tidy nine inches above the top of the pots. Leaves are in every way preferable, the heat being steadier and more lasting.

Seakale in Pots.—Where only small quantities of seakale are required, it may be forced very conveniently and cleanly in pots. Pot the roots in 24-inch pots, putting three in each. Use a mixture of leaf-mould, rotten dung, and sandy loam, equal parts. Place the pots on the top of a brick flue or on a gentle hotbed, the bottom heat not to exceed 60 deg. Invert over each pot another empty pot, stopping the hole of each with a piece of flat tile or with a lump of clay. For those who have no convenience to force seakale in the open ground this system will be found useful.

VILLA FARM.

On the home farm the storage of the root crops will necessarily occupy a considerable share of attention now, for although a moderately severe frost will not do any serious injury to the hardy kinds, such as the swedes and yellow-fleshed turnips, it is quite certain that even the hardiest of the roots are decidedly better for both keeping and feeding when not exposed to much frost. The mangels are the most tender of all the root crops grown upon the farm, and as after this date we are not safe from severe frosts, they should be clamped as expeditiously as possible. In many districts it is still the practice to "tail" as well as "top" mangles and swedes also before clamping them, but the practice is decidedly bad; for the wounds caused in the removal of the tap and fibrous roots are promotive of decay, and in some cases much mischief is done. The leaves must be removed as a matter of course, but the roots ought not to be touched beyond the removal of lumps of soil that may be adhering to them. Whether the clamps are formed in the field or near the homestead must be determined by those immediately concerned, but if the cattle are housed and fed under cover during the winter a considerable saving of labour will be effected by making the clamps as near as possible to the sheds wherein are fitted the chopping and pulping machines, because when the roots are once in the cart it is not a matter of much consequence whether they are taken one hundred or one thousand yards. The clamps for both large and small quantities should be four to five feet in width at the base and be brought up to a sharp point at the apex, and the roots be laid regularly to economise space.

NATIONAL AURICULA AND NATIONAL CARNATION SOCIETIES (SOUTHERN SECTION).

The annual meeting of the members of these societies took place at the Hotel Windsor, Victoria Street, by the kind permission of the Horticultural Club, on the 28th ult., the Rev. H. H. D'Ombrain presiding, and afterwards Martin R. Smith, Esq. The reports of the committees of the two societies were read by Mr. Douglas. That of the former declared there was no lack of interest in the cultivation of the auricula, and though the early months of the year were characterised by weather of an ungenial nature, a large number of plants of show varieties were staged, generally of good character. The Alpine varieties were never before finer and more numerous. The fancy polyanthuses and primroses were also very fine and attractive. In reference to the Carnation Society, the report set forth that the interest in this flower materially increased during the year, as was shown by the exhibition and conference held at the Chiswick Gardens, both of which were well attended; and so numerous and fine were the show varieties that it proved the best exhibition yet held by the society. The yellow grounds, the selfs and fancies, were shown in the very best character. The treasurer's balance-sheet of the Auricula Society showed an income of £83 11s. 3d., and an expenditure of £72 3s. 3d., including £61 12s. 6d., paid away as prize money, leaving a balance of £11 8s. in the hands of the treasurer. It was also stated that ten new members had been added during the year. The balance sheet of the National Carnation Society showed receipts £77 4s. 11d., and disbursements £67 10s. 9d., a balance of £9 14s. 2d. being carried forward for next year. The reports and financial statements were unanimously adopted, and a hearty vote of thanks went to Messrs. Douglas and Henwood for their services. The presidents, vice-presidents, and members of the committees were re-elected. The name of Mr. Martin R. Smith, was added to the vice-presidents. The schedules of prizes were then revised. In the case of that of the auricula exhibitions, the amounts of the prizes for six, three, and one specimens of gold-laced polyanthuses were reduced, and a first prize of 20s. apportioned to each of the classes for fancy polyanthuses and primroses, making five prizes in each of these classes. The schedule of the Carnation Society was passed unaltered. Mr. Douglas reported that the Council of the Royal Horticultural Society would contribute the same sum as last year towards the prize lists of the two societies. The dates of the two shows will, as usual, be meeting days of the Royal Horticultural Society, the Auricula Show at the Drill Hall on April 21, and the Carnations and Picotee Show on July 21, also at the Drill Hall. The meeting closed with the usual vote of thanks to the chairman.

TRADE CATALOGUES.

Wm. Clibran and Son, Oldfield Nursery, Altrincham.—*Roses, Conifers, Fruit Trees, &c.*

Dickson's (Limited), Chester.—*Forest and Ornamental Trees, Evergreens, &c.*

F. A. Brackhaus, 16, Querstrasse, Leipzig (Botanical and Horticultural Books).—Botanick 1, *Periodicals and Miscellanies, Economic Botany*; Botanick 2, *Flowering Plants and Local Floras*; Botanick 3, *Cryptogamic Botany and Vegetable Physiology.*

W. and J. Birkenhead, Sale, Manchester.—*Ferns and Selaginellas.*

EXHIBITIONS AND MEETINGS FOR THE ENSUING WEEK.

Monday, Nov. 3, and Tuesday, Nov. 4.—Woolcote Chrysanthemum Society.—Annual Exhibition.

Tuesday, Nov. 4.—Devizes.—Chrysanthemum Show.

Tuesday, Nov. 4.—Ipswich.—Chrysanthemum Show.

Tuesday, Nov. 4, and Wednesday, Nov. 5.—Kent County Chrysanthemum Society.—Annual Exhibition.

Tuesday, Nov. 4, and Wednesday, Nov. 5.—Finchley Chrysanthemum Society.—Annual Exhibition.

Wednesday, Nov. 5.—Torquay Chrysanthemum Society.—Annual Exhibition

Wednesday, Nov. 5.—Ealing Horticultural Society.—Autumn Exhibition.

Wednesday, Nov. 5, and Thursday, Nov. 6.—Dalston Chrysanthemum Society.—Annual Exhibition.

Wednesday, Nov. 5, and Thursday, Nov. 6.—Highgate Chrysanthemum Society.—Annual Exhibition.

Wednesday, Nov. 5, and Thursday, Nov. 6.—Market Harborough Chrysanthemum Society.—Annual Exhibition.

Wednesday, Nov. 5, and Thursday, Nov. 6.—Tooting Horticultural Society.—Chrysanthemum Exhibition.

Wednesday, Nov. 5, to Friday, Nov. 7.—Portsmouth Chrysanthemum Society.—Annual Exhibition.

Thursday, Nov. 6.—Worthing.—Chrysanthemum Exhibition.

Thursday, Nov. 6.—Chiswick Horticultural Society.—Chrysanthemum Exhibition.

Thursday, Nov. 6.—Pembroke Chrysanthemum Society.—Annual Exhibition.

Thursday, Nov. 6, and Friday, Nov. 7.—Ascot Chrysanthemum Society.—Annual Exhibition.

Thursday, Nov. 6, and Friday, Nov. 7.—Isle of Sheppey Chrysanthemum Society.—Annual Exhibition.

Thursday, Nov. 6, and Friday, Nov. 7.—Romford Chrysanthemum Society.—Annual Exhibition.

Thursday, Nov. 6, and Friday, Nov. 7.—Stroud Chrysanthemum Society.—Annual Exhibition.

Thursday, Nov. 6, and Friday, Nov. 7.—Tottenham Chrysanthemum Society.—Annual Exhibition.

Friday, Nov. 7.—Devon and Exeter Horticultural Society.—Autumn Exhibition.

Friday, Nov. 7.—Bradford Chrysanthemum Society.—Annual Exhibition.

Friday, Nov. 7, and Saturday, Nov. 8.—Crystal Palace.—Chrysanthemum Exhibition.

Saturday, Nov. 8.—Royal Botanic Society.—General Meeting.

Obituary.

On the 17th ult., Mr. Thomas Cubbon, gardener to G. H. Pinckard, Esq., Coombe Court, Witley, where he had been employed fourteen years. He was a frequent exhibitor at the Godalming Chrysanthemum Show.

On the 28th ult., at 50, Westbourne Terrace, suddenly, of heart disease, John Noble, Esq., of Park Place, Henley-on-Thames, aged 77 years. The beautiful gardens and interesting collections at Park Place represented this gentleman's taste and love of horticulture in a more than ordinary degree; for with the able assistance of Mr. George Stanton, much of the place has been made in recent years. His kindly nature and rational generosity were agreeably illustrated in the rules established for the under gardeners, and the excellent provisions made for their comfort and general training.

CHRYSANTHEMUM EXHIBITIONS.

NOVEMBER.

3 and 4.—Woolcote.
4.—Devizes, Ipswich.
4 and 5.—Brixton, Kent County, Finchley.
5.—Ealing, Torquay.
5 and 6.—Dalston, Highgate, Market Harborough, Tooting.
5 to 7.—Portsmouth.
6.—Chiswick, Pembroke, Worthing.
6 and 7.—Ascot, Isle of Sheppey, Putney, Romford, Stroud, Tottenham.
7.—Bradford, Exeter.
7 and 8.—Crystal Palace.
10.—St. Neots.
11 and 12.—Brighton, Eastbourne, Jersey, Kingston, Leeds, Lewes, South London, Truro, Watford.
11 to 13.—Lambeth.
11 to 14.—National (Royal Aquarium, Westminster).
12.—Chelmsford, Sevenoaks, Wanstead.
12 and 13.—Bath, Birmingham, Bournemouth, Cornwall, Croydon, Dartford, Faversham, Guildford, Hampstead.
13.—Crediton, Dawlish, Dublin, Reading, Staines, Taunton, Waltor.
13 and 14.—Barnsley, Bromley, Cranbrook, Southend, Southgate, Teddington, Winchester, Wimbledon.
14.—Cheshunt, Eccles, Hitchin, Reigate.
14 and 15.—Bolton, Derby, Dewsbury, Leicester, Nottingham, Sheffield.
15.—Bacup, Ramsbottom.
17 and 18.—Hinckley.
18.—Cardiff, Stamford.
18 and 19.—Hartlepool, Manchester, Twickenham.
19.—Banbury, Swansea, Twickenham.
19 and 20.—Bedford, Bristol, Hull, Rugby, Wasterhem.
19 to 21.—York.
20.—Shrewsbury, Tiverton.
20 and 21.—Norwich, Ware, Warwick.
20 to 22.—Edinburgh.
21 and 22.—Stockport.
22.—Batley, Martpool.
26.—National (Floral Committee).
28 and 29.—Dundee.

CHRYSANTHEMUMS IN NEW JERSEY.

WE are now close into another chrysanthemum season; the flower is becoming more popular here. I have two large centre beds 6 ft. wide by 110 ft. long, looking first-rate, and the earliest will soon be in flower. For early white I have *Moonlight* and *Elaine*, and two or three others. For very late, *White Christmas Eve* is largely grown. I have all these kinds looking very fine; also *Mrs. Alpheus Hardy*, a splendid thing; it is pure silvery white, and the petals are covered with white silvery hairs, giving it the appearance of an ostrich plume. For a fine late yellow I know of nothing better than a sort you sent me a few years ago, called *Mrs. Barnes*. This sort has other names here because last year I was in need of some fine yellow flowers, and I sent to John Thorpe for some, and he sent me the very same under the name of *Early Yellow*. A very fine late white is *Mrs. Humphreys*; and *Charles H. Waterer* is also a very fine late yellow; so also is *Gloriosum*. You see good whites and yellows are the most useful to me as well as to most other florists. Once in a while other shades are asked for, but scarcely sufficient to make growing them profitable. I am using two of my centre beds this year with chrysanthemums, intending, as soon as they are done, to pull them up and plant carnations, which are, at this writing, all potted and in cold frames, and advancing their buds nicely; this is a new departure, and I am inclined to think it is going to work well, and, if it does, it will be a most valuable economic arrangement. Previous to this year I have grown my chrysanthemums in pots which stood in frames upon ashes all summer, by which method lots of water was always required. This year, however, I have done very differently. In June or July, when the plants were shifted for the last time, they were well watered, and then the pots were all buried in trenches in the open ground, the soil being trodden firmly all round and two inches over the tops of the pots. By this means they made wonderful fine plants, and had no water but such as fell upon them from above.

I have completed a very fine new greenhouse this season, the rafters, purlins, brackets, trusses, and ventilating gear are all of iron. It makes the lightest and most substantial house I ever saw. The method of getting out the iron is quite new and very neat as well as durable. This new house is now entirely filled with white carnations, about six thousand plants in three kinds, the sorts being *Lamborn*, *Silver Spray*, and *Lizzie McGowan*.

Paterson, New Jersey, U.S.A., October 6, 1890. H. E. CHITTY.

Replies to Queries.

D. G.—Aloe frutescens flowers annually in a warm, dry, light planthouse, and its usual season is June. The rarity of its flowering in a mixed collection is owing to insufficient warmth.

Names of Fruits.—F. R.: 1, Cornish Aromatic; 2, Irish Reinette; 3, Sheepsnose, better known in Somerset than elsewhere. It is a favourite for cider, but is as good as Tom Putt for cooking; 4, Red Styre, also a cider apple, but good for table use when in best condition.—R. Fairfield: 1, Sturmer Pippin, an excellent late dessert apple; 2, Winter Hawthornden; 3, Bergamotte Esperen; 4, Winter Bon Chretien.—A few names of fruits are unavoidably held over to next week, as they necessitate careful comparisons, for which we have not had time of late.

Names of Plants.—R. Harding: 1, Oncidium bicolor; 2, O. reflexum.—P. Q. R.: The drawing represents Russellia juncea, a plant not often seen, but at one time in great favour for exhibition.—F. Phillips: 1, Polypodium aureum; 2, Pleopeltis salicifolia; 3, Adiantum reniforme; 4, Gymnogramma trifoliata.—Eaton: It is the leaf of the white mulberry, Morus alba.

Frux.—If you will send a distinct question it shall have our best attention, but to make a general rummage of the British flora to find plants suitable for the metropolitan area is a task we are not prepared for, time with us being a very precious article, and patience not less precious.

JOHN LAING and SONS'

CHRYSANTHEMUM EXHIBITION.

A FINE DISPLAY. INSPECTION INVITED.

BEST NOVELTIES and OLD VARIETIES and many promising SEEDLINGS are represented.

We were Awarded TWO GOLD MEDALS (London, NATIONAL, and Ghent), and SIX FIRST PRIZES in 1889, for Groups of Plants and Cut Bloom; also TWO FIRST PRIZES in September, 1890, in open competition.

CATFORD BRIDGE RAILWAY STATION. CATALOGUES POST FREE.

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Particulars of recent and best introductions free from

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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.
1890			H. M.	H. M.	H. M.	H. M.	H. M.
9	S	Birth of Prince of Wales, 1841.	7 9	16 4	4 20	3 7	3 32
10	M	Martin Luther born, 1483.	7 10	15 58	4 19	4 19	3 48
11	Tu	*St. Martin, Bishop.*	7 12	15 51	4 17	5 33	4 4
12	W	● New Moon.	7 14	15 43	4 16	6 52	4 25
13	Th	*Britius, Bishop.*	7 16	15 35	4 14	8 11	4 52
14	F	C. Simeon died, 1836.	7 18	15 26	4 12	9 30	5 24
15	S	*Machutus.*	7 19	15 16	4 11	10 45	6 10

High Water at London Bridge. Noon.	After.	Liverpool Dock. Morn	After.	M. tmp. avrg. of 40 yrs. Chiswk.
H. M.	H. M.	H. M.	H. M.	DEG.
—	0 2	9 2	9 27	43·5
0 22	0 41	9 47	10 6	43.3
0 57	1 15	10 22	10 40	43·1
1 31	1 48	10 46	11 13	42 8
2 6	2 22	11 31	11 47	42·5
2 39	2 57	—	0 4	42.3
3 16	3 35	0 22	0 41	42 2

Orchids in Flower.		Day of Yr.
		1890
Angræcum bilobum	Cape Coast.	313
Angræcum sesquipedale	Madagascar.	314
Barkeria Skinneri	Guatemala.	315
Cattelya Eldorado virginalis	Mexico.	316
Lycaste Deppi	Xalapa.	317
Odontoglossum Alexandræ	New Granada.	318
Pleione Reichenbachiana	Himalayas.	319

NATIONAL CHRYSANTHEMUM SOCIETY.—GREAT CENTENARY CHRYSANTHEMUM FETE AND DISPLAY at the ROYAL AQUARIUM, WESTMINSTER, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, NOVEMBER 11, 12, 13, and 14, 1890.

£500 offered in money prizes, plate, and medals, including the Centenary Class for 48 blooms of Chrysanthemums, 24 Incurved and 24 Japanese distinct. First prize, £25; second, £20; third, £15; fourth, £10; 5th, £5.

Classes for all types of Chrysanthemums, Table Decorations, Fruit, and Vegetables.

A Bronze Centenary Medal will be awarded to every competitor in certain leading classes.

Entries must be received not later than the morning of Saturday, November 8. Schedules of prizes and all information can be obtained of RICHARD DEAN, Hon. Sec. and Superintendent, Frampton Park Nurseries, Hackney, London, N.E.

HINCKLEY AND DISTRICT CHRYSANTHEMUM SOCIETY'S ANNUAL SHOW, Nov. 17 and 18.—A Silver Challenge Cup will be offered for Competition. Schedules and Entry Forms on application to Mr. J. H. ROBOTTOM, 20, Castle Street, Hinckley. Spaces to Let for Novelties.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.—SEVENTH ANNUAL SHOW AND CENTENARY, HULL, WEDNESDAY and THURSDAY, NOVEMBER 19th and 20th. £160 in Money Prizes and five Silver Cups. Entries close November 12th. Schedules free from the Hon. Secretaries, EDWARD HARLAND, Manor Street, Hull, and JAMES DIXON, 2, County Buildings, Hull.

KINGSTON & SURBITON CHRYSANTHEMUM SOCIETY.
President—G. C. SHERRARD, Esq., J.P.

The FOURTEENTH GREAT SHOW of CHRYSANTHEMUMS, FRUIT, &c., will be held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, NOVEMBER 11 and 12, 1890, when, in addition to valuable money prizes, the Sixth Champion Challenge Vase, value 25 guineas, will be offered. Schedules and any other information of Mr. GEO. WOODGATE, Warren House Gardens, Kingston Hill, Surrey, Hon. Sec.

Entries Close Nov. 6.

SHEFFIELD, HALLAMSHIRE, AND WEST RIDING UNITED CHRYSANTHEMUM SOCIETY ANNUAL SHOW, CORN EXCHANGE, SHEFFIELD, NOVEMBER 14th and 15th, 1890. £200 in prizes. £50 in cash for cut blooms in the open class. Schedules and form of entry post free on application to the Secretaries, W. HOUSLEY and W. MARSHALL.

SOUTHGATE AND DISTRICT CHRYSANTHEMUM SOCIETY.

The EIGHTH ANNUAL EXHIBITION will be held in the VILLAGE HALL, SOUTHGATE, NOVEMBER 13 and 14. GEO. JAMES, Hon. Sec.

STAINES AND DISTRICT CHRYSANTHEMUM SOCIETY.—The ANNUAL EXHIBITION will be held at the TOWN HALL, on THURSDAY, Nov. 13. Entries should reach the Secretary, F. BATES, Gwencolne, Richmond Road, Staines, not later than Monday, Nov 10.

YORK CHRYSANTHEMUM SHOW, FINE ART EXHIBITION BUILDING, NOVEMBER 19, 20, and 21, 1890.—36 Cut Blooms, £5 Cup and £5 cash; 6 bunches Grapes, £5; with other liberal prizes in Plants, Cut Flowers, Fruits, and Vegetables. Entries, November 12. There will be a stall for the sale of Flowers, Fruit, &c., the proceeds to be devoted to the Gardeners' Royal Benevolent Institution.

Contributions are solicited of Fruit, Flowers, &c., and will be thankfully received on any of the above days by

13, Feasegate, York. J. LAZENBY, Secretary.

Auction Sales for the Ensuing Week.

MONDAY, WEDNESDAY, AND SATURDAY, NOV. 10, 12, AND 15.—Mr. J. C. Stevens, 38, King Street Covent Garden; Dutch Bulbs.

MONDAY, NOV. 10.—Messrs. Protheroe and Morris, at the Exeter Nursery, Exeter; Nursery Stock. (Six days.)

TUESDAY, THURSDAY, AND SATURDAY, NOV. 11, 13, AND 15.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

TUESDAY, NOV. 11.—Messrs. Protheroe and Morris, at Aigburth, near Liverpool; Orchids. (Two days.)

WEDNESDAY, NOV. 12.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Plants and Bulbs.

THURSDAY, NOV. 13.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Orchids and Lilies from Japan.

FRIDAY, NOV. 14.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

FRIDAY, NOV. 14.—Messrs. Protheroe and Morris, at the Cooksbridge Nurseries, Sussex; Nursery Stock.

SATURDAY, NOV. 15.—Messrs. Protheroe and Morris, at the Stamford Hill Nurseries, Amhurst Park, N.; Nursery Stock and Decorative Plants.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column £3; one page, £9.

Displayed Advertisements are charged according to the space occupied.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 148 and 149, Aldersgate Street, London, E.C.

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THE GARDEN ORACLE FOR 1891

Will be published in the usual form at 1s., and will be, as heretofore, a complete review of horticulture and floriculture in the past year, and a guide for cultivators, exhibitors, and purchasers of plants, flowers, fruits, &c., in the year that is before us. This is the oldest horticultural almanac extant, and as it contains the latest information on new varieties, forthcoming exhibitions, and undertakings of various kinds in prospect, it cannot be published so soon as the general run of almanacs, that are chiefly made up by hasty compiling. The Oracle now preparing will be rich in reports, announcements, and selections, all condensed into the smallest possible space, and arranged for handy reference. The Oracle is a business almanac and diary, in addition to its special floricultural features. Published at the GARDENERS' MAGAZINE Office, 4, Ave Maria Lane, London, E.C.

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The Gardeners' Magazine.

SATURDAY, NOVEMBER 8, 1890.

THE CENTENARY FESTIVAL OF THE NATIONAL CHRYSANTHEMUM SOCIETY should, and doubtless will, prove an event of much interest, as it may by anticipation be declared an event of great importance. The Royal Horticultural Society was well within its rights as regards the chronology in holding its centenary celebration last year, for the historical prestige and commanding position entailed on that venerable body a certain amount of responsibility in respect of this matter. But the obligation has been discharged, and in a way that afforded gratification at the time to all who participated in it, and has given satisfaction since in the acceptance of the records of results. The celebration last year coincided with the introduction of the chrysanthemum into Europe a century since; that of the present year, now impending at Westminster, coincides with the introduction of the flower to this country at the same distance of time. Comparisons are not to be desired, and moreover at this moment it is impossible to make them, but if the *raison d'être* is a matter of any consequence, the national festival, which will be opened on Tuesday next and closed on Friday, has the advantage of special propriety, for our own possession of the flower in 1790 is to us of far more importance than the fact of its wandering to Marseilles in the year 1789. The National Society's extensive programme therefore is in no sense an afterthought; indeed, if that point were under debate we should be inclined to speak of the movement of the R.H.S. as one of anticipation. It is enough that we enter upon this celebration free from all secondary questions, the hundredth year of our precious possession is completed, and we may imitate Prometheus and steal a little sunshine for our comfort in the dull season by the assumption of a festive air to mark our sense of gratitude and consciousness of triumph.

The programme of the approaching centenary celebration has for its basis a great exhibition of plants and flowers in the Royal Aquarium, Westminster, from Tuesday to Friday, inclusive, many leading exhibitors, both of the metropolis and the provinces, will enter with spirit into the competitions, for the classes are provided with suitable money prizes, and centenary medals will be added in accordance with a scheme which intending exhibitors have by this time made themselves acquainted with. To the public at large the entertainment should prove eminently attractive; to the cultivators and the critics it will undoubtedly prove of more than ordinary interest.

In connexion with the exhibition, a loan collection of curios, pictures, books, and other objects illustrative of the history of the flower will be formed, and will, we hope, include many objects of rarity and value, such as are calculated to gratify students of historical botany and persons of culture generally. The flower belongs to our social history not less than to the history of floriculture, and somewhat of universal attaches to its progress from its first appearance here to its present magnificence as a florist's flower.

The exhibition will be opened on Tuesday, at one p.m., and the officiating leader will be the Right Hon. Lord Brooke, M.P., the President of the Society, who with Lady Brooke, will view the display, and, having received an address, Lady Brooke will declare the exhibition open.

On Tuesday, from the time of opening until six p.m., there will be no special business, and the guests assembled will have enough to occupy them in admiring the flowers, congratulating the prizewinners, and such other agreeable business as a flower show customarily promotes. At six will commence in a chamber arranged for the purpose a Conference on Chrysanthemums, at which Sir Edwin Saunders, F.R.C.S, will preside. The papers to be read include "The Origin of the Florist's Chrysanthemum," by Mr. Shirley Hibberd; "The Chrysanthemum in Tasmania," by Mrs. Marian Thrower; and "The Chrysanthemum in Art," by Mr. G. T. Haite, F.L.S.

On Wednesday there will be no special business, the day being (with prudence, as we consider) left free for uninterrupted enjoyment of the exhibition. There will be agreeable occupation for connoisseurs and experts, and the great public will be satisfied with a feast of flowers and music, with such other entertainments as the Aquarium arrangements may provide.

Thursday will be a busy day. The exhibition will probably be refreshed in certain particulars, and at half-past two the Conference will be renewed, Sir Guyer Hunter, M.P., in the chair. The papers to be read will include "Experiments in Chrysanthemum Culture," by Mr. Briscoe-Ironside; and "Chrysanthemums for Exhibition," by Mr. C. Gibson. The talking will probably be concluded in time to afford a season of rest to prepare for the next business, which is fixed for six p.m. "prompt." This will consist of a banquet, under the presidency of Right Hon. Lord Brooke, M.P., the President of the Society, who will be supported by representatives of foreign and colonial chrysanthemum societies. On this occasion ladies are specially invited, and it is hoped, therefore, that many intending guests of the male persuasion will bring their ladies, as the dinner will be arranged in St. Stephen's Hall, which has a private entrance from the Broad Sanctuary, and is so far separated from the Aquarium as to ensure the complete isolation from the exhibition of the dinner party. It is important, however, to note that tickets (5s. each) must be secured not later than Monday next, November 10. Information on this matter did not reach us until after the publication of last week's issue, and the present is, therefore, the first opportunity we have had of making the announcement.

Friday will be a kind of "do-as-you-please" day, but still it will not be without some features of interest. Necessarily many exhibitors will be present to distribute their flowers and remove their boxes, and for other business pertaining to the wind-up. St. Stephen's Hall, therefore, will be an imitation of another St. Stephen's Hall in its dedication to colloquial amenities, but the utterances will be strictly "extra-parliamentary." The hall will, in fact, be arranged as a lounge, and informal conferences will be held for interchange of notes and observations on plants, flowers, exhibitions, prizes, things past, and things to come. The word "smoking" is not in the printed programme, but we shall be content to wait and learn, and as a blind man can see when people are smoking, the lighting of one cigar will be a sufficient declaration that smoking is allowed. Desultory talk has its uses when the talkers have a subject and some knowledge of it. In the world at large desultory talk is always in danger of being marred by people who have nothing to say and will say it—such interesting beings will not be wanted, and are not likely to appear in the hall on Friday.

Wokingham Chrysanthemum Show, November 19 and 20.

Croydon Chrysanthemum Show, November 12 and 13.

Borough of Hanley Chrysanthemum Exhibition, November 18 and 19.

The Weather Plant is now in operation at the Crystal Palace, where Mr. Nowack is attending to give explanations. "They say"—but we never know who "they" are—"that we are indebted to this."

Horticultural Club will meet as usual in Hotel Windsor, on Tuesday next. Dinner at six, after which Mr. C. E. Pearson will open a discussion on "Chrysanthemums."

National Rose Society.—A meeting of the committee will be held, by permission of the Horticultural Club, in their Rooms, Hotel Windsor, Westminster, on Tuesday next, at three p.m., the chief business being to make arrangements for the general meeting.

The Chrysanthemums in the nursery of Mr. George Stevens, St. John's, Putney, are now in their best condition and will gratify critical visitors, who may, like Mrs. Gilpin, be on pleasure bent. The collection includes many novelties, and they are all in good character.

The George Deal Memorial is virtually completed, and in a most satisfactory manner. The sum of £250 was asked for at the last annual dinner of the Gardeners' Orphan Fund, and the result is a total of subscriptions amounting to about £270. Mr. N. Sherwood and Mr. Harry Veitch have paid over, as promised, a sufficient sum to complete the fund needful for the seven orphans that remained "out in the cold" at the last election. These seven are now provided for as Deal Memorial orphans. As all the sums promised have not been received, the subscription list will be kept open to the 22nd to afford a final opportunity for those who still wish to testify their respect for the character and labours of the late Mr. George Deal.

Edinburgh International Exhibition has ended in an uncomfortable manner. The number of visitors was 2,414,129, which is about a-quarter of a million less than the visitors to the exhibition of 1886. The incomings are insufficient to balance the outgoings, and a heavy call will be made on the guarantors to meet the deficiency.

The Booth Museum of British Birds formed by the late Mr. E. T. Booth in Dyke Road, Brighton, and by him bequeathed to the town, has been formally handed over and accepted by the Corporation, and will henceforth be counted amongst the special attractions of the queen of watering places.

The Cross-bred Wheats raised by Messrs. James Carter and Co. have been subjected to critical cultivation and comparison by the Marquis of Hertford, at his Dunnington Heath Farm, and the result is an average value of crop amounting to £4 per acre more than the average yield of the county in which they were grown.

The Population of the United States is stated by the Census Bureau to number sixty-two and a-half millions (62,480,540), the increase in the past ten years being about 25 per cent. Disappintment is expressed that the number is not sixty-five millions. But time will cure that little trouble, and indeed the day may be not far distant when it will be thought the people are multiplying too rapidly.

The Gardens at Eaton Hall are open to visitors under certain regulations, one of which is that each visitor must pay 1s. for admission. The Duke of Westminster hands over the proceeds to charities at his own discretion. He has lately informed the governors of the Chester Infirmary that the results of the past year in what may be termed "gate money" will enable him to hand over to the institution the sum of £500. It may be inferred, therefore, that the visitors in the past year numbered fully 10,000.

Next Week may claim attention from admirers of the "weekes" of Du Bartas. A full bottle or a gun overcharged is nothing to it. The meetings and exhibitions are like the stars in heaven for multitude or the sands on the seashore past counting. First in the list as most important of all we place the meetings of Committees of R.H.S. on Tuesday. That business shall not have second place in these columns, but after it may come the National Show and Conference on the same day, and those who do the first may find it not so difficult to do the second. And as dinner ranks amongst the sad necessities of life, the Horticultural Club will be found to be engaged with soup, with fish, &c., &c., to follow at the hour of six the same day. As for the rest of the week, beloved friends, consult our list of appointments, which, being in print, need not be repeated. In order to keep our several engagements we are now being divided, not as Falstaff desired, into two halves, but into innumerable pieces, so that when the week is ended we shall be enabled to supersede the Christmas mincemeat.

Are the Incurved Chrysanthemums on the Wane? This curious question occurs in a letter just received. We can give a direct answer that the incurved flowers are not on the wane, for they are cultivated more extensively than ever. But the question has a justification in the apparent overwhelming force of the Japs. We say "apparent" advisedly, because the immense show these flowers make is deceptive so far as it may suggest that they are pushing the incurved out of the field. The incoming of the Japs has augmented the number of cultivators immensely, and every cultivator takes incurved varieties into his collection, and a certain number succeed with them to the extent of becoming successful exhibitors. The Japs are doing for the incurved precisely the same kind of thing that the single dahlias have done for the show varieties; they are educating new men, and as these advance they learn to appreciate the perfection of form and refined finish of the incurved, just as the novitiate with single dahlias soon become experts with double dahlias. And so far from the raising of new incurved having come to an end, as many have supposed and feared, we can speak by the card to the effect that some superb new incurved are on the way to fame, and some of them are from new men who have but lately entered on the agreeable labour of enlarging the bounds of this class. The reports will in due time show that the incurved are safe and are progressing.

Railway Rates as set forth in the Revised Schedule of the Board of Trade do not meet with the approval of the railway companies. A deputation has represented to Sir Michael Hicks-Beach that it will be an injustice to the companies should Parliament proceed to operate on the scheme formulated by the Board of Trade as the result of the exhaustive inquiry conducted by Lord Balfour of Burleigh in the interests of all the parties. They say they want more time to work out results, and no doubt time will be allowed them. But we may be sure the inquiry will not be reopened. Parliament is more likely to lean to the companies than to the general public, if we can suppose it capable of any kind of leaning, because the railways are largely represented there. But we would not dishonour Parliament, much as we regret it has declined from dignity in recent years, by supposing it capable of a leaning in such a case as this. It may sometimes lean when pressed by clamour on some subject that provokes political passion, but in such a matter as the adjustment of railway rates, Parliament will make an honest endeavour to strike a fair balance between the several interests that will demand consideration. One thing is certain, that railway companies, in common with other traders, must be allowed a certain freedom of action to secure rates that will pay, for it is only profitable business that is of any real service to the community. The world swarms with shallow people who like to see business done at a loss. Business done at a loss soon comes to a stop, and much of that sort of thing would end in every man having to carry home his own washing and do his own mangling. But the companies will take care of themselves; we will not press upon our readers to be painfully anxious about them.

A Food and Cookery Exhibition was opened in the Agricultural Hall, Islington, on Wednesday last, and will continue until the 15th, the hours being from one p.m. to nine p.m.

Portsmouth has made an impression in the chrysanthemum world; with beautiful weather and a grand show the brave old port was unusually gay. Messrs. Drover carried off the challenge cup, Mr. Molyneux coming second, Mr. Penford third, Mr. Payne fourth. The Jubilee prize of £10 for forty-eight trained went well to Mr. J. Bushby. Our report reached us too late for this week.

The Retirement of D. Morris, Esq., F.L.S., from the office of Honorary Treasurer to the Royal Horticultural Society is, for the society, a fact to be regretted; but as Mr. Morris is wanted for the forthcoming exhibition in Jamaica, where he can serve the State effectually, our duty is to be resigned, and to make the best of the circumstances. Another treasurer must be appointed, and we do not doubt the Council will find a gentleman able and willing to take charge of the onerous office. Our duty at this juncture is to acknowledge the deep indebtedness of the society to Mr. Morris for his generous sacrifices in the society's behalf, for the business must have made serious inroads upon his scanty leisure, and the responsibility was never otherwise than of serious import. As a man of business Mr. Morris probably has not his superior within the Fellowship of the R.H.S. He is a master of finance, and has an eagle eye for what we may term the "angle of incidence" in the monetary affairs of an organization of this peculiar kind. His participation in the management of the gardens at Chiswick has brought us much into contact with him, and although we have sometimes held a quite different opinion to him on matters of administration, we were always impressed by his earnestness, clearness of view, and full comprehension of his duties as treasurer for whatever policy might be under consideration or in prospect. As an important officer of the Royal Gardens, Kew, that institution shares with ours in his absence for a season, and the fact reminds us that Kew has been generous to the R.H.S., and has done for it more than the R.H.S. can ever hope to make adequate return for. The Fellows are sensible of their obligations, but if there be exceptions—and in every mixed community there are persons who, from some infirmity of mind, are incapable of gratitude—such exceptions will prove the rule, that Mr. Morris takes with him our hearty thanks, and earnest wishes to see him safe home again and working with us as heretofore.

MANAGEMENT OF VINES IN SUMMER.

It is surprising what a difference there is in the practice of different men in the management of vines during their growing season. I see a good deal of it as I go about, and I find the results obtained are as different as the practice pursued. There are some cultivators, and I am glad to say that the number is many, who act on the principle that the more leaves the more roots, and the more roots the better the fruit. But sometimes I meet with men who work on quite different lines; they appear to act as if many leaves on a vine are a nuisance, and so they keep nipping them off as fast as they appear, until the rods present quite a skeleton form. Such cultivators do not appear to know that there is any sympathy between the roots and branches; their practice ignores altogether the fact that the leaves sustain the roots, and that the latter increase in proportion as the branches extend. We see more mistakes made in this way in the case of young vines than old ones. The latter, owing to the space they cover, will invariably be left with a sufficient number of leaves to keep them safe from harm. But in the case of young ones, we frequently see the lateral growth so persistently cut back that the rods are as straight as a gun barrel, and as hard and as brown as mahogany before the growing season is over. Such a state of things is not conducive to fruitfulness or long-lived vines, because in the first place the growth is so hard that the buds do not start regularly; and in the second place, because the roots are fewer in number than they ought to be, for the reason that the removal of the young foliage prevented their increasing as nature intended them.

Young vines subjected to such treatment as I have described will never make luxuriant examples, because their energies are crippled when young. Without leaves they cannot make roots, and without plenty of roots they cannot become fruitful and luxuriant. The only way to make luxuriant vines is when they are young to allow them to make all the growth they are capable of doing; let them, in fact, ramble at their own sweet will. The roots will then be numerous, and lay up a store of nutriment that will in the succeeding season make growth that the cultivator may be proud of, while the man who persistently curbs the roots by reducing the leaves will have to lament over a feeble growth and small bunches of fruit.

I am not writing in this strain on imaginary evidence of how vines are treated in different places. I have had ocular demonstration of what I refer to with regard to the management of established vines, as supporting what I say regarding the difference in the treatment prevailing. The greatest departure I ever saw in this direction was at Cote House, Westbury-on-Trym. In this case Mr. Bannister, the gardener, had not only allowed a good portion of the lateral growth to grow unchecked all the season, but he had allowed the shoots that had formed on the stems outside before the rods entered the house to grow their own way all the summer, so that when I saw them in the month of October the surface of the vine border was nearly covered with the growth and foliage of the vines. More handsome bunches or better coloured grapes I never saw. Nor do I expect to see more conclusive evidence of the value of the doctrine, that the more leaves the more roots, for both were abundant in this case, as the crop of grapes testified.

J. C. C.

POT-GROWN CHRYSANTHEMUMS.

Use and Abuse of Manure Water.

Chrysanthemum growers of all grades, amateur as well as professional, have become so well versed in the mysteries—if such there are—of chrysanthemum culture, that it seems difficult to place a finger upon any phase of practice whereon to write without risking their honest criticism, rather than profitable attention to facts enunciated. Nevertheless, there is one phase connected with the culture of these favourite plants wherein both professionals and amateurs, or their employés, err more in these latter days than was the case in days of yore, when they were less popular, and only occasionally to be met with in form of collections. I refer to the use and abuse of artificial stimulants, or manurial waterings.

I go back to the time of Salter and the large groups of plants he grew at Hammersmith, which were tall, robust, and with blooms—according to the varieties, new and old, he then held in possession—little, if any, inferior to those of the present day.

Visiting him personally myself long ago—thirty years and more—I purchased a score or more of his best varieties, and before parting from him took occasion as a young man to ask him how to grow plants with blooms like unto his, and his answer was—abundance of air, abundance of light always, moderate but firm shifts when really necessary, with alternate weak manurial waterings whenever the pots became fairly full of roots during active growth only.

By following his advice I had a group annually somewhat after the manner of the early Temple displays, with excellent foliage and large blooms, though no manure water was ever given after the buds were once formed.

My first awakening to the terrible effects of excessively strong and late manurial waterings took place at one of the old and then popular Woolwich chrysanthemum shows. The largest and best-trained specimens I had ever seen, or have met with since, were staged thereat, carrying few flowers only of indifferent size and poor quality. I made a purpose of "interviewing" the grower, and he had no hesitation in saying he had never given so much time and attention to plants previously; had never been kinder or more liberal to them; and the failure was due to a new and "marvellous," as he put it, blood manure, which he hoped would incite the buds to form grand blooms, but which simply "turned them blind."

Even to this day growers—amateur growers more especially—too frequently fail, or only meet with qualified success, from this same cause. Excepting in the moderate use of essentially mild, safe, liquid manures there is danger at all stages of growth; but especially dangerous are such stimulants but slightly overdone between the time of bud formation and bloom expansion. Mr. Salter was right beyond cavil when he advised the use of alternate weak manurial waterings during active growth and when active root growth began to exhaust the richness of the soil wherein they grew.

But there is yet another point of practice whence more injury than good may accrue from excess of manure water, consisting of apparently strong, yet unduly forced wood growth, deficient in fibre or stamina, hence incapable of forming sound buds and huge blooms. At a recent chrysanthemum exhibition I saw many plants with curled leaves, though deep green in colour, the tips of some of which were brown and decaying, brought on no doubt by this same cause. If roots are injured, leaves deformed, and plants suffer, the blooms will inevitably suffer still more.

To all in possession of healthy plants showing bud, or with partially expanded blooms, I would say, in preference to running the slightest risk of injury by such manurial waterings, withhold them partially or altogether.

William Earley.

NOTES ON INCURVED CHRYSANTHEMUMS.

Although I well aware that the centenary edition of the National Chrysanthemum Society's catalogue, to the revision of which I devoted so much time during the past summer, was anticipated with much interest by cultivators, I have been surprised by the rapidity with which it has found its way into distant parts of the country. Already I have received letters from writers in widely separate districts with reference to the work. With but few exceptions, these letters are of a complimentary character, and need not be referred to farther than to say that it is satisfactory to know that the catalogue is so highly appreciated by cultivators and judges. A few writers appear not to be altogether satisfied with the catalogue, because certain varieties that they regard as distinct, have been entered as synonymous with other established kinds. To engage in a long correspondence at this season is wholly beyond my power, and I will take advantage of the pages of the Gardeners' Magazine for replying to a few of the questions that have been raised.

One of my correspondents is desirous of knowing why Emily Dale is bracketed with Golden Queen, as it has hitherto been considered distinct. Another writer asks why John Lambert and Emily Dale Improved should also be entered as synonymous with Golden Queen, as they originated as sports in different districts. In reply to the first question, I would say that the Revision Committee entered Emily Dale as a synonym of Golden Queen not because it is an exact replica of that variety, but because the difference is so slight when both are in their true character that but few cultivators are able to distinguish them. In consequence of their being so much alike the names have become so mixed that in some collections the older form is grown under the name of Emily Dale, and in others the last-mentioned bears the name of Golden Queen. At an advanced stage of development the blooms are so much alike that it is impossible for anyone to tell them apart. Therefore the only satisfactory course in the interest of the cultivator for exhibition was to bracket them together. Again, in the

case of John Lambert and Emily Dale Improved no question is raised as to their origin, but they are entered as synonymous with Golden Queen to show that they are too much like that variety to be shown in the same stand as distinct varieties. The sport known as John Lambert promises to prove the finest of the several forms of the Golden Queen, and is therefore worthy of special attention during the present season. Each of the several sports may be shown under the name it now bears, but not more than one can be included in the same stand without incurring the risk of disqualification. In a similar manner John Doughty and Mr. R. Mudie, which originated as sports obtained in widely different districts, are so much alike that for exhibition they must be regarded as the same. Further, they are so similar to Bronze Queen that not more than one of the three should form part of the same collections if distinct varieties are required. As in the case of Emily Dale Improved and John Lambert they appeared to be improved types, a point which cultivators should endeavour to determine in the course of the season.

A question is raised also as to the accuracy of the statements in the select list of incurved that Alfred Salter and Golden Queen originated as sports from Queen of England. My correspondent states that the Revision Committee must be wrong, because Mr. Burbidge included them in a list, given in his paper read at Chiswick last year of "chrysanthemums actually reared from seed by the late Mr. John Salter and his son, Mr. Alfred Salter." Especially so, as he also marked those two varieties with an asterisk *, and says: "Perhaps those marked with an asterisk are Mr. John Salter's best seedlings." With reference to this matter it must suffice to say that the dates and other facts in the catalogue are not given second-hand, and that the statements as to Alfred Salter and Golden Queen having originated as sports are absolutely correct. That the question should have been raised by anyone sufficiently interested in chrysanthemums to purchase the catalogue is surprising, for the character of the foliage and flowers is so pronounced as to be sufficient to indicate the parentage of the varieties to the merest tyro. GEORGE GORDON.

EXHIBITIONS AND MEETINGS FOR THE ENSUING WEEK.

MONDAY, NOV. 10.—ST. NEOT'S CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
TUESDAY, NOV. 11.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral, Fruit and Scientific Committees.
TUESDAY, NOV. 11.—OXFORD CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
TUESDAY, NOV. 11, AND WEDNESDAY, NOV. 12.—LEWES CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
TUESDAY, NOV. 11, AND WEDNESDAY, NOV. 12.—LEEDS PAXTON SOCIETY.—Chrysanthemum Exhibition.
TUESDAY, NOV. 11, AND WEDNESDAY, NOV. 12.—SOUTH LONDON CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
TUESDAY, NOV. 11, AND WEDNESDAY, NOV. 12.—TRURO CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
TUESDAY, NOV. 11, AND WEDNESDAY, NOV. 12.—KINGSTON CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
TUESDAY, NOV. 11, AND WEDNESDAY, NOV. 12.—EASTBOURNE CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
TUESDAY, NOV. 11, AND WEDNESDAY, NOV. 12.—BRIGHTON CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
TUESDAY, NOV. 11, AND WEDNESDAY, NOV. 12.—WATFORD CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
TUESDAY, NOV. 11, AND WEDNESDAY, NOV. 12.—ROYAL HORTICULTURAL SOCIETY OF JERSEY.—Autumn Exhibition.
TUESDAY, NOV. 11, TO FRIDAY, NOV. 14.—NATIONAL CHRYSANTHEMUM SOCIETY.—Centenary Exhibition and Festival. Meeting of Floral Committee first day.
TUESDAY, NOV. 11 TO THURSDAY, NOV. 13.—LAMBETH CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12.—CHELMSFORD HORTICULTURAL SOCIETY.—Chrysanthemum Exhibition.
WEDNESDAY, NOV. 12.—SEVENOAKS CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12.—WANSTEAD FLORICULTURAL SOCIETY.—Chrysanthemum Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—BIRMINGHAM CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—ISLE OF THANET CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—CROYDON CHRYSANTHEMUM SOCIETY.—Annual Exhibition
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—TUNBRIDGE WELLS CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—NORTHAMPTON CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—BATH.—Chrysanthemum Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—BOURNEMOUTH CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—CORNWALL CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—DARTFORD CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—FAVERSHAM CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—GUILDFORD CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
WEDNESDAY, NOV. 12, AND THURSDAY, NOV. 13.—HAMPSTEAD CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13.—CREDITON CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13.—DAWLISH CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13.—STAINES CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13.—ROYAL HORTICULTURAL SOCIETY OF IRELAND.—Autumn Exhibition.
THURSDAY, NOV. 13, AND FRIDAY, NOV. 14.—BARNSLEY CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13, AND FRIDAY NOV. 14.—CRANBROOK CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13, AND FRIDAY, NOV. 14.—SOUTHEND CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13, AND FRIDAY, NOV. 14.—SOUTHGATE CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13, AND FRIDAY, NOV. 14.—TEDDINGTON CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13, AND FRIDAY, NOV. 14.—WINCHESTER HORTICULTURAL SOCIETY.—Chrysanthemum Exhibition.
THURSDAY, NOV. 13, AND FRIDAY, NOV. 14.—WIMBLEDON HORTICULTURAL SOCIETY.—Chrysanthemum Show.
THURSDAY, NOV. 13, AND FRIDAY, NOV. 14.—BROMLEY CHRYSANTHEMUM SOCIETY. Annual Exhibition.
THURSDAY, NOV. 13.—WALTON CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13.—READING CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
THURSDAY, NOV. 13.—TAUNTON CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
FRIDAY, NOV. 14.—ECCLES CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
FRIDAY, NOV. 14.—REIGATE CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
FRIDAY, NOV. 14.—CHESHUNT CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
FRIDAY, NOV. 14.—HITCHIN CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
FRIDAY, NOV. 14, AND SATURDAY, NOV. 15.—BOLTON.—Chrysanthemum Show.
FRIDAY, NOV. 14, AND SATURDAY, NOV. 15.—LEICESTER.—Chrysanthemum Show.
FRIDAY, NOV. 14, AND SATURDAY, NOV. 15.—NOTTINGHAM.—Chrysanthemum Exhibition.
FRIDAY, NOV 14, AND SATURDAY, NOV. 15.—SHEFFIELD CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
FRIDAY, NOV. 14, AND SATURDAY, NOV. 15.—DERBY CHRYSANTHEMUM SOCIETY.—Annual Exhibition.
FRIDAY, NOV. 14, AND SATURDAY, NOV. 15.—DEWSBURY PAXTON SOCIETY—Chrysanthemum Exhibition.
SATURDAY, NOV. 15.—RAMSBOTTOM FLORAL SOCIETY.—Chrysanthemum Exhibition.
SATURDAY, NOV. 15.—BACUP CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

CHRYSANTHEMUMS IN THE PUBLIC PARKS AND GARDENS.

THE exhibitions of chrysanthemums in the public parks and gardens within the metropolitan area are considerably above the average, and afford those who are unable to indulge in the luxury of a visit to one the shows, at which a charge is made for admission, abundant opportunities for enjoying the beauty of the flowers of the best varieties.

FINSBURY PARK fully maintains the high reputation it has so long enjoyed, for the great excellence of its exhibitions of chrysanthemums and the display produced is one upon which Mr. Cochrane, the able superintendent, and Mr. Mardlin, the foreman, may be heartily congratulated. Incurved varieties, which afford such a good test of the cultivator's skill, are especially good, the majority of the blooms being so highly developed that they would render substantial assistance in a close competition. Especially noteworthy are the examples of The Queen of England, and Empress of India. The Japanese varieties are simply magnificent, new and old varieties being alike well represented. Both the large and Japanese anemones are plentiful, and the superb blooms greatly enhance the interest and attractiveness of the display.

BATTERSEA PARK has an excellent exhibition, in which the Japanese varieties greatly predominate. The plants are arranged in a roomy structure in the frame ground, and as they are well flowered and the blooms of good quality a very effective display is produced.

VICTORIA PARK Exhibition is again remarkably good, and the light and airy span-room house provided for the chrysanthemums when in bloom presents a bright and attractive appearance. Japanese varieties are the most numerous, but the incurved have not been overlooked, and their large massive flowers contribute their share to the interest of the exhibition.

SOUTHWARK PARK is situated in a district by no means favourable to vegetable life, and the exhibition of chrysanthemums now being held within its boundaries reflects much credit upon the management. Both incurved and Japanese varieties are well represented, but it is not surprising to hear that the quaintly formed and richly coloured flowers of the latter are the most highly appreciated by the visitors.

TEMPLE GARDENS, in which so much has been done to popularise the chrysanthemum, has again provided an exhibition at once distinguished by its beauty and interest. The exhibition contains a goodly number of varieties of recent introduction, and all the old favourites are represented in a manner that does credit to Mr. Newton's cultural skill.

Law.

A BEE-SWARMING CASE.

IN the Small Debt Court, Stonehaven (near Aberdeen), on Wednesday, the 29th ult., Alexander Kerr, Stonehaven, sought to recover £1 5s. from James Lindsay, Howieshill, Muchalls, being the value of a swarm of bees, which it was alleged had left a skep belonging to pursuer at Backhill of Cowie, on July 28. Proof was led. Mrs. McPherson, tenant of Backhill, said she had kept bees belonging to Kerr for several years. On July 28 her attention was directed by a neighbouring farmer to a swarm of bees, which she supposed were Kerr's, which had escaped from a skep, and she followed the bees to Howieshill. She was a short distance behind them, but saw them flying in the air, and at Howieshill she saw a swarm, which she thought was Kerr's, settling on a skep and entering it. She did not see them leave the place, but on her return the skep was empty, into which a swarm which had come of Kerr's on the previous day was put. Defender did not deny that a swarm might have gone on his hive; indeed, he thought such had happened, and that, after seeing a number of dead bees, he was of opinion that the new swarm had killed his bees, and taken possession of the hive. The case was argued at some length by Mr. Crockett, solicitor, on behalf of pursuer, and Mr. Falconer for defender. The Sheriff assoilzied defender with expenses.

BEDFORD PARK NATURAL HISTORY AND GARDENING SOCIETY.

The first meeting of the current session was held at The Club, Bedford Park, on Saturday evening, the 1st inst. There was a large representative display of chrysanthemums, and an interesting collection of photographs and engravings illustrative of the history of the chrysanthemum since its introduction into this country.

Mr. George Gordon, the honorary secretary, gave a short lecture on the evolution and characteristics of the several groups into which the chrysanthemums are now divided, which was much appreciated by the large audience. This was followed by an address by Mr. G. C. Haite, F.L.S., on the use of the "Chrysanthemum in Decorative Art." The address, which was enthusiastically received, showed that Mr. Haite fully appreciated the great value of the chrysanthemum in the arts, and is thoroughly conversant with he details of its efficient utilization.

Exhibitions and Meetings.

NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.

Cultivation of the Gooseberry.

The monthly meeting of this association was held in the Music Hall, Aberdeen, on the 27th ult. There was a good attendance, and Mr. D. M. Smith presided. The chief business on the agenda card was a paper by Mr. Donald, gardener, Denmore, on "The Gooseberry." After giving an interesting history of the plant, Mr. Donald went on to speak of its cultivation. It is very easily raised from seed, and its varieties are capable of being endlessly multiplied, as many as a hundred kinds having been cultivated in the early part of the century, while at the present time the lists of exhibitors contain as many as three hundred. As far as weight is concerned, it would seem that the maximum weight had been reached in 1852 in the "London" variety, the figure being 37 dwts. 7 grains. Since then the tendency has been backward, the next heaviest being that of the "Bobby" of last year, which scaled only 29 dwts. These berries, however, are quite unnatural in their size, being produced by special cultivation. The gooseberry possesses four different habits of growth—namely, upright, pendulous, spreading, and the large fruiting varieties termed "Lancashire sorts," which are of a drooping or horizontal nature. Of all the modes of training, none will yield heavier crops than the bush form, and he (the lecturer) recommended what is generally termed quarter planting as preferable over all others for this purpose. At the present time the berry is to be found in all sorts of soils, but, speaking for himself, he had found the best results in a calcareous soil or sandy loam—one rather inclined to be dry than wet. Mr. Donald then proceeded to speak in detail on quarter planting, dealing with trenching of new plantations, the space allowed to each plant, manuring, and the prevention of over-wooding. In regard to growth and training, the chief care was the prevention of over-luxuriance, and he gave certain instructions in regard to pruning. He went on to refer to the numerous dangers to which the plant is exposed, mentioning in particular birds, the only preventive from which was netting; cold, from which there was little or no safeguard save the very obvious one of canvas covers; insects, such as wasps, the remedy for which is to kill the queen wasps in spring, and extermination as opportunity offers: caterpillars—the greatest of all pests—being best coped with by the application to the plants of hellebore powder in the proportion of 1 lb. to every hundred bushes. Proceeding to speak of the pecuniary aspect of the subject, namely, the profitable cultivation of the berry, he went on to say that an acre, containing 1,210 plants in a good season, should yield £120, but, speaking generally, the average return was something like £75. With reference to the productive powers of the gooseberry of other countries, he did not think that this country had any serious competition to meet. He then made some remarks on the uses of the fruit, and gave a number of hints in regard thereto. The yellow, green, and white varieties were mostly used in a fresh state, being generally of a sweeter and more palatable nature. The smaller sorts of the red are preferred for making into jams, unripe berries of all kinds being equally adaptable for the making of jellies, &c. In the matter of over-production, it was his opinion that the present supply would be nothing to the demand were the nature of the fruit better understood, and better managed. He would suggest as an interesting matter for the Fruit Committee of that association to make a specialty of raising new varieties, flavour and the maintaining of flavour being the chief points in view. Prizes might be offered for varieties possessing merits over existing varieties. New methods of preserving ought also to be sought. Why, he asked, were not the berries preserved in a dry state as well as a liquid? He also spoke of the manufacture from the gooseberry of brandy and wine; and while he might not commend this, he thought a good cordial or temperance beverage could be made from the berry. The demand for fruit, he said, was growing, and if cultivators did not keep their weather-eye open they, together with their fruit-producing privileges, would be nowhere. He concluded his interesting lecture by commending to amateur growers the culture of the berry as an interesting and profitable recreation. A discussion followed, and at the close Mr. Donald was thanked very warmly for his paper. Mr. Minty, Canal Road, exhibited two beautiful specimens of chrysanthemums grown in the outside, which showed the mildness of the season. Mr. Grigor, Fairfield, had forward a bunch of strawberry blooms. A vote of thanks to the chairman closed the proceedings.

NORTH OF SCOTLAND ROOT, FRUIT, AND VEGETABLE ASSOCIATION.

Annual Exhibition.

The annual show of this association, which was held on Saturday, 1st inst., in the Drill Hall, Inverurie, N.B., was smaller than it has been for several years. It was supposed that the stormy, unsettled weather which prevailed in the early part of last week prevented the full number of exhibits of field products being brought forward; at any rate, there was a pretty large falling off as compared with last year. The entries in the respective departments were as follows: Turnips, 128; field potatos, 122; garden potatos, 85; fruit, vegetables, &c., 315. Total, 650. This, as compared with last year, when the entries numbered 840, gave a decrease of 181. In other respects the show was a great success, there having been seldom a better all-round display, taking into account the quality of the exhibits. The exhibition does good in the way of bringing competitors together to talk of their successes and failures, and so from the experience of neighbours light is often thrown on difficult problems in the horticultural art. In a season of such abundant crops as the present, it was not surprising to find there was a splendid display of field products.

Fruit.—The association does great service to fruit growers by establishing the varieties best suited for northern soil and climate. There has seldom been a finer show in this section, and the keen interest that gardeners took in the exhibits indicates that this somewhat neglected branch of the gardeners' profession is reviving. Though it cannot be said the past season has been a good one for apples, the weather being too dull, cold, and damp, still the display was up to the standard of former years. There was a fine show of baking apples, the Warner King variety, noted for its hardy constitution, fine crisp flesh, and its suitability for a northern climate, taking the lead in the collection. Mr. R. Singer, Keith Hall, had the credit of carrying off first honours. The New Hawthornden, another hardy apple, and Lord Suffield, were also shown in good condition. On the same table Messrs. Benjamin Reid and Co., Aberdeen, exhibited a seedling named the Ecklinville, which is something after the Warner's King type, but quite distinct, and the specimen shown was well finished, and in splendid condition. It was grown by Mr. Smith, Cullen House. Mr. A. Campbell, Thainston, carried off premier honours for dessert apples, with a superior dish shown in good condition. The Ribston Pippin variety was fairly well shown, Mr. Middleton, Monymusk, and Mr. Barron, Meldrum, being successful for beautiful dishes in very fine condition. Mr. P. Ogg, Fintray House, was awarded the leading place for collections of pears, his exhibits being wonderfully well grown for the climate, and apparently of French descent. They were considered to be equal to any ever seen at Inverurie. In the class for baking apples, open to amateurs, Mr. Nares, Parkhill, exhibited a particularly good dish of the Warner's King variety—large, crisp, and in good condition—which was selected for first honours; and for dessert apples in this class, Mr. George Taylor, Inverurie, scored with a dish of very fine Cellini, which were much admired.

Turnips.—In this department the quality of the bulbs was excellent; the exhibits had been selected with the greatest care, and the competition was very close in many of the classes. It would appear, however, that the crop throughout the north is not uniformly so good as might have been expected, there being in many cases a deficiency in the Swedish turnips arising from the fact that the growth, instead of going to the bulbs, has gone largely to the tops, and reduced the feeding value of the crop to a considerable extent. This is more observable in the case of green-topped swedes than in purple tops. By several competent judges the deficiency in the crop is attributed to seed which had not been transplanted, as they have observed that "shooting" has been less common where transplanted seed was used. Probably the character of the season has had a good deal to do with it. Where the crop was early the bulbs "set" during the dry weather, and their growth was checked, and when the rain came the second growth seems to have gone into the tops. The turnips in competition were generally well grown, but the swedes were not so heavy as in some seasons. The prize for the twelve heaviest swedes went to a Morayshire gentleman, Mr. W. Robertson, Linkwood, whose entry turned the scale at 138½ lbs. Sir Robert Abercromby, Bart., of Forglen, was a most successful exhibitor, taking both the first prizes for green and purple-top swedes, with two well-selected samples. The judges gave the award of a special prize to the purple tops as the best entry of swedes on the ground, and a fine-fleshed lot they were. Mr. Bruce, Byres, and Mr. Murray, Fauchfaulds, also showed fine samples in these classes, which were deservedly placed by the judges. The section for yellow turnips, was uncommonly fine. For the second year in succession Mr. Reid, Culhay, Allford, gained the special prize for the best yellow with a beautiful-topped, well-grown, shapely, nice-coloured, well-finished lot of green tops, which gave an average measurement of 24½ inches. Mr. Yool, Glenlogie, was second for a sweet lot of yellows, not unlike in type to the Culhay entry. In purple-topped yellows, Mr. Charles, Gammons, was first with a lot of beautifully-grown, well-coloured bulbs, which ran the green tops very close for the special prize. Some of the entries in the class of purple tops were too white at the bottom. Mr. Reid, Culhay, first, and Mr. Murray, Fauchfaulds, second, for early field yellows, with good samples of pretty shapes, but several of the entries, it was noticed, hardly came under the term "early," being apparently mostly Aberdeenshire bullock yellows. The competition was very close in the classes for collections, and the quality good. In one of the competitions for a collection of 24 turnips, and 36 round field potatos, an entry from Linkwood was disqualified on the ground that the potatos were not according to the classification, although it was stated that in the catalogue of a well-known English firm they were offered as a round variety. In this competition Mrs. Maitland, Muirton, who was a very successful exhibitor, won with a very creditable sample, in which the Swedish turnips were about the strongest feature.

Potatos.—The display of potatos at Inverurie is reckoned to be about the best in the country. Among the early varieties this year, especially of garden growth, there has been a good deal of disease, and in field potatos too where the soil was cold and damp, but it appears that the main crop is fully better than was expected, both in quantity and quality. This was borne out by the samples which growers put into competition on Saturday. Several new varieties were brought under notice, which are apparently worthy of cultivation, and among the more popular, disease-resisting, heavy-cropping varieties, the Champions may be mentioned as still keeping their place, and another variety closely allied to the last, known as the Invincible, a better finished potato, and recently introduced into the north, will, it is thought, prove a valuable acquisition to potato growers. The Lord Rosebery and Grampians are also largely cultivated. In the class for round whites, Mr. Lawson, Scotsmill, took the lead with an excellent sample of the Glenbervie variety, which was considered to be as good as anything that has been seen at Inverurie for years. It was also awarded a piece of plate as the best against Victorias, Champions, Invincible, and Grampian or Lord Rosebery. Mr. Gerrard carried the premier with a superior dish of Forty-folds, and Mr. G. Mearns with a strong entry of Magnum Bonums. The same gentleman was placed first in a fine class of Victorias. In the Champion of the Invincible varieties, Mr. Brown got placed first with a dish of Invincibles, a very large and well-finished sample of excellent quality and shape. In the competition for Grampians or Lord Rosebery potatos the running was very close, Mr. Yool being placed first with a beautiful entry. Mr. James Mearns exhibited several dishes of The Farmer, a variety which was admired by growers for their nice shape and finish. Mr. James Mearns and Mr. R. Ironside had a keen tussle for the leading prizes for collections of thirty-five potatos, Mr. Mearns ultimately winning with a very superior entry, which included Imperator, Glenbervie, Fortyfolds, Magnum Bonums, Grampians, and Reading Rubies. Mr. Ironside's collection was made up of Regents, Glenbervies, Ingliston Flukes, Magnum Bonums, Fortyfolds, and Lord Rosebery, his entry of Ingliston Flukes being greatly admired. They are said to be becoming very popular in some parts of England. For collections of twenty-four potatos Mr. Sowden, Hillhead, Keith Hall, took the lead, his finest dishes being Grampians and Regents. Garden potatos, in spite of the fact that several of the varieties were badly affected with disease, were well shown. Here that well-known amateur grower, Mr. P. Moir, Kemnay, was again to the front, beating professionals and everybody, and winning a piece of plate for the best dish in the hall with a perfectly complete sample of Snowflakes, which were greatly admired by growers. An interesting seedling raised by Mr. R. Grigor, gardener, Aden, was exhibited by Messrs. Ben Reid and Co., of Aberdeen. It has been named the Optimus, is of the Ashleaf type, and is recommended as an early potato. The tops grow only to a height of ten or twelve inches, which is a great desideratum for a variety intended for early use. From a sample which was shown in the boiled state it is evidently a potato of first-rate quality. Mr. Ironside, Ingliston, also showed The Cobbler for the first time, a variety of the Regent type, recommended to growers as a second early, a

large cropper, and a hardy sort. Mr. Macpherson, Elgin, also introduced several new varieties of seedlings in the regular classes, for which he carried off all the honours, several of which are, in the opinion of experts, likely to "hold the field." Vegetables were fully up to the standard of former years. Leeks were uncommonly fine, and onions were also a capital show, the Cranston Excelsior being prominent. The arrangements were ably carried out by Mr. Baxter, Union Bank, Inverurie, the newly-appointed secretary.

The judges were: For field turnips—Mr. George Donald, Grange; Mr. A. Cowie, Turtory; and Mr. James Merson, Craigwillie. For field potatos—Mr. Macleod, Aberdeen; and Mr. D. M. Smith, Aberdeen. For garden potatos—Mr. Gregor, Aden; and Mr. W. Smith, Aberdeen. For garden roots, fruit, and vegetables—Mr. Cameron, Forglen; and Mr. J. Smith, Cullen House.

THE DINNER

Dinner was held in the Hall of the Gordon Arms Hotel, Mr. W. H. Lumsden, of Balmedie, president of the club, in the chair. There was a good attendance. Having given the usual loyal and patriotic toasts, and presented the special prizes, the Chairman proposed the toast of the day, "Success to the North of Scotland Root, Fruit, and Vegetable Association." He asked them to fill their glasses, as he felt sure that the finest blend of whisky could not be dedicated to any better cause than that of drinking to the Association. First of all, he supposed he must put himself forward. (Applause.) He begged to return to them his most sincere thanks for the proud position to which they had again elected him in making him president of the society. (Applause.) He found many distinguished names on the roll of presidents; and he supposed, when they placed him on it they wanted one without a distinguished name; but he would yield to no man in his desire to promote the welfare and well-being of that association. He thought—for he did go round the show—that he might congratulate them upon their display that day. He had seen a larger show, but he had never seen one that would beat it in the quality of the exhibits. He thought they might be thankful to a bounteous Providence for the most abundant crop that had been bestowed upon them this year. (Applause.)

Other toasts followed.

Mr. Darling, seedsman, Aberdeen, proposed "The Judges," and Mr. Merson replied.

Mr. A. M. Gordon, of Newton, proposed "The Chairman," which was very cordially received, and duly acknowledged.

MR. JOHN WALKER'S ROOT SHOW, THAME, OXON, NOVEMBER 4.

This year's exhibition at Mr. Walker's stores was aided by brilliant weather. The roots were ranged on the footways in front of the premises. The number of roots entered was 350, the bulk of general good outline and quality. To aid the display, Mr. Walker submitted a fine collection of Long Red, Golden Tankard, Yellow Globe, and other mangels of extra quality, and well-grown swedes (not for competition) were sent by Mr. B. Holland, of Thame. The aggregate weights are appended, but the heaviest globe mangel turned the scale at 30 lb., while the biggest turnip and the handsomest long red mangel each pulled down 25 lb. The judges' work was a trifle arduous, their awards being as follows:—

Class I. Roots pulled from not less than six acres.—Long Red Mangels (six): First, Mr. Wiggins, Thornley Hall (weight 89 lb.); second, Mr. Geo. Bailey, Thame (90½ lb.) Globe Mangels (six): First, Mr. Wiggins (96 lb.); second, Mr. Thos. Howlett, Kingsey (90½ lb.); the unplaced lots gave 88, 81½, 76½, 70½, 69½, 66, and 61 lb. respectively. Common Turnips (six): First, Mr. W. Collett, Stafford Farm, Headington (95½ lb.); second, Mr. G. Bailey (73 lb.); the unplaced ranged 121, 101, 100, 96, 87, and 81½ lb. the six roots. Swedes (six): First, Mrs. Rowlands, Shabbington (91½ lb.); second, Mr. Jos. Sotham, Holton (90 lb.); the unplaced collections giving 104, 89, 82½, 81½, 80½, 78½, 75½, 73½, 72½, and 70 lb. the half-dozen roots.

Class II. To be drawn from less than two acres.—Long Red Mangels (three): First, Mr. J. Joiner, Worminghall (68½ lb.); second, Mr. E. Hawes, Worminghall (61½ lb.); one other lot weighed 63 lb. Globe Mangels (three): First, Mr. J. Joiner (90 lb.); second, Mr. E. Hawes (72½ lb.)

Visitors to the show usually embrace the opportunity of inspecting Mr. Walker's nurseries. In the fruit quarters all hands were in full swing in packing off trees and shrubs, but the attraction lay chiefly with the floral treasures under glass, the show of chrysanthemums being exceedingly interesting. The varieties fully expanded as show blooms included: Madame J. Laing, Edward Audiguier, Duke of Berwick, Mons. Baco, Lady Cave, Mons. Harman Payne, Sarah Owen, Sunflower, Jubilee, Mrs. W. Shipman, Eve, Mrs. Sharpe (extra large), Prince of Wales, Lady Hardinge, Bronze Jardin, Miss V. Tomlin, Miss M. A. Haggas, Jeanne d'Arc, Lord Wolseley, Edwin Molyneux, Avalanche (good), Florence Percy, Baronne de Prailly, Maiden's Blush, Roi des Japonais, Mons. J. M. Pigny, Madame C. Audiguier, Charles Gibson, Etoile de Lyon, Jardin des Plantes, Mrs. Cannell, Mons. H. Jacotot, Mons. Bernard, Golden Dragon, Marguerite Marrouch, Carew Underwood, and Gloriosum. Among the small stuff in flower, we noted a nice strain of crimson primulas.

GARDENERS' ORPHAN FUND.

The first monthly meeting of the executive committee after the usual recess was held at the Horticultural Club, Queen Victoria Street, on Friday evening, the 31st ult. William Marshall, Esq., occupied the chair, and there was a large muster of members.

The business included the reception of the report of the sub-committee appointed at the July meeting to consider the advisability of commencing and ending the financial year in January and December respectively, instead of its beginning in July and June as is at present the case. The sub-committee recommended that the change be effected, and that the annual meeting and election of pensioners be held in February, instead of July. The matter was fully discussed, and it was unanimously resolved to recommend to the subscribers that the several changes be made. For this purpose, a general meeting will be held at the Cannon Street Hotel on Tuesday, December 9, when the proposals will be submitted to the subscribers.

It was decided that the Deal Memorial Fund should be closed on the 22nd, and a list of the contributions be sent to the subscribers. Mr. Barron expressed a hope that those who wished to contribute to the fund would communicate with him by that date. Mr. George Gordon announced that the concert held under the auspices of the Chiswick Gardeners' Association, of which he is chairman, had proved highly successful, and that the committee hoped to be able to make a substantial contribution to the fund.

The hour of meeting of the committee was, to meet the convenience of the members, altered from six p.m. to seven p.m.

DUTCH HORTICULTURAL SOCIETY, SEPTEMBER 25.

FLORAL COMMITTEE.

At this meeting first class certificates were awarded to: Mr. E. H. Krelage and Son, Haarlem, for Crocosma aurea var. maculata, Kniphofia Leichtlini var. distachya, and dahlia Annie Harvey; Mr. J. J. Kruyff, Sassenheim, for Begonia tuberosa Dr. H. Van Hall; Messrs. Groenewegen and Co., Amsterdam, for Viola odorata Amandine Millet, Cactus dahlia Beauty of Brentwood, Cactus dahlia Mrs. Hunt, Anthurium Rotschildianum, and Sonerilla Orientalis picta; Messrs. Anton Roozen and Son, Overveen, for Kniphofia hybrida R. C. Affourtit; Mr. G. De Haan, Zeist, for Anthurium hybridum R.C.Affourtit; the Zoological Gardens, Rotterdam, for Rhododendron Duchess of Connaught, and Nymphæa rubra splendens; Mr. C. G. Van Tubergen, Jr., Haarlem, for Crocosma aurea var. maculata, Colchicum autumnale fl. alb. pl., collection of dwarf cannas, and Kniphofia hybrida Météor, with yellow flowers; Messrs. Zocher and Co., Haarlem, for cut flowers of Cactus dahlias Marianne Harvey, Mrs. E. Hunt, and Beauty of Brentwood, and for single dahlias F. W. Heineman and Pfirsichblüthe; Mr. J. Th. Van Den Berg, Jr., Jutfaas, for a collection of cut flowers of Begonia tuberosa var. erecta gigantea duplex in different colours, and for Delphinium hybridum fl. pl. Jean Baudry; Mr. Segers and Co., Lisse, for Spiræa astilboides.

Second class certificates to: Messrs. E. H. Krelage and Son, Haarlem, for Kniphofia hybrida Westermanii, and Lilium speciosum album Kroonprinses; Mr. C. G. Van Tubergen, Jr., Haarlem, for Kniphofia hybrida John Waterer and for a collection of seedling Tydæa; Messrs. Zocher and Co., Haarlem, for Lilliput dahlias Fairy Tales, Eurydice, Red Indian, and Little Ethel; Messrs. Groenewegen and Co., Amsterdam, for Sonerilla Orientalis punctata; Mr. J. Th. Van Den Berg, Jr., Jutfaas, for a collection of cut flowers of Begonia tuberosa var. erecta gigantiflora.

VEGETABLE COMMITTEE.

A first class certificate was awarded to Mr. H. W. Otto, Gouda, for cucumber Hampel's White; second class certificate to Messrs. Groenewegen and Co., for onion Light Red Hard of Groenewegen.

NEW CONTINENTAL ROSES.

TEAS.

Adelina Viviand Morel.—Vigorous; flowers medium size; apricot, shaded yellow and tinted rose.

Charles de Fanciosi.—Moderate; large, double; chrome yellow, shaded salmon and rose.

Christine de Nouë.—Vigorous; large, double; red purple.

Comtesse Eva Starhemberg.—Moderate; large, of good form, and with fine petal; yellow, cream colour in centre, and petals margined with rose.

Comtesse de Witzthun.—Vigorous; large, of good form; bright yellow, deep yellow in the centre.

Elisa Fugier.—Vigorous; resembling Niphetos in growth; large and full; white shaded yellow.

Etoile d'Angers.—Vigorous; large and globular; coppery yellow petals shaded at the edges with red-peach.

General Mertschansky.—Vigorous; large, and full; delicate flesh pink.

Gribaldo Nicola.—Vigorous; above the average in size, silvery white, shaded flesh colour; nankin yellow in the centre.

Jaune Nabonnand.—Moderate, large, full and of fine form; chrome-yellow tinted chamois, and shaded coppery-yellow in the centre.

La Chanson.—Vigorous; rather large; rose carmine.

Madame Dorgere.—Moderate; large and globular.

Madame Durand.—Vigorous; large, full and globular; bright yellow, shaded coppery-yellow.

Madame Elie Lambert.—Moderate; very free; medium size; cup shape; flesh rose.

Madame Simon.—Vigorous; large; white shaded rose and yellow.

Maurice Rouvier.—Vigorous; large, and of fine form; tender rose, tinted red.

Miss Wenn.—Vigorous; medium size; rose pink.

Princesse Sarsina.—Vigorous; rose and yellow, centre apricot, shaded vermilion.

Princesse Marguerite d'Orleans.—Vigorous; large, with fine petal; rose, with carmine centre.

Souvenir Lady Ashburton.—Vigorous and very free; large; red, salmon, and rose.

Souvenir de Madame Sablayrolles.—Moderate; medium size; rose.

Souvenir de Clairvaux.—Vigorous; medium size; rose pink.

HYBRID TEAS.

Gustave Regis.—Moderate; medium; canary yellow, centre saffron yellow.

Henry Brichard.—Moderate; rather large; white with carmine centre.

Madame Angelique Veysset.—Vigorous; sport from La France; flowers large, rose striped and blotched with bright red.

Madame Caroline Testout.—Vigorous; large, full and globular, satiny rose.

Triomphe de Pernet pere.—Moderate; flowers large; good form; bright rose.

HYBRID PERPETUAL.

Commandant de Lamalignie.—Vigorous; large and full; red-scarlet.

Dr. Bastien.—Moderate; large and globular; magenta-rose; very fragrant.

Joseph Degueld.—Moderate; large and full; bright carmine, shaded vermilion.

Jules Lemaitre.—Vigorous; large and globular; rose-carmine; fragrant.

Madame Charles de Rostang.—Vigorous; medium size; rose-pink, shaded mauve.

Madame E. Forgeot.—Vigorous; large and full; cerise-red.

Madame Lemesle.—Vigorous; large and globular; red-purple, shaded violet.

Roger Lambelin.—Moderate, medium; red carmine, shaded rose, and margin of petal.

Souvenir de Cecile Vilin.—Vigorous; rather large; red amaranth, shaded velvety purple.

BOURBONS.

Dr. Chopart.—Vigorous; medium size and full, satiny rose.

Juliette Berthand.—Vigorous; medium size; white, shaded flesh pink and pale yellow.

Souvenir de Victor Landeau.—Vigorous; large; cup-shaped; red, shaded carmine.

NOISETTE.

Comtesse de Bouchard.—Vigorous; large; saffron yellow.

SEMI-EARLY OR OCTOBER-BLOOMING CHRYSANTHEMUMS.

It has turned out that there are so many new good semi-early sorts of this season that I think it as well to say a little of them. It seems, indeed, that what has appeared desirable for some time, viz, that an October show should be held for them to display their merits, not possible either in September or November. When I entered the Aquarium at Westminster on the 15th of that month I was pleasingly surprised to see that the thing was accomplished; for although it was a fruit and flower show, the chrysanthemums were such a large feature that they were sufficient to make a show of themselves. Many of those shown were hardly such as could be considered October bloomers, but then the flowers looked so fresh and nice in their not fully developed beauties that there was a delicious charm about them not belonging to the flowers of similar sorts kept so long under glass as is necessary in November. It was a new sensation.

The main feature of this show was two large groups in fine order, containing many old favourites, as well as several new sorts. One group was from Messrs. J. Laing and Sons, of Forest Hill, London, S.E., and the other was from Mr. H. J. Jones, of the Ryecroft Nursery, Hither Green Lane, Lewisham, London, S.E., and we have to thank those gentlemen, especially as there were no prizes for these fine masses of flowers except the credit and publicity.

As for the novelties of this show, perhaps the exhibit of Mr. R. Owen, of Maidenhead, of a whole batch of new seedlings raised from seed grown there was the greatest. This seed grown by him was not produced in the way I grew mine, that is, naturally as far as regards fertilization, but regularly crossed one upon another, as Dr. Walcot, of New York, raised Sam Henshaw from Viceroy of Egypt and Comte de Germiny. Mr. T. H. Spaulding, of Orange, New Jersey, U.S.A., does the same thing. He says that a much larger percentage of good sorts come that way, and this season's experience of Mr. R. Owen seems to justify this opinion; indeed, it is quite in accordance with very much experience, or perhaps the law that all breeding in and in tends to retard the development of a species, while breeding outwards, although often producing a reversion backwards, is one of the great openings to advance by selection seeming one of the main keys to unbounded progress. The seedlings exhibited by him contained many very good things, but the greatest novelty was a good Japanese, which he has named *Coral Queen*, and a good name too, for it is more the colour of pink coral than aught else. It seems to me a new colour. This is result of a direct cross between W. Holmes and Pynaert Van Geert. I think it will be a very acceptable colour, if not among chrysanthemum growers that it will in the cut flower trade and the ladies, who are so great a factor there.

One of the most striking new things of this show were some very fine blooms of a newly discovered white of most superb merit. It is named *Bouquet de Dame*, exhibited by Mr. N. Davis, of Camberwell, London; how it is such a beauty has not been shown before is a wonder. It is a large flower of great body. The blooms shown were, of course, disbudded flowers, grown in the first style of the art; but it is likely such a powerful plant is fit for many other uses. Mr. Davis also exhibited a plant of the new American incurved variety, *Miss Anna Hartsorn*, for which he received a certificate. This is another beautiful white, which will at once make itself a place in many collections. It is not so tall a plant as Bouquet de Dame, but very white, and exquisitely delicate. Probably fit for many decorative purposes, if it should not prove large enough to satisfy the craving for large size.

Mr. A. J. Manda, of the United States Nursery, Hextable, Swanley, Kent, showed a small board of chrysanthemum blooms, among which was one of *Mrs. Hicks Arnold*. This is a new American variety, the first time exhibited. It is a very stout, dwarf, bushy sort. The plant grows not more than about two feet high, bearing a pale magenta to white flower, four inches across, very flat, reflexed near the middle and incurved at the ends of the petals, blooming this month or the end of September. It is a very good grower and quite a novelty in shape; for any season, especially October. Can be grown without sticks, and must command attention at once.

He also had on this same board some flowers of *Clarence Bryant*, a new good American yellow. I have grown this, and it seems a very good sort. It is not too tall. A pompon in size.

Harvest Queen, not yet exhibited in England as far as I know, is another American variety said to be a sport of October Beauty, but larger and better than that. It is a very excellent plant, good grower, and robust; height, three feet; bushy habit, and profuse bloomer; flowers reflexed, very white, two to three inches across. Will be very good for cut flowers. We have nothing in the style at the time.

Cameleon is another October bloomer, two feet six inches high, of stout close growth; flowers reflexed, three inches across; colour primrose. Its bloom is so thick a mass on the top of the plant as to form a solid table of flowers. It is one of the most profuse bloomers I ever grew. Very striking, indeed, in appearance.

Souvenir de M. Menier is a new crimson. It will probably bloom in September next season. Grows four to five feet high; blooms four to five inches across of globular form with straight petals.

Mons. H. de Fortanier is rather a slender plant four to five feet high, the flowers being about five inches across, of a bright purple crimson colour. This as it has bloomed this season is a thin flower showing a disc, but as it is likely to come better next season, if it be not valuable for anything else, will probably furnish seed with a capacity for the production of descendants of a colour much wanted among the early sorts.

Madame Dolobel.—This is another useful semi-early quite of a new style in the forward sorts. Three feet high; flowers three inches across; incurved, crimson in colour.

M. Hilliot is very similar to the above in colour and form of flower. About two feet six inches high. The flowers are rather larger than Dolobel.

Madame Ernest Bergman, a profuse bloomer, is a pink Japanese, somewhat like Pink Lacroix, and will most probably be one of the early sorts next season. Grows four to five feet high.

Madame Ferdinand Bergman is a dwarf white, with straight petals wide and stout.

Mons. Ernest Bergman is a thin-growing plant, with fimbriated crimson flowers.

The following are all semi-early, and some of them probably early next season: Mons. Robert Owen, Mons. Harry Laing, Rose Laing, M. Jules Humbert, M. Ulrich Brunner, H. Faisant Lamotte, and Mons. E. Barrillion.

W. Piercy.

89, *Beadnell Road, Forest Hill, London, S.E.*

THE HOMES OF SOME INDIAN FERNS.

No. II.

In an article on the Fern Conference of the Royal Horticultural Society on page 453 of the Gardeners' Magazine, the writer says, "A leading lesson for the observer of the several lots can be set forth in three words, to the effect that *Ferns Love Light.*" With this opinion I cordially coincide. Some few there are, doubtless, that refuse to display their greatest charms when exposed to the strong light of day, but as a general rule "ferns love light." Many there are whose habitat is under the fierce sun and exposed to all the blasts of heaven; and it would seem as if they could not thrive under different conditions. They seem to suffer from long continued droughts, but spring to life again on the approach of the first revivifying shower of spring with renewed vigour, and, seemingly, all the better for their prolonged rest; they love the light and must have it even at the expense of extreme climatic privation. I will go farther, and say, from observation, that ferns that affect even the shadiest parts of the earth, love light. That is, they may not thrive under the direct rays of the sun, but they will thrive almost as little when subjected to semi-darkness from the dense foliage of other plants and trees or artificial shade of whatsoever kind. Of course, it will be understood that I am now only writing on the habitats of our Indian ferns, and will give my experience briefly on the subject of light so far as my observations went while sojourning in that country. In the dense cool forests of the Western Ghauts, ferns are to be found in abundance, clothing the ground where the canopy of evergreen foliage above effectually shuts out every sunray, and where the light even at midday is greatly subdued. The plants look green and beautiful, but when the fern collector happens to reach a small clearing in the midst of the jungle, his surprise is great when he sees the same species of ferns around its edges, half in and half out of the surrounding forest, with fronds of double the size and crowns of double the strength and vigour of those within the shade, and saying in unmistakable language, "We love the light." It is the same where roadways have been driven through the forests. The deep cuttings are immediately clothed with a generation of ferns, veritable giants in comparison with the pigmy forms of their own species growing but a few paces distant within the half-darkened forest. Should a small clearing be made in the midst of the forest by the native tribes for the cultivation of cardamoms, it is just the same, the influence of light will soon clothe the margins of the patch with ferns of far stouter proportions than those growing where the light is wanting. The tree fern, Alsophila latebrosa, so common on the Western Ghaut and Nilgiri ranges, is generally found in the deep cool forests in the near neighbourhood of streams. It is generally to be seen in groups, and although its roots and stems are well protected, it is invariably found in situations where the noble crown of fronds are fully exposed to the tropical sun. So far as my observation extends, by far the greater number of Indian ferns, while shunning the direct rays of the sun, at the same time revel in an abundance of light. Some few court situations of the fullest exposure to sun and weather, whilst the number is very small that seek and thrive in continual shade. In the cultivation of tropical ferns under glass in England, the influence of the sun's rays through the glass roofs of course must be taken into consideration; but I am inclined to doubt that tinted glass does any good, or indeed permanent shade of any kind. Shade by all means from the noonday summer sun, but let this be withdrawn as the sun declines, and withheld altogether in cloudy weather, and depend upon it a better chance will be afforded most ferns of obtaining what they evidently require to sustain them in health and vigour, namely light.

Drynaria quercifolia is a splendid object when seen in its wild state. In South India it grows from an elevation of 1,000 to 4,000 feet above the level of the sea. It is found on rocks and trees, but mostly the latter, in Malabar preferring the wild mango (*Mangifera indica*) overhanging the large rivers. In such situations it is frequently seen during the rainy season literally clothing the stout limbs of the mango trees with its curious and splendid fronds, causing the traveller to stop in amazement at the magnificent sight.

I have very seldom seen the drynaria growing on other trees than the wild mango. This tree is evergreen, and the wood is white, soft, and spongy. What a fine thing it would be if this fern could be grown on the limbs of trees in some of our largest English conservatories, instead of in pots, in which I always think it looks extremely unhappy after having seen it in its home overhanging the rivers of Malabar. In its wild state the fronds perish during the dry weather, but when the first showers of spring come the drynaria is not slothful in sending

forth its new fronds, the delicate tints of which are beautiful in the extreme. This fern evidently requires a complete rest during our winter months, which correspond with the hot season of South India.

Pteris geranifolia.—This pretty little fern I have frequently found on the eastern slopes of the Nilgiris, but it is another of those plants which is rarely seen in a purely wild state; it would seem rather to love the haunts of man, and follow him in his operations of subduing the wilderness. It is mostly found on roadside cuttings and other excavations, and near to the dwellings of natives where the ground has been disturbed to some extent. It is never found where the rainfall is heavy, but affects districts where the ground is dry and parched for many months of the year. Its fronds, although never disappearing altogether, flag and wither to a great extent during the hot season, giving the plant the appearance of being dead, but with the first thunder shower of spring a rapid and wonderful transformation takes place from apparent death to life in an exquisite form.

The aspleniums are numerous in South India, and include A. furcatum (growing abundantly on trees on the Nilgiris), A. nitidium, A. contiguum, A. tenuifolium, and A. formosum—the latter, perhaps, the most charming of the group. It is found growing on rocks and clefts of trees at low elevations, in pure leaf-soil, in the bamboo and teak forests. It is most frequently found on deciduous trees, and, like Pteris geranifolia, suffers in the hot weather. During the wet season, however, the plant presents a remarkably beautiful appearance, its exquisite and graceful fronds drooping in large tufts from the trees in rich abundance. This, to my mind, is the queen of all the aspleniums of South India, and the genus is represented by a great number of species.

Nephrolepis exaltata is found sparsely in Malabar, at an elevation of from three to four thousand feet, and is quite a startling object when a good specimen is found. It is sometimes found on rocks, but most frequently growing out of the clefts of large trees where some leaf-soil has accumulated. It grows on the edges of the cool evergreen forests, and does not suffer during the rainless months, but always presents a green and beautiful appearance. It affects close, hot valleys, and thrives in a minimum of soil and abundance of light.

Alsophila, two species. These tree ferns are found in the cool evergreen forests and sholas of Malabar and the Nilgiris. As stated above, they affect situations where there is plenty of moisture and shade for the roots and stems, but the noble crowns of fronds are always above the undergrowth of the jungles and fully exposed to the light of heaven. The plant grows in groups, and it is difficult to imagine anything in the vegetable kingdom at once more graceful, noble, and attractive than a group of tree ferns as seen in their native wilds, speaking of the remnants of a bygone race of plants that at one time covered the earth with their peculiar glory.

With me it is often a subject of regret that while resident amongst the ferny jungles of South India I did not make diligent search for varieties among the numerous species. When one sees and reads of what wonderful things have been found by careful search and observation among our British species, it can hardly be doubted that the same and more might be accomplished in foreign lands, where the wild species are legion as compared with the limited number of our British kinds. The possibilities in this direction would seem to be great with a tribe of plants of such protean proclivities as illustrated by the almost infinite number of varieties of British species recently exhibited at the Fern Conference.

The careful and studious observers amongst our young gardeners who are constantly leaving our shores for situations in many parts of the globe have, I imagine, within their grasp opportunities of revealing to the horticultural world a store of beauty and wonderment hitherto undreamt of.

J. LOWRIE.

ROYAL BOTANIC GARDENS OF CALCUTTA.

THE annual report for the year 1889-90 of these gardens, of which an accomplished Aberdonian, Brigade-Surgeon George King, LL.D, F.R.S., C.I.E., is superintendent, contains several items of general interest. No new work of much importance was carried out in the gardens during the year, we are told, and the attention of the staff was chiefly devoted to the maintenance, in as high a state of efficiency as possible, of the various departments of the gardens. "The display of orchids," says Dr. King, "was by far the finest that has been seen in the garden since I took charge of it nineteen years ago. This improvement is due partly to the recent extension of correspondence and interchange with collectors both in India and outside its borders, and partly to improvement in our conservatories and in our methods of cultivation. The number of tropical South American orchids in the collection is steadily increasing; and our accessions have been obtained, for most part, by exchange for indigenous species." With regard to economic plants, the most specific points mentioned are that the cheap and efficient extraction of rheea fibre (for paper-making, &c.) still remains an unsolved problem; and that "the use of *Sabai Bhabur* or *Babui* grass, which was first suggested as a good raw material for paper-making in the annual report of these gardens, has now been fairly established; and large quantities are regularly purchased by the various paper mills in Northern India. As yet, however, this fibre does not appear to form an article of export." A full, and to specialists, interesting account is given of the Herbarium, containing a very extensive collection of dried and named plants, which, in a scientific view, is the most important feature in a botanic garden, and very specially so in India, the flora of which contains more than 14,000 species of flowering plants. With regard to the Government cinchona plantation under Dr. King's care, the number of trees uprooted for their bark, or which died during the year, was 373,690, the "crop" of bark amounting to 140,310 pounds. The efficient services of Dr. King and his staff are acknowledged by the Lieutenant-Governor in the usual form.

CULTURE OF LILY OF THE VALLEY.

By C. WARDEN, The Gardens, Clarendon Park.

THERE are few plants in British gardens that are more neglected or roughly treated than the good old Lily of the Valley. Yet there are few plants that give better returns for well-directed labour bestowed upon it, than does this plant. At whatever season, or whatever way it is obtained in bloom, whether the weakly sprays blanched with the dark days of December, or the last remnants from a north border at the end of May, all are appreciated, But the much finer sprays, produced from February onwards are always greatly admired. The lily delights in a strong, deep, and rich soil, and it is much the best if the position is not too exposed to the sun, although it will thrive fairly well in open situations. The main of our stock is planted on a border, under a wall, having a north-west aspect, so that they get partially shaded during the very hottest part of the day, and in such a position they thrive admirably.

Although the Lily of the Valley appears to go back the following season after lifting, there is no way of keeping the stock in good condition other than lifting a part of it each year, sorting the crowns and replanting, taking care that the ground is deeply dug and well dressed with manure before the work of replanting is proceeded with. Where the stock of this plant is insufficient, it would be well to replant all the crowns, both flowering and the weaker ones, but in most instances the plump blooming crowns will be wanted for flowering in pots. It has been our practice for some years past to lift one-fourth of our stock of this plant every year, choosing the oldest crowns. Some of these are put into pots, but the majority of them are forced in shallow boxes, and also planted in frames on a cool bottom, and within a foot or so of the glass. In the latter place we have good accommodation for heating by hot-water, and by keeping the frame close for a time after planting, those put into the frame at mid-winter may be had in bloom moderately early. As they can have abundance of air as they begin to open their flowers, they do far better than when coddled up in a house. And there is yet another advantage in this shallow pit system of planting. It is that large clumps may be lifted in a mass with all the soil they will hold. In this way they do not miss the shift.

When all the bloom has been gathered they may be gradually hardened off and finally planted where they are to remain, cutting the large clumps into smaller pieces as the work of planting out proceeds. Nine inches apart is a good distance to plant, and the crowns when put out singly may be about an inch and a-half to two inches apart in the rows, but when clumps of strong crowns are cut up into pieces of eight or ten crowns each, one foot apart each way is a good distance. If these eight or ten crowns are pressed together in a neat form before planting, after they have become thoroughly established and strong, they would make excellent clumps for growing in pots, and when lifted after two or three years, any of the young rhizomes that may have grown from the old crowns may be removed and planted in lines for future use.

Differences of opinion exist as to the comparative earliness of home-grown or imported crowns. But except our home-grown crowns have been specially prepared, that is to say, kept in pots from a batch flowered in pots during March and April, we usually depend upon foreign crowns.

There are good and bad varieties of lily of the valley, and those who think of purchasing for the purpose of increasing their stock should see that they have a good variety. The Berlin variety is a good one, as are also some of the stocks held by growers who make a speciality of growing this plant in this country.

CHRYSANTHEMUM MADAME DESGRANGE.

THE finest lot of this chrysanthemum I have seen as grown for market purposes have been produced this season by a grower near Brighton. The number of plants exceeds 500, yet, as I saw them arranged in two span-roof houses, the tops were so level that in no instance was any shoot more than two inches higher than any of the others. The whole breadth of plants was one even unbroken mass, without any attempt being made in the arrangement to secure that result. The evenness in the height of the plants has been secured by careful cultivation, which I will briefly describe. I ought, however, to have said before, that two feet is the height of the plants all through without exception.

Those to which I refer were propagated from cuttings put into boxes during the month of December last. The boxes were about two inches deep, each holding about fifty cuttings. As soon as the cuttings were inserted the boxes were placed in a rather close structure where the temperature maintained was about fifty degrees. There they remained until they were rooted, when they were taken to a cold pit to remain until the time arrived to deal with them in the open air.

On the way they were managed after they were taken from the pit rests the whole secret of success in this instance. It will be understood that the object of the grower was to get as many flowers from each individual plant with as little outlay as possible, and when I have explained the treatment, I think the reader will agree with me the end aimed at was accomplished. None of the plants was ever inside a pot, as when the time came to plant them out in the open, they were transferred from the boxes to the ground. I ought perhaps to say here, that a strong vigorous growth was not desired, for that reason no manure was put on the land before planting. Previous experience had shown that more blooms were obtained from fairly strong plants than from those with more vigorous growth. In rather poor ground the plants were more branched and not so tall as when grown in a stronger medium. In inquiring into the details, I learnt that the plants were put out two feet apart each way; and instead of having a hole made to receive the roots in the ordinary way, the planter simply let the

roots rest on the level surface and drew some earth up to them in sufficient quantity to cover them.

The grower acknowledged that this style of planting necessitated a little extra care in watering at first if the weather was dry. It was, however, made quite clear that the practice was sound. It was explained, that by planting on the surface the roots would be nearer the top when lifting time came, and would lift with more roots attached than when they were deeper in the earth. This was quite easy to understand, as a portion of the stock demonstrated by their appearance. As some of them had been lifted only the day before I saw them, it is important to note that there was not the slightest trace about them of having been so recently disturbed.

It is necessary to explain that when brought indoors from the open ground the plants are not put into pots, but placed in a bed of soil with the tops averaging a distance of three feet from the glass. Here without any fire-heat they expand their flowers and a more promising lot one could not wish to see. I should mention that disbudding is freely done, either before or after the plants are brought indoors, and as soon as the roots begin to take hold of the soil in their fresh quarters, they are given weak liquid manure. I cannot attempt to say the number of blooms such a lot of plants would produce before they were used up; but I know that large quantities had been cut before I saw them, and that they would go on producing still greater numbers. What surprised me most of all, was the fresh and healthy appearance of the plants. The foliage was both large and plentiful with a depth of green about it that is not always present in this variety.

Surface planting, if I may so describe the practice pursued in this case, must, I think, explain a good deal, because some of the stock which had been brought in three weeks before were feathered with green leaves down to the soil. I must confess—old hand as I am—that I could never lift chrysanthemums from the open ground and put them in pots, or plant them in a bed of soil without the bottom leaves on the stems turning yellow. This case is another proof of how much one has still to learn. I, however, honour the man who can step out of the old rut and improve on the practice of others, especially as is the case in this instance, when the author of it declines to have his name mentioned in the matter. J. C. Clarke.

AMERICAN CHRYSANTHEMUMS OF 1890.

Ada Spaulding. (*Spaulding.*)—Globular flower, sturdy habit, lower half of the flower rich deep pink shading to purest pearl white; petals large, broad, and solid.

Addie Decker. (*Spaulding.*)—Mandarin-yellow, enlivened with salmon and flame colour.

Amber Gem. (*Hallock.*)—Flowers in form of a ball; beautiful amber. Imported from Japan.

Antoinette Martin. (*Spaulding.*)—Japanese, curly petals forming a compact mass of pink silvery sheen.

Arabian. (*Henderson.*)—Piped petals, lilac-rose tipped carmine. Imported from Japan.

Arizona. (*Pitcher.*)—Japanese, dwarf; tubular petals outside and flat incurved ones in centre; light chrome. Imported from Japan.

Auriole. (*Hollis.*)—Japanese, bright straw yellow shaded silver.

Ben Hur. (*Henderson.*)—Long silken petals, beautiful pink, large. Imported from Japan.

Bird's Nest. (*Hallock.*)—Single; tubular petals, carnation pink. Imported from Japan.

Bohemia. (*Pitcher.*)—Reflexed, Venetian red.

Brahma. (*Henderson.*)—Pure white forked petals.

Bronze Jewel. (*Hallock.*)—Large tubular petals, imbricated, bronze; inside of petals bright crimson. Imported from Japan.

Carrie Denny. (*Hill.*)—Flowers spherical, incurving and slightly whorled, colour clear amber.

Cashmere. (*Henderson.*)—Long wavy petals, orange-scarlet, tipped golden yellow. Imported from Japan.

Charity. (*Hallock.*)—Bright rosy carmine, lighter towards ends and centre; centre petals incurving towards centre, outer ones drooping. Imported from Japan.

Charles A. Reeser. (*Hill.*)—Recurved flower; rosy pink, with lighter shadings.

Chiffonier. (*Hallock.*)—Petals twisted, forming a ball; silver pink; imported from Japan.

Clara Rieman. (*Hill.*)—Lavender-rose, shading to silvery rose, white centre.

Coquette. (*Hallock.*)—Single; rosy-pink, yellow disc, with white zone.

Crown Prince. (*Hill.*)—Broad petals, like Mrs. C. H. Wheeler; blood-red and old gold; early.

Cyclone. (*Spaulding.*)—Japanese; creamy, white centre.

Damascus. (*Henderson.*)—Flat petals, scarlet and yellow. Imported from Japan.

Delhi. (*Henderson.*)—Orange and yellow, delicate wavy petals. Imported from Japan.

Eclipse. (*Waterer.*)—Large, flat, incurved, bright mahogany; probably synonymous with Gipsy.

Edwin Lonsdale. (*Waterer.*)—Similar to Mrs. Bullock in shape; velvety deep cranberry.

E. G. Hill. (*Spaulding.*)—Large flower, golden yellow, lower petals sometimes shaded carmine.

Elliott F. Shephard. (*Pitcher.*)—Japanese, broad ribbon-like petals, lemon yellow. Imported from Japan.

Galconda. (*Hallock.*)—Long petals, canary-yellow. Imported from Japan.

Garnet. (*Spaulding.*)—Japanese; petals rich wine-red, reverse silvery-white.

Gipsy. (*Waterer.*)—Flat incurved flower, light velvety mahogany; probably the same as Eclipse.

Gold Band. (*Hallock.*)—Broad petals, deep lemon-yellow. Imported from Japan.

Gold Thread. (*Hallock.*)—Outer petals long and thread-like; inner ones shorter; colour crimson, maroon and yellow. Imported from Japan.

Golden Burr. (*Hallock.*)—Full flower, petals twisted; sulphur-yellow. Imported from Japan.

Golden Fleece. (*Hallock.*)—Like Neesima; rich golden-yellow. Imported from Japan.

G. P. Rawson. (*Spaulding.*)—Rich buff, centre nankin and apricot yellow.

Harry E. Widener. (*Hill.*)—Incurving, large flowers on stiff stems, bright lemon-yellow.

Ismail. (*Henderson.*)—Pure white, fine petals like a cotton ball. Imported from Japan.

Iona. (*Pitcher.*)—Reflexed, tubular deep rose petals.

Iowa. (*Pitcher.*)—Chinese white, tinted mauve at the ends.

James R. Pitcher. (*Spaulding.*)—Reflexed Japanese; light blush, passing to white; strongly perfumed.

Java. (*Henderson.*)—Crimson-purple, petals thin, tipped lilac. Imported from Japan.

Jean Humphrey. (*Pitcher.*)—Japanese; large fawn-coloured flowers, outer petals long and tubular, the inner incurving. Imported from Japan.

John Lane. (*Hill.*)—Rose-pink, with reverse of lighter shade; tips of centre petals golden.

Kearsage. (*Pitcher.*)—Chinese, light mauve.

Khivia. (*Henderson.*)—Fine petals, one half white, the other lilac. Imported from Japan.

Lallah Rookh. (*Henderson.*)—Buffish-carmine, piped petals, slightly hairy. Imported from Japan.

Landon Humphrey. (*Pitcher.*)—Japanese, like Ithica, but deeper rose colour.

Lutea. (*Hallock.*)—Twisted petals, deep golden yellow. Imported from Japan.

Mahomet. (*Henderson.*)—Deep golden yellow. Imported from Japan.

Mandus. (*Hollis.*)—Chinese; rosy-white.

Marie Ward. (*Spaulding.*)—Large cup-shaped flower; long, narrow petals; sport from Mrs. J. N. Gerard; pure snow-white.

Mecca. (*Henderson.*)—Yellow piped petals, ends forked. Imported from Japan.

Miss Mary Weightman. (*Hill.*)—Large flower, chrome-yellow.

Miss Minnie Wanamaker. (*Waterer.*)—Incurving, rather dwarf habit; cream white.

Model. (*W. K. Harris.*)—Large flower; deep pink.

Mokanna. (*Henderson.*)—Yellow, long piped petals. Imported from Japan.

Molly Bawn. (*Hill.*)—Sport from Syringa, pure white.

Mrs. Benj. Harrison. (*Hollis.*)—Japanese, pearl white; inner petals slightly flushed straw colour.

Mrs. Charles Dissel. (*Waterer.*)—An improved Mrs. Thompson; flowers larger and perfectly incurved, colour variable, sometimes lavender-pink, at others cream white.

Mrs. Edmund Smith. (*Hill.*—Long narrow petals, interlaced, pure white.

Mrs. Frank Clinton. (*Waterer.*)—Soft canary-yellow, shading to straw-yellow; flowers slightly incurved.

Mrs. Hicks Arnold. (*Pitcher.*)—Japanese, soft rose, dwarf.

Mrs. J. S. Fogg. (*Hollis.*)—Japanese; long petals, chrome-yellow.

Mrs. J. T. Emlen. (*Hill.*)—Similar to Mrs. Carnegie in size and colour; blood-red, reverse old gold.

Mrs Thomas A. Edison. (*Spaulding.*)—Incurved; long petals, rose-pink.

Mrs. President Harrison. (*Spaulding.*)—The largest of the Mrs. Wheeler type.

Mrs. Winthorp Sargeant. (*Hill.*)—Incurved; large flower, brilliant straw colour.

Nineveh. (*Henderson.*)—Lilac-rose, darker inside. Imported from Japan.

Omar. (*Henderson.*)—Very dark ox-blood-red. Imported from Japan.

Oneida. (*Pitcher.*)—Chinese, full flower, light pink.

Oriole. (*Hallock.*)—Crimson tipped gold. Imported from Japan.

Palestine. (*Henderson.*)—Deep golden yellow, long drooping petals. Imported from Japan.

Passaic. (*Pitcher.*)—Japanese, white; stiff tubular petals. Imported from Japan.

Peerless. (*Hollis.*)—Lemon-yellow; incurving.

Pendennis (*Hallock.*)—Large flower, underside of petals silvery, upper side rose madder; incurving. Imported from Japan.

President Harrison. (*Monahan.*)—Large cupped flower, outer petals salmon-red, centre Indian red.

Queen of Sheba. (*Henderson.*)—Brilliant carmine, inside petals fringed. Imported from Japan.

Raleigh. (*Pitcher.*)—Japanese incurved; buff-tinged rose, centre petals lemon-yellow.

Reward. (*W. K. Harris.*)—Reddish-violet.

Robert S. Brown. (*Hill.*)—Dark crimson, free.

Rose Queen. (*Hallock.*)—Flowers cup-shaped, rose-amaranth. Imported from Japan.

Saladin. (*Henderson.*)—Ribbon-like petals, looks as if dusted with gold. Imported from Japan.

Saracen. (*Henderson.*)—Medium, white. Imported from Japan.

St. Sophia. (*Henderson.*)—Large lilac. Imported from Japan.

Silver Tassel (*Hallock.*)—Long narrow petals, silvery white. Imported from Japan.

Snow Crest. (*Hallock.*)—Pure white, light lemon centre. Imported from Japan.

Snowdrops. (*Hallock.*)—Incurved; snow-white. Imported from Japan.

Syria. (*Henderson.*)—Yellow, pencilled carmine. Imported from Japan.

Thistle. (*Hallock.*)—Thread petals, lemon-yellow changing to white. Imported from Japan.

Turcoman. (*Henderson.*)—Piped petals, pure white. Imported from Japan.

Twilight. (*W. K. Harris.*)—Large white flower, lemon centre.

V. H. Hallock. (*Hallock.*)—Rosy pearl, deepening towards the centre; centre slightly twisted, incurved. Imported from Japan.

Vishnu. (*Henderson.*)—Anemone, outer petals pure white. Imported from Japan.

Vizier. (*Henderson.*)—Anemone, white, outer petals long and curly Imported from Japan.

White Cap. (*Hallock.*)—Exquisite white, short broad incurving petals. Imported from Japan.

White Cap. (*W. K. Harris.*)—Pure white, reverse violet-pink.

Zenobia. (*Spaulding.*)—Japanese; long petals, pure white.

NEW VELVET PILE CHRYSANTHEMUM.

Louis Boehmer.

IT was our privilege last year to present the first authentic figure of the novelty of the season, Mrs. Alphens Hardy, and again we have the same good fortune, the figure subjoined being a lifelike representation of a typical flower. It is a matter of much interest that this, like its predecessor of the velvet pile character, comes from America, being sent out by Messrs. Peter Henderson and Co., of New York, who made it known at the autumnal shows in the States last year, winning thereby golden honours. Very shortly the flower will speak for itself, but its first speech will be in a somewhat weak tone, for hard propagation will keep down the initial vigour, and we shall not see it in perfection until it has become established in the country. But then—well, we will wait and see what then; for the present here is the portrait of the candidate, and for a season at least it will be at the head of the poll.

CHRYSANTHEMUM FLOWERS DAMPING.

THE present season has already furnished many instances of chrysanthemum flowers damping; as it has also given evidence that the plants are behaving somewhat mysteriously in other directions. But the damping is perplexing growers more than anything else just now. As usual, many conjectures are made as to the cause of damping. I am aware it may be difficult to reconcile all the statements that have been made respecting it. The principal reason for this is that some varieties are more given to damping than others. That point is, I think, explained that some sorts are more enduring than others by reason of extra stoutness of the tissues. If it is not so, I do not see how we are to explain the difference in the behaviour of the plants. My own impression is that the real cause of the damping is the excessive use of stimulants to obtain monster flowers. Years ago, when the growers were satisfied with ordinary-sized flowers, damping in the early part of the season was unknown. Indeed, the blooms did not damp until they began to fade through age, nor do they do so now; at any rate, they did not do so with me last season. I cut thirty dozen blooms in the week before Christmas last year, and did not lose one through damp. The flowers were not large, as the plants were grown to produce blooms for decorative purposes only. They consisted of such sorts as Boule de Neige, Pelican, Moonlight, and one or two others. More than this we do not hear complaints from larger growers, who grow their plants for the same purpose as I grow mine. I therefore maintain that everything points to excessive feeding of the roots as the cause of the trouble. I am writing on October 18, which is an early date to write about damping. I should not, however, have referred to this subject now, only I have already seen one collection that is spoilt for the season, as most of the blooms are more or less affected, although not more than a-third of the petals are unfolded. With regard to other matters, it is the opinion of many growers that the Japs are opening early this season, especially those with dark-coloured flowers. E. Molyneux and W. Holmes were showing well-developed flowers in the first week of October. In many instances the incurved varieties are late.

J. C. CLARKE.



NEW VELVET PILE CHRYSANTHEMUM, *Louis Boehmer*.
(Colour silvery pink, undersides of florets clothed with silvery hairs).

LIFTING THE ROOTS OF PEACH TREES.

THE present is a good time to take in hand any peach or nectarine trees that have not produced satisfactory crops during the past season. It should not be supposed that exuberant growth affords the only necessity for lifting, for trees that make stunted and miffy growth, and produce sickly and yellow leaves, are often greatly benefited by having their roots lifted and laid in fresh soil. This plan is often the only remedy for trees that have got into such a state, nor need the crop of fruit looked forward to the following year deter anyone from carrying out the work, for we have frequently gathered some of our best fruit from trees that were either transplanted or had the roots lifted during the previous autumn.

In carrying out this work it is not well to begin to open the trench too near the base of the stem, but an opening should be made from three to six feet from the stem of the tree, according to the size. In opening the trench pay no regard to what few roots may be found, but cut straight through them, and have the trench sufficientiy wide to work in so that the soil may be thrown out quite down to the drainage, or better still, the bottom of the border, as in all probability the roots that are the cause of the mischief will be found among the material that has been placed in the bottom for drainage. When once a good trench has been made the soil should be forked out from amongst the roots, letting it fall into the trench, and shovelling it out at short intervals, so as to keep a clear trench that it may the better be seen where the roots are. Everyone of these roots should be carefully preserved, tying them in bunches and holding them aside as the work proceeds, until a foot or two of the base of the tree is reached. If any doubts are entertained that there are any roots go straight down beneath this ball of earth, which should be carefully burrowed beneath so as to cut them or bring them up, after which the tree will be equal to being entirely lifted.

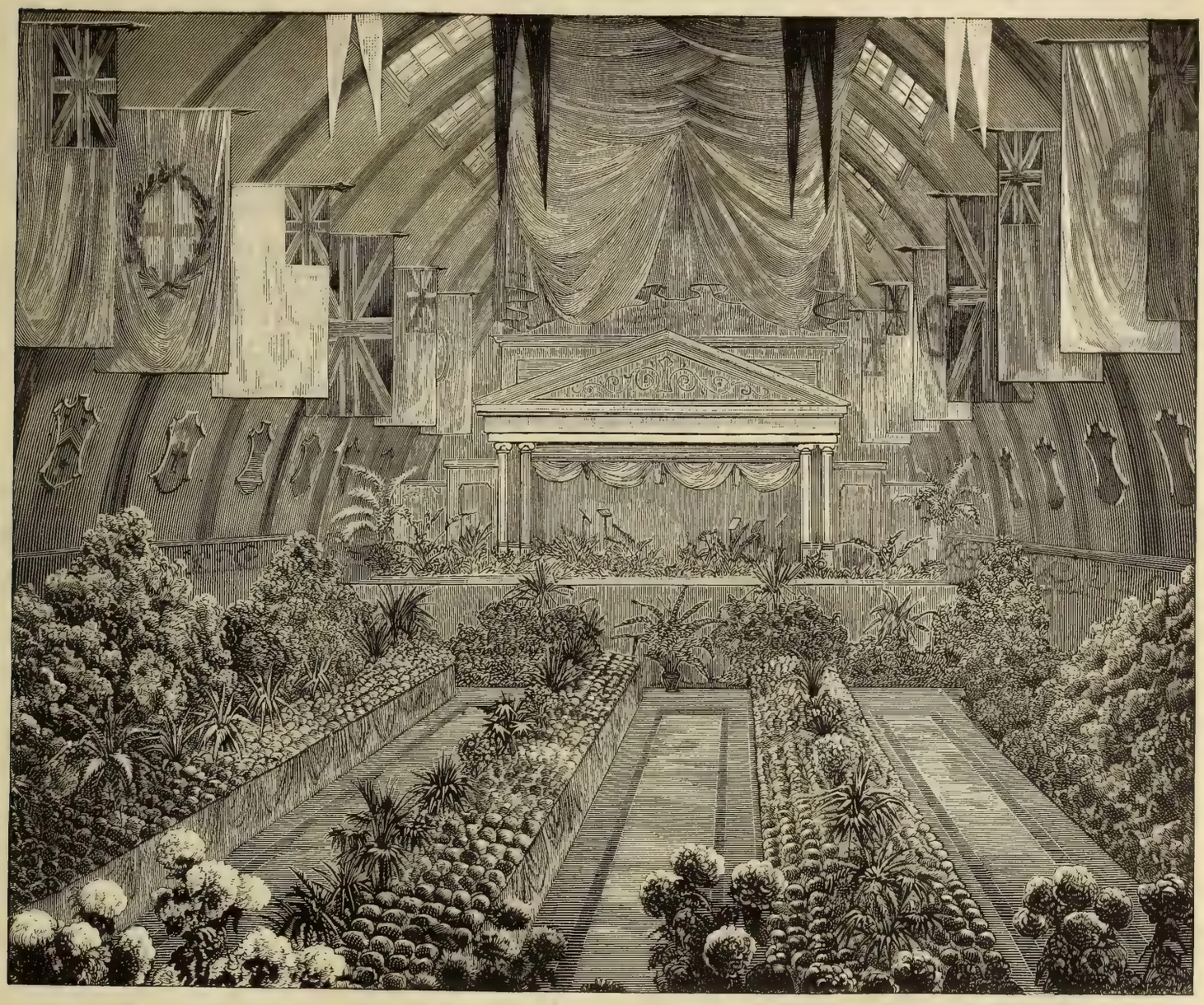
It is well to have all things in readiness before this work proceeds, that the roots do not remain longer out of the ground than necessary. Those who can obtain it will have in readiness a good quantity of fresh turfy loam, with a good portion of old mortar rubble intermixed with which to surround the roots. But before the work of relaying the roots in the new compost is proceeded with the drainage should be looked to and carefully laid, using some rough material, such as turves laid grass side downwards over the drainage, to keep the fine particles of soil from falling amongst it and stopping it up. Care should next be taken that the soil worked away from under the ball should be replaced, first seeing that the tree has not sunk deeper than is desirable in the hole, and making the soil put under it quite firm, that no settlement will take place. The next proceeding is to fill in some of the old soil, bringing it up to within six or eight inches of the surface and making it firm. Then commence laying in the roots of the tree, covering each with a good layer of the newly mixed compost, taking care that the roots are well spread out and divided in the new soil, and that they run in an horizontal direction. It is necessary to cut away any bruised or damaged portions as the work of laying them in proceeds, and any long fibreless roots may be nicked in a few places to induce them to send out new roots.

After the work of laying in the roots has been completed the ground must be made firm, taking care not to bruise the roots during the operation. The hole may then be filled up with the old soil, leaving a basin around the stem to admit of a good soaking of water, which should be given them as soon as possible after the lifting and relaying have been completed. After this the trees will be benefited with a syringing overhead each afternoon until the leaves fall.

Clarendon. C. Warden.

KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY.

This society has been referred to as having represented the flower of its choice with peculiar efficiency, and in a way to extend its popularity, and demonstrate the principles that ensure success in the organising of an exhibition. It has an advantage perhaps in being a young society, for although



KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY'S EXHIBITION IN THE DRILL HALL, KINGSTON-ON-THAMES, NOVEMBER 12 AND 13, 1889.

youth is not always of itself a recommendation, because it necessarily lacks experience, it has its compensations in being comparatively unfettered by prescriptive prejudices and unencumbered by the corrosions of time. Whatever may be the large philosophy of the subject, certain it is that the Kingston Society is, as yet, in the lusty vigour of youth, its fourteenth annual exhibition being due on Tuesday and Wednesday next, November 11 and 12.

The society was inaugurated at a general meeting held February 28, 1877. At that meeting F. A. Davis, Esq., was elected president, Mr. Thomas Jackson honorary secretary, and Mr. John Drewett honorary treasurer. It began well, and has been successful from the first. Of the original members of the committee there now remain only Mr. J. Puttock and Mr. McPherson; the remainder have retired or have been removed by death. Mr. Jackson was compelled through failing health to retire in 1887, and in his place the present honorary secretary, Mr. George Woodgate, was elected. Very soon afterwards Mr. Jackson passed away, and the society lost one of its most earnest workers.

All went well with the society, notwithstanding inevitable changes, and its power of initiative was made evident in the institution of the first Champion Challenge Vase of the value of twenty-five guineas in 1879. The first of the series was provided by the vice-presidents, but subsequently, with one exception, prizes have been provided out of the funds of the society. This occurred in 1888, when Sir J. Whittaker Ellis, member for the division of Surrey in which Kingston is situated, provided the vase, to mark his approbation of the society's endeavours. These challenge vases have ever proved an immense attraction, for one reason that it has to be won more than once to entitle the winner to keep it. The ownership of the first vase was not decided under four consecutive exhibitions. The rule has been that it must be won twice. A proviso against a possible difficulty is that if it should be won by three different exhibitors in the first three years they alone shall be allowed to compete for it in the fourth year: thus the vase cannot be "hung up" indefinitely through the occurrence of a succession of different winners. Here is the record in brief from the official documents:—

1882.—T. D. Galpin, Esq., Bristol House, Putney; gardener, G. Harding.
1883.—W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, Hants; gardener, E. Molyneux.
1885.—W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, Hants; gardener, E. Molyneux.
1887.—J. Wormald, Esq., Morden Park; gardener, C. Gibson.
1888-9.—W. Furze, Esq., Roselands, Teddington; gardener, E. Coombs.

The annals of a society of this description are records of the seasons, for although mistakes are sometimes made even to the extent of a week in the selection of the best time, an endeavour is always made to catch the flowers at their best, the extra early and the extra late kinds being of less consequence than the general mass representing the flower as a whole. Thus, in 1879, a year of potato disease and other distresses, the summer having been characterized by much rain with a low temperature, in a leader in the Gardeners' Magazine, November 8, 1879, we find it stated that the chrysanthemums were in better condition than might have been expected, "the bright October

weather having helped to mature the watery growth of the summer." The Kingston show in that year was held on November 27 and 28, the latest date in the society's record. In 1880, when the affairs of the show were wound up, the eminent services of Mr. Thomas Jackson were acknowledged in a testimonial subscribed for by the members generally. It consisted of a tantalus stand of solid oak, with nickel silver mountings, and an electro silver tea and coffee service. This closed up the year agreeably.

One of the best exhibitions of the society took place in 1881. In that year a special collection of trained specimens was contributed by T. H. Bryant, Esq., Surbiton. To accommodate these plants, it was necessary to remove the whole of the dramatic stage from the end of the Drill Hall, in which the show was held, and a remarkable effect was the result. A special vote of thanks was accorded to Mr. Bryant at the society's meeting on December 14 following, and it was agreed on all hands that Kingston had attained to a singularly high position in the chrysanthemum world.

The prize list advanced in a degree corresponding with the increasing strength of the society, and all the details of the management were made conformable to the teachings of experience as from year to year events told their tale. In January, 1886, Mr. Davis resigned his position as president, and in his place was elected G. C. Sherrard, Esq., J.P., of Canbury Lodge, Kingston, who, with Mrs. Sherrard have done much to promote the society's continued prosperity.

It is worthy of note that the present auditors, Mr. J. A. Fricker and Mr. W. Parham, both of Kingston, have held office since the establishment of the society. Mr. J. Drewett, the present treasurer, has held his office from the first, and is unremitting in his attention to his important duties. In March last a pleasant incident was the presentation of a tantalus stand, a gold watch, and an illuminated address testifying the gratitude of the members for his untiring zeal and constancy in the cause in which—speaking for ourselves—we hope he will long continue, for he seems to have been modelled for such an onerous task.

The society has had its dull days as well as its bright ones. Considering the season in which an affair of this kind asserts itself, and the kind of climate that affects all human affairs in those parts, there is something in the nature of a surprise in the fact that prosperity is really possible. Undoubtedly gas is one of the saving agencies of a chrysanthemum show. It looks well under artificial light. Annihilate gas, and with it electricity, and then for a chrysanthemum show, where are you? And an English echo, if minded to speak, might reply, "Where are you?" An Irish echo might reply, "Where Moses was when the candle was blown out." Well, in the years 1885, 1886, 1887, and 1888—four years in succession—this society had bad weather for its exhibitions, and the treasurer, in consequence, had in each of those years a light bag and a heavy heart. For example, in 1884 the takings at the door on the days of the show amounted to £132 9s.; in 1888 the takings only reached to £67 8s. 8d.—in other words, just half the former amount. How severely a run of bad years will pinch the financial department is seen in the fact that at the conclusion of the show of 1889, when all charges had been met, the balance carried forward amounted to only £2. We close this brief history with a list of the incomings and outgoings. They are full of instruction, first as showing the considerable totals of a few years of such comparatively inexpensive operations, and next, as showing the absolute necessity of a substantial membership, for what is called "gate money" would never sustain an exhibition; the main source of its life must be the subscriptions of its members. We have cast up the several amounts because the totals, as such, have an interest of their own :—

Date.	Total Receipts.	Taken at Doors.	Paid in Prizes.
1877	£70 9 6	£19 10 0	£39 11 6
1878	114 7 6	24 16 6	46 9 6
1879	158 9 6	36 9 0	60 2 0
1880	140 15 0	48 7 0	82 7 0
1881	175 12 0	60 0 0	72 16 0
1882	195 17 6	82 0 0	97 11 0
1883	211 18 6	101 16 6	87 18 6
1884	252 12 6	132 9 0	108 9 6
1885	212 16 0	92 10 6	113 0 0
1886	195 14 0	79 7 0	176 12 6
1887	184 19 6	68 19 0	127 16 0
1888	235 0 0	67 8 8	126 17 6
1889	297 19 6	109 10 6	107 11 6
	£2,436 18 0	£927 13 8	£1,245 2 6

It is unfortunate that the most important exhibition of the National Society occurs coincidentally with that of Kingston. It is not to the advantage of the flower that such events should clash, nor is it to the advantage of managers and exhibitors that there should appear to be antagonism where in reality there is none—none, indeed, that can be defined or traced to any living source. As the case stands, both events must be weakened, a fact that might have been happily avoided, for there were from the first two weeks to choose from for both societies. But we will say no more; a week hence the balance will have been struck, and only those will be the better for it who make the wise resolve that the difficulty shall not occur again. We wish our friends at Kingston a happy time and a replenished exchequer, and hope they may continue to represent the flower in the future as faithfully and energetically as in the past.

New Plants, Flowers, and Fruits.

TRACHYCARPUS KHASYANUS (*B.M.* t. 7,128).—A handsome palm of the corypha alliance. It is interesting as connecting botanically the Himalayan with the Chinese and Japanese species of the genus. This palm thrives in the temperate house at Kew.

PLEUROTHALLIS PLATYRACHIS (*B.M.* 7,129).—An uninteresting orchid from Costa Rica.

ACONITUM FISCHERI (*B.M.* 7,130).—A well-known plant that has at least a dozen synonyms, the one by which it is best known being *Aconitum autumnalis*.

EPISCIA MACULATA (*B.M.* 7,131).—A curious gesnerwort, with brilliantly-polished leaves of elegant form and smallish flowers, deep yellow covered with red spots.

PEDICULARIS MEGALANTHA (*B.M.* 7,132).—A fine plant of the order scrophulariaceæ, the leafage peculiar and beautiful, the flowers in terminal clusters of a delicate rose colour. Native of subalpine regions of the Eastern Himalaya, and quite hardy in the treasure-garden of G. F. Wilson, Esq., F.R.S., Weybridge Heath.

AMERICAN LETTER.

ROMAN HYACINTHS.

EUROPEAN raisers of Roman hyacinth bulbs are likely to have strong competitors, at no distant date, in the bulb growers of Bermuda. It is reported that an experiment has already been made in this direction, with the result that, while the Bermuda bulbs are rather uneven in size, they are apparently of very good quality. It remains to be seen, however, how they will turn out under cultivation. The growers are confident, even with their present limited experience, of being able to produce material equal at least to that of Europe in uniformity of size and good quality. A point much to the advantage of the Bermuda growers is the fact that their produce would reach the New York market about a month in advance of the European bulbs.

THE AMERICAN CHRYSANTHEMUM SOCIETY.

This society does not appear to make very rapid progress. More stimulants, in the form of startling introductions of the Mrs. Alpheus Hardy degree of intensity, will be required to stir up the American growers to practical working heat. With the annual addition of numerous new varieties (so-called) to the already ponderous list, it will hardly be surprising if those interested get a little confused in the near future as to "which is which." There is reason to believe that the influx of new kinds of questionable merit will be greater than ever this year, and as yet no hand is raised to shield the confiding public from the wanton robbery which will surely follow. It would be of the greatest importance to growers in this country and in Europe if some arrangement could be made at once whereby all new productions could be openly criticised by a competent tribunal previous to being put in commerce. European growers could further some such movement by refusing to purchase new American varieties that have no recommendation other than that of the person who raised them. To test the large number of new roots that are annually catalogued, and find ninety-nine per cent. of them absolutely worthless (I am supported in this by several European and numerous American correspondents), is an experience positively aggravating, even to the most ardent admirer of the chrysanthemum.

CUTTING BEGONIA SEEDS!

There is a story now going the rounds which would incline one to the belief that gardeners are not often found growing spontaneously beyond the garden wall. A prominent seed merchant and practical nurseryman had sold a considerable quantity of begonia seeds to a florist who grows those plants on a large scale. The seeds failed to germinate, and the florist, desiring to lodge a complaint, approached the man in charge of the seed shop—he happened to be the son who was to succeed to the business—saying: "Some begonia seeds your father sold me a few months ago were quite useless—how do you account for it?"

"I hardly know how to account for it. Did you give them proper care after sowing?"

"Oh, yes! They received all requisite attention, and could scarcely have failed to come up had they been of genuine quality."

"I've heard that cutting the seeds will cause them to germinate when other methods fail—did you try that"?

"What!" exclaimed the surprised florist.

"Have you tried cutting the seeds?" coolly inquired the merchant. The florist was now really startled, and stared about, with a wild expression, as if in search of some instrument with which to belay an enemy. In their mad career his eyes with furious glance fell upon the perpetrator of this ridiculous outrage against common sense in matters horticultural. But he was serene as a statue of stucco. The counter, moreover, was between them, and the enraged visitor saw there was nothing in the way of personal injury to fear from the man behind. By degrees he grew calm and retreated, backwards, toward the door. No word escaped his lips till he got beyond its portals, and then, in a hissing mutter, he merely said, "I guess I'll cut my stick," and was lost in the crowd.

DRUMMOND'S PHLOX.

About two years ago one of Boston's big daily papers suggested that something should be done in the way of selecting a national floral emblem for the United States. The question was warmly discussed in its various phases for a time, and it seemed as though something would be done in the matter. But so far there has been no decisive selection, and the subject appears to be losing interest. The goldenrod *(Solidago)* seemed to be the most popular flower, but the plants put forward for the proud position were as numerous as they were diversified. The most recent candidate for the office is that charming annual, in its legion of variations, our old and favoured friend, *Phlox Drummondii*. As far as beauty is concerned it might well be chosen as United States ambassador to the court of Flora, yet in one important matter it would not be representative. It could truly represent only a few of the Southern States, its home being in a belt which extends from Georgia to Texas. It is said to be most plentiful in the former State, but it was in the latter one that the Scottish botanist found the little plant, and there he collected some of its seeds and forwarded them to Glasgow in 1835, thereby enriching the gardens of the world. Drummond fell a victim to Cuban fever shortly afterwards; but his name dwells in history, and it will live there while science lasts, for Sir William Hooker kindly bestowed it upon the pleasing waif of the Texan plains. How endless seems the variation in this little plant! As year succeeds year new forms come pouring in upon us, and each new one has a charm peculiarly its own. We cannot afford to lose one of them; they are all bright and beautiful. In this country they flower very freely, but owing to the dryness of the summer season their growth is not near so luxuriant as under the humid atmosphere of British gardens.

AGAVE VESTITA.

An interesting new agave has been discovered at Guadalajara, Mexico, by Mr. C. G. Pringle, the well-known botanical traveller, and named as above by Professor Sereno Watson, of the herbarium of Harvard University. It is of the small-growing section. The largest of the comparatively pale green leaves are about twelve inches in length, and terminate with a hard sharp point. Margins horny, with coarse thread-like appendages, as seen in the common *A. filifera*. Irregular longitudinal lines of silver-grey mark both surfaces, which are also dotted freely with yellow spots. These spots are the plant's most interesting feature, and they add materially to its value as a decorative subject. We have, to be sure, other spotted or blotched forms of agave in *A. maculata* and *A. guttata*, but these belong to another section of the genus, and are not so useful from a garden aspect.

Cypripedium Arnoldianum.

At a recent meeting of the Massachusetts Horticultural Society, Messrs. Pitcher and Manda, of Short Hills, New Jersey, exhibited a specimen of this new hybrid. It is not strikingly beautiful, but it is destined to be remembered in orchid history as the first hybrid cypripede of American origin to flower in this country. It was raised from seed obtained by crossing *C. Veitchii* and *C. concolor*, and sown in December, 1888, considerably less than two years elapsing between sowing and flowering. It bore but a single flower, which was of a character intermediate between the parents. But the more distinct colouring of the flowers of the latter would render either one much more desirable as a decorative plant. The plant has been purchased by Mr. Hicks Arnold, an enthusiastic orchidist of New York, after whom it was named by the raisers.

Boston, Mass., U.S.A. Uncle Sam.

Notes.

One has the feeling of being not so very far from home, when, in bounding along through the various states on an American railway train, he can poke his head through the carriage window, and see at almost every wayside station a real old-country garden, gay with its geraniums and hollyhocks, its roses, dahlias, and gladioli.

An excellent idea in decoration is adopted by the proprietors of some of the more elegant shops in the principal streets of Philadelphia. Brackets are fastened to the front of the building, and these support baskets or vases which are periodically filled with foliage and flowering plants, thus ensuring a rich display during three-fourths of the year.

Uncle Sam.

MESSRS. A. QUERTIER AND CO.'S ASHFORD VINEYARD, FORDINGBRIDGE, HAMPSHIRE.

The extensive ranges of glass structures which are already built at this place, and others which it is contemplated to build, are destined to secure for the Ashford vineyard a world-wide reputation. When I say that grapes are the staple article grown, and that Mr. Stephen Castle is the manager, the reader will not hesitate to accept my opinion that the place is soon to become famous in the horticultural world. Mr. Castle's name is not altogether unknown to your readers, both as an occasional contributor, and as a prize winner at many important fruit shows. It will therefore interest many of his old friends if I place on record something of his present doings, and the course he is pursuing to secure a commercial success as well as fame in the annals of grape growing.

In the first place I must mention that the Messrs. Quertier made a very suitable selection when they chose the position for their intended vineyard. They evidently brought to bear on the selection sound judgment and forethought. The ground selected has a gentle slope to the south, and is open on all sides to the full action of the sun. The land is evidently of a fairly fertile character. A stream of water runs along at the lower end of the grounds. From this stream the supply of water is drawn for use by steam power, and distributed in every house by means of pipes from an elevated tank. To the pipes a hose is attached for the convenience of watering. It will thus be seen that with regard to watering the labour is reduced to the lowest possible minimum. As showing the necessity for providing a good water supply, I may mention, that except in one long range of houses where the roots of the vines are part inside and part out, all the borders for vines are inside the houses. Mr. Castle is a firm believer in inside borders, and for his purpose the produce of the vines shows that he is right.

Taking the houses in the order in which I entered them, Nos. 1, 2, and 3, are span-roof structures 30 feet, 40 feet, and 50 feet long respectively, and 12 feet in width. During the summer, No's. 1 and 2 were occupied with tomatos. These were being cleared out to make room for chrysanthemums, Elaine being the only sort grown. The plants are grown in the open ground in summer, and lifted with balls of roots and transferred to the borders inside. These two structures will be planted with vines next spring. No. 3 is planted with Muscat grapes, and although the vines were only put in last March they are making splendid growth.

The next set of houses are also span-roof. Nos. 4, 5, and 6 are 80 feet, 90 feet, and 100 feet long respectively, and 18 feet wide. No. 4 is planted with Gros Colmar vines, and a most promising lot they are. In about three years time this house will be a grand feature.

No. 5 is planted chiefly with Alicante vines with a few Gros Maroc between them; although only planted last spring some of the canes bore a few good bunches of grapes.

No. 6 is planted with Muscat of Alexandria and Gros Colmar alternately. The vines are quite young, but they are carrying two or three fine bunches each. The above structures are in sets of three with no dividing space between them.

No. 7 is also span-roof, but detached. This house is 120 feet long and twenty feet wide, one side is planted with Gros Colmar, the other side with Gros Colmar and Muscat of Alexandria alternately.

No. 8 is 150 ft. long, same width as No. 7. This is filled with tomatos for fruiting during the winter. At the time of my visit (early in October), the plants were fruiting admirably. There are four rows of plants on each side trained to upright stakes, but the row nearest the front will be trained some way up the roof on wires. The oldest vines on the place I should say have been planted about three years. These occupy a noble range of lean-to houses, the entire length being 200 feet, which is divided into three compartments, the width being eighteen feet. In these houses the roots of the vines have a run of an outside border as well as inside.

The first house in this range is filled with Alicante. At the time I saw them there were 350 bunches of grapes, every one of which would average two pounds in weight; a more even lot of fruit I never saw. The bunches on the bottom of the vines were as closely packed as on the top, and as might be expected, under the care of such a master hand, they were perfectly finished in every respect.

If the house of Alicantes interested me, how shall I find words to express my delight and surprise at the appearance of the next division, which is filled with Gros Colmar. Most of the readers of these pages are aware that through the liberality of the editor, I am enabled to visit a good many gardens and nurseries during the year. Remarkable instances of good grape growing therefore come under my notice. But this instance, I feel bound to say, surpasses them all up to the present time, not so much for the actual weight of grapes in a given area, but more particularly for the exceedingly high quality of the produce.

The bunches in the front of the house nearly touched the soil, and they are so closely set on the rods that they nearly touch each other, the whole of the length of the rods that are in a condition for fruiting. There are plenty of bunches in this house that will weigh from four lbs. to five lbs. each, and some of the rods will average forty lbs. of grapes each. To one who has seen them this is not surprising, for many of the berries are as large as a half-crown piece, while some of the leaves are fifteen inches over, and as thick and stout as a leather apron. To refer to the next and last house in detail is not necessary, all that it is needful to say is, that it is furnished in every respect equal to the others. Both the bunches and berries in this division are equal to that of any other, bearing as they do the impress of a master.

With regard to the details of management in the vineries here, I may mention that Mr. Castle is a believer in firm borders for vines. He never disturbs the surface, but depends on keeping up the fertility of the soil by rich surface dressings and frequent but judicious waterings. At a more leisure time I hope to refer to many important matters that I am now compelled to leave unnoticed.

J. C. Clarke.

EXHIBITION OF THE INSTITUTE OF PAINTERS IN OIL.

The 18th exhibition was opened on the 3rd instant, in the Galleries, Piccadilly, consisting of 681 pictures in oil, including many interesting and beautiful works; but with them too many trifles that tend to make a diaper of the walls rather than a picture exhibition. But one need not be greatly troubled with these little goes, for the better things declare themselves and sufficiently engage us to compensate for a certain confusion of the vision consequent on the repetition of little frames with nothing in them.

In the West Gallery we begin well with Mr. R. W. Allan's "Haymaking" (2), which, though hard and painty, is honest and gratifying; and the "Too Many Cooks" (14), of Mr. C. B. Barber, starts a cheerful vein consistent with a good beginning. The young pastry maker, with a couple of pet dogs to assist in making pigs of paste, will not blush from admiration, for she is too earnest in her work. Mr. J. R. Reid, in "Porthamel Farm" (27) and "Our River" (143), appears to be oppressed with the idea that there cannot be too much colour loaded on a picture, and he is careful to give us a liberal allowance. It is refreshing to turn to Mr. Orrock's "Ferry" (33), with its grand sky, and still more delightful, if that be possible, is Mr. Hughes-Stanton's "Peep of the Arun" (43), with its fine perspective and rich though sober colouring. Not often do we see water painted as in the "Waves" (45) of Mr. Harry Quilter, and an almost equally interesting study of colour is the "Autumn Tints," by Mr. Arthur Severn (54). Not often are trees painted better, or so well, as in the quiet picture of "Haddon" (65), of Mr. Yeend King, who employs the old house to embellish his vegetation, thus reversing the object of the planter, and quite advantageously for art purposes. There is peculiar freshness in "A Fresh Day" (92), by Mr. E. M. Wimperis; one can see the wind as it sweeps over his pleasing landscape. "Loch Tay" (136), by Mr. Alfred East; and "On the Moor" (151), by Mr. Arthur Severn, must be added to the liberal list of good landscapes here. Mr. E. Parton's "Summer Days" (162) is unpleasantly green; but Miss Welby's "Roses" (157) take the green out of our eyes, and enable us to leave the gallery with rosy impressions.

In the Central Gallery we are suddenly arrested by the "Last Good-bye" (135) of Mr. E. Blair Leighton, a love scene notable for its direct appeal to us and its high finish of design and colour. The "Sweet Silence" (257) of Mr. J. Haynes-Williams is nearly in the same key, but less moving. Mr. E. M. Wimperis rises to his full height in "Under the Willows" (318); and Mr. Frank Walton presents a striking woodland scene in the "Camp of Refuge" (380). Quite delightful is "Watery Norfolk" (458), by Mr. E. H. Fahey, who often assures us in pictures that he understands the Broads, and can paint them as they are seen in many aspects. Somewhat of a novelty is Mr. G. King's fishes (434); they show at least that a man with a pair of eyes need not look far for a suitable subject for artistic treatment.

The East Gallery is crowded with small things, but we have fair help from things that are not small. One of these is "The First-born" (446), by Mr. Phil Morris, a quite delightful idyll. The "Release" (496), by Mr. H. J. Stock, is altogether a mistake; and Mr. Shannon's portrait of a boy (642) is scarcely less so, though something may be said for it as representing a reality. There is good work in "Fine Feathers" (507), by Mr. J. Watson Nicoll, but the subject is repulsive; it is an ancient dame, dressed in unseemly finery, flattering herself before a glass. No one needs to see such folly. But Mr. E. Parton is at hand here with a wholesome water scene, with lilies, reeds, trees, and sky, all speaking of nature in repose—a healthy and refreshing transcript from the everlasting and ever-changing book. The "Tantallon" (523), by Mr. E. Hayes, and "Moonrise at Venice" (572), by Mr. Keeley Halswelle, are two of the best works here, but we must mention Mr. Warren's "Harvest" (549), Mr. C. J. Lewis's "Fishermen's Anchorage" (592), and J. L. Pickering's "Eskdale" (606), as works of high merit, that will gratify many. A strong study of green is afforded in "A Game at Bowls" (654), by Mr. Yeend King, and most agreeable it is to note success where many fail.

There are some admirable flower pieces from Fantin-Latour that should have attention. Miss R. Welby paints roses well (157). The chrysanthemums (206) of Miss Parsons are good, as are those of Miss Williams (454.) The "Red Roses" of Miss C. M. Wood (581) are quite above the average of such works, and the passion flowers (648) of J. FitzMarshall are true to the life. "Michaelmas Daisies" (319), by F. D. Millet, is perfect in its way; there is not a better thing in the whole exhibition.

WARNER'S KING APPLE AND PITMASTON DUCHESS PEAR.

These would appear to be well adapted for a comparatively shallow soil, judging from the fine specimens of them I recently saw in Colonel Pepper's garden. The soil of the place is somewhat shallow in places and rests upon gravel. The apples were in every way excellent, both in size and also the crop carried by the trees. And the pears were also fine, rivalling, if not surpassing, the best samples seen in first-class fruiterers' shops. The trees on the shallow soil carried good crops one cluster of six fruits must have weighed several pounds. C. W

House, Garden, and Villa Farm.

THE HOUSE.

At this season of the year store rooms must have careful attention, and all stores must be looked over, and the rooms devoted to them be well cleaned out. Whatever old stuff is worth using should be set aside for use at the earliest opportunity, and what has become worthless should be destroyed. As a matter of course a regular washing down of shelves and floors will be part of the routine of this rummage. But it is open to question whether washing is a good feature. It all depends. The clear out is certainly needed at this time of year, but a place that is liable to become damp in winter should not be wetted, and it can be kept clean and swept without the customary soap and water. Having swept out all dust and brushed the walls, let the shelves and floor be vigorously rubbed with a coarse cloth a little damp, but not wet. This will take up all the dirt that has escaped the broom, and will effect a thorough cleaning without introducing the dangerous element of moisture. Store rooms should, if possible, be dark as well as dry, but on that point it is difficult to speak with decision, because the persons who use the room must have light to a certain extent.

CONSERVATORY AND GREENHOUSE.

Chrysanthemums may be kept in trim to keep the houses gay for some time yet, if a little care is bestowed on removing dead leaves and keeping the foliage healthy. Some of the later kinds will now be coming into bloom, and a little fire-heat will be good for them if the weather is severe. The whole stock should be carefully examined now to see that all the plants are tallied correctly, to prevent errors in propagating next spring. Put in cuttings at once of the varieties to be grown as specimens, and for the production of exhibition blooms next year. As size of is great importance in specimen plants, the sooner the cuttings are put in the better, that they may have a long season of growth.

Ericas of the winter blooming kinds are to be kept as well aired and as hardy as possible. When requiring water, give the roots a good soaking, choosing bright mild weather for it if possible, and repeat the watering the next day if any doubt whether the ball has been moistened through. After this let them go nearly dry again, but never beyond a certain point of dryness, or the ball will become hard.

Hyacinths that have filled their pots with roots may now be pushed on by placing them over a moderate bottom heat. A hotbed formed with stable manure will answer admirably, as the vapour will give the foliage a rich green healthy hue, and the flowers will come in fine spikes. But they must be prevented rooting down into the dung by being placed on flat tiles or slates.

STOVE AND ORCHARD HOUSE.

Euphorbia jacquiniæflora will soon be in a fine condition if carefully treated. Let it have good stove temperature and plenty of light, but be careful to give it very little water. At the same time it must not go dust-dry.

Gesneras include some of the most useful winter flowers, and should have every encouragement, for their exquisite leaves are almost as attractive as their showy flowers. They will require an average temperature of 65 deg, to 70 deg., with plenty of water.

Orchid Houses to be kept at as low a temperature as is consistent with safety. The use of excessively high temperatures has been the cause of more mischief than all the rest of the mistakes in orchid culture. Keep the atmosphere of the house moderately dry and as sweet as possible. One of the most important matters for the young beginner to learn is to decide when the pseudo-bulbs are ripe and ought to be at rest, and to proportion the period of rest to the habit of the species—matters which depend more on personal observation than on the precepts of books.

FORCING AND FRUIT HOUSES.

Pines in fruit will need a moist air and a good bottom heat. The general stock must have as low night temperatures as will be safe—say 55 deg. for a minimum, and by day 70 deg. to 75 deg., and not higher. Dung heat is rather troublesome at this time of year, and there must always be at hand materials for lining and covering up, in case of a sudden change to severe weather.

Vines now to be started should not have much heat—say 55 deg. by day and 45 deg. by night, to be increased gradually; in fact, any hurry in starting vines into growth has to be paid for afterwards in shanking, mildew, deformed bunches, or some other grievance.

FLOWER GARDENS AND PLEASURE GROUNDS.

Alpine Plants usually suffer more from wet than frost; choice kinds had better be potted and put in frames, as during January there is usually much havoc committed among alpines on rockeries. The only safe way to keep up a collection is to have duplicates of all the species in pots.

Flower Beds not occupied should be deeply stirred and kept rough. The fear of an untidy appearance causes many a flower garden to become sour and full of vermin, whereas the soil should be as thoroughly broken and pulverized as that of the kitchen garden. The beds may be manured now where the positions are comparatively dry, but it may be as well to defer manuring till the spring. If supplies of turf are wanted for next year's potting, cart in the material at once, and stack in long narrow ridges like dwarf walls.

KITCHEN GARDEN AND FRAME GROUNDS.

Artichokes to be dressed for the winter by removing any late heads, the stalks of which can be inserted in a bed of earth under cover till wanted; next remove the large leaves, and mould up the plants without throwing any soil into the centre. As clippings of hedges and prunings of trees are generally burnt at this time of year, keep the ashes dry, and at the first opportunity after having earthed up the plants, spread the ashes two or three inches thick over the ground between them.

Beans and Peas.—If there is plenty of spare room in frames or pits, preparations may be made for early crops without incurring the risk of sowing out of doors. Fill a frame with turfs cut the usual width, and laid grass-side downwards. Sow the seeds pretty close together along the centre of each breadth of turf, and then sift over some fine soil just to cover them, and shut up. As soon as the seeds have started, give air cautiously, and keep them as hardy as possible. As they rise, occasionally add more soil, so as to keep earthing them up; this will make them more strong and stubby than by covering them their proper depth in the first instance. In February the turfs may be lifted out, and the plants divided without any injury to the roots, and so planted out in drills of well-prepared soil, and protected with long dry litter and reed wattles, until the weather allows of complete exposure.

Garnishing and Flavouring Herbs should be taken up and potted in case of severe weather. Parsley and mint are generally scarce in February, because there is no care taken in time to secure supplies. Large roots of parsley potted now will keep green and fresh till wanted. The roots of mint should be potted in leaf-mould, and the pots plunged in an asparagus bed, or placed on a flue to force it gently. Parsley may also be protected on the ground by means of hooped mats and litter.

VILLA FARM.

Every effort should be made to render the poultry yard and house as warm and comfortable as can well be done. It is especially necessary that the place in which the birds roost is perfectly water-tight, and if not wind-tight also all openings on the north and east side of the house ought to be closed excepting those provided for ventilation, and these should be closed also at night. Therefore whatever repairs are necessary ought to have attention at once, for there is not anything more trying to the birds than to be exposed to wet or cold winds during the night. The house ought, as a matter of course, to be freely ventilated, but this should be done chiefly during the day, and the ventilators for admitting air during the night should be of small size or opened but a little way, be near the roof, and as far as practicable on the south or west side. In very mild weather only should the ventilators be opened on opposite sides of the structure at the same time, because of the injurious effects of cold draughts. To still further promote the well-being of the birds, have the roosting bars scrubbed with hot water and soap as often as may be required to keep them fairly clean, and this should, as a matter of course, be done in the morning of a dry day. The floor of the house will want sweeping two or three times a week, and a little fresh sand sprinkled over it each time. By having a thin layer of sand on the floor it will of course be a much easier matter to make it more thoroughly clean each time it is swept, and the birds will be able to more readily obtain a supply of grit to assist the digestion of the food. A dust bath—or, to speak more plainly, a heap of sand, ashes, or earth—for the birds to dust themselves in, should be provided in the yard, and to keep the material dry it must be placed in a corner where a cover of some kind can be fixed a few feet above it to throw off the wet, for the heap becomes useless immediately it is saturated with moisture. The heap ought also to be regularly changed every week, ten days, or a fortnight, according to the facilities which exist for renewing the material.

Exhibitions of Chrysanthemums.

HAVANT, October 31 and November 1.

The district of Havant, though not a large one, is strong in chrysanthemum growers, much interest being taken in the cultivation of this plant in the neighbourhood. The present show is the seventh, and was held, as usual, in the Town Hall. The number of exhibits was slightly less than in some past years, but those presented were meritorious and in sufficient numbers to make a capital display.

Cut Blooms were much the strongest feature, the principal class being that for twenty-four distinct varieties, twelve incurved and the remainder Jap. A handsome silver cup and a good money prize were offered as first honours, and were somewhat easily won by Mr. Payne, gardener to Mrs. Ernold Smith, The Oaks, Emsworth. The varieties were Empress Eugenie, Jardin des Plantes, Princess Beatrice, Novelty, Jeanne d'Arc, Refulgence, Miss M. A. Haggas, exceedingly fine; Prince Alfred, Lord Wolseley, Empress of India, of large size and purity; Queen of England, and Golden Queen. The Japanese varieties were Sunflower, Mons. Bernard, Mdlle. Lacroix, Madame Bacco, Mrs. J. Wright, Puritan, Carew Underwood, Stanstead White, Edwin Molyneux, Avalanche, Mr. R. Brocklebank, and Madame C. Audiguier. Mr. R. Woodfine, gardener to C. P. Boyd, Esq., Emsworth House, was a good second, with heavier Japanese, but his incurved were not so good. Mr. J. Agate, nurseryman, Havant, was third.

For eighteen, half incurved and the remainder Japanese, Mr. Steptoe, gardener to R. Gale, Esq., Horndean, was the only exhibitor; he staged a good lot of blooms.

The class for twelve varieties of Japanese was well filled, some excellent blooms being staged; Mr. Payne occupying first place, Mr. Agate running very close for second, Mr. Parrott, gardener to Mrs. K. Smith, Woodlands, Havant, third. For the same number of incurved, Messrs. Payne, Woodfine, and Agate were awarded the prizes in the order here given. The large anemone section was well represented by stands of twelve blooms, in not less than six varieties, Mr. Steptoe being first with highly-coloured flowers, with good centres; Mr. Agate second, in whose stand the new variety Gladys Spaulding was well shown, the guard florets are bronzy lilac, the centre or disc is fine yellow, very full. Japanese Anemone varieties were well represented by Mr. Payne, with leading sorts; Mr. Agate second; and Mr. Steptoe third.

The Reflexed section produced some creditable stands of blooms. Messrs. Woodfine and Steptoe being first and second respectively; Mr. Agate third.

Pompons in twelve sprays, with a stipulation that three blooms should go to a spray, there was one contribution from Mr. Agate who was awarded a first prize. Our old friend Golden Madame Marthe was conspicuously beautiful, so was that bright coloured variety Eynsford Gem, which really has the Cullingfordi tint of colouring.

Single pompons in twelve sprays and not less than six kinds were magnificently staged, forming one of the most attractive features in the show, such a light graceful appearance had they. Bessie Conway, large flower, white ground, striped heavily with purple lilac. Florence, delicate blush, the tips of the florets drooping gracefully, a large blooming variety, quite one of the best. Elegant bronze yellow, florets thin, effective and charming. All were good.

Single-handed gardeners and amateurs showed well in the classes set apart for them. For a bouquet, composed entirely of chrysanthemums and ferns, Mrs. Conway, Havant, was distinctly ahead with a light arrangement, in which single varieties showed to advantage. Mr. Agate was second.

Groups of chrysanthemums were utilized to fill up the corners of the hall, and well did they answer this purpose. Forty feet square was the space allotted for each exhibitor to fill. Mr. Agate secured the leading position with plants thinly arranged, but carrying exceptionally large blooms, and with good foliage also. Mr. Roberts, gardener to E R. Longcroft, Esq., Hall

Place, Havant, was second; the blooms not being nearly so fine, but the plants were dwarf, making a neat group.

Table plants were staged by five competitors, and were a neat lot altogether; the best coming from Mr. J. Agate, followed by Messrs. Payne and Woodfine in the order named. Mr. Agate had the best primulas—well flowered, double and single mixed.

Fruit was staged in capital condition in the hardy classes. For six dishes of apples, dessert or kitchen, Mr. Mariner, gardener to Colonel Thistlethwayte, Drayton, took first place, his Cox's Pomona being especially fine and bright in colour. This exhibitor was also first for six dishes of pears, with excellent fruit of Comte de Lamy, Beurre Diel, and Duchesse d' Angouleme. For two bunches of black grapes, Mr. Sait, gardener to General Napier, Oaklands, was easily first, showing capital Lady Downes. Mr. Woodfine second with Alicante.

Vegetables made a good display. For nine varieties, Mr. Fuller, gardener to the Right Hon. J. Matthews, Idsworth House, Horndean, was an easy first; Mr. Sait, second.

Messrs. Ewing, Sea View Nurseries, staged, not for competition, a splendid assortment of trees and shrubs and berry-bearing plants in a cut state, showing the immense variety obtainable for decorations at this time of the year. Mr. Penford, gardener to Sir F. Fitz Wygram, Leigh Park, Havant, staged two boxes of cut chrysanthemums of excellent quality not for competition. The hon. sec., Mr. A. Chignell, is to be congratulated on producing so excellent a show in this the first year of his holding the reins of management.

IPSWICH HORTICULTURAL SOCIETY, November 4 to 6.

The cultivation of chrysanthemums has undergone such a remarkable development in East Anglia since the institution of the autumn shows of this society some five years since that the annual exhibitions of these flowers at Ipswich have assumed immense proportions, and become noteworthy for the high quality of the productions. The exhibition was, as usual, held in the Public Hall, and, as the result of the taste evinced in the arrangement, the effect produced was surprisingly beautiful, and brought much praise to the Rev. H. A. Berners, the able and energetic honorary secretary, and other members of the executive associated with him in carrying out the details.

Cut Blooms formed the most important of the several features, for the whole of the classes were well filled, and the majority of the collections were distinguished by their high quality. Two classes were provided for twenty-four blooms, to comprise equal numbers of incurved and Japanese varieties, and in that open to both trade and private growers there were seven or eight competitors. Here Mr. H. Lister, gardener to Lord Brooke, M.P., Easton Lodge, Dunmow, was first with a collection in which both the incurved and Japs were admirably balanced, the blooms being of large size and superbly finished. The incurved varieties were Lord Alcester, Jeanne d'Arc, Prince Alfred, Queen of England, Golden Empress, Mrs. Heale, Refulgens, Alfred Salter, Golden Queen, Empress of India, Lord Wolseley, and Princess of Wales. The Japs were Avalanche, Ralph Brocklebank, Pelican, Sunflower, Meg Merrilies, Mrs. Jameson, Condor, E. Molyneux, Blanche Pigny, Mrs. Wheeler, Madame C. Audiguier, and Criterion. Mr. W. Dance, gardener to Mrs. Lowe, Gosfield Hall, Halstead, and R. C. Notcutt, Esq., Anglesea Road, Ipswich, followed closely for second and third places. In the same division Mr. Lister was first for twelve incurved with large, well-developed blooms of Queen of England, Golden Empress, Lord Alcester, Prince Alfred, Empress Eugenie, Emily Dale, Mrs. Heale, Princess of Wales, Jeanne d'Arc, Lord Wolseley, and Miss Haggas. Mr. W. Dance and Messrs. Saltmarsh and Son, Chelmsford, were second and third respectively. For twelve Japs, open, Mr. M. Chenery, gardener to J. Limmer, Esq., Woodside, Ipswich, was first with superb blooms of Maiden's Blush, Comtesse de Beauregarde, Oracle, E. Molyneux, Sunflower, Madame C. Audiguier, Avalanche, Val d'Andorre, Boule d'Or, Etoile de Lyon, and Madame Baco. Mr. Notcutt and Mr. Lister were second and third respectively with stands of great excellence.

The amateurs' classes were not less well filled than were those open to all. Very severe was the competition in the class for twenty-four blooms, consisting of twelve each of incurved and Japs, and the post of honour was occupied by Mr. W. H. Lees, gardener to the Duchess of Montrose, Sefton Lodge, Newmarket, with blooms in a high state of development. The incurved were Empress of India, Princess of Wales, Golden Empress, Alfred Salter, a superbly-finished bloom, for which he was awarded the silver medal of the National Chrysanthemum Society, offered for the best bloom in the exhibition; Miss M. A. Haggas, Refulgens, Empress of India, Lord Alcester, Lord Wolseley, Prince of Wales, Prince Alfred, Jeanne d'Arc, Nil Desperandum. The Japs represented were Avalanche, Fair Maid of Guernsey, Thunberg, Blanche Pigny, Bertier Rendatler, Val d'Andorre, E. Molyneux, Ralph Brocklebank, Comte de Germiny, Mrs. J. Laing, Soleil Levant, Etoile de Lyon, and Madame C. Audiguier. Mr. Holden, gardener to A. D. Holford, Esq., East Bergholt, was second, with a collection in which the incurved were of grand quality; and Mr. G. Jordon, gardener to the Rev. H. A. Berners, Hackstead Vicarage, Ipswich, was a close third, with blooms of high quality. For twelve Japs, Mr. Holden, Mr. Lees, and Mr. Jordon were first, second, and third respectively with remarkably fine collections, differing but little in relative merit. In the corresponding class for incurved Mr. Lees had the premier award made in his favour, and Mr. Holder was a close second. There was a spirited contest for the prizes for six red reflexed, and Mr. G. Jordon occupied the first place with superb blooms of Cullingfordi, and Mr. Lees was second with Crimson King in good condition. For six white reflexed, Mr. Lees and Mr. Notcutt were first and second with Mrs. Forsyth and Felicity respectively. For six blooms of any Japanese variety, Mr. Chenery was first with Maiden's Blush, seldom seen in such good condition as on this occasion; Mr. Smith was second with superb blooms of Avalanche; and Mr. Notcutt was third with E. Molyneux. The exhibitor last named was successful in taking premier honours for six incurved, six large anemones, and six reflexed; other successful exhibitors in these classes were Mr. G. Jordon, Mr. Lees, Mr. Dance, and Mr. Smith.

Plant Classes were admirably filled, and in the great class for groups to occupy a space not exceeding fifty superficial feet, the post of honour was occupied by Mr. Jordon, gardener to the Rev. H. A. Berners, with a group in which the plants were distinguished by the amplitude and freshness of the foliage and the splendid quality of the flowers; Mr. Andrews was a good second; and Mr. Southgate, gardener to R. R. Casley, Esq., Old House, Ipswich, was third with a very neat arrangement. Several other groups of great excellence were staged. The groups of twenty plants were also deserving of much praise, the best being that from Mr. G. Adams, gardener to Mrs. Oxborroa, St. Peter's, Ipswich. The groups of miscellaneous plants were bright and tasteful, and the first and second prizes were awarded to Mr. Caldecott and Mr. Gilbert, the former employing orchids rather liberally, and the latter using the brilliantly-coloured Poinsettia pulcherrima, with good effect. Trained specimens were contributed by Mr. Chenery, Mr. Pooley, Mr. Pollard, and other exhibitors.

Fruit and Vegetables were staged in large quantities, and formed an attractive display. Mr. J. Sheppard, gardener to Captain Berners, Wolverston Park, Ipswich, was successful in taking premier honours in the class for collections, and had fine clusters of Alicante, Golden Queen, and Muscat of Alexandria; Mr. Andrews, gardener to Hon. W. Lowther, M.P., Empsey Ashe, was a good second. Mr. Sheppard was first also for white grapes with good Muscat of Alexandria, for black grapes, any variety, with Gros Colmar and for Alicante. Mr. J. Morse, Woodbridge, and Mr. Crosswell were the most successful of the exhibitors of apples: and Mr. Rogers and Mr. Andrews occupied prominent positions amongst the competitors in the classes for pears.

The judges were: Mr. W. Coomber, Mr. L. Castle, Mr. W. Earley, and Mr. George Gordon.

KENT COUNTY CHRYSANTHEMUM SOCIETY, November 4 and 5.

The exhibition of this young and flourishing society was held on Tuesday and Wednesday, and proved so thoroughly successful that all concerned have good reason to be highly satisfied with the results. With a laudable desire to celebrate the centenary of the introduction of the chrysanthemum into England the committee provided a special class for forty-eight blooms, in which a challenge cup of the value of £10 and £8 in cash were offered as the premier award. The prizes in the other classes were also liberal, with the result that the competition was throughout characterised by its severity. As in previous years, the exhibition was held in the skating rink, Blackheath, and spacious as is that building, its capacity was taxed to the utmost. The competitors for the prizes in cut blooms included many of the leading growers, the average quality was particularly high. The arrangements were such as to do credit to the taste and judgment of Mr. Needs, the honorary secretary.

Cut Blooms constituted a large and very attractive feature. There were six entries in the centenary class for forty-eight blooms, comprising twenty-four incurved and twenty-four Japanese, and the premier award was made in favour of Mr. J. Blackburne, gardener to J. Scott, junr., Esq., Chislehurst, who had splendidly developed blooms of Lord Wolseley, Jeanne d'Arc, George Glenny, Queen of England, Miss Haggas, Princess Beatrice, Violet Tomlin, Mrs. Jay, Prince of Wales, Golden Queen, Mrs. Heales, Lady Hardinge, Golden Empress, Prince Alfred, Princess Teck, Empress of India, Bronze Jardin des Plantes, Mrs. W. Shipman, Lord Alcester, Empress Eugenie, Nil Desperandum, Prince of Wales, Jardin des Plantes, Mrs. George Rundle, Stanstead White, Thomas Stevenson, Madame C. Audiguier, Mons. Bernard, Boule d'Or, Jeanne Delaux, Maiden's Blush, Fair Maid of Guernsey, Baronne de Prailly, Sunflower, Avalanche, Sarah Owen, Meg Merrilies, Mdlle. Lacroix, Val d'Andorre, Etoile de Lyon, Mrs. J. Wright, Madame John Laing, Mons. H. Elliott, Ralph Brocklebank, Stanstead Surprise, E. Molyneux, Gloriosum, and Madame Baco. The second prize fell to Mr. M. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, Surrey, who had blooms of excellent quality; Mr. E. Whittle, gardener to C. H. Goschen, Esq., Addington, Croydon, was a good third; and Mr. Coombes, gardener to W. Furze, Esq., Teddington, was fourth. In the competition for the prizes for twenty-four blooms to consist of equal numbers of incurved and Japs, the silver cup offered as first prize was awarded to Mr. H. Fincham, Cranbrook, for a remarkably fine stand; Mr. W. G. P. Clark was second, and Dr. G. Walker, Wimbledon, a good third.

There was a brisk contest in the classes for Japanese. Mr. Blick, gardener to M. R. Smith, Esq., The Warren, Hayes, was first for twenty-four, staging superb blooms of Mrs. J. Wright, Madame J. Laing, Stanstead White, Etoile de Lyon, Florence Percy, Comte de Germiny, Sunflower, Carew Underwood, Mons. J. M. Pigny, Mons. Bernard, Mrs. H. Cannell, Baronne de Prailly, Avalanche, Jeanne Delaux, E. Molyneux, Gloriosum, Stanstead Surprise, Ralph Brocklebank, Golden Dragon, Mrs. Falconer Jameson, Sarah Owen, Madame C. Audiguier, Lady J. Lawrence, and Mrs. Alpheus Hardy, the last-named being exceptionally good; Mr. J. Blackburn, gardener to J. Scott, jun., Esq., Elmstead Grange, Chislehurst, and Mr. J. Doughty, gardener to Mrs. M. Tomlin, Angley Park, Cranbrook, were second and third respectively. In the class for twelve Japanese varieties, Mr. J. Blackburn was first with good blooms of Mons. Bernard, Meg Merrilees, Madame Baco, Sunflower, Mrs. J. Wright, Val d' Andorre, E. Molyneux, Avalanche, Baronne de Prailly, Etoile de Lyon, Gloriosum, and Ralph Brocklebank; Mr. J. Doughty was second, and Mr. C. E. Shea, The Elms, Foot's Cray, was third. There were four entries in the class for twelve Japanese, or large flowered Anemones, Mr. M. Sullivan was first with Mons. C. Lebocqz, Mons. Pankoucke, Mrs. Judge Benedict, Marguerite Solliville, Sœur Dorothee Souille, Laing's Anemone, Gladys Spaulding, Gluck, George Sands, Souvenir de Madame Blandeneries; Mr. J. Mitchell, gardener to A. W. Arbuthnot, Esq., Bexley, was second, and Mr. F. Moore, gardener to W. C. Pickersgill, Esq., Blendon Hall, Bexley, was third. For six blooms of any white Japanese variety, Mr. Mitchell was first with well-developed examples of Avalanche; Mr. Hadlam, gardener to W. S. Milnes, Esq., Woodstock, Lee, was second; and Mr. Hazell, gardener to R. W. Mitchell, Esq., Fairfield, Bickley Park, third. There were seven entries in the class for six blooms of any yellow Japanese variety, and Mr. C. E. Shea, The Elms, Foot's Cray; Mr. J. Mitchell, and Mr. J. Payne were first, second, and third respectively, each showing good blooms of Sunflower. For six blooms of any one variety, Mr. J. Mitchell was first with Etoile de Lyon, remarkably well coloured, and of good size; Mr. J. Doughty was second with Edwin Molyneux; and Mr. C. E. Shea third. The contest was very brisk for the prizes for eighteen Japanese, and Mr. J. Blackburn was first, Mr. C. Blick second, and Mr. Leadbetter, gardener to A. G. Hubbock, Esq., Chislehurst, third. Mr. Hazell, Mr. L. Barnes, and Mr. T. Skinner, The Gardens, East Sutton Park, Staplehurst, were first, second, and third respectively for twelve Japanese varietities.

Although comparatively few prizes were offered for incurved, there was a good display of these varieties, and the quality of the blooms was, on the whole, so high as to do credit to the cultural skill of the several exhibitors. In the class for twelve incurved, Mr. E. Whittle was first with Lord Alcester, Lord Wolseley, Queen of England, John Lambert, Violet Tomlin, Golden Empress, J. Doughty, Miss M. Haggas, Empress of India, Alfred Salter, and Mrs. Shipman; Mr. H. Briscoe-Ironside was a close second; and Mr. A. Munnock, gardener to A. J. Scrutton, Esq., Eagle House, Eltham, third. In the class for six blooms of the "Queen" family, the premier award was made to Mr. C. Cox, gardener to J. Trotter, Esq., Brickenden Grange, Hertford, who had Lord Alcester, Golden Empress, Empress of India, and Alfred Salter

in fine form; Mr. E. Whittle and Mr. F. Moore were second and third respectively. For twelve incurved varieties, Messrs. W. Ray and Co., Mount Pleasant Nursery, Sittingbourne, were first with finely-developed blooms of Prince Alfred, Miss M. A. Haggas, Lady Hardinge, Jeanne d'Arc, Alfred Lyne, Mrs. Heales, Lord Wolseley, Princess of Wales, Refulgens, Violet Tomlin, Empress Eugenie, and Mrs. W. Shipman; the second and third awards were made to Mrs. H. Tomlins and Mr. H. Shoesmith, gardener to M. Hodgson, Esq., Croydon. In the class for six blooms of any incurved variety the premier award went to Mr. E. Whittle for fine blooms of Golden Empress; and Mr. Hazell and Mr. Pepworth, who both showed Empress of India, were second and third. There was a spirited contest for the special prizes presented by the President for a collection consisting of eight incurved, eight Japanese, and eight reflexed blooms, and the awards were made to Mr. Blackburne, Mr. Mitchell, and Mr. J. Moore in the order of their names.

There were five entries in the class for twelve reflexed blooms, Mr. J. Mitchell being first, Mr. F. Moore second, and Mr. C. Holbrow third. In the class for twelve pompons there was only one entry, and the prize was awarded to Mr. J. Filmont, South Lambeth, who had good blooms of Black Douglass, Victoria, Golden Mdlle. Marthe, Sœur Melanie, Precocite, Prince of Orange, Mdlle. Elise Dordan, Pygmalion, Rosinante, Nellie Rainford, and Kyrle Bellew.

GROUPS arranged for effect constituted a good feature, and in the principal class the first prize went to Mr. John Payne, while the second, third, and fourth were awarded to Mr. J. Rudd, Mr. T. Dobson, and Mr. G. Barker in the order of their names. The several groups were remarkable for the excellent condition of the blooms and the taste with which they were arranged.

The principal competitors in the amateurs' classes were Mr. W. G. Clark, Hitchin; Dr. G. Walker, Wimbledon; and Mr. A. Baldey, Blackheath.

BOUQUETS AND VASES were well represented. The prize for a hand bouquet were awarded to Mr. G. Newman, Bromley; and Mr. H. J. Jones, Ryecroft Nursery, Lewisham, was a very close second. Mr. G. Newman was also successful in obtaining the premier award for an épergne.

MISCELLANEOUS CONTRIBUTIONS were numerous and of good quality. Messrs. J. Laing and Sons contributed a fine collection of apples, and numerous palms large and beautiful. A highly meritorious group of chrysanthemums was shown by Mr. H. J. Jones, Ryecroft Nursery, Hither Green, Lewisham. The Swanley Horticultural College sent a group of chrysanthemums, and Mr. W. Garton, The Nurseries, Shooter's Hill, staged an interesting collection of wreaths, bouquets, and table decorations.

BRIXTON AND STREATHAM CHRYSANTHEMUM SOCIETY, NOVEMBER 4 AND 5.

This admirably managed society, which has during the past thirty years done so much in promoting the cultivation of the chrysanthemum, held its annual exhibition on Tuesday and Wednesday, and scored a great success. Finding the Lecture Hall at Brixton no longer sufficient for the accommodation of the productions invited by the schedule, the Town Hall, Streatham, was engaged by the committee for the purpose, and notwithstanding the increased room it afforded, the whole of the available spare was fully occupied. Cut-blooms, miscellaneous plants, fruits and vegetables were, as in previous years, staged in large quantities, and contributed their full share to the attractions of the show, but the great feature was formed by the trained specimens for which the exhibitions of the society have been so long distinguished.

SPECIMEN PLANTS had a considerable number of classes provided for them, and with but one or two exceptions the competition was very keen. The special class for six Japanese was a very strong one, and the several collections produced a brilliant effect. Mr. W. Clarke, gardener to J. H. Lile, Esq., Devon House, Brixton, obtained premier honours with large examples, perfect in contour and well-nigh solid with bloom. Especially good were the specimens of William Holmes, La Triomphante, Source d'Or, and L'Ile de Plaisirs; Mr. E. Cherry, gardener to Mrs. Gabriel, Streatham, was a capital second; and Mr. J. Weston, gardener to D. Martineau, Esq., Clapham Park, was third with plants large in size and admirably finished. Mr. W. Clarke was also successful in occupying the post of honour in the class for six large-flowered kinds, and had Cullingfordi, Mrs. Dixon, Dr. Sharpe, and other well-known varieties in high class condition. Mr. E. Cherry followed very close for second place. Mr. R. Clarke, gardener to W. Griffith, Esq., Palace Road, Streatham, was first for three large-flowered varieties, his best specimen being that of Dr. Sharpe. The successful competitors in the class for six dwarf trained pompons were Mr. W. Clarke, Mr. E. Cherry, and Mr. Weston; and in the class for six pyramid pompons, Mr. W. Clarke and Mr. Cherry were first and second respectively, with specimens representing cultural skill of the highest class.

CUT BLOOMS were plentiful, and produced an effective display. Japanese varieties were somewhat above the average, but the incurved showed a slight falling off, this being attributed to the show being a few days too early for several of the principal growers in the district. Mr. Howe, gardener to H. Tate, Esq., Streatham, was first for twenty-four incurved with a collection of great excellence, the varieties being Golden Empress (two blooms), Princess of Wales, Princess of Teck, Empress of India (two blooms), John Salter, Jardin des Plantes, Miss Violet Tomlin, Jeanne d'Arc (two blooms), Emily Dale, Lord Wolseley, Miss M. A. Haggas, Queen of England, Prince Arthur, Alfred Salter, Mrs. Heale, Barbara, Lord Alcester, and Prince of Wales; J. Wildman, Esq., Oaklands, Clapham, was a close second with an even stand of well-finished blooms. Mr. Howe was first also for twelve incurved, staging in capital condition Queen of England, Miss Violet Tomlin, Emily Dale, Golden Empress, Prince Alfred, Jeanne d'Arc, Jardin des Plantes, Princess of Wales, Empress of India, John Salter, and Beauty. Mr. Cherry obtained premier honours in the class for six incurved, and Mr. Ashby, gardener to B. H. Holman, Esq., The Chestnuts, Streatham, was a good second. Mr. J. Swain, Clapham Park, was first in the class set apart for large anemones, and Mr. F. Fulbrook, gardener to B. B. Baker, Esq., Palace Road, Streatham, and Mr. J. Young were second and third respectively; the blooms being of high finish throughout. In the corresponding class for anemone pompons, Mr. J. Pearce, Upper Tulse Hill, was first.

The Japanese blooms were of exceptional quality, Mr. T. Mursell, gardener to Mrs. Burton, Tower House, Streatham, obtained premier honours in the class for twenty-four, with splendidly developed blooms of Etoile de Lyon, Sunflower, Ralph Brocklebank, Avalanche, Maggie Mitchell, L'Adorable, Fair Maid of Guernsey, Charlie Sharman, La Triomphante, E. Molyneux, Mdlle. Paule Dutour, Mrs. F. Jameson, Blanche Pigny, Val d'Andorre, Elaine, Gloriosum, Comte de Germiny, Mrs. Thompson, Stanstead Surprise, Thunberg, Mrs. Alpheus Hardy, very fine; Stanstead White, Boule d'Or, and Mrs. Clarke. Mr. W. Howe and Mr. Ashby were second and third, with fine blooms. Mr. W. Howe was successful in taking the first prize for twelve Japs, and had large and fresh blooms of Stanstead White, Val d'Andorre, Criterion, E. Molyneux, Madame C. Audiguier, Sunflower, Mrs. J. Laing, Florence Percy, Jeanne d'Arc, Mons. Bernard, Hamlet, Gloriosum. Mr. Mursell was second. The class for twelve Japs in which the competition was limited to those who had not previously taken a prize at this society's shows was well filled, there being no less than nine entries, and the blooms so good that they would have done good service in the open classes. Mr. T. Stevens and Mr. G. Sandham were first and second.

MISCELLANEOUS FLOWERING AND ORNAMENTAL-LEAVED were presented in capital condition, orchids being especially good. For six orchids Mr. E. Ranson was first with good examples of Cattleya aurea, Cypripedium Spicerianum, Vanda cœrulea, Oncidium varicosum, and Calanthe vestita rubro-oculata. Mr. Jones, gardener to N. N. Sherwood, Esq., Streatham Hill, was first for three orchids, with Cattleya Bowringianum, Dendrobium formosum giganteum, and Oncidium varicosum. Mr. Fulbrook and Mr. Howe were also very successful in the orchid classes.

FRUIT AND VEGETABLES were plentiful and of great excellence, and the most successful of the exhibitors were Mr. W. Howe, Mr. J. Wiggins, Mr. Guyett, Mr. G. Coles, Mr. Bonnewell, Mr. Pearce, Mr. Poulton, Mr. H. Wright, and Mr. Stevens. Messrs. J. Peed and Sons staged, not for competition, a large collection of excellent apples.

The arrangements were admirably carried out, and much praise is due to the secretary, Mr. J. Salter, and other members of the executive.

EALING HORTICULTURAL SOCIETY, NOVEMBER 5.

The autumn exhibition of the Ealing Horticultural Society was held in the Victoria Hall on Wednesday, and proved eminently successful. Chrysanthemums constituted, as a matter of course, the most important feature, but miscellaneous plants and flowers were contributed in considerable numbers, and of fruits and vegetables there were large and highly-interesting displays. The spacious hall, so admirably adapted to the purpose to which it was put on this occasion, was fully utilized, and as the material at command was turned to the best possible account, the effect produced was bright and tasteful.

GROUPS OF CHRYSANTHEMUMS had two classes provided for them, and as the competition was keen in each, and the several arrangements judiciously placed at intervals on either side of the hall, they contributed liberally to the general effect. Mr. H. Viner, gardener to R. Dawes, Esq., Edmonscote, Ealing, was first for large groups with an arrangement distinguished alike by the high quality of the blooms and the taste shown in the disposition of the colours; Mr. J. Wigmore, gardener to F. Hicks, Esq., Ealing, was second; and Mr. Merridew, gardener to F. Gerlock, Esq., Hanger Vale, Ealing, third, both having capital groups. For small groups, Mr. C. Long, Mr. W. White, gardener to J. Carryer, Esq., Ealing Dean, and Mr. J. Granger were first, second, and third respectively.

CUT BLOOMS were more numerous and of finer quality than at any of the corresponding exhibitions previously held by the society. There was a spirited contest for the prizes for twelve incurved, and in the result Mr. C. Edwards, gardener to W. Owen, Esq., Castlebar Hill, Ealing, was placed first. The blooms were large, fresh, and well-finished, and the varieties were Queen of England, especially good, and selected as the best incurved bloom in the exhibition; Miss Violet Tomlin, Miss M. A. Haggas, Empress of India, Golden Empress, John Salter, Alfred Salter, Lord Wolseley, Mrs. Heale, Lord Alcester, Princess of Wales, and Refulgens; Mr. C. Long, gardener to E. P. Oakshott, Esq., Orchardene, Ealing, was a capital second; and Mr. H. Collyer, gardener to Mrs. Murrell, Uxbridge Heath, was a good third. The classes for nine, six and three incurved, were all well-filled, and the most successful of the several competitors were Mr. H. Viner, Mr. A. Jones, gardener to E. Hyde, Esq., Hillcrest, Ealing; Mr. H. Collyer, Mr. C. Edwards, and Mr. C. Long. Large anemones were well shown by Mr. H. Viner, Mr. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing, and Mr. Edwards.

The competition was not less satisfactory in the classes for Japanese varieties than in those for incurved. Mr. C. Long occupied the post of honour in the class for twelve with superb blooms of E. Molyneux, Sarah Owen, Sunflower, Gloriosum, Meg Merrilies, Belle Paule, Carew Underwood, Comtesse de Beauregarde, Jeanne Delaux, Stanstead White; selected as the premier Jap; and Ralph Brocklebank. Mr. Edwards and Mr. Viner followed closely for second and third places. Mr. Collyer, Mr. W. Harman, and Mr. Chadwick were the prize-takers in the class for six, and in that for three the awards were made in favour of Mr. F. Davis and Mr. Long. Mr. Collyer was first in each of the two classes for pompons, and Mr. E. Chadwick was second in one, and Mr. Edwards occupied a similar position in the other.

BOUQUETS AND VASES were exceptionally good. Mr. Chadwick was first both for epergnes and bouquets with tasteful arrangements, and Mr. Merridew was second. Miss Hudson exhibited not for competition three very beautiful stands, and Mrs. Smith had several tasteful arrangements of chrysanthemums.

FRUIT AND VEGETABLES were staged in large quantities and capital condition. The principal exhibitors of vegetables were Mr. C. Edwards, Mr. Chadwick, and Mr. Long. Mr. Reynolds, Gunnersbury Park, sent not for competition a large collection of fruit, comprising apples, pears, and grapes, which added much to the interest of the gathering.

The arrangements were admirably carried out under the direction of Mr. G. Cannon, the able secretary; and the prizes were awarded by Mr. A. F. Barron, Mr. George Gordon, Mr. J. Hudson, and Mr. G. Reynolds.

DEVIZES CHRYSANTHEMUM SOCIETY, NOVEMBER 4.

This exhibition, which is held annually in the Corn Exchange in connection with a bazaar in aid of the Devizes Benevolent Society, took place on the 4th inst., and produced, as is usual at Devizes, a very fine and effective display. The specimen plants of incurved, Japanese and pompon varieties no longer occupy a palce in the schedule, though they were some of the best seen in any part of the country, and groups of chrysanthemums arranged for effect have been substituted for them. There were four of these, and the best came from Mr. W. Hall, gardener to C. N. May, Esq., Elm Lodge, Devizes. The Japanese varieties were particularly striking, well-grown, and carrying grand blooms, especially Sunflower, Edwin Molyneux, Etoile de Lyon, Avalanche, Madame E. Audiguier, and Val d'Andorre. Some very fine incurved forms were also shown. Mr. H. Clach, gardener to C. E. Colston, Esq., Roundway Park, Devizes, staged a good group also, and was awarded the second prize. Mr. F. Perry, gardener to Captain J. E. Spicer, Spye Park,

Chippenham, was third. The only other class for chrysanthemum plants was for one each of Mr. G. Rundle, George Glenny, and Mr. Dixon, and here Mr. Clach was first and Mr. Hall second, although there was very little to choose between them. The plants were finely grown, and grandly bloomed, carrying about 50 flowers each, but Mr. Clach had rather larger and fresher blooms. Mr. W. Mantell, gardener to W. Brown, Esq., Devizes, was a remarkably good third, and it is doubtful if nine finer plants of the Rundle type were ever before staged at one exhibition.

The handsome first prize of ten guineas for twenty-four blooms of incurved chrysanthemums not less than eighteen varieties, brought seven collections, and Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch, Reigate, was first with a fine well balanced lot of blooms, consisting of Queen of England, Empress of India, Lord Wolseley, Golden Empress, Lord Alcester, Princess of Wales, Prince Alfred, Mrs. Heale, Jeanne d'Arc, John Doughty, Barbara, Novelty, White Venus, Refulgens, Miss M. A. Haggas, Empress Eugénie, and Violet Tomlin; second, Mr. G. Inglefield, gardener to Sir J. Kelk, Bart., Marlborough, who had finely finished examples of Lord Alcester, Princess of Wales, Nil Desperandum, Jeanne d'Arc, Violet Tomlin, Miss M. A. Haggas, Queen of England, Mrs. Coleman, Prince Alfred, Princess of Wales, Emily Dale, Lord Wolseley, Mrs. Haliburton, Alfred Salter, and Lady Carey; third, Mr. John Baylis, Winterbourne, Bristol. The second prize was a handsome silver cup, given by C. N. May, Esq., one of the hon. secretaries.

There were eleven entries for twelve blooms of Japanese varieties, and Messrs. Elcombe and Son, Nurserymen, Romsey, were placed first, with fine blooms of Edwin Molyneux, Madame E. Audiguier, Comte de Germiny, Etoile de Lyon, Mrs. Falconer-Jameson, Carew Underwood, Bouquet Fait, Val d'Andorre, Marsa, Avalanche, Sunflower, and Triomphe de la Rue des Chalets; second, Mr. C. J. Salter, with Avalanche, E. Molyneux, Sunflower, Mdlle. Lacroix, Stanstead Surprise, Mrs. J. Laing, Maiden's Blush, &c.; third, Mr. Inglefield.

In the class for twelve cut blooms of incurved varieties, distinct, there were six competitors, and Mr. C. J. Salter was again first, with very good blooms of Queen of England, Empress of India, Lord Wolseley, Princess of Wales, Jeanne d'Arc, Golden Empress, Prince Alfred, Lord Alcester, Refulgence, Novelty, Nil Desperandum, and White Venus; second, Mr. Robinson, gardener to Lord Justice Lopes, Westbury, who had in good character Princess of Wales, Baron Beust, Refulgens, Nil Desperandum, Empress of India, Mrs. Heale, and Miss M A. Haggas. A class for the same number of distinct incurved varieties, shown with four inches of stem and foliage, had much the same varieties staged in it, Mr. Hale being first, and Mr. Robinson second, both with very good blooms well displayed.

The class for twelve large anemone-flowered chrysanthemums, not less than four varieties, Japanese types being included, brought eight competitors, some very fine flowers being staged. Here Mr. W. Neville, gardener to F. W. Flight, Esq., Twyford, Hants, was first, with an excellent lot, consisting of Jeanne Marty, Nelson, Madame Clos, Judge Benedict, Lady Margaret, Miss A. Lowe, La Villageoise, and Nouvelle Alveole; second, Mr. C. J. Salter, with, distinct from the foregoing, Mons. C. Lebosceqz, Sabine, La Marguerite, Gluck, Acquisition. and Mrs. M. A. Lowe.

Collections of nine plants of Primula sinensis fell very short of what we have previously seen at Devizes, and the first prize was withheld; a second prize being awarded to Mr. Mantell.

Baskets of autumn foliage, with or without berries, were a charming feature, and as the woods and hedgerows are now aglow with autumn tints, all were very rich in colour, and arranged with great taste, sprays of evergreen variegated plants being mingled with charming effects. There were twenty-one competitors, and they filled a large table, forming a leading feature in the centre of the hall. Miss Annie Merritt was first; Miss F. Cunnington, second; and Master Harry C. Medlicott, third.

The prizes were awarded by Mr. Richard Dean and Mr. A. Miller.

HIGHGATE CHRYSANTHEMUM SOCIETY, November 5 and 6.

The Highgate Chrysanthemum Society held its sixth annual exhibition, at the Northfield Hall, on Wednesday and Thursday, and in consequence of the interest taken in chrysanthemums in the district and the liberal prizes provided by the committee and friends interested in the society there was a good display. The general quality of the productions was high, and the entries were so numerous as to tax the capacities of the hall to its utmost limits. The arrangements made were in every way ample and satisfactory, and as a whole all concerned have every reason to be satisfied with the gathering.

Cut Blooms had very liberal provisions made for them, the prizes including no less than three silver cups, and as the natural result the competition was very spirited and the blooms shown were of great merit. The most valuable of the cups was that offered as the prize for twenty-four blooms, to consist of equal numbers of incurved and Japanese, and the winner was Mr. J. Brittain, gardener to F. Rickett, Esq., Caen Wood Towers, who had finely developed flowers. The varieties represented in the collection were George Daniels, Criterion, Marguerite Marrouch, E. Molyneux, Gloriosum, W. Holmes, Condor, Stanstead Surprise, Etoile de Lyon, Sunflower, Carew Underwood, Avalanche, Princess of Wales, Prince Alfred, Lady Harding, Miss Haggas, Violet Tomlin, Empress of India, Golden Queen, Alfred Salter, Lord Alcester, Lord Wolseley, Queen of England, and Emily Dale. Mr. W. R. Hodges, gardener to Mrs. Crossley, Copley Dene, was second, and Mr. F. Busby, gardener to D. C. Thomas, Esq., Muswell Hill, was third, both having good collections.

In the cup class, open to amateurs only, Mr. D. B. Crane, Archway Road, was successful in obtaining the premier award with very fine blooms; Mr. J. Sears, Hornsey Vale, was a good second. The competition for the cup provided for cottagers only was brisk, and Mr. C. Halsey, Holmesdale Road, was the successful competitor. The class for thirty-six distinct varieties was a good one, and Mr. T. Curyer, gardener to A. G. Messner, Esq., Weybridge, was first with admirable blooms of E. Molyneux, Madame C. Audiguier, Mrs. J. Wright, Sunflower, Belle Paule, Marsa, Madame Louise Leroy, C. Orchard, Soliel Levant, Madame J. Laing, Jeanne Delaux, Val d'Andorre, Stanstead White, Pink Lacroix, Florence Percy, Madame Baco, L'Or du Japon, Miss Haggas, Prince Alfred, Mrs. W. Shipman, Miss Violet Tomlin, Barbara, Jeanne d'Arc, Lord Alcester, Lady Hardinge, Perle Precieuse, John Salter, Mrs. Coleman, Princess Beatrice, Princess of Wales, Jardin des Plantes, Nil Desperandum, Mrs. Heale, Lord Wolseley, and Mrs. Dixon. Mr. A. Aitken, gardener to A. M. Goodall, Esq., Highgate Road, was second. Mr. E. Rowbottom, gardener to H. R. Williams, Esq, The Priory, Hornsey, was first for twenty-four distinct Japanese; and Mr. J. Brooks, gardener to W. Reynolds, Esq., The Grove, was second. For twelve distinct Japanese blooms, Mr. W. R. Hodges was first; Mr. G. Quelch, gardener to W. W. Howard, Esq., Shepherd's Bush, second; and Mr. E. Rowbottom third. Mr. W. R. Hodges was first in the class for six blooms, with fine examples of Empress of India; and Mr. J. Brittain and Mr. F. Bushby, gardener to D. C. Thomas, Esq., Muswell Hill, were second and third respectively. The bronze centenary medal of the National Chrysanthemum Society was offered for six blooms of any white Japanese, and was awarded to Mr. D. B. Crane, who presented Avalanche in fine condition; Mr. E. Rowbottom, Mr. W. R. Hodges, and Mr. J. Brooks were first, second, and third respectively for six blooms of Avalanche. For twelve incurved, Mr. J. Brittain was first with Empress Eugenie, Jardin des Plantes, Lady Harding, Jeanne d'Arc, Princess of Wales, Lord Wolseley, Golden Queen, Queen of England, Alfred Salter, Miss Violet Tomlin, Lord Alcester, and Empress of India; Mr. J. Brooks was a good second, and Mr. W. R. Hodges third. Mr. H. Neary, gardener to Rev. R. W. Powell, Hornsey, was awarded the premier prize for twelve reflexed, the varieties comprising Cullingfordi, Golden Christine, King of Crimsons, Cloth of Gold, Mrs. Forsyth, and Emperor of China; Mr. G. Quelch was second, and Mr. A. Aitken, gardener to T. M. Goodhall, Esq., Highgate Road, was a close third.

In the class for twelve anemones Mr. E. Rowbottom was first with Minnie Chate, Lady Margaret, Madame Ghys, Gluck, Acquisition, Nelson, Fleur de Marie, Sœur Dorothee Souille; Mr. F. Bushby and Mr. J. Clement, gardener to S. H. Hicks, Esq., Muswell Hill, were second and third respectively. Mr. F. L. Turk, gardener to T. Boney, Esq., Cholmeley Lodge, occupied the post of honour in the class for twelve Japanese blooms, with Sunflower, Val d'Andorre, Florence Percy, Etoile de Lyon, Criterion, E. Molyneux, Madame C. Audiguier, Mdlle. Lacroix, Edouard Audiguier, Avalanche, and Madame J. Laing. Mr. G. Saunders, gardener to Mrs. Dawson, Crouch End Hill, was a good second, and Mr. E. F. Wicks, Holloway, was third. Mr. Wicks was first for six, and Mr. H. Rawson, gardener to J. H. Lloyd, Esq., Merton Lane, was second. The first prize for twelve incurved was awarded to Mr. J. L. Turk, who had good blooms of Golden Queen, John Salter, Golden Empress, Beverley, Miss Violet Tomlin, Empress of India, Prince Alfred. Jeanne d'Arc, Golden Beverley, Queen of England, Prince of Wales, and Nil Desperandum. Mr. H. Neary was second. A welcome introduction was that of a class for cut blooms arranged with ferns and foliage, and Mr. D. C. Thomas and Mr. E. Rowbottom were first and second respectively.

Plants were a noticeable feature of the show, Mr. J. Brooks was awarded the prize for six trained specimens, the varieties comprising Miss Gorton, Elaine, Madame Baco, Le Chinoise, and Bertier Rendatler. Mr. Brooks was also first for a second six trained specimens, and these included Lord Wolseley, Golden J. Salter, Princess of Wales, Mrs. Dixon, Dr. Sharpe, and Prince Alfred. Mr. H. Eason, gardener to B. Noakes, Esq., North Hill, was awarded the first prize for six pompons, with fine specimens of Eynsford Gem, Sœur Melanie, Rubrum Perfectum, and Osiris. The President's prize for the best group was awarded to Mr. J. Brittain, who had an excellent arrangement, and the second prize fell to Mr. E. Vince, London Cemetery Company, Highgate. For three plants the prizes were awarded to Mr. S. Fisher, and Mr. J. Parson in the order of their names. For the best specimen pompon the prizes fell to Mr. S. Fisher, Mr. S. Broadbent, and Mr. J. Jackson respectively.

Dinner Table Decorations were very tasteful; for these Mr. W. Wilkinson, Crouch End, was awarded the first prize, and Mr. J. Smith, Fitzroy Park, the second. Mr. E. Rowbottom was first with three buttonholes, and Mr. J. Dewdney, and Mr. C. Halsey were first and second respectively for a bouquet.

Fruit and Vegetables.—Fine collections of fruits, comprising grapes, apples and pears, were shown, and vegetables were also staged in considerable quantities, and afforded much interest.

PUTNEY CHRYSANTHEMUM SOCIETY, November 6 and 7.

The annual exhibition of this society was held in the Assembly Rooms on Thursday and Friday, and both in the number of entries and the quality of the collections evinced a marked advance upon previous gatherings at Putney. Groups arranged for effect were especially good, trained specimens were of a high degree of excellence, and cut blooms were plentiful and, on the whole, fully equal to the high average of previous years. The arrangements were admirably carried out by Mr. J. Moore, the able secretary, and the general effect was extremely rich and tasteful.

Groups Arranged for Effect constituted an important and very attractive feature, there being no less than six entries in the class for groups of chrysanthemums, and a keen contest for the prizes for arrangements of miscellaneous plants. The post of honour in the class for groups of chrysanthemums was occupied by Mr. G. Stevens, St. John's Nursery, Putney, with an arrangement that reflected the highest credit both upon his taste and skill. Incurved and Japanese varieties were employed in about equal proportions, the plants were of medium height, splendidly flowered, and furnished with healthy leafage to within a short distance of the rim of the pots. Arranged with due regard to a tasteful combination of the colours, the effect produced by the large mass of finely-developed blooms was such as to render the task of making the premier award a comparatively easy matter. Mr. G. Springthorpe, gardener to R. H. Alexander, Esq., Gifford House, Putney, was second with an excellent arrangement, and Mr. J. Dark, gardener to J. Harker, Esq, Lomond House, Putney, and Mr. J. Portebury, gardener to W. N. Froy, Esq., Ripon House, Putney Heath, who were third and fourth, had groups that did them much credit.

Specimen Plants were highly meritorious. Mr. C. W. Knowles, gardener to Mrs. Egerton Solan, Roehampton, was first for four dwarf specimens with neat, finely-flowered examples of Mrs. George Rundle, George Glenny, Mrs. Dixon, and Prince of Wales; Mr. J. Bentley, gardener to Sir T. Gabriel, Bart., Edgcumbe Hall, Wimbledon, was a good second; Mr. J. Bentley was first for one large flowered standard; Mr. Springthorpe occupied the first place in the classes for two specimen Japanese and for one large flowered specimen; Mr. C. Bentley and Mr Grunsell also exhibited successfully in the plant classes, each taking several firsts.

Cut Blooms were strongly represented, and produced a rich display of colour. There were two entries in the class for twenty-four incurved, and the premier award was made in favour of Mr. M. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, who had large admirably-finished blooms of Princess Beatrice, two blooms; John Salter, two blooms; Lord Alcester, John Doughty, two blooms; Queen of England, two blooms; Miss Violet Tomlin, Mr. Brunlees, two blooms; Jardin des Plantes, two blooms; Emily Dale, two blooms; Golden Empress, two blooms; Miss M. A. Haggas, Jeanne d'Arc, Jardin des Plantes, Hero of Stoke Newington, Refulgens, Mrs. Heale, Nil Desperandum, and Princess of Wales. Mr. C. W. Knowles was a good

second, and Mr. J. Bentley was third. For twelve incurved Mr. Knowles was first with Empress of India, Prince Alfred, Emily Dale, Alfred Salter, Lord Alcester, Lady Hardinge, Queen of England, Miss Violet Tomlin, Mrs. Heale, Lord Wolseley, Princess of Wales, and Miss M. A. Haggas. Mr. W. Burns, gardener to Sir J. Brunlees, Argyle Lodge, Wimbledon, was a capital second. In competitions for the special prizes for twelve blooms, to comprise equal number of incurved and Japanese, Mr. Sullivan was first with flowers of exceptionally fine quality.

There was a spirited contest for the prizes offered for twenty-four Japanese varieties, and Mr. C. W. Knowles occupied the first place with well-developed blooms of Edwin Molyneux, Mrs. J. Wright, Madame C. Audiguier, Mons. H. Elliott, Edouard Audiguier, Ralph Brocklebank, Elaine, Hamlet, Gloriosum, Fair Maid of Guernsey, Triomphe de la Rue des Chalets, Mdlle. Lacroix, Stanstead Surprise, Mrs. C. H. Wheeler, Avalanche, Martha Hardinge, Mons. Barez, Sarah Owen, Duke of Berwick, Mons. J. Laing, Etoile de Lyon, Val d'Andorre, and Belle Paule. Mr. M. Sullivan, who was second, had a remarkably fine collection, the blooms large, bright in colour, and highly finished. Mr. C. W. Knowles was first also for twelve Japanese, with good blooms of Sunflower, Stanstead Surprise, Mrs. Wright, Etoile de Lyon, Condor, Val d'Andorre, Gloriosum, Mdlle. Lacroix, Triomphe de la Rue des Chalets, Belle Paule, Mons. H. Elliott, and Avalanche. Mr. Sullivan was a very close second, and Mr. J. Portebury was third. There was a brisk competition in the several classes for incurved and Japanese varieties, in which the competition was limited to amateurs and single-handed gardeners. Especially successful were Dr. G. Walker, Wimbledon; Mr. B. Faulkener, Fairholm, Wimbledon; Mr. Page, Putney Hill; and Mr. Munt, Putney. Large anemones were presented in splendid condition by Mr. Sullivan, and admirable collections of pompon anemones were staged by Mr. C. Bentley, Mr. E. Pierce, Elm Lodge, Putney, and Mr. Grounsell, gardener to Mrs. Langdon, Upper Richmond Road, Putney, who were first, second and third respectively.

FRUITS AND VEGETABLES were less plentiful than for several years past, but the productions staged did credit to the cultural skill of the exhibitors, Mr. A. Methven, gardener to W. Keiller, Esq, Fernwood, Wimbledon; Mr. J. Bentley, Mr. E. Moe, and Mr. Wilson, were the principal exhibitors of fruit; and the chief exhibitors of vegetables were Messrs. Tigwell and Son, Mortlake; Mr. W. Barnes, and Mr. C. Bentley.

CHISWICK HORTICULTURAL SOCIETY, NOVEMBER 6.

This society held its annual exhibition of chrysanthemums, miscellaneous plants, and fruits on Thursday, when the Vestry Hall presented a bright appearance, and was filled to its utmost capacity. There was a good competition, especially in the cut flower classes.

CUT BLOOMS.—In the class provided for twenty-four there were five competitors, and Mr. C. Waite, gardener to Colonel the Hon. Talbot, Esher, was awarded the first prize with good blooms of Madame C. Audiguier, Florence Percy, Hamlet, Sunflower, Golden Dragon, Etoile de Lyon, E. Molyneux, Golden Empress, Lord Wolseley, Miss Violet Tomlin, Prince Alfred, and Golden Queen. Mr. C. Long, gardener to E. P. Oakshott, Esq., Ealing, was second; Mr. W. Palmer, gardener to H. Dick, Esq., Thames Ditton, third; and Mr. A. Wright, gardener to E. H. Watts, Esq, Devonhurst, fourth. For twelve incurved Mr. W. Palmer was first, and Mr. H. Collyer, gardener to Mrs. Murrell, Ealing, second. There were also five competitors for twelve Japanese blooms, and the first prize fell to Mr. Waite, who had good blooms of Etoile de Lyon, Sunflower, Stanstead White, Madame C. Audiguier, Comte de Germiny, Avalanche, and Mrs. J. Wright. Mr. F. Davis, gardener to E. Tautz, Esq., Castle Hill, Ealing, was a good second, and Mr. W. Palmer third. Mr. H. Head, gardener to J. T. Hoare, Esq., Twickenham, was first for six blooms, with fine examples of Empress of India, and Mr. R. J. Wood, gardener to Mrs. Sanderson, Duke's Avenue, was second; Mr. Head was also first for six blooms of Golden Empress of India, and Mr. W. Palmer second. For six pompons, Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Ealing, Mr. W. Palmer, and Mr. C. Long were placed in the order of their names. Mr. C. Waite was first for six reflexed varieties, staging Peach Christine, Golden Christine, King of the Crimsons, Mrs. Forsyth, and Amy Furze; Mr. C. Long and Mr. W. Palmer were second and third respectively. For the best bouquet of chrysanthemums the first prize fell to Mr. E. Chadwick; Mr. W. Palmer and Mr. C. Long being second and third. Mr. Chadwick was the only competitor for the prizes for a stand of chrysanthemums, and received the premier award.

GROUPS AND PLANTS.—There were only two entries for groups, and the prizes were awarded to Mr. A. Wright and Messrs. W. Fromow and Sons, Sutton Court Nursery, in the order of their names. For twelve untrained specimens Mr. F. Mears, gardener to J. Thornycroft, Esq., Chiswick, was first and Mr. J. R. Wood second; and for six untrained pompons Mr. G. Garrod, Sutton Lane, was the only competitor, and was awarded the first prize. In the class for a group of miscellaneous plants to include chrysanthemums, the first prize went to Messrs. W. Fromow and Sons, and the second to Mr. A. Wright.

Mr. F. Mears was first in the class for a single specimen stove or greenhouse plant, with a fine lady's slipper; Mr. A. Wright was second with a white azalea. In competition for the prizes offered for six primulas, Mr. C. J. Waite, was first,; Mr. J. Hucklesby, gardener to B. Hardy, Esq., Gordon House, was second; and Mr. J. R. Wood third.

FRUIT formed a good feature, and in the class for four dishes of apples Mr. C. J. Waite, Mr. A. Wright, and Mr. E. Chadwick were first, second, and third respectively. Mr. C. J. Waite was first for four dishes of pears, Mr. E. Chadwick second, and Mr. C. Long third. For three bunches of grapes Mr. F. Davis was first, Mr. C. J. Waite second, and Mr. E. Chadwick third.

VEGETABLES were particularly good, and for the best collection the first prize was awarded to Mr. C. J. Waite, who showed Perfection tomato, King of Russets potato, White Gem celery, Rousham Park Hero onion, Carter's Autumn Mammoth cauliflower and Red Intermediate carrot; Mr. W. Palmer and Mr. W. Peasey, Ealing Common, were second and third. There were also other for classes fruit and vegetables, in which the exhibits were of a high order.

Mr. Reynolds, gardener to Leopold Rothschild, Esq., Gunnersbury Park, sent a fine group of chrysanthemums and ferns; Mr. T. May, gardener to the Marquis of Bute, Chiswick House, contributed a good group of chrysanthemums; Mr. G. Wythes, gardener to the Duke of Northumberland, sent a fine box of chrysanthemums, with foliage, and arranged with ferns and palms; and Mr. A. F. Barron sent from the R.H.S. Gardens, Chiswick, a representative collection of chrysanthemums with grapes, tomatos, and ornamental gourds.

Calls at Nurseries.

MESSRS. J. LAING AND SONS, FOREST HILL, S.E.

THE large and extremely beautiful exhibition of chrysanthemums which forms such an important feature in the nurseries of this well-known firm at Forest Hill is especially interesting, both for the high-class cultural skill it evinces and for the large number of novelties it contains. Arranged in the spacious span-roof structure which during the summer season is usually devoted to specimen begonias, the plants produce a singularly striking effect, for they are not less remarkable for their amplitude and healthy appearance than for the splendid development of the blooms. Both cut-down and naturally-grown plants are represented, and it is worthy of note that although the finest flowers produced are those that have been allowed to grow unchecked, the blooms borne by the "cut downs" are large in size and exceedingly well finished.

The Japanese varieties of necessity predominate, and in a walk through the exhibition it is not difficult to see how well able the varieties raised and distributed by the firm are to hold prominent positions in their respective shades of colour. Especially deserving of mention among those raised at Forest Hill are Stanstead White and Stanstead Surprise, the first named being unsurpassed amongst the white varieties, and the other one of those having purple-crimson flowers. Album fimbriatum, which belongs to the same series, although hardly large enough for exhibition, is so exquisitely beautiful as to be generally grown for the decoration of the conservatory and the supply of cut flowers for indoor departments. Turning to the new Japs from America and the Continent, we find several that will undoubtedly become immensely popular when they become generally known. First to arrest attention is Viviand Morel, a superb variety with large and handsome flowers of a pleasing shade of rose-pink; for the middle and back row it is unquestionably a valuable addition. Then follow Mdlle. Marie Hoste, a white reflexed Japanese, the blooms large with broad florets, and very solid. Alberic Lunden, a distinct Japanese reflexed, the blooms of medium size with narrow regularly arranged florets, and the colour brilliant crimson-purple. Somewhat similar in character but distinct in colour is Souvenir de Mons. Menier, a handsome flower of a rich marone colour. M. Mezard fils is a beautiful incurved Jap, in the way of M. Freeman, but perfectly distinct, the upper surface of the florets being of a rich purple-magenta hue. Sugarloaf, a distinct incurved Jap of American origin, is very promising; the flowers are large, with broad finely incurved florets; the colour crimson-purple, the back of the florets orange-buff. This is not yet in commerce, but will be distributed by the firm in the course of the season. Cortez, a distinct incurved Jap, the blooms large, the colour yellow suffused crimson. Mrs. Andrew Carnegie, an incurved Jap, the blooms large and bold in appearance, and the colour deep crimson. Ada Spaulding, an incurved Jap, the blooms large and of a pleasing pink colour, but widely different in form from the illustrations that have been published. W. H. Lincoln, a distinct Japanese variety, the blooms very large and of a rich golden yellow; one of the greatest gains of the year whether for exhibition or conservatory. Eugenie Giat is an excellent reflexed Jap, the blooms rather large and of a rich purplish hue. Aida, sulphur yellow; J. R. Pitcher, white suffused with rose; Vice-President Audiguier, pale rose; Ethel Addison, pure white; and Zenobia, primrose yellow, are other new Japs that are so highly promising as to deserve attention.

All the incurved varieties of recent introduction are well represented, and finely-developed blooms abound of Miss M. A. Haggas and Miss Violet Tomlin, for which the firm received awards of merit from the Royal Horticultural Society at the second of its two October meetings. Excellent blooms are also plentiful of Mrs. S. Coleman, another of the beautiful sports from Princess of Wales that have been recently introduced. The new sports from the several members of the "Queen" family are interesting, and no better opportunity could well be desired than is now offered for instituting comparisons between them. These sports comprise John Doughty, John Lambert, Emily Dale Improved, and Robert Mudie, and standing by the side of them are Golden Queen, Bronze Queen, and Emily Dale. In carefully comparing the new and old sports, it was found that Golden Queen, Emily Dale, Emily Dale Improved, and John Lambert are practically identical, and that John Doughty and Robert Mudie are identical; further, that the two last-named varieties so closely approach Bronze Queen in character and colour that they ought not to be shown in the same collection where it is necessary the varieties should be distinct. The blooms of John Doughty are of higher quality, and rather deeper in colour than those of Bronze Queen, and the first mentioned of these two is unquestionably the best type.

To refer to the chrysanthemums in general cultivation is not necessary, beyond saying that all the finest varieties in the several sections are here to be seen at their best. It must, however, be mentioned that the raising of seedlings is receiving a due share of attention, and that a considerable number have flowered, some being of great promise.

MR. H. J. JONES, RYECROFT NURSERY, LEWISHAM.

The exhibition of chrysanthemums now being held in the Ryecroft Nursery is of such an immense extent, and so thoroughly good in the whole of its features, that in a walk through the fine structure in which the plants are arranged it is difficult to realize the fact that Mr. Jones did not take possession until the spring of the current year. But Mr. Jones, so well known as one of the most successful of trade cultivators of chrysanthemums, has a full share of energy and administrative ability, and has thus been able to accomplish much in so short a period. The exhibition house is especially deserving of attention, for a more suitable house for chrysanthemums when in bloom could not well be designed. It is over one hundred feet in length, fully twenty-five feet in width, and of a proportionate height. Admirably ventilated, and remarkable for its lightness, the plants are placed under the conditions most favourable for the preservation of the beauty of the flowers over as long a period as possible, and for the production of a firm, short-jointed growth. Moreover, the admirable proportions of the structure materially enhance the general effect. As indicating the extent and attractiveness of the exhibition it may be mentioned that there are at the present time fully 10,000 blooms in various stages of development, the majority now being at their best, and all indicating cultural skill of the highest class.

The collection, which is remarkable for its completeness, is particularly rich in novelties, and contains several new incurved varieties of great promise, the production of raisers of which, as yet, but little has been heard. Especially deserving of attention amongst the incurved are R. Bahuant, a distinct variety, which appears to have been raised from Queen of England. It has much the same habit as that variety, and the flowers are very large, with

broad, smooth, and finely incurved florets; the inner side of the florets rose cerise, the back bright cerise. Madame Darrier, yellow, suffused with rose, the blooms of medium size, regular in outline, and well finished. Sarah Bernhardt, a rather small, finely-incurved flower, of a bright rose-pink hue; will probably prove valuable for a back row. Camille Flammarion, a distinct variety, the blooms of medium size and good build, the colour deep rose; likely to be extremely useful for the middle or front row. In Aurore we have an excellent addition to the comparatively short list of reflexed. As indicated by its name, the variety is of Continental origin, and has large, deep bloom, circular in outline, and with broad, smooth florets; the colour bright red.

The new Japanese varieties in perfection included Cleopatra, a promising white variety, the flowers of large size, and high quality; Coronet, rich golden yellow, the flowers of average size and good form; W. H. Lincoln, a superb yellow Jap that can hardly fail to attain to a high degree of popularity, for the blooms are of the largest size and grand form, and the colour is unsurpassed in richness by any of the yellow Japs; Alberic Lunden, one of the finest of the reflexed Japanese variety of the current season, the flowers being of good form and of a rich shade of magenta-purple, will probably be of much value for decorative purposes; Mrs. Butt, a beautiful Japanese variety of American origin, the blooms similar in size and form to Florence Percy and of a bright yellow colour, it may indeed be described as a yellow Florence Percy; Mrs. B. Harrison, a beautiful blush white Jap; Cesare Costa, a very distinct Japanese variety, the blooms rather large and of a brilliant crimson hue, highly valuable for its colour; M. Victor Palallier, a fine Japanese variety, with blooms in the way of L'Adorable, and of a rich brassy-amber colour; and Annie Clibran, a beautiful pink sport from Mdlle. Lacroix, certificated by the National Chrysanthemum Society a few days since.

The large anemones include Mrs. Judge Benedict, one of the most valuable additions made to the class for some years past; and Miss Annie Lowe, a recently-introduced pale yellow variety, possessing much merit.

Tuberous begonias, petunias, and zonal pelargoniums also constitute special features, and tomatos are grown with a degree of success that is seldom equalled, especially in the production of late crops.

MESSRS. H. CANNELL AND SONS, SWANLEY.

Chrysanthemums are now in their full splendour in the Swanley nurseries, and constitute one of the most important of the many attractive features that now claim the attention of visitors. The collection, which bears the impress of the most skilful cultivation, occupies some half-dozen spacious houses, and forms a series of displays, remarkable alike for their great interest and extreme beauty. Not only are there, in the finest possible condition, all the principal novelties, but the collection includes many of the old varieties that are not often met with in either trade or private collections. The collection is therefore especially interesting to those who are not satisfied with a few of the more showy sorts.

Conspicuous amongst the numerous novelties that have a place in the collection is the new incurved variety, Robert Cannell, which created so much interest when submitted to the Floral Committee of the National Chrysanthemum Society last year. Anticipating a brisk inquiry for so important an addition to its class the firm have grown the variety largely, and the scores of finely developed blooms afford the best possible opportunity for estimating its value for exhibition. The growth, it may be interesting to state, is robust and comparatively dwarf, and the flowers are of the largest size, with broad finely incurved smooth florets, and perfectly distinct in colour, the inner side of the florets being red-crimson and the back orange-buff. Such a distinct novelty should speedily take a prominent position amongst back row flowers. The Japanese varieties distributed during the past two or three years by Messrs. H. Cannell and Sons form a group of great importance, especially noteworthy being Avalanche and Eynsford White, two white varieties of immense value; E. Molyneux, now so well known as not to require description; Sunflower and Mr. H. Cannell, two of the very finest of the yellow Japs; and Mrs. H. Cannell, a beautiful white variety. Another white Jap met with in exceptionally good condition was Stanstead White, which is seldom met with in such a high state of development as was here the case. The new American varieties deserving of special mention included W. H. Lincoln, a fine Jap, remarkable for its dwarf, stout growth, and the large size, fine form, and the rich golden hue of its flowers; William Tricker, a reflexed Jap, having large finely formed flowers of a beautiful soft rose-pink hue; Sunsdown, a good Jap, with large rich yellow flowers; Lilian B. Bird, a very distinct variety, the flowers large, with long quilled florets, the best of its type, the colour light blush; Puritan, a fine Jap, the blooms large, light rose shading to white, in some instances becoming wholly white; George Atkinson, a fine Jap, with blooms of large size; and Mrs. A. Carnegie, a distinct crimson Jap.

The continental Japs of recent introduction include several of great promise, the most noteworthy being Exposition de Troyes, a fine reflexed Jap of a pleasing shade of lilac rose; Alcion, a distinct reflexed Jap, the blooms rather large, very solid, and of a rich purple rose colour; Fee Melusine bright lilac rose a distinct and effective flower; Le Daphinoise a very promising flower of a rich orange yellow colour, and Archiviste Blanchau, an attractive flower of a bright rose colour.

Of the older chrysanthemums it is not necessary to speak beyond saying that all the finest incurved, Japanese, reflexed, anemones and pompons are represented by examples bearing flowers of the highest possible quality.

Attractive as are the chrysanthemums they have formidable rivals in the zonal pelargoniums, of which there is a brilliant display, or rather a series of displays, for three houses are devoted to plants in flower. In each of the structures the plants are well nigh solid with bloom, and the great masses of colour thus produced are singularly effective at this dull season of the year. The novelties now in perfection include: Parker's Favourite, brilliant scarlet; Stella Massey, delicate pink; Mrs. Norman, salmon; Miss Joynson, pink, with red centre; Silver Queen, double white; Lady Brooke, light pink, shaded deep rose-pink; Turtle's Surprise, a brilliant crimson sport from F. V. Raspail; Ethel Lewis, deep pink; Sappho, rose-salmon; and M. V. Neulans, a distinct variety in the way of Souvenir de Mirande, but much brighter in colour. Primulas are exceptionally good this season, and as they have six large houses devoted them, they promise a rare treat to visitors in a short time hence.

MR. G. STEVENS, ST. JOHN'S NURSERY, PUTNEY.

Mr. Stevens, who is so well-known both as a raiser and cultivator of chrysanthemums, has surpassed himself this season, and the exhibition now being held in his nursery at Putney is of immense extent and the highest degree of excellence. The exhibition is this season especially strong in incurved varieties, and of the Queen of England and the numerous sports from it there are some hundreds of blooms in remarkably fine condition. Especially noteworthy also are the blooms of Princess of Wales and its two fine sports, Mrs. S. Coleman and Miss Violet Tomlin. Especially deserving of attention also are the splendidly-developed blooms of Miss M. A. Haggas, which, originating a few years since as a sport from Mrs. Heale, has proved so useful for the back and front rows that it is now one of the most popular of the yellow incurved varieties. John Doughty, the new bronzy-rose sport from the Queen, is also well represented. Turning to the anemone varieties, we find fine blooms of Jeanne Marty and Mr. Charles Lebocqz, two of the most beautiful of the anemone Japs.

A considerable number of excellent Japanese and pompons have been raised by Mr. Stevens, and they have all proved of much value either for exhibition or decorations. One of the most important of the exhibition varieties is undoubtedly William Stevens, a beautiful reflexed Jap, the flowers large and solid, and of a rich orange hue. Alice Stevens, a beautiful Japanese variety, the blooms large and of a pleasing cream colour, suffused with rose; usually at its best during October, this fine variety has not received so much attention as it deserves. Mrs. Stevens, a Japanese variety of special value for decorative purposes; it has an excellent habit, is profuse in flowering, and the flowers which are of medium size, are of a rich orange hue. The flowers are especially adapted for indoor decorations in a cut state, and in the conservatory it has but few equals in effectiveness. Snowflake is a distinct Japanese variety with small pure white flowers having fimbriated florets; this also is found extremely useful for decorations. Alice Stevens is an exceptionally good pompon, the blooms comparatively large and of a deep golden hue, and Alice Stevens is a valuable addition to the list of anemone pompons; it has an excellent habit and the flowers are of average size, perfect in form, and of a rich golden colour. Mr. Stevens has also obtained a sport from William Holmes, which differs from the type in having incurved flowers. It is equally as free as William Holmes, and is of much value for decorations, the mixture of crimson and gold being singularly effective.

With reference to the Japanese varieties in general cultivation it must be said that all the finer kinds are represented by blooms remarkable for their high development and the names of those remarkable for their excellent quality would form a somewhat lengthy list.

MESSRS. J. VEITCH AND SONS, CHELSEA.

The display of chrysanthemums produced in the Chelsea nurseries of Messrs J. Veitch and Sons is especially interesting as illustrative of the success which may be attained in the cultivation of these flowers by the "cutting down" system. In the large camellia house which forms the entrance to the nurseries from the Brompton Road, there are two rows of plants extending the whole length. These range from thirty inches to three feet in height, and as they are exceptionally well bloomed they produce a striking effect in contrast with the dark green leafage of the specium camellias. In a contiguous structure there is a highly attractive exhibition, the plants being dwarf, furnished with healthy leafage to the rim of the pots and admirably flowered, the blooms being somewhat above the average of those produced by cut down plants. With reference to the varieties it must be said that they comprise all the best in the several sections.

PEACHES AND NECTARINES.

A paper by Mr. T. F. Rivers. Read at the Conference of the British Fruit Growers' Association, Crystal Palace, September 5, 1890.

The continually increasing imports of peaches of not very good quality points to the fact that a demand exists. Although the peaches on the street barrows are at present very inferior, if a profitable sale can be made the quality of the fruit will soon be improved, and the continental peach orchards from which the supply is drawn will be planted with sorts that will command a ready sale and probably a higher price. In America the sale of peaches is enormous, and thousands of acres are planted for the supply of this demand. The distance from their markets being as great as the available districts of France are from us, we may look forward some day (if a favourable soil and climate can be found) to the supply of the English markets by foreign growers. It will be for English growers to consider whether it is possible to compete successfully with the out-of-door peach orchards, and to create a demand by the production of fruit which will tempt buyers to give a sufficient price to pay the producer.

It is absurd to suppose that in England wall culture without glass can ever be employed with profit for peach growing, but a reasonable profit may, I think, be derived from cultivation under glass. Span-roof houses may be erected at a moderate cost. By planting half-standard trees with untrained heads the great expense of training will be avoided, and if the trees are not overcropped an annual and certain return may be expected in unheated houses from July to October. If glass cannot compete with foreign orchard peaches in the supply of the streets, they can, at all events, supply the shops. During the last thirty years many varieties have appeared in England which have altered the conditions of peach growing. Many gardeners can recollect that July peaches, as a rule, were small and very inferior, this precocity being their only merit. In place of these small and worthless sorts we have large and good fruits, the earliest being the Alexander, which I received from Messrs. Capps and Son, of Fort Pulaski, Illinois, U.S.A., about 1874. This is a large bright coloured fruit of excellent quality, freestone, and firm enough to bear carriage well. At the same time Messrs. Capps sent me the Amsden June peach, quite as early, but not so good in quality. This peach, however, appears to have improved since its introduction, as it seems to be popular with some. I have, however, invariably found it to be a clingstone and bitter. The Waterloo is another American peach of good quality, ripening in my orchard house about a week after the Alexander. This is also a large bright peach. After the Waterloo there is a series of July peaches: the Early Beatrice, small, but a most abundant bearer; the Early Louise, Early Rivers, Hale's Early, Early Leopold, all ripen in July and in an unheated orchard house. In August the succession is continued by Rivers' Early York, a very valuable market peach, the Early Grosse Mignonne, the large Early Mignonne, the Condor, Dr. Hogg, Crimson Galande, and Early Alfred. In September peaches are numerous enough, and the best sorts are well known, the principal varieties being the Grosse Mignonne, Galande, Goshawk, Alexandra Noblesse, Noblesse, Royal George, English Galande, Stirling Castle, Dymond, Barrington, Princess of Wales, Nectarine, Late Admirable, Walburton Admirable, and Gladstone. Lady Palmerston and Golden Eagle are late yellow peaches of excellent flavour. In October we have the Desse Tardive and Catherine, and in November the Salway and

Comet. This seems a long list of peaches, but I assume that peach growing will be eventually entirely carried on under glass, and instead of the cumbrous trellis, trees will be grown in their natural form—that is, either as half-standards or bushes; and more varieties can, of course, be planted even in the area of a glass house than on trellises.

Of late years a very considerable advance has been made in the varieties of nectarines. Before the Stanwick Nectarine was introduced into England the available sorts were very limited both in season and quality. The small and worthless Fairchild's Early was the earliest, ripening about the second week in August. We have now the Advance Nectarine in July, and in August and September a series of large and fine nectarines very much superior in size and flavour to the older varieties. These are Lord Napier, Improved Downton, Spenser, Stanwick Elruge, Newton, Milton, Goldoni, Rivers' Orange, Humboldt, Pine Apple, and Victoria. These nectarines will supply fruit from August to October, and there is a steadily increasing demand, consequent, I imagine, on the discovery that nectarines of the present day are much better than those formerly offered for sale. This improvement is due in a great measure to the mixture of the Stanwick Nectarine race with the old sorts. There are two very distinct types of nectarines, the orange fleshed and the green fleshed, the former being the more popular from its peculiar richness of flavour, especially when allowed to shrivel.

In my opinion a profitable business may be made by the cultivation of nectarines alone, but no large profit can be expected from either peaches or nectarines grown on walls, or by the very expensive trellis training. Trees trained to walls are cultivated under conditions which can hardly succeed for any length of time. It cannot be conducive to the health or well-being of a tree to place one side in perpetual shade during the summer when its best energies are required; this is done when the tree is placed against a wall, and when portions of the bark on all the branches are prevented from enjoying the healthy action of the sun by fastening with woollen shreds. Trees trained to trellises under glass are not, of course, grown under the same vicious conditions, but the system is expensive and the training tedious, and also requires to be managed by skilful practitioners.

The dwarf standard, either planted out or grown in pots, is the most profitable form. Span-roof eighteen feet wide will take three rows of trees, and all the pruning and training can be managed with the budding knife and the finger and thumb. With an abundant supply of water and a calcareous soil I believe that a fair profit can be made even by cultivators who have not been specially educated for the business, but who have their wits about them and a good faculty for observation. I should not recommend lofty houses. Every tree should be grown at a height which the cultivator can reach, as during the time when the peach is starting into growth it seems to be singularly liable to the attacks of those intolerable nuisances red spider and aphis, which will certainly prevent success if not destroyed as soon as observed; on low trees they are sooner found out, and when once a vigorous and healthy growth is established there is no danger to be feared. Abundant ventilation and sunlight are two of the primary elements to bring about this desirable result.

AMERICAN NOTES.

A Large Allamanda.

We have a specimen of Allamanda Schotti which occupies part of the roof on the west side of the plant house here, writes Mr. W. Tricker, of Staten Island, in the *Garden and Forest*, covering an area of 200 square feet. It is planted in a box three and a-half feet long and two and a-half feet wide and nine inches deep. The soil is a rich loam, and ordinary stove temperature is maintained, and in summer the plant is shaded from strong sun. With plenty of moisture in the air and water at the roots constantly, it never flags. A few applications of liquid manure when the box is full of roots, or a mulching of rich compost, is given, according to its needs. Being so strong a grower, it would soon have a starved look, and would produce smaller flowers with less generous treatment; as it is now, we have an average of 500 flowers open daily, and have had not less than 10,000 flowers this summer, averaging six inches in diameter.

Duchess of Albany Rose.

Duchess of Albany is, observes a correspondent of the *Garden and Forest*, a sport from La France, and, while they have their resemblances, they are quite as distinct as Pearl and Sunset. By selecting a La France deeper in tint than the average, and a Duchess lighter than its average, one might hold in his hand two very similar roses; but when the two are seen in a mass in any florist's forcing house the most casual observer will note the new variety with admiration. They are quite similar in constitution, Duchess of Albany being the less liable of the two to drop its leaves; its bloom is slightly larger, too, under the same cultivation, while the colour is a deep even shade of rosy pink without the light satiny sheen seen in La France. A dozen buds of Duchess make a cluster as distinct from a similar cluster from La France as a dozen buds of Catherine Mermet would be. Duchess of Albany is already highly appreciated among the florists as one of the most popular and most easily managed of the new forcing roses.

Wild Fruits of Wisconsin.

In the United States Government Crop Report for September the following statement is made by Mr. T. W. Clark, a statistical correspondent for Marathon County, Wisconsin: "The northern half of Wisconsin is one vast berry patch. Strawberries grow profusely in their season; following them comes the blueberry during the months of July and August, this crop amounting to hundreds of thousands of bushels. Some black raspberries and a few serviceberries are found. The red raspberry, blackberry, and dewberry yield thousands of bushels. Carloads of glass cans are used annually in preserving these for winter use. Thousands of people find occupation in harvesting these spontaneous crops of luscious fruit. The cranberry comes to perfection in September, rounding out the season. The value of the wild fruit utilized in northern Wisconsin is estimated at 1,000,000 dollars. Three or four times as much goes to waste for want of pickers. The exceeding healthfulness of this portion of the country may be attributed in a great measure to the purity of the water and the profusion of fruits."

TRADE CATALOGUES.

John Fraser, Leyton, and Woodford Road, Wanstead.—*Roses, Fruit Trees, Conifers, Rhododendrons, &c.*

Benetfink and Co, 89, 90, 107, 108, Cheapside, London, E.C.—*Furnishing Ironmongery, Mowers, Rollers, Tennis and Cricket Goods, &c.*

Ryder and Son, Sale, Manchester.—*Bulbs, Japan Primulas, Roses, Fruit Trees, &c.*

Replies to Queries.

Names of Plants.—Fruit in Box: The curious fruit is the Virginian Poke, Phytolacca decandra. It is not edible, but has some decided medicinal qualities. The young leaves of the plant are sometimes cooked as spinach, the cooking removing their acrid qualities, but we do not recommend it.—E. Hazelly: Your plant is Silphium trifoliatum.—W. Burrows: 1, Sternbergia lutea, sometimes labelled Amaryllis lutea; 2, Rudbeckia speciosa; 3, Rivina humilis; 4, Cyclamen Europeum.

Leaf Soil.—Philo: In small gardens it is not good practice to manufacture leaf soil, for it is a slow business, and causes a certain amount of untidiness, and, unless the business is properly managed, the results are far from satisfactory. A common incident is for broken glass, wire, and other objectionable and even dangerous rubbish to get mixed with the stuff, and it is generally used before it is half rotted. Where there is convenience for it, the preparation of leaf soil is a quite proper proceeding. It is mechanically useful to plants, but as plant food there is not much in it.

Commercial Fruit Culture.—Iota: We cannot incur the responsibility of advising you how to embark a small sum in fruit culture. If you do not understand how to begin, and what to pay for the land and such other matters as you place before us, the best advice we can give you is that you acquire more knowledge of the business before you proceed to invest money in it. When you say you know nothing of it, you virtually warn us that it is no part of our duty to encourage you to go on. We will do our best to answer distinct questions, but vague generalities we must decline to entertain.

Names of Fruits.—H. H. O.: 1, Not known; 2, King of the Pippins; 3 and 4, American Mother; 5, Reinette d'Espagne; 6, Longville's Kernel.—R. M. J., Cambridge: 1, American Mother; 2, Rymer; 3, Screveton Golden Pippin; 4, Court of Wick; 5, Golden Pippin.—F. N.: 1, Golden Noble; 2, Peasgood's Nonsuch; 3, Bess Pool; 4, Hall Door; 5, Beachamwell.—F. K.: 1, King of the Pippins; 2, Mannington's Pearmain; 3, not known; 4, Bedfordshire Foundling; 5, Cockle's Pippin; 6, Wellington; 7, Golden Knob; 8, Vicar of Winkfield. Your King is a fine sample; all the others are poor, and appear to have been grown in a water-logged soil.—F. Warder: 1, King Edward; 2, Napoleon; 3, General Todleben; 4, Pitmaston Duchess; 5, Golden Knap, not worth growing; 6, Beurre Diel.

Three Queries for Friends Disposed to Help.—Permit me to submit a query about the value of blood from an ordinary butcher's slaughter house as a manure. I want to ask the opinion of some of your valuable correspondents on the matter. Of course the blood of the ox would form by far the largest part to be obtained. I want to ask how it should be applied to say roses, grape vines, and chrysanthemums, and what is its worth as an article of commerce, *i.e.*, what would be a fair price to pay the butcher for it.

I also should like to ask the opinion of some of your orchid growing contributors as to whether Odontoglossum vexillarium is a long lived plant. We have some plants about ten years old, I grew them on into nine-inch pots and they thrived luxuriantly till last season, when after they flowered they began to look rather unhealthy, and I decided to divide three or four of them and make each of them into five or six plants. They have not done well since; they do not seem to take kindly to being divided. I found when I pulled them to pieces that the bottom roots had decayed through being continually repotted lower as they required larger pots. Some examples of Odontoglossum Roezlii I divided in the same way have done exceedingly well.

I should also like to ask if any of your correspondents can suggest a reason why a large plant of Lapageria alba has not made any growth this season. It has bloomed very profusely from the old wood but has made no new growth. It nearly covers the roof of a large span-roofed house and is planted in a well prepared border, and the plant is about fourteen years. Each previous season it has made a rampant growth. I have wondered if it would be better to replace it with a young plant? I should like the opinion of some of your correspondents as to whether it is a long lived plant.

Cheshire, October 20, 1890. W.M.

Cape Gooseberry.—F. Wyatt: The Cape gooseberry may be successfully grown under much the same conditions as obtain in the cultivation of capsicums and chilis. The seed should be sown in a shallow pan in March, and be placed in a pit or house in which a brisk temperature is maintained. When the seedlings are large enough, prick them off into small sixties, putting two in each pot. When they are nicely established remove them to a greenhouse or pit, where they will have sufficient artificial heat to keep them safe from frost. In a week or ten days shift them into five-inch pots, and use a compost consisting of turfy loam, well-rotted manure, and sand. If they are to be grown in pots they must be shifted into pots eight inches in diameter as soon as more root space becomes necessary. On the other hand, if they are to be grown in the open border, no further shift will be necessary. The end of May or the beginning of June is a good time for bedding them out. A warm, sheltered border is the most suitable place for them.

Raising Potatos from the Apples or Plums.—Mr. A. W. Joyce asks if potatos can be grown from the so-called apples or plums that are produced on the plants after flowering? These are the true fruits of the plant, and contain the seeds from which, and from which alone, new varieties are obtained. It is a quite simple matter to raise potatos from the true seeds, and they may even be obtained of a sufficient size to be suitable for cooking the first season, although the weight of the first tubers will rarely exceed four ounces, and is generally less. The plums should be collected when ripe, and the seeds should at once be separated, and washed and dried; or the better plan may be followed of drying them, as this ensures perfect ripening, and much saving of trouble. Having secured the apples or plums, they are placed in shallow trays or boxes, and these are kept in any warm dry place in the full light. This promotes perfect ripening, and the pulp shrivels into a mere pasty mass, which hardens into a kind of rough cake, in which the seeds are embedded. In the month of March the mass is broken up and spread on light soil on a hotbed, or in pots in a propagating house, and the seedling plants soon appear. They require the usual treatment of tender annuals, and should be carefully hardened and planted out in May.

"THERE IS UNQUESTIONABLY" no better remedy in the whole world for all cough and throat troubles than KEATINGS LOZENGES—any medical man will assure you of this fact. Relief is speedy; they contain no strong acting, but only simple drugs; the most delicate can take them. Sold everywhere in 13½d. tins.—[ADVT.]

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Noon.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
16	S	**24th Sunday after Trinity.**	7 21	15 5	4 10	11 50	7 12	3 57	4 17	1 0	1 22	42·1
17	M	Suez Canal opened, 1869.	7 23	14 53	4 9	After.	8 24	4 38	5 0	1 42	2 3	42.0
18	Tu		7 25	14 40	4 8	1 19	9 48	5 25	5 52	2 25	2 50	41·9
19	W	Nicholas Poussin died, 1665. ☾ First Q'rter.	7 27	14 27	4 7	1 47	11 10	6 22	6 56	3 17	3 47	41·8
20	Th	Berlin Decree, 1806.	7 28	14 13	4 6	2 9	Morn.	7 31	8 11	4 21	4 56	41·7
21	F	Princess Royal born, 1840.	7 30	13 58	4 4	2 27	0 35	8 52	9 35	5 36	6 17	41.6
22	S	*St. Cecilia.*	7 31	13 42	4 3	2 43	1 56	10 14	10 48	7 0	7 39	41.6

Orchids in Flower.		Day of Yr.
		1890
Cypripedium Swanianum	Gar. hyb.	320
C. insigne purpureum punctatum	Sylhet.	321
Cœlogyne Cummingi	Singapore.	322
Oncidium ornithorynchum	Mexico.	323
Pleione maculata	India.	324
Pleione lagenaria	India.	325
Zygopetalum Mackayi	Brazil.	326

YORK CHRYSANTHEMUM SHOW, FINE ART EXHIBITION BUILDING, NOVEMBER 19, 20, and 21, 1890.—36 Cut Blooms, £5 Cup and £5 cash; 6 bunches Grapes, £5; with other liberal prizes in Plants, Cut Flowers, Fruits, and Vegetables. Entries, November 12. There will be a stall for the sale of Flowers, Fruit, &c., the proceeds to be devoted to the Gardeners' Royal Benevolent Institution.

Contributions are solicited of Fruit, Flowers, &c., and will be thankfully received on any of the above days by

13, Feasegate, York. J. LAZENBY, Secretary.

Exhibitions and Meetings for the Ensuing Week.

MONDAY, NOV. 17, AND TUESDAY, NOV. 18.—HINCKLEY CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

TUESDAY, NOV. 18.—STAMFORD.—Chrysanthemum Exhibition.

TUESDAY, NOV. 18, AND WEDNESDAY, NOV. 19.—LIVERPOOL HORTICULTURAL ASSOCIATION.—Autumn Show.

TUESDAY, NOV. 18, AND WEDNESDAY, NOV. 19.—HARTLEPOOL CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

TUESDAY, NOV. 18, AND WEDNESDAY, NOV. 19.—TWICKENHAM HORTICULTURAL SOCIETY.—Chrysanthemum Exhibition.

TUESDAY, NOV. 18, AND WEDNESDAY, NOV. 19.—MANCHESTER.—Chrysanthemum Exhibition.

WEDNESDAY, NOV. 19.—BANBURY CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

WEDNESDAY, NOV. 19.—THAME.—Chrysanthemum Exhibition.

WEDNESDAY. NOV. 19, AND THURSDAY, NOV. 20. — RUGBY CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

WEDNESDAY, NOV. 19, AND THURSDAY, NOV. 20.—HULL CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

WEDNESDAY, NOV. 19, AND THURSDAY, NOV. 20.—BEDFORD CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

WEDNESDAY, NOV. 19, AND THURSDAY, NOV. 20.—WESTERHAM.—Chrysanthemum Exhibition.

WEDNESDAY, NOV. 19, AND THURSDAY, NOV. 20.—BRISTOL CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

WEDNESDAY, NOV. 19, TO FRIDAY, NOV. 21. — ANCIENT SOCIETY OF YORK FLORISTS.—Chrysanthemum Show.

THURSDAY, NOV. 20.—SHREWSBURY.—Chrysanthemum Show.

THURSDAY, NOV. 20.—TIVERTON CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

THURSDAY, NOV. 20, AND FRIDAY, NOV. 21.—WARWICK.—Chrysanthemum Exhibition.

THURSDAY, NOV. 20, AND FRIDAY, NOV. 21.—WARE.—Chrysanthemum Exhibition.

THURSDAY, NOV. 20, AND FRIDAY, NOV. 21.—NORWICH HORTICULTURAL SOCIETY.—Chrysanthemum Show.

THURSDAY, NOV. 20, TO SATURDAY, NOV. 22.—SCOTTISH HORTICULTURAL ASSOCIATION.—Chrysanthemum Show at Edinburgh.

FRIDAY, NOV. 21, AND SATURDAY, NOV. 22. — STOCKPORT CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

SATURDAY, NOV. 22.—BATLEY CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

SATURDAY, NOV. 22.—MARLPOOL CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

SATURDAY, NOV. 22.—ROYAL BOTANIC SOCIETY.—Annual Exhibition.

Auction Sales for the Ensuing Week.

MONDAY, WEDNESDAY, AND SATURDAY, NOV. 17, 19, AND 22.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Dutch Bulbs.

MONDAY, THURSDAY, AND SATURDAY, NOV. 17, 20, AND 22.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

MONDAY, NOV. 17.—Messrs. Protheroe and Morris, at the Woodlands, Clarence Road, Clapham Park; Orchids. (Two days.)

TUESDAY, NOV. 18.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside: Lilium auratum.

TUESDAY, NOV. 18.—Messrs. Protheroe and Morris, at the Nurseries, Leytonstone and Wanstead; Nursery Stock. (Three days.)

WEDNESDAY. NOV. 19.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Plants and Bulbs.

WEDNESDAY AND SATURDAY, NOV. 19, AND 22.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Shrubs and Conifers, Border Plants, Azalea Mollis, &c.

WEDNESDAY, NOV. 19.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Liliums from Japan.

THURSDAY, NOV. 20.—Messrs. Protheroe and Morris, at Winchcombe; Fruit Trees and other Nursery Stock. (Two days.)

FRIDAY, NOV. 21.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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THE GARDEN ORACLE FOR 1891

Will be published in the usual form at 1s., and will be, as heretofore, a complete review of horticulture and floriculture in the past year, and a guide for cultivators, exhibitors, and purchasers of plants, flowers, fruits, &c., in the year that is before us. This is the oldest horticultural almanac extant, and as it contains the latest information on new varieties, forthcoming exhibitions, and undertakings of various kinds in prospect, it cannot be published so soon as the general run of almanacs, that are chiefly made up by hasty compiling. The Oracle now preparing will be rich in reports, announcements, and selections, all condensed into the smallest possible space, and arranged for handy reference. The Oracle is a business almanac and diary, in addition to its special floricultural features. Published at the GARDENERS' MAGAZINE Office, 4, Ave Maria Lane, London, E.C.

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The Gardeners' Magazine.

SATURDAY, NOVEMBER 15, 1890.

THE APPLE IS THE KING OF HARDY FRUITS, and the world appears never to reach the point of satiety in its enjoyment of it. One of the rarest events is for market prices to fall below a paying figure, even in seasons when a great glut prevails, for the moderate lowering that results from the competition so quickens consumption that the rectification is soon accomplished, and the good sample keeps its head well above water. In the year when plums rotted on the ground, and the friends who sent their surplus away as presents only burdened their friends with railway charges for fruit shaken to a pulp on the journey—in that year of plenty, apples were not lost as plums were, and when the pressure on the markets was heaviest the prices left a margin for the producer. Apples carry well, and although each sort has its season, they may be said to keep well, for a few days' delay in the sale of a ripe stock does not make any such difference to it as in the case of any softer fruit. There is no fruit so cheap as apples, and, in fact, it is the only fruit that can be seriously spoken of as "food," for all others are as toys of the table, useful, wholesome, nourishing, and enjoyable, yet not food in any serious sense of the word. The cheapness is the natural consequence of plentifulness, and plentiful products that are always in demand are of the first consequence in commerce, so that we may say there is more money in apples than in orchids, more money in potatos than in pine apples, and even wheat at thirty-five shillings the quarter runs to an enormous aggregate when the whole consumption is considered. All these requirements of the universal appetite are safe as subjects for sober speculation, so far as anything can be safe that is subject to the vicissitudes of seasons and the severe competition that prevails in all subjects that are in common demand. We have an example in the case of apples in the experiences of the present season. The fruit crop of the year is one of the poorest, and yet the apple crop makes a very considerable figure, and it proves that there are vastly more apples than were estimated in the early part of the season, for, indeed, there appeared then to be scarcely any. The case is necessarily deceptive, because a thin distribution of fruit makes no show in the first instance, but, being thin, the trees cast but few, and such as remain have the opportunity of attaining to a liberal growth and good quality, and the end is, the comparative smallness of the crop at starting is in favour of its ultimate improvement to the highest point possible for the season. The conspicuous bearers were Lane's Prince Albert, Bramley's Seedling, Duchess of Oldenburgh, Worcester Pearmain, Duchess of Gloucester, Lord Grosvenor, Cellini, Cox's Orange, Dumelow's Seedling, or Wellington, Gascoigne's Scarlet, Grenadier, New Hawthornden, King of the Pippins, or Golden Winter Pearmain, Stirling Castle, Warner's King, Yorkshire Beauty. The summer sorts were plentiful, but with the exception of Beauty of Bath, which was equal to its fame, they are scarcely of sufficient importance to demand mention amongst the varieties "conspicuous" for productiveness and market value. The list, however, as we here put it, trusting to memory of observations made, is full of matter for reflection at the close of a season that is generally regarded as making but poor returns in fruit.

The comparative certainty of the apple crop—taking a run of years and making large comparisons—should entitle it to special favour with those who live by tilling the ground. To be sure it is in favour with them, and yet only superficially so. Not many of their number appear to grasp the facts advantageously, for they are as to

their leading features full of interest and importance. The apple will thrive on a greater diversity of soils and in greater extremes of climate than any other of the more substantial fruits. It is rather a question where it will not grow than where it will. In common with nine-tenths of all the more useful products of the earth a deep, fertile, well-drained loam suits it best, but it thrives on clay and on sand; it does not disdain a calcareous soil, and is not quite lost on peat or bog when reasonably reclaimed and freed from sour humidity. But it is not profitable to test it by extreme conditions, and when soil and climate appear to be adverse to apples, prudent men will proceed cautiously, and will be content with a few trees by way of trial in any doubtful case where the possibility of apples is a question of any importance. The best evidence of the matter is that of eye witnesses. Our reports from all parts of the British Islands keep our readers well informed of the districts in which fruit-growing is profitable and the classes and kinds that are severally in favour. In our last week's issue it may be noted that good Ribstons, Lord Suffield, Warner's King, Ecklinville, and Cellini were shown at Aberdeen on the 1st inst., and we may remind our readers of the Edinburgh Apple Congress, fully reported on in these columns, as illustrating the possibilities of apple culture in the North—indeed, the Carse of Gowrie is an apple garden, and Merlin's song of the apple is a memorial of the Caledonian forest in the years immediately following on the departure of the Romans. Lately the British Fruit Growers' Association has enlightened the public on the actualities and possibilities of apple culture in Ireland, and no one conversant with rural affairs can doubt that Nature has laid all necessary foundations for such an industry, which, to use the language of society, only needs to be "developed." But, alas! "development" in Ireland is not in the fruit line; it is more in the nut line, and they prefer to crack nuts that have brains in them. It is enough that political patriots do not plant trees, and as political patriots are in the ascendancy in the Emerald Isle, we cannot for the present expect to see apples making golden orchards and putting gold into the pockets of the people. Yes, it is more a question where the apple cannot be grown than where it can, but at the end of the story it must be admitted that it is impossible to cover these islands with apple trees because there are certainly some tracts of country that are quite unsuited to the business.

During the fifty years' career of the horticultural press, or forty years if we reckon only from the first of the weekly papers, the cultivation of the apple has undergone a revolution, and in this the press has aided more than has been suspected hitherto. Editorial opinions may have contributed but little, but the arena for discussion has proved the engine of action. The stocks, the varieties, the operations, the enemies and friends of the apple crop have all been reviewed and dissected, and the result has been a piling up of facts on one hand and of a great body of opinion on the other. The Paradise stock has been lifted from the position of a toy to the status of an instrument of usefulness, chiefly by the operations of the R.H.S. in the garden at Chiswick, where the several forms of this stock were compared, and the faulty ones that brought disgrace on all were marked and banished. For substantial lasting service we wish it to be noted that the crab stock when well managed is still of incalculable value. Or rather it is calculable, because there is no difficulty in making comparisons, and the calculation secures for it a respectable figure. But we live and learn. The ancient standard tree lifting its head to the clouds was quite a necessity when the orchard was a grazing ground, and the apples were suspended overhead to exalt the ideas of the humble beasts that performed their munching and made beef and mutton under the golden bough. But where cattle do not graze in orchards a far better form of tree is obtained by entering the bud close down over the collar and so securing growth, not of stock, but of tree proper from the ground line. Mr. Dancer's trees that he used to invite Fellows of R.H.S. to see when loaded with fruit in his orchard at Chiswick were of this make, and the picture was wonderful, because the leafy trees could scarcely display their leaves because of the enormous bulk of their golden fruit, and his square acres of Stirling Castle were just a prosaic transference of the garden of Hesperides to the region of fact; but had he planted the old-fashioned standard trees he would have had no such surprise for the visitors who agreed with him that he ought to have discovered both the apple and the methods a few years earlier. It is quite true he "ought," and so we all ought to be first in the field, but Providence ordains that somebody shall be second, and at every railway station there is always somebody too late for the train.

Amongst the revolutions in apple culture, we may name the exaltation of the Paradise stock, which is but a dwarfing stock, and does not supersede the crab stock for substantial work, though it does enable us to gain time, and overcome defects of soil because it is a surface feeder. Another result is the establishment of a number of varieties of the greatest excellence that supersede varieties in the same classes that were less manageable than an apple should be to prove profitable. We may name Cox's Orange as a proper substitute for the good old Ribston Pippin. It is more certain, it is not fastidious about conditions, although a cold locality does not suit it, and it combines a good appearance with fruitfulness and high quality. It is but proper that it should supersede the Ribston, because it is many degrees more trustworthy, and to carry mere sentiment into the business is sheer folly. It cannot but be proper to speak also of a method of forming standards that is advancing in favour. It consists of entering the bud close over the collar as for bush or pyramid trees, and allowing a regular bristling of growth on the stem which forms spurs, and makes a show of fruit while the head is forming. A superficial view of this will be unfavourable to it, but superficial views are not necessarily the safest. The stems of standards, as commonly made, are singularly weak for some years after the foundations of the head have been established. No newly-made standard tree can stand alone when planted out, and the only reason it can stand in the nursery is that the crowd is so dense there is no room for any individual to topple over. But the furniture of the stem feeds it, and we get a sturdy basis for a healthy tree, and as a matter of course as the head opens out the stem furniture is removed; and indeed, to some extent, it would remove itself, for the growing head would operate as in all such cases. Nature likes clean stems, though she takes more time to make them than we do, for we make them with a knife, and they are as pliable as willow wands, though less tough, and therefore less able to take care of themselves until the head has acquired a degree of vigour to liberally feed the column that carries it.

BOROUGH OF CROYDON CHRYSANTHEMUM SHOW, 1891, is fixed for November 11 and 12.

MR. W. PALMER, secretary to the Dittons Horticultural Society, has been presented with a marble timepiece by the members, in recognition of his much valued labours.

A CONCERT IN AID OF THE GARDENERS' ORPHAN FUND, lately given by the Chiswick Gardeners' Association, resulted in a profit of £20, which sum has been handed over to the fund.

PHOTOGRAPHS OF THE RECENT GUILDHALL FRUIT SHOW were taken by Messrs. J. Russell and Co., 17, Baker Street, Portman Square, and may be obtained from them by persons desirous of possessing souvenirs of the event. In quality they are excellent.

HORTICULTURE IN THE CHANNEL ISLANDS was discoursed upon by Mr. John Fraser at a recent meeting of the Chiswick Gardeners' Association, the subject proving highly interesting to the large body of members present.

AN EXHIBITION OF CHRYSANTHEMUMS at Geneva by the Société d'Horticulture will be opened this day, November 15, and continued to-morrow and Monday. The November number of the Society's Bulletin contains a sketch of the history of the flower, founded on the work of Mr. Harman Payne, published in the G.M. last year.

THE FLORAL MEETING OF R. H. S. on Tuesday was characterized by several interesting features, not the least important being Mr. Arthur Sutton's lecture on "Chinese Primulas," for the hearing of which there was a considerable assemblage. Considering the vast spread of business in the chrysanthemum world there was a good show of humanity in the Drill Hall.

MR. ALFRED PEEL, HORTICULTURAL BUILDER, Wood Green, London, announces that in future the Dublin business will be carried on by Mr. Rowland Peel, on his own account; the Edinburgh business by Mr. Tate Peel, on his own account; and the Wood Green and Tooting works will be carried on under the name of Alfred Peel and Son.

THE USEFULNESS OF GLOXINIAS for the supply of cut flowers for indoor decorations is admirably illustrated by blooms received from Mr. Bones, who is especially successful in the cultivation of these plants. The flowers, which have been gathered from plants raised from seed sown about the middle of June last, represent a fine strain of erect varieties, and are remarkable alike for their large size, superb form, and rich colouring.

ALEXANDRA PALACE.—To enable the Alexandra Palace and Park to be used for other purposes than those specified at the time of the acquisition of the land, an Act of Parliament is requisite. We learn from the *City Press* that a Bill to this end is now being prepared, and will, we trust, put an end to the unsatisfactory results that have followed every attempt to make the venture prosperous. Powers will be asked to sell the land for building purposes, so that now, or very shortly, will be the time for the friends of open spaces to intervene, through Parliament or otherwise, and so secure to the public the whole or part of the familiar grounds on Muswell Hill.

CENTENARY EXHIBITION OF THE NATIONAL CHRYSANTHEMUM SOCIETY has proved a magnificent success. The materials of the exhibition, in other words the plants and flowers, were of higher quality throughout than any ordinary average; and in many instances the splendour of the flowers surpassed all former experiences. What a picture would this affair have made in a place adapted for its display as a whole! Well, we must take the facts as they are, and with all the points that might be better under other circumstances, many of the facts are surprising. The addresses in the conference meeting were brief and to the purpose, and were fully appreciated.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

CENTENARY BANQUET.

THE centenary festival banquet of this society was held on Thursday evening, at St. Stephen's Hall, Lord Brooke, M.P. (the president), in the chair. There was a large assemblage of guests, including a large number of ladies, who were present at the annual dinner of the society for the first time. Among those present were:—

Major Isaacs, M.P., Sir Guyer Hunter, M.P. (Central Hackney), the Hon. Captain Greville, Sir Walter De Souza, L.C.C., Lady Bouche, Mr. R. Ballantine (chairman of committee), Mr. E. C. Jukes (vice-chairman of committee), Mr. J. R. Starling (treasurer), Mr. Richard Dean (secretary), Mr. C. Harman Payne (foreign secretary), Mr. Lewis Castle, Mr. G. Gordon, Mr. Brian Wynne (secretary of Banquet Committee), Messrs. Leaton and Wilkinson (Royal Aquarium), Captain Molesworth (chairman of Royal Aquarium), Major Cresswell (vice-chairman of Royal Aquarium), Mr. Gladding, Dr. Spink, Mrs. Thrower (of Tasmania), Mr. and Mrs. Cannell, Mr. Glendinning, Mr. R. B. Laird (Scottish Horticultural Society), Mr. Sanderson, Mr. Daniels (Norwich), Mr. and Mrs. J. Wills, Mr. and Mrs. Segar, Mr. and Miss Barron, Mr. Bevan, Mr. Kemp, Mr. Williams, Mr. and Mrs. Laing, Mr. Stevens, Mr. Veitch, Mr. H. Turner, Mr. Jay, Mr. Nye, Mr. Dawes (secretary of Ealing Society), Mr. Shirley Hibberd, Mr. Crute, and Mr. Addison.

The dining-hall presented an extremely beautiful appearance, numerous varieties of the popular flower having been arranged in all parts of the room, and the tables being decorated in like fashion by members of the committee.

The first toast was that of "The Queen," proposed from the chair. In submitting the toast the Chairman said it was generally agreed that there had never been a more glorious reign than that of her Majesty's, and everyone earnestly wished her long life and continued happiness.

The Chairman next gave "The Prince and Princess of Wales, and the Other Members of the Royal Family." He said that when the Princess of Wales first came to this country as a bride she was received with a hearty English welcome, and the feelings which were then felt towards her had in no way diminished. With regard to the other members of the Royal family he felt that each in his or her way merited the approbation of the citizens.

The Chairman, in submitting the toast of the evening, viz., "The National Chrysanthemum Society," said he felt very much the honourable position which he occupied on that occasion, that of president of the society, on that, its 100th anniversary. It was a matter of very deep regret to him that on the opening day the death of a very old friend prevented him being amongst them. But his wife was able to be present—(cheers)—and she was very much pleased with the beautiful exhibition she saw, and the very hearty welcome which she received. He had on the previous day a somewhat later opportunity, in company with their excellent secretary (Mr. Dean), of going round and viewing some of the beautiful specimens in the Aquarium. He regretted exceedingly that his visit was postponed, and he confessed that he had some slight misgiving—the very slightest misgivings, perhaps—that some member of that august assemblage, the London County Council, might take a fancy perhaps to some of those lovely flowers which surrounded them—that he might perhaps be induced to place in his button-hole one of those grand specimens, and take it away before he (the chairman) had had an opportunity of inspecting it. (Laughter.) Such, he was pleased to say, had not been the case, as he found when he had an opportunity of seeing the flowers. (Cheers.) It was needless for him to describe to them the history of the chrysanthemum. It was a flower which was not of recent date. He believed that this most charming flower was first cultivated in China and Japan, and it was needless for him to say in such an assemblage that in Japan it was the most popular flower. It was not, he believed, until 1790 that the chrysanthemum was first brought into England and introduced to our botanical gardens at Kew. Since that time it had had many great lovers, and it had been brought by degrees to its present state of perfection. In 1812, he believed that there were only about twelve varieties of the flower, and now if they were to look through the society's catalogue, they would be perfectly astonished at the variety there laid before them. To his mind the chrysanthemum was a very satisfactory flower in whichever way it was looked at. Even if one looked at the reverse side of it some lovely tint was to be found which showed up and enhanced the beauty of the petals. It had, in this country, been brought to such a state of perfection that it was worthy to adorn any palace in the kingdom or in the world. (Cheers.) A small grower might be equally successful with a larger grower in cultivating the flower. That was evidenced in the shows which were being held thoughout the country. It had been so much the case that there had been seen all over the country large and important chrysanthemum shows and societies, which were of the very greatest benefit, because they acted as stepping-stones, and served as an encouragement and inducement to the members of the society. It was not always, of course, that an exhibitor was successful; but if he were successful, and if the flower which he exhibited was, to use an apt term, "quite at the top of the tree," he occupied a position, especially on an occasion of that kind, which must fill every other grower with the greatest envy. He could hardly imagine that there could have been a more successful, a larger, and more important show than the one opened within that building on Tuesday. (Cheers.) There had been, he was told, many additions to the ranks of their members since last year. He had the honour of taking the chair at their dinner last year. At that time there were 615 members, and now they had 734. (Cheers.) That was most eminently satisfactory, and it was also satisfactory to feel that the number of growers was increasing, but the number of those who took an interest in the flower as spectators was also largely increasing. He was sure that Captain Molesworth would bear him out in saying that not only had the show been a benefit to the society, but it had also been a benefit to the proprietors of that important establishment. (Cheers.) It was very right that it should be so, because the proprietors had been most generous to the society. (Hear, hear.) The toast was one upon which he might dilate at considerable length. He was, indeed, very fond of flowers, like most of those present. They had some of the most perfect specimens that it was possible to obtain exhibited at that show, and he thought that one of the most beautiful specimens was White Stanstead. They had competitors from all parts of the country, and he was also glad to find that they had representatives from their societies abroad. It was satisfactory to note that in the cultivation of this flower Englishmen had the sympathy and support of their fellow countrymen in various parts of the world. He thanked them very much for the patient hearing which they had given him, and also for having given him the opportunity of occupying so proud a position as that of chairman of their centenary festival. He sincerely hoped that, although the flowers which they had been exhibiting were fading, and many of them had faded already, the memory of that, their hundredth anniversary, might long remain in their mind. (Loud cheers.)

The toast was enthusiastically drunk.

Mr. Shirley Hibberd proposed the next toast, viz., "To the Eternal Glory of the Golden Flower that claims and obtains the constant homage and service of the National Chrysanthemum Society." He said:—

The toast I am to submit has for its object to commend to your favourable consideration the flower that has attracted, or I might say invited us here this night. It is a matter of form more than of reason that it should be so commended, because you are all of one mind on the subject. Were it not so, I might fail to unite you, but the persuasions of the flower would heal your differences, and as everything is bright that the sun shines upon so all must be harmony where this glorious flower exercises its proper influence. There is nothing, probably, in the whole creation that appeals so directly to our best feelings, while leaving undisturbed those of our feelings that are not the best, as a beautiful flower. Many minerals, as for example, gold, silver, rubies, emeralds, diamonds, are wondrously beautiful, but they do not touch the tender chords of human nature so surely as do flowers; indeed, they do sometimes—so I have been told—discover and encourage the worst feelings of men. They arouse cupidity, jealousy, and avarice, and but rarely persuade men powerfully to the path of duty and right. I am not seeking the dark side, either of nature or human nature; I strike a bold contrast between things that are obtained with difficulty from the interior of the earth, and things that we find not only with ease, but with pleasure on its sunny surface; things that come without seeking; flowers that bloom at our feet and make cheertul the highway of our daily life. Flowers have been properly set forth as emblems of all that is beneficent in nature and good in man, and the stars in heaven, because we cannot buy or sell them, or do wrong to possess them, have been likened to flowers. Thus the extremes of creation, the orbs that seem destined to endure for ever, and the flowers that come and go before our eyes, are brought into the same category, because they teach the same lesson of the largeness of the life that has been given us. It is one of the peculiar circumstances of our lot that we find on every hand rivers of bounties and oceans of wealth. The Divine Word went forth that man should not live by bread alone, but by every word that proceedeth from the mouth of God, and lo! while the bread is growing in the fields, a voice from heaven sweetly invites us to behold its exceeding beauty. Yes, the beauty of the wheatfield is as good for the soul as the ripened grain is for the body of man. Were we unfortunately destitute of the perception of beauty we should take no note of things we cannot put to some material use, and creation would be no better than a dry goods store. But it happens that the flowers that kindle our love and arouse our enthusiasm are the least useful of the many products of nature. If all the roses were annihilated we might remain as happy as before, so far as happiness is derived from material utility. The rose, the auricula, the carnation, the dahlia, the chrysanthemum, are in every ordinary sense of the term useless, and yet they give delight to all mankind, and are especial favourites with the florists. Observation proves that they are as useful as any of the plants that we look to for food and clothing, for the spiritual nature needs sustenance and the flowers supply the best of spiritual food. The motives that bring us together to-night may be in some degree mixed, but it must be evident to all, that however our individual motives may differ, the differences are all on the surface, and like the ripples on deep water they do but in part conceal what lies below, for there abides a strong, enduring, life-giving sentiment: our hearts are warmed and our thoughts are harmonised by the love and the worship of beauty. To man has been given by a beneficent creator something like a monopoly of sentiment. The creatures around him, many of which are dependent upon him, and all of which share in the same beneficence, appear to be altogether, and without exception, destitute of sentiment. They seek nothing but what ministers immediately to their material requirements, and although we hear of birds that plant gardens and insects that indulge in personal adornment, it seems after all, that these habits represent only the artifices of life to promote the material well-being of the creatures that resort to them. What a lesson in the study of the moral nature may we derive from the history of the chrysanthemum! It has been cultivated three thousand years, and has been with us a hundred years; it has absorbed to itself a large part of the life of many generations of men; they have given much of their wordly substance and daily strength to it, but they have never extracted from it a loaf of bread, or a material for clothing, or a medicine, or an implement. It has been a task verging on the impossible to convert the stem of the plant into a walking stick, and with all its wealth of colour the dyer can make no use of it, for as the season wanes the colour passes, leaving not a rack behind. It is sentiment that brings us here, and sentiment is defined as a particular disposition of the mind in view of some object. The object we have agreed upon, it is the flower that is the subject of my appeal to you, but which makes its own passionate appeal; one indeed that is irresistible in its variety of form, its infinite gradations of colour; its possession of a mysterious life; in a word in its beauty, for beauty is compounded of many qualities, and often those that are the most characteristic are the least definable. It may be consistent with our present object to consider the geographical origin of our flower. Europe may be said to be eminently conscious of its superiority to the Celestial empire, and has sometimes made rude assertion of its superiority. But I will express my doubt if Europe has given to China anything like an equivalent for what China has given to her. To that mysterious land we are indebted for "the cup that cheers, but not inebriates," for tea roses, and for the first chrysanthemums. Nor is Europe alone benefited, for the new world is enriched equally with the old, and each of these three gifts from the far East has permeated the far West, and when we mix with the enlightened English-speaking people of the American continent, we find that tea and tea roses and chrysanthemums are prized in every household, and one touch of floral nature seems to make the whole world kin. The rose has been the symbol of strifes that have written dark lines in English history. The lily has a place of pride overshadowed by sorrow in the history of France. The simple primrose is dear to us as a reminder that a great genius was taken from us at a moment when his country needed his wise guidance in affairs of State. But our flower has no suggestions of sadness; its history is a simple unfolding of facts in which science and sentiment play an equal part, and all its associations are joyous—nay, it is an emblem of festivity. Most properly may we wish that it may enlarge its influence, and thus continue to add to the sum of human happiness. Floriculture is a science of remembrances; they encounter us at every step we take in the garden. While these flowers are here this hall is a floral Walhalla; the flowers bear names that are records; they are tributes of honour and esteem to statesmen, philosophers, divines, poets, and to many who were none of these, but only honest men who loved flowers and gave examples of devotion to them that we may heed with advantage. Your catalogue is to me a storehouse of

delightful remembrances; it compels me to see again in memory's glass the pleasant faces of such men as Robert James, John Salter, Samuel Broome, Joseph Dale, Robert Fortune, William Holmes, and many more, whose bright minds and gentle natures I became acquainted with through this golden flower. A science of remembrances did I say? Why, they are the best part of it; they are the human part, and they speak of the happy harmony established between the heart of man and the life around him, a harmony enabling him with better content to plod through this breathing world. This flower attains the nearest of any to universality in the tastes of the people; it is the one that shines most brightly in the floral firmament when the lustre of others is dimmed, and we see all around us on the horizon the darkness that would press upon us were this light to cease to shine. The florist needs no vindication, the chrysanthemum no appeal and no apology. It is a rich man's flower, and adorns the palace; it is a poor man's flower, and a blessed boon for the cottage; it is the flower for the busy man, and one of the most useful to him and his family: how should I hope to do justice to it? How much better to confess I cannot, and to ask you now to drink to the Eternal glory of this golden flower; may the chrysanthemum live and flourish for ever!

Mr. Isaacs, M.P., proposed the health of the President, who, he said, richly deserved their sympathy and support in his dual capacity of President of the Society and Chairman of the Festival. He was, as was well known, a political man, but he would not venture to trespass on good manners by alluding to Lord Brooke in a political sense. He thought he must fairly say that his Lordship had shown a great desire as President of that society, to discharge his important duties in the most careful manner possible, and that he had shown by his speech that night how much he appreciated those subjects with which he was so closely connected by reason of his presidency of that society. (Cheers.) Lord Brooke had not only proved an excellent president of the society, but he had proved an excellent chairman over that night's proceedings, and the success of that gathering was largely due to his efforts. He could dilate for a long time upon his other good qualities. He could refer to the fact that he was a model landlord, but he thought he would be better known as the generous patron of all manly sports which were pursued in a legitimate manner. He asked them to drink his very good health, first as president of the society, and, secondly, as chairman over those proceedings. (Cheers.)

The Chairman, in response, prefaced his remarks by observing that no society ever got on well without a public dinner. He again assured them that he deeply appreciated the honour which they had done him in placing him in the chair. His visit to the show, and his inspection of the flowers recalled to his mind memories of his dear friend, the late Mr. Holmes, the former secretary of the society. That gentleman did much to promote the society's welfare. The group of chrysanthemums, which he had grown to show on the present occasion, was a very touching memento of him, and he had very great pleasure in bearing testimony to the very great good their deceased friend had done for the society. For his own part, he could only say that with whatever he was connected he always tried to do his duty like every Englishman did. It was not always a very pleasant thing to speak at any great length, as his friends, Sir Guyer Hunter and Major Isaacs would bear witness to. We had, perhaps, too much talking in this country; and, therefore, bearing that in mind, he would not detain them longer. Before doing so, however, he wished to thank them for the very kind way in which they had drunk his health, and especially to thank the ladies for the kind way in which they had graced their tables that evening. (Cheers.)

Mr. Jukes next proposed "The Lady Patronesses and Vice-Presidents," of whose services to the society he spoke in eulogistic terms.

Sir Guyer Hunter, M.P., briefly responded to the toast.

The remaining toasts included: "The Affiliated and Kindred Societies," proposed by Mr. C. Harman Payne, and responded to by Mrs. Marion Thrower and Mr. D. P. Laird; "The Royal Aquarium and Summer and Winter Garden Society," proposed by Sir W. De Souza, and responded to by Captain Molesworth; "The Exhibitors and Judges," proposed by Mr. Ballantine, and responded to by Mr. John Laing and Mr. H. Turner; "The Officers of the Society," proposed by Mr. H. Jay, and responded to by Mr. Ballantine and Mr. J. R. Stirling; and "The Horticultural Press," proposed by Mr. R. Dean, and responded to by Mr. George Gordon.

The musical arrangements were under the direction of Mr. Richard Mackway, who was assisted by some of his choir boys, Mr. Gilbert Thorne and Mr. Allan Clark. During the dinner, selections of music were rendered by a competent band.

BRIGHTON CHRYSANTHEMUM SOCIETY.

NOVEMBER 11 AND 12.

This society, which has from the first held a foremost position amongst kindred associations, held its eighth annual exhibition on Tuesday and Wednesday in the Dome and Corn Exchange. The show was of immense extent, as proved by the fact that there were over five hundred entries in the classes provided in the comprehensive schedule. The classes for cut blooms suffered somewhat in consequence of exhibitions of several of the other leading societies being held on the same dates, but the competition for the prizes for groups was more spirited than on any previous occasion. The arrangements were remarkable for their completeness, and reflected much credit upon the administrative ability of Mr. Longhurst, the able secretary, and Mr. Rupert Miller, and Mr. H. M. Denman, who acted as superintendents. As indicating the popularity of the exhibitions of the society, it may be interesting to state that over £150 was taken at the doors on the opening day.

GROUP AND SPECIMEN PLANTS constituted a great and surprisingly beautiful feature, the groups being of exceptional excellence even for the exhibitions of this society. The competition for the best group of chrysanthemums was very keen, there being eight entries and all the arrangements more or less good. The prizes were awarded to Mr. John Miles, Bristol Nursery, Kemp Town, Brighton; Mr. G. House, gardener to F. Mowatt, Esq., Withdean Hall, Patcham; Mr. J. Spottiswood, gardener to Mrs. Duddell, Queen's Park, Brighton; and Mr. George Miles, Victoria Nursery, Dyke Road, in the order of their names. Extra prizes were awarded to Mr. E. Meacham, gardener to Mrs. Armstrong, Withdean; Mr. James Hill, gardener to M. Wallis, Esq., Mr. Isaac Rolfe, gardener to Colonel Dawes, Worthing; and Mr. Tulley, Springfield Road, Brighton. There were five entries for the best group of chrysanthemums, occupying a space not exceeding sixty square feet. Mr. T. Fairs, gardener to R. Clowes, Esq., Clayton Wickham, Hassocks, was first, Mr. F. Collis, gardener to Mr. Barnes, Alexandra Villas, Brighton, second, and Mr. Fry, gardener to C. W. Catt, Esq., Middle Street, Brighton, and Mr. A. Netley, gardener to Mrs. Stroudley, Bosvigo, Preston Road, were third and fourth respectively. A pleasing novelty was the introduction of a class for twelve chrysanthemums arranged with a groundwork of ferns, and in this the prizes were awarded to Mr. J. Spottiswood, Mr. G. Miles, Mr. Rapley, gardener to C. A. Dash, Esq., Preston Road, Brighton, and Mr. A. Fry. For four standards Mr. J. Hill, gardener to M. Wallace, Esq., Springfield, Witham, was first with good examples of Peter the Great, Mr. G. Rundle, George Glenny, and Roseum superbum. Mr. Scutt, gardener, to Mrs. Jenkins, Franklands, Burgess Hill, was second, while Mr. J. Rolfe and Mr. E. Meacham, were third and fourth. Mr. A. Scutt was first for four dwarf plants, showing Hiver Fleuri, Madame de Sevin, George Glenny and Sunflower. Mr. J. Hill and Mr. E. Meacham were second and third. Mr. E. Meacham was first for four pyramids, showing Mrs. Dixon, Val d'Andorre, Source d'Or, Bertier Rendatler; Mr. J. Hill and Mr. J. Tulley were second and third. For six table plants, Mr. T. Nutting, gardener to J. Blundell Maple, Esq., M.P., Childwickbury, Herts, was first, and the second and third prizes went to Mr. Fry and Mr. Coleman. Mr. G. Miles, Mr. A. Netley, Mr. Turner, and Mr. House received prizes for six solanums.

CUT BLOOMS were rather below the average this year, but this may, perhaps, be accounted for by several other great exhibitions having been held during the week. In the competition for the prizes offered for twenty-four incurved and twenty-four Japanese Mr. W. Neville, gardener to F. W. Flight, Esq., Cornstiles, Winchester, was awarded the silver cup. The collection comprised fine blooms of Album Fimbriatum, Stanstead Surprise, E. Molyneux, Madame Baco, Stanstead White, Sunflower, Etoile de Lyon, Val d'Andorre, Avalanche, Thunberg, Lady T. Lawrence, Boule d'Or, Condor, Japonais, Bertha Flight, Hero of Stoke Newington, Princess of Wales, Miss Violet Tomlin, Mrs. W. Shipman, Queen of England, Golden Empress, Mrs. Heale, Prince Alfred, Jeanne d'Arc, Miss M. A. Haggas, Lord Wolseley, Nil Desperandum, Mrs. Coleman, Empress of India, John Lambert, Princess of Teck, John Salter, and Jardin des Plantes. Mr. C. Penfold was second, and Mr. J. Hopkins third. Mr. R. Phillips, gardener to Dr. Baker, The Deodars, Meopham, was first in the class for twenty-four incurved, with good flowers of Lord Alcester, Empress Eugenie, Miss M. A. Haggas, Queen of England, Golden Empress, Lord Wolseley, Emily Dale, Princess of Wales, Mrs. Cunningham, Lady Dorothy, Barbara, St. Patrick, Jeanne d'Arc, C. Gibson, Mrs. J. Crossfield, Miss Violet Tomlin, Mrs. N. Davis, and Cherub. Mr. S. Coleman was a good second. Mr. T. Glen, gardener to Mrs. Montefiore, Worth Park, Crawley, was first in the class for twenty-four Japanese, showing Meg Merrilies, C. Underwood, Maiden's Blush, Mons. Bernard, Mr. H. Cannell, Jeanne Delaux, Mrs. F. Jameson, Baronne de Prailly, Lady Lawrence, Pelican, Sunflower, Mons. H. Eliot, Etoile da Lyon, Madame Baco, Val d'Andorre, Ralph Brocklebank, Avalanche, Criterion, E. Molyneux, Condor, Marsa, Stanstead White, Comte de Germiny, Belle Paule. Mr. J. Phillips was second, and Mr. J. Voss, gardener to W. Saville, Esq., The Finches, Lindfield, was a close third. For twelve incurved the first prize went to Mr. W. Jupp, gardener to G. Boulton, Esq., Forfield Gardens, Eastbourne, who had good good blooms of Miss Violet Tomlin, Queen of England, Golden Queen of England, Miss M. A. Haggas, Bronze Queen of England, Empress of India, Alfred Salter, Princess of Wales, Golden Empress of India, Mrs. Heale, Jeanne d'Arc, and Lord Alcester; Mr. C. Fowler was a close second; and Mr. C. Sayers third. The premier award for twelve Japanese went to Mr. J. Hodges, gardener to C. Gibbons, Esq., Great Walstead, who had staged Etoile de Lyon, Volunteer, Madame Baco, Thunberg, Stanstead Surprise, Sunflower, E. Molyneux, Mrs. H. Cannell, Moonlight, and Triomphe de la Rue des Chalets; while the second and third prizes were awarded to Mr. J. A. Hemery and Mr. C. Penfold, gardener to Sir F. Fitz Wygram, Bart., Leigh Park, Havant. There were twelve entries for six blooms of any one Japanese, and the prizes were awarded to Mr. T. Glen, who had magnificent specimens of Stanstead White; Mr. J. Hopkins, gardener to the High Sheriff of Sussex, High Cross, Framfield; and Mr. M. Russell. The last-named was first in the class for twelve pompons, and his stand included good flowers of Prince of Orange, Mr. Astie, Comte de Morny, Mdlle. Montels, Black Douglas, Osiris, Antonius, Rose Marguerite, Mr. Holmes, Marguerite de Coi, and Rubrum Perfectum; and Mr. R. Phillips, Mr. Coleman, and Mr. D. Neville were awarded prizes in the order of their names. Mr. W. Jupp received the premier honour for six highly-developed blooms of Miss M. A. Haggas; and in the class for six reflexed, Mr. C. Penfold was first, showing good blooms of Mrs. Forsyth, Golden Christine, King of Crimsons, Cullingfordi, Cloth of Gold, and Felicity. Mr. R. Phillips was first in the class for six anemone-flowered, having fine flowers of Sabine, Dame Blanche, Lady Margaret, Nelson, Jeanne Marty, and Mrs. Pethers. Mr. G. Miles received the first prize for an elegant stand of chrysanthemums; and for a bouquet the prizes went to Mr. G. Miles, Mr. J. Miles, Mr. G. F. Wickham, and Mr. Rapley. The Sussex Horticultural Company contributed an interesting and representative collection of chrysanthemums; and Mr. Longhurst, W. Mill's conservator, contributed a beautiful stand of ornamental plants, ferns, chrysanthemums, and fruit.

FRUIT was abundant and of good quality, and for three bunches of white grapes Mr. T. Glen was first, showing highly-finished Muscat of Alexandria, Mr. A. Kemp, Mr. Spottiswood, and Mr. G. Miles also receiving prizes. The competition for three bunches of black grapes was keen, there being twelve entries. Mr. R. Phillips was first with well-coloured bunches of Gros Maroc, and Mr. Hodges, Mr. G. Miles, and Mr. E. Meacham were also successful. For four dishes of dessert pears, Mr. T. Glen was first, showing Duchesse d'Angouleme, Beurre Diel, Pitmaston Duchess, and Doyenne du Comice. Mr. G. Stowell, gardener to W. Young, Esq., Withdeane, was second, and Mr. J. Spottiswood third. Large collections of apples and pears were contributed by Mr. W. Balchin, nurseryman, Hassocks; Messrs. J. Cheal and Sons, Crawley; Messrs. Marshall Bros., Barnham Nursery, near Bognor; and Mr. Rupert Miller, Southdown Nursery, Shoreham.

VEGETABLES were numerous and of good quality. Mr. J. Nash received the premier award for a dish of tomatos, showing good specimens of Trophy. Mr. A. Netley and Mr. J. Hodges were second and third respectively. Mr. T. Glen was first for nine onions with Ailsa Craig; Mr. J. Turner second, and Mr. W. Manton was a good third. Messrs. Sutton and Sons, Reading, contributed a large collection of potatos, and Mr. A. Cuddington, Kingston, sent a good collection of vegetables.

First class certificates were awarded as under: To Mr. M. Russell for *Mrs. S. Coleman*, a fine incurved, now well known; and to Mr. J. Bunney, gardener to W. H. Champion, Esq., Dunny Park, Hurstpierpoint, for *Lily Bunney*, a single white chrysanthemum.

THE ORIGIN OF THE FLORIST'S CHRYSANTHEMUM.

By Shirley Hibberd.

[Read at the Centenary Conference of the National Chrysanthemum Society, November 11, 1890.]

The origin of the flower that commands our homage at this season and is the subject of this centenary festival is a matter of some importance both to botanists and horticulturists, and cannot be without interest to those who find amusement in speculating on the beginnings of things, and the histories of the favourites of the garden. It may appear to the casual observer of what is now passing as a question easily disposed of; for do we not read in the books that the chrysanthemum was introduced to this country a hundred years ago, certainly; and has been known in Europe two hundred years probably; and that China has the honour of having made it as a garden flower from one of the wildings of her own woods? Many questions may be disposed of in this easy way for those who are content with the dust that may be swept from the surface of a subject, but in this solemn assembly, making serious business of all that pertains to the history of the golden flower, there must be an endeavour made to brush away the superficial dust in order to explore what lies beneath.

There is then, be it observed, a strong *primâ facie* case for a plural origin of the various groups of flowers that are brought into the purview by the generic term chrysanthemum. The Chusan Daisy appears far removed from the noble Queen of England or the fantastic Spiderkry, the latest of the grotesque forms of the flower that Japan has given us. We have Lilliputians, Pompons, Reflexed, and Incurved, Japanese of several distinctive characters, and single flowers that in some particulars of growth and proportion stand apart from the other groups. When I said, the other day, in discoursing on the dahlia, that it is the most variable of all known flowers, I had not forgotten the flower that is now before us, but I was less sensible than I ought to have been of the immense range of its variations both in form, and size, and colour. But when I look seriously at the matter, I perceive many visible connecting links between the several groups, and these are to be traced only by a careful diagnosis, which shall distinguish between actual differences and mere modifications and variations. An elastic cord may be one foot long and one inch thick, and in that form of great strength. But when stretched a touch might snap it; yet it is the same cord, and if we are careful not to break it will return to its original proportions and qualities, and so prove its identity. I would submit the chrysanthemum to some such test, but the moment I contemplate doing so, a difficulty arises that appears insuperable. We may stretch the flower as we stretched the cord, and in fact we have stretched it in every way imaginable, but we cannot restore it to its pristine form. We know something of analysis in this business, but nothing of synthesis; we have no record of any floral favourite that has been much modified by man being actually bred back to its original form of a wild flower. I remember at the first primula conference, Mr. Lynch, of the Cambridge Botanic Gardens, undertook to breed back the auricula to the wild form out of which it originated, and all that can be said further on the subject is that the promise made years ago remains unfulfilled, and I will venture to say will so remain for ever and ever. The experimental test must be useful in this inquiry, but it cannot be final; there remains for us only the inductive method, and in aid of that we have a body of facts of the highest interest and value.

It will be proper to begin with a few elementary particulars for the advantage of friends here who have not given any special attention to the structure of the flower and the general character of the plant. The chrysanthemum is a compound or composite flower, and may be roughly described as a cluster of distinct flowers fused together, and fixed on one centre or receptacle. We find in a typical flower of any of the higher classes of exogenous plants a calyx of green leaves, a corolla of coloured petals, male organs or stamens crowned with anthers that diffuse a fertilizing pollen, and female organs or pistils crowned with sensitive stigmas that receive the pollen, and by the stimulus thus communicated to the ovary at the bases of the styles or stems of the pistils, the growth of fertile seed is promoted, and the proper work of the flower is thus completed. If you take a flower of a wild rose you will easily discover all these parts, and they combine to represent what I will call unity, for the one flower is one flower, and all its parts relate to one centre, and the use of every part is in some way to contribute to the production of the scarlet hep or berry in which the seeds are formed. In the flower of a single chrysanthemum the corresponding organs are all to be found, but modified in form and arrangement. The characters that first strike us are the corolla, as we may call it, that forms the boundary, and the stamens and pistils that form the golden disk. When we remove one of the supposed petals we find it to be tubular at the base, and enclosing an imperfect pistil, which is often a mere thread without stigmas. Now we know that this is not a petal, but a kind of imperfect flower, and we call it a ligulate or strap-shaped floret. Analysing the disk by cutting the flower through vertically, we find on the receptacle a closely-arranged set of tubes or narrow cups that terminate above in teeth and below in corresponding ovaries. In each of these tubes are stamens in a bundle, and through the bundle or fasces rises the pistil crowned with two horns that are veritable stigmas. Now we learn the meaning of the arrangement. Each tube is a complete flower, the tube itself being the corolla, and the stamens and pistils within rendering it properly hermaphrodite, and capable of seed production, which the strap-shaped organs of the margin are not, for the pistils there are mere signs, and apparently accomplish nothing. We term the strap-shaped outer adornments, florets of the ray, and the tubular flowers within, florets of the disk. The golden colour of the disk is the result in the first instance of the pollen produced by the syngenesious or coherent anthers, which perfect and disperse the pollen some days in advance of the protrusion of the stigmas, and when these are ready to receive pollen advantageously the pollen of the florets to which they belong is all dispersed and gone, and consequently we may regard it as a rule of life with the chrysanthemum that although the stigmas may receive pollen from florets of the same disk, they cannot receive it from the same floret, and will be very likely, indeed, to receive it from the stamens of another flower. The word "flower" I use for convenience solely; the proper term is capitulum, because a so called flower consists, as already explained, of many florets united in one head

When we reflect on the number of wild flowers that are fertilized by pollen from other flowers on other plants of their own kind, and that many of them are proterandrous or produce their pollen in advance of their stigmas, it seems a marvel that they should remain constant to a certain typical form, as many appear to do for centuries, although exposed to the chances of cross-fertilization. Variations do indeed occur, as every botanist knows full well, and yet the constancy of what we call species presents a problem of tremendous import for the philosopher. Many plants associate in groups which flower simultaneously and so favour a settled heredity, and thus the circumstances of place and time contribute to the constancy I am hypothecating. And another cause contributes to it, for varieties have a more slender tenure of existence than settled types, and we speak of the survival of the fittest to express our faith in the practice by nature of a process of selection, death being the agency for the removal of variations that are not wanted. Thus creation and continuance are both kept in check, and types survive variations, except in some peculiar cases, in which they become established to behave themselves as species.

But when man steps in the case is altered. Anything that differs from the accustomed type will suit his taste even if it be useless and ugly. A peloric snapdragon, or a wheat-ear carnation, or a green rose, or a chrysanthemum in which the florets of the ray have usurped the place of florets of the disk, and so produces what we call a "double" flower, will afford great delight. His first business will be to keep this new creation, whereas, perhaps if he had left it alone, death would have swallowed it as a thing unfit. This keeping of the curiosities is the beginning of floriculture. A variation fires a new enthusiasm; the variety is cherished, and though unable to propagate itself by reason of its barrenness, the florist finds means to multiply it, and he takes the hint it offers and labours to obtain other variations, and so by degrees becomes the master of nature within certain limits which, indeed, are very narrow, and as compared with the great scheme of nature the work of the florist is but trifling. But as an amusement, floriculture must have the highest place amongst what may be termed elegant pursuits, for its aim is the creation and preservation of floral beauty, and its work will be of incalculable value to the philosopher if he will but remove the scales of prejudice from his eyes and see what he can learn from it. We talk of heredity and the causes and consequences of variation, and sometimes imagine the botanists know all about it. The truth is, they know very little about it; the key to such knowledge is in the florist's hands as regards the subjects of his attention, for he possesses records of their variations, and their life histories are to him familiar, and the habit of observation is not only forced upon him as essential to his success, but it grows by what it feeds upon, and every day reveals to him something that is concealed from the botanist, unless he happens to be also a florist, which he seldom is, and perhaps never can be.

Now let us look into this subject of variation. The ligulate florets are, as regards actual and direct contribution to the formation of seed, useless. But nature is frugal, and all things have or have had uses to justify their being. That the ray florets were once upon a time fertile female flowers is probable, but if it be asked of what use are they now, it may be answered that they doubtless serve to attract insects to the flowers that the pollen may be usefully removed and scattered. Now what do we see as the result of the multiplication of these ray florets at the expense of the disk florets? We see nothing else but this, that the doubling of the flower renders it infertile, and from the moment it acquires this new character it is actually dependent on man for its continuance. When man ceases to preserve the double chrysanthemums they will absolutely perish, unless, indeed, neglect should quickly replace the inner ligulate florets with tubular florets, in which case they would save themselves by returning to a single form, and even that would be equivalent to destruction, for it is the continuance of the double flower we are considering. If you pull to pieces a double flower of any kind, whether incurved or reflexed, pompon or jap, if it has no yellow disk, it will be found destitute of pollen and absolutely incapable of seed production. One reason, therefore, that the raising of seedling chrysanthemums is a matter of difficulty, is that the flowers have become sterile, and therefore to obtain seed from them is impossible. I am well aware, of course, that seed is obtained not only by accident but by method, and there is what may be called a science of seed production in this field of floriculture. But I am striving to get at the beginning of things and must be allowed to set forth bold generalities, and I repeat that the tendency of all improvement of the chrysanthemum is to render the flower incapable of reproduction, and therefore its entire care as a garden flower is in the hands of man.

In our observations of garden favourites we learn that variation is subject to laws of which we know at least something, though it is but little considering the vastness of the subject. One thing we know, that the great law of like begetting like holds good here as in the rest of creation. Yet even in the most extravagant departures from types the law is illustrated, for when we can trace new forms to their parentage, we find they represent their origin fairly enough, though, perhaps, in a way we could never have predicated. When the waggish soldiers at Scutari grafted the tails of rats on the snouts of other rats and so got up a new species which they called the truncated or proboscis rat, they were not much more extravagant than the florists, only less honest, for the thing was a cheat, but a florist's flower, however far removed from its natural prototype, is a reality of nature, and like the truncated rat when examined, reveals its origin. You see, the variations of the chrysanthemum are accomplishments of nature in the first instance, but they represent the taste, fancy, or fanaticism—call it what you will—of man, because he takes pains to divert nature from her wonted course, and as regards results, will keep and perpetuate only what pleases him; and one consequence of this is that with all our wide range and great number of varieties, we do not possess all the materials needful to the inquiries before us, for in fact man would be sure to destroy the best evidences, which would be the varieties differing but little from the original types, and probably he would preserve nothing until he had obtained some very great remove between which and the type the connecting links were lost.

We have to make the best of the case as it stands. It may be said at starting that as regards form, the flower presents fewer difficulties than as regards size and colour. The ray florets are drawn out to an extravagant length in the spiderkry and the disk is contracted proportionately. It is the parallel of our elastic cord that served for an illustration of identity. The foundation of every group was imported. But the European cultivators have enlarged the groups and greatly improved the forms, and I use the term "improved" in full consciousness of all that it implies. But please observe how the florists have been working with nature, and I may say under her dictation, without exactly knowing it. The incurved flower when perfect is absolutely sterile. In a cold climate this is possible, for cold causes the florets to curve inward, and suppresses the organs of reproduction, so that ligulate and incurving florets are alone produced, and to expect seeds from such perfect florets is as vain as to look for lunar caustic in moonbeams. But warmth causes the florets to reflect or to curve outwards, and it favours the retention in the centre of the flower or capitule of a few tubular florets, and thus while in a warm climate it is impossible to grow the incurved varieties to

perfection, the Japanese varieties attain to fine proportions and to secure seed is not only possible, but easy. I know that seed can be produced and has often been produced in this country, but you must permit me to deal with this subject in this broad manner or my story will have no end, unless, indeed, it makes an end of me. But observe that in the British Islands and the north of France, Belgium, and Holland, the incurved chrysanthemums are well grown and have much beauty, but in the south of France, and generally in the United States the summers are too hot for them, and the more fantastic kinds that refuse to incurve with geometrical precision are the favourites, and the production of seed presents no special difficulty. Thus the favourites of the several countries have been determined by nature much more than by man. A man may have longings for something he cannot obtain, but the regard that comes of familiarity is impossible. The longing for a rarity is very different to the love of a homely toy, and our intense admiration of the incurved flowers is in great part the consequence of the fact that our circumstances enable us to grow it to a high perfection.

The variations of colour are of great importance. There are but two colours in our flower, yellow and purple. Of white I say nothing, for it is simply the absence of colour; of yellow I will say that the chrysanthemum attains to perfection of colour in yellow only, for in such a flower as Jardin des Plantes we have the purest yellow, and the colour is such as the artist would regard as perfect impasto, or a French florist might say "well ground in." You will say we have red, crimson, lilac, mauve, and so forth. I say these are all variations of purple, or they are mixtures caused by the intrusion of yellow, as in the colours we call orange, chestnut, and golden bronze. Upon the blue tone that is the basis of purple disappearing, the yellow steps in, and then we have brown, or bronze, in place of purple, but equally an impure secondary or tertiary colour, often very beautiful, and the more so by association with its own green leaves. These do more for colours than we know of until the leaves are removed, and the flowers are put in bunches of one colour to look like cauliflowers that have been dipped in a dye vat, and then are very gay, though destitute of beauty. And this purple, be it observed, is not well ground in. It is, in fact, not properly skin deep, and is rather a discolouration than a proper colour, for it belongs to the upper face of the florets, which on the under side are white, which causes the silvery turn-over of the incurved, and the curious gleamings of light in other varieties that show the undersides of their florets I like the manner in which Mr. Norman Davis, in his paper on "Sports" read last year, speaks of these colours as "reflective." When a good distinctive term like this is proposed I make it a rule to adopt it, to prevent the manufacture of another, and the evils of collision that may ensue. He calls the purple tones reflective because they are not properly integral, and you may illustrate this by comparing the florets of a yellow variety with those of any other colour. There is no white underside in the yellow flower; the colour is integral, and it is the only colour that is so; all the others are superficial or reflective, and they illustrate the law of compensation in colours, for the purple is the complementary of yellow, and just the variation a yellow flower should aim at to keep within the limits of chromatic respectability. The law that appears to govern sports is one that affords direct hints of the origin of the chrysanthemum. Mr. Norman Davis, arguing from the white basis of the rose and purple flowers, and the frequent occurrence of white flowers both in seedlings and sports, expresses his belief that the flower was originally white, and the supposition illustrates a remark by Mr. Burbidge, in his paper read last year at Chiswick, that our favourite is a kind of glorified ox-eye daisy endeavouring to become a tree. Madame Desgrange may be taken as an example of many instances. The original is white, and when immature it has a yellowish centre. If carefully examined it will be seen that this colour is akin to the green tint that occasionally appears in the centre of Lord of the Isles and other varieties, while the flowers are young and disappears as they open out. But, however we may explain the yellow tint in the centre of Madame Desgrange, it certainly gives a hint of a kind of desire in the flower to become yellow, and this desire is gratified in G. Wermig. In like manner Lady Selborne has given a yellow sport; Beverley, Empress of India, Queen of England, Mrs. G. Rundle, White Globe, White Trevenna, White Cedo, and Snowdrop—to mention only a few out of many—have in like manner sported from white or blush to yellow; but there is, on the other hand, no instance of a decided sport of a yellow to a white. Yellow flowers give deeper toned and bronzy sports, as, for example, Golden Annie Salter becomes Orange Annie Salter, the pure Yellow Jardin sports to Bronze Jardin; the white grounds are capable of anything known in the way of sports, for although we know of no sport from white to marone or chestnut, yet as the crimson is a reflective colour on a yellow ground, the white may first produce a yellow, and that may evolve the tone of red required for the chestnut. That sports have occurred most frequently in the incurved group is a fact demanding consideration Is it becaute these are the farthest removed in form and constitution from the original type, or is it that, having been the most carefully cultivated and the most closely observed during a run of fifty or more years, the minutest variations of these have obtained skilled attention, while sports in other branches of the family have often passed unheeded to oblivion, in some cases not having been seen at all, and in many not cared for? It is impossible to answer these questions, but they are pertinent to the business before us, for the incurved flowers are in the most helpless condition of any of their family through complete sterilization, and as they cast the burden of increasing their mere number on the cultivator, they take to a sportive habit to make amends for incapacity to vary through the agency of seeds? I offer these suggestions in all seriousness, for while we do not allow that plants possess volition, we are bound to assume that they possess it when endeavouring to sum up in brief the collective result of a complication of influences and circumstances. When we say that a garden flower casts upon its owner the charge of perpetuating it, that is like stating in the concrete that as cultivation renders it less fertile and less hardy, it must cease to exist as a subject for the florist unless assisted by the art that has shaped its form in a manner antagonistic to its welfare.

Passing from the comparatively trivial characters derived from colour, let us look a little closer into the plant. The small wiry Lilliputians differ by many degrees from the large incurved varieties, and these again from the Japanese. The smaller kinds have thin much cut leaves, and small flower-heads of a chaffy texture, the florets very closely set and the capitules as round as buttons. Seedlings of these produce a large proportion of yellow flowers, and often we find amongst them copies of the wild *Chrysanthemum indicum* so nearly identical with specimens obtained from China and India that cultivation appears scarcely to have changed it. The speculative cultivator must often have asked himself the question—Is it possible to obtain from any of these a proper incurved or Jap variety, and after taxing his memory for the results of his own observations, and of reports current on the origination of well known varieties, he would give a negative reply and dismiss the matter with the epithet—"impossible." But this Chrysanthemum indicum is the reputed parent of all our varieties, and there has been some robust faith shown in its pliability, or perhaps the declaration having been made at hazard has been accepted by one part of mankind for lack of a better explanation, and by another part in accordance with the schoolboy doctrine, that whatever is seen in print must be true.

But we have not been without witness to an explanation, possibly better. In 1792, Ramatuelle, in *Journal d'Histoire Naturelle*, vol. 2, page 240, described the old purple kiku, that was afterwards figured in the "Botanical Magazine," declared it to be distinct from the Linnean *C. indicum* and named it *Chrysanthemum morifolium*, the mulberry-leaved chrysanthemum, a quite appropriate name, for the leaf, especially as figured in B.M. 327, bears a striking resemblance in general outline to the leaf of the white mulberry. At the Chiswick Conference, Mr. W. B. Hemsley, F.R.S., directed attention to this point and illustrated it by specimens recently collected by Dr. Henry in Central China. There is a slender form of the plant named *gracile*; and Mr. Hemsley named the plant obtained by Dr. Henry, *vestitum*. He has since cancelled vestitum, and has assigned gracile a place as a slender variety of C. morifolium. This slender plant is found in North-west China, and its characters appear prominently in what we know as Chinese chrysanthemums, more particularly those of the incurved and reflexed groups. The typical C. morifolium appears to show itself plainly in the Japanese group, the leaves of which are thicker and more downy and the involucral bracts are often clothed with a fine pubescence. Maximowicz describes a plant as morifolium that cannot be accepted as such, and in respect of which there is not enough known to enable us to speculate upon it. But it appears that Dr. Henry has found the true morifolium, and that it answers admirably for a place in our charmed circle. The plant is robust, with thick, leathery leaves, very variable in shape and degree of cutting, and clothed with a grey tomentum.

The case then stands thus as the result of the inquiry, that *Lilliputians* and *Pompons* are garden forms of CHRYSANTHEMUM INDICUM, while the whole of the larger kinds, *Reflexed*, *Incurved*, and Japanese, are garden forms of CHRYSANTHEMUM SINENSE (syn. C morifolium), the first two groups being descended from the variety *gracile*, the third from the true *sinense*, the most robust of all.

It must be observed here that the flower has certainly been cultivated in China three thousand years, and probably five thousand years, and we are absolutely without record of the manner in which the Chinese obtained it, but the actual vegetation of to-day in that country suggests the explanations that have been offered. Now it must be admitted that the two reputed species, Indicum and Sinense, though for botanical purposes distinct, are so nearly related that the speculative mind is inevitably carried back to the time when one species became two through the influence of circumstances. The weaker Indicum may have produced in travelling south the stronger Sinense, but it is much more likely that the stronger Sinense in travelling north degenerated to Indicum, and that a yellow flowered form proved itself the most capable of withstanding unfavourable influences; that in fact we have here a striking example of the survival of the fittest. Another separation gives us the Sinensis in a weaker form, bearing the name Gracile, and thus we have three possible parental forms to generate the three great families, the Pompons, the Incurved, and the Japanese, and they thus stand in proper order as to relative vigour and the magnitude of their several parts.

This view of the case establishes the unity afar off, of the three forms now known as occurring wild in China. We are to regard them as three forms of a species that as such, no longer exists, having split up into these three subspecies or varieties. Call them what you will, the botanist must begin somewhere, and if he insists on calling them species, there is no reason in the world why we, who view things so differently, should dispute with him. But even now the matter is not absolutely settled, for I am bound to return to the primary proposition and speak to that before I conclude.

You propose to me to declare the origin of the Florist's Chrysanthemum. Now the Pompon forms are not florist's chrysanthemums. The Japs are, perhaps; the Incurved certainly are, and for present purposes I declare this group to be CHRYSANTHEMUM SINENSE. If you ask in what, as regards origin, the incurved differ from the Japs, I answer, the first are from the slender plant that is found in North-western China, and the Japs represent the stouter plant that is found in the warmer zone. Here then in the original geography of the species we seem to have an explanation of the reason why our best reflexed and incurved varieties are so well adapted for cultivation in this country and in northern Europe generally, while the Japs are more at home in the south, and with us are less hardy than the others. The first and hardiest group represent the North-western gracile form of C. sinense; the more vigorous and less hardy Japs represent the true morifolium or Central China form of C. sinense; and thus we establish our florist's chrysanthemum as of pure descent, its innumerable varieties being of its own making, and all of them descendants of a white rayed flower capable of sporting to yellow, and by reflective sports producing all shades of colour while avoiding the two primaries, pure red and true blue. That we shall ever have these colours is quite unlikely, and if the theory of the flower now presented is a sound one, it may be said in a word that to hope for red or blue is but a forlorn hope, and may with advantage be abandoned.

New Plants, Flowers, and Fruits.

CATTLEYA LAWRENCEANA (*B.M.* 7,133).—A good figure of this fine orchid, which comes so near to the well-known *C. Skinneri* "that it would not be easy to distinguish them by words for botanical purposes, except that the pseudo-bulbs of Lawrenceana are monophyllous."

CELMISIA LINDSAYI (*B.M.* 7,134).—An interesting composite allied to olearia, native of New Zealand. Growth, dwarf and shrubby; flowers white, resembling those of the oxeye daisy.

IRIS ROSENBACHIANA (*B.M.* 7,135).—A beautiful dwarf species, "more variable in the colouring of the flower than any other species of the genus." Native of Turkestan, and quite hardy in English gardens.

REINWARDTIA TETRAGYNA (*B.M.* 7,136).—A near ally of our old friend *Linum tetragynum*, and probably the same plant geographically modified. It is much grown for decorating the greenhouse at Kew, and is one of the most useful plants for the purpose.

CARAGUATA ANGUSTIFOLIA (*B.M.* 7,137).—A handsome and distinct dwarf bromeliad, inflorescence very showy, the bracts vermilion, floral tubes yellow.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Stove Plants in flower comprise Justicia speciosa; Aphelandra Aurantiaca; Begonia Clarkei, B. Ingrami, B. hydrocotylifolia; Bouvardia jasminiflora; Crinum insigne, C. undulatum; Euphorbia jacquiniflora; Gesnera cinnabarina, G. refulgens; Goldfussia isophylla; Monochœtum sericeum multiflorum; Poinsettia pulcherrima major; Scutellaria incarnata.

THE HOUSE.

Hyacinths in glasses are frequently grown so weak and spindling that the leaves fall about and have a more or less unsightly appearance. It may therefore be proper to advise those who indulge in the cultivation of these bulbs in water to give them the fullest daylight possible as soon as they begin to grow freely. Previous to the formation of roots they do not need light at all, but when the roots have made a start they should be put in the fullest light, and if possible in a south or east window, where they will obtain a little sunshine occasionally. It is only in a full light that the leaves and flowers acquire their proper colour, and the stems their proper stoutness. The taller they grow the poorer they will be, and the more ridiculous they will look. There are various supports made for hyacinths grown in glasses: the best are made so as to drop into the top of the glass to obtain firm support for the uprights, these last having moveable catches that are easily adjusted to clasp the flower stem.

CONSERVATORY AND GREENHOUSE.

Azaleas and Camellias claim attention now that we have little else to depend upon to keep the conservatory gay. Azaleas to bloom early to have very moderate bottom heat, and to be syringed daily. Those still at rest to have a rather dry air. Camellias will not stand so much heat as azaleas. As you can get time clean the foliage of specimen plants.

Calceolarias of the herbaceous class grown for specimens may now want a shift; they must on no account become pot-bound, or they will bloom prematurely. Water on fine mornings and beware of green fly and mildew.

Cinerarias for exhibition to have a shift now to the pots in which they are to flower, or they will bloom prematurely. Give them the fullest possible amount of light, and keep them a good distance apart, placed on inverted pots, and they will thus have a free circulation of air about them, which will keep them strong and stocky.

Climbers in conservatories may now have special attention to reduce their dimensions. Lay in wood for next summer's bloom, and clear the walls and trellises.

Pelargoniums must have a little fire-heat if the house is damp, and the temperature should be kept nearly at an average of 45 deg. Nice work now, when the weather stops outdoor movements, to train them into form for blooming, and stir the surface of the soil in the pots, and make the pots as clean as if they had just come from the kiln.

STOVE AND ORCHID HOUSE.

Stove Plants in free growth must have moderate supplies of water, and those which have filled their pots with roots, and are now making new growth or pushing for bloom, will need more than those that have plenty of pot room, and are not thoroughly established. Care must be constantly taken to prevent the entrance of draughts, and especially after watering. Achimenes and gloxinias at rest should be packed altogether in a dry place. Mixed stove collections must now be kept rather cool, as growth is not desirable. Keep the atmosphere of the house sweet by giving air on fine days.

FORCING AND FRUIT HOUSES.

Cucumbers to be started now for the first batch to plant out next month. Sow in pots singly, and grow them on liberally, without running them up two or three together in a pot as if they had been wire-drawn. Fruiting plants must be thinned if the plants are more than moderately fruitful, or they will fail to give a succession when the fruit may be most desired.

Mushrooms to be kept as near 60 deg. as possible, and have plenty of atmospheric moisture. A steady temperature will greatly prolong the bearing of the beds, but if they are nearly at the end of their productiveness make up fresh beds at once for succession. At this time of year it will be necessary to make a new bed every month to ensure a constant supply.

Vegetable Forcing.—Keep asparagus going for succession. Rhubarb, seakale, and French beans will soon be in request. Lay a few picked tubers of early potatos on a warm flue to sprout for planting over dung heat, and make ready a bed for them.

Vines breaking to have a gradual rise of temperature, beginning at an average of 55 deg., with a rise of 10 deg. during sunshine. As the vines acquire a vigorous growth, raise the heat so as to average 65 deg. by day and 60 deg. at night, when they come into bloom. Too sudden a rise will make long joints and weakly growth, independent of the injury to the crop. A warm, dry border will do as much as the best management of the temperature of the house.

FLOWER GARDEN AND PLEASURE GROUNDS.

Carnations and Picotees must have abundant ventilation and very careful watering. Take off the lights daily in fine weather. If any appearance of fly, which is easily detected on the top grass of the plant, fumigate twice.

Hyacinths, Tulips, and other bulbs remaining out of ground may still be planted, and they will bloom very soon after those planted a month or six weeks ago. Plant large bulbs six inches deep; small ones three to four inches deep. If the position is damp, put silver sand under and around all bulbs of any value.

Ranunculus and Anemone of common kinds for showy masses may be planted now, but choice and valuable kinds must be kept in the drawers till the beginning of February, and in the meantime get the beds ready by deep trenching and laying up the earth in ridges.

FRUIT GARDEN AND ORCHARD.

Gooseberries and Currants may be lightly forked between to mix the manure with the soil, but raspberries should have three or four inches of dung, not very rotten, laid over the piece, and the soil between them should not be dug at all.

Dig round old fruit-trees, and lay down a layer of old dung six inches thick, in a ring, three feet round the stem of each. Trees that are sufficiently luxurious should not have manure.

Orchard House Trees may be pruned at once, and washed with a solution of Gishurst Compound, prepared by adding four ounces to a gallon of soft water.

KITCHEN GARDEN.

Potatos for planting in frames may now be brought out from the store and placed in shallow baskets or boxes, and then be put in the full daylight in a cool position where frost cannot touch them. They will soon green over, and when they begin to sprout the sprouts will be short, hard, plump, purple, and not liable to snap off in the process of planting.

Rubbish of all kinds should be cleared up, and if the place is not clean and tidy, now is the time to make it so by cutting in overgrown fences, rooting up useless trees and shrubs that intercept the light and exhaust the soil, and clearing the soil of all decaying rubbish.

VILLA FARM.

The time required for fattening pigs depends very much upon the purpose for which they are required and the condition they are in when taken in hand, but, speaking in a general way, small porkers may be prepared for killing in six weeks, and small pigs for bacon may be made sufficiently fat in from ten to twelve weeks, but those of large build will require three or four weeks longer. In the feeding of pigs, as in the case of other animals, it is necessary to select such foods as will lay on the flesh at the most economical rate and at the same time produce bacon or pork of the finest quality. Feeding them too largely on any one food is not a good practice, and in proof of this assertion it will suffice to mention the fact that if they are fed too largely on potatos and other vegetables and wash, both bacon and pork will be soft and waste



CHRYSANTHEMUM INDICUM.
From specimen in the Herbarium at Kew. Rev. J. Webster, No. 246. *See page* 730.

considerably in the process of cooking, as also will that produced chiefly with Indian corn. On the other hand, when beans or peas, either whole or in the form of meal, largely predominate, the bacon or pork will be decidedly hard and lack delicacy of flavour. The best results are obtained by a combination of these foods with such others as are of proved excellence. During the first two or three weeks, potatos, pollard, and peas or Indian corn will be the most economical. The potatos should be cooked by boiling or steaming, and to every bushel should be added half a peck of pollard and half a peck of either Indian corn or peas, which also should be cooked, and when they have been well mixed with the liquor in which the peas or corn have been boiled, or a little fresh wash of a nice warmth. With this the animals must be fed three times a day, and at each meal they must have as much as they can eat and no more, as indicated by the condition in which the trough is left. At the end of the period here mentioned the proportion of potatos must be considerably lessened and the quantity of pollard increased and barley meal added. Probably the best course is to give barley meal once a day at first, then to be increased to twice a day, and finally to three times, and during the last week the pigs may be fed wholly with it. Until the last week pollard must be largely employed, and the barley meal varied with peas and Indian corn, and probably there is no better plan than to give pollard with each meal, and to add to it barley meal in the morning, peas at midday, and the Indian corn in the afternoon; but as the preparation of three distinct mixtures each day necessarily adds to the labour, it will in most cases be found more convenient to give the Indian corn for one week and the peas for another.

THE WILD CHRYSANTHEMUM.

IN illustration of the subject discoursed upon by Mr. Hibberd at the Chrysanthemum Conference on Tuesday, the authorities of the Royal Gardens, Kew, generously supplied from the Herbarium a few of the more notable examples of the wild plant Two of these we have figured as particularly interesting.

One of these is the *Chrysanthemum Indicum*, of Linnæus. This specimen is from Northern China, collected by the Rev. J. Webster. It is of slender growth, with small deeply cut leaves and small yellow flowers, which, as will be seen on reference to Mr. Hibberd's paper, he regards as the parent form of the pompon group of chrysanthemums



CHRYSANTHEMUM SINENSE. From specimen in the Herbarium at Kew. Dr. Henry, No. 930.

The other is the true *Chrysanthemum Sinense*, with a robust growth, the leaves not deeply cut, and the flowers much larger than those of C. Indicum, and of a double or semi-double character. This is one of the many valuable contributions to the Herbarium of Dr. Henry, whose botanical exploration of the mountains of Central China are of the highest interest and importance. It will be seen that, if in the first we have the making of the pompons, we have here the possible making of all else, for the multiplicity of ray florets indicates a desire of the plant to advance in a way to gain the favour of humanity, and only needing the guiding hand of man to make progress as a garden flower. That these two "species" should be regarded as geographical forms of one and the same species—which is Mr. Hibberd's contention—cannot be considered unreasonable when the specimens are compared, not only with each other, but with the intermediate links that other specimens supply.

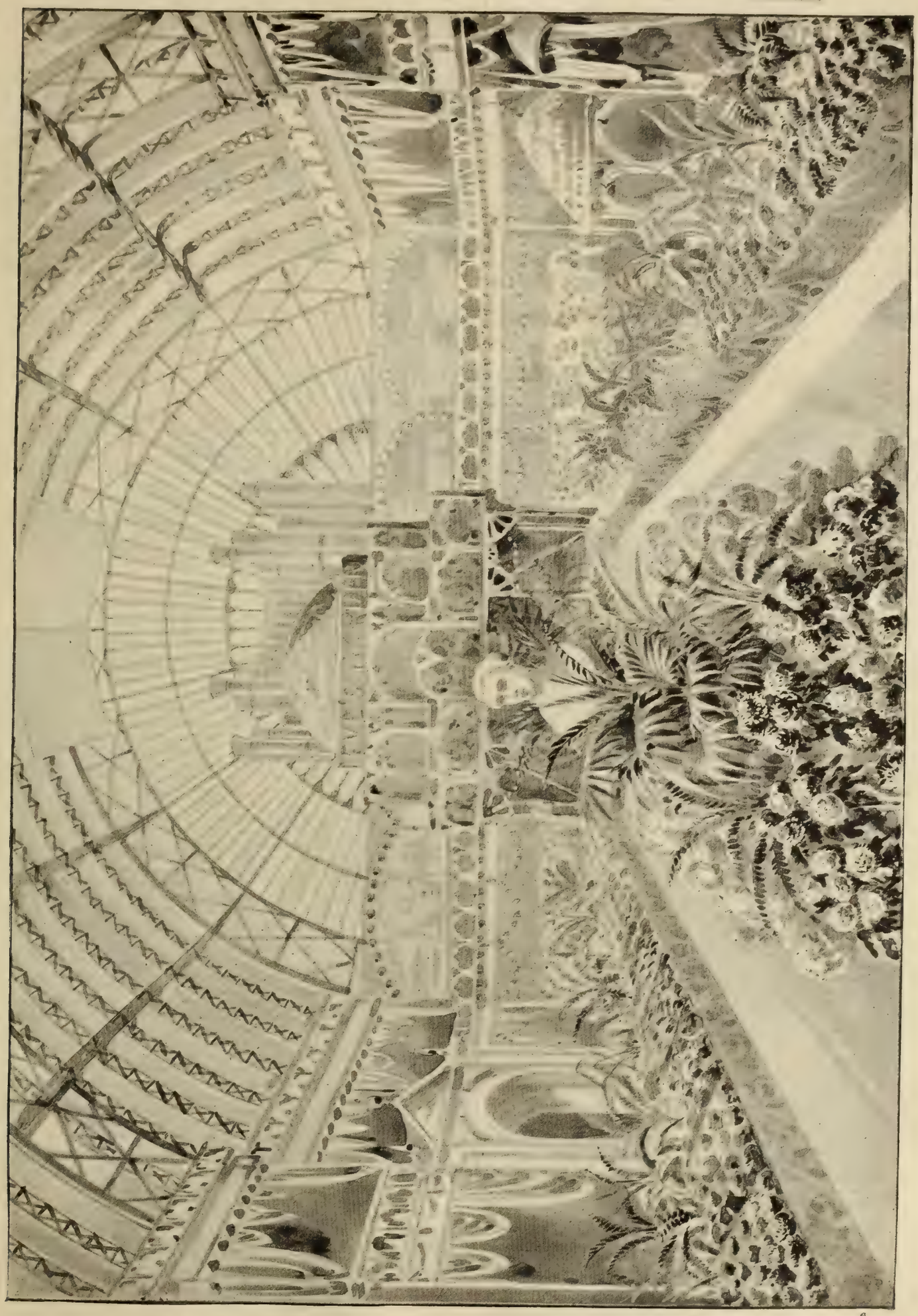
THE CHRYSANTHEMUM IN ART.

By Mr. G. C. HAITÉ, F.L.S., Bedford Park, W.

[Read at the Centenary Conference of the National Chrysanthemum Society, November 11, 1890.]

IT has very properly been thought that so important a celebration as the centenary of the introduction of the chrysanthemum would be incomplete without some reference to its position in the art expression of the country from whence it came, a country remarkable for many qualities, but chiefly for the charm of its decorative arts and skilled handiwork; and would also be incomplete without some recognition of its introduction in the ornament of our own manufactures. Although the introduction of the flower may be considered recent, it has of late years become a favourite and prominent *motif* with our art workers; so much so, that it must of necessity be associated with the great art revival of the latter part of the Victorian era.

The committee of the National Chrysanthemum Society, in asking me, as a practical worker in applied ornament, to talk to you on this phase of a most fascinating subject, paid me a great compliment, and, as the task was by no



CENTENARY FESTIVAL OF NATIONAL CHRYSANTHEMUM SOCIETY.—A PEEP AT THE EXHIBITION IN THE ROYAL AQUARIUM, WESTMINSTER.

means an uncongenial one, I ventured to accept the honour, and shall endeavour to keep the few remarks I propose making as comprehensive and clear as the time at my disposal will allow.

I need, therefore, offer no apology for the subject matter of my address, or for its introduction here; I can only regret that it was not undertaken by some one more competent than myself.

It must be clearly understood that my remarks upon the art aspect and adaptation of the chrysanthemum will be confined exclusively to that branch of art known as the *applied* or decorative; inasmuch as the selection of this flower for purposes of imitative painting can offer little, if any, food for reflection, seeing that its beauty and variety of form—combined with its richness of colour, would alone be sufficient to recommend it for such purposes. But a flower, or growth, must possess something more than an abstract beauty to take a foremost place in the ornament and history of a people. A flower may be beautiful in itself, and yet lack the qualities necessary for the purposes of *applied* art.

As an example of this we may take the cultivated rose, beautiful enough to satisfy the most fastidious taste, and absolutely unequalled in its exquisite colour range and subtleness of perfume, and yet can we call to mind a single instance in which it has been successfully treated as a decorative *motif*? On the contrary, it is painful to reflect that the only claim it could possibly advance to artistic utility—save the mark! would be its frequent recurrence in the crotchet and wool-worked table-mats and antimacassars of the last generation; now, let us hope things, I had almost said, *sins* of the past. The rose will, of necessity, be associated with the darkest age in the art history of this country.

Again, the dahlia has been developed and cultivated to its full pitch of perfection, possibly, but has left no record, at least of a creditable kind, upon our every-day art.

The tulip was at one period more than popular. It became a fashionable craze—in some cases, almost criminal in its consequences—riding foremost in the gilded chariot of fashion, and yet, as regards the influence upon taste and art, we meet with it, chiefly in gaudy chintz or abominable specimens of naturalistic wood carving.

I might give further instances of a like nature, but these will suffice to justify the assertion that a flower may be beautiful in itself, but yet totally unfit for the purposes of applied art. Something more than culture and development, something more than the caprice of fashion, something more even than abstract beauty, gratifying though it be to sight and smell, is necessary for a growth to be exalted and to live for all time as a characteristic feature in a nation's ornament. The lotus, the iris, the Tudor rose, the ivy, and the chrysanthemum not least, illustrate and prove this. Without prejudice, I think I am justified in saying that in only too many instances, although the selection of a growth for cultivation has resulted in finer flower-heads and more luxuriant growth to the gain of our gardens—all this has only been obtained by the elimination of those very points and characteristics which made it acceptable to the artistic eye, and possible artistic adaptation. But this has not been so in the culture and wonderful development of the chrysanthemum. Never, perhaps, in the history of the world—certainly there is no parallel in our own memories—has art been so indebted to the florist as she is to-day for the development of this wonderful flower.

It must be confessed that the florists and chief growers possessed, and it is said still possess, a strong predilection for the variety known as the "incurved." That is a form which, viewing the flower from its artistic aspect, does not commend itself so strongly to artists, while the emphasis of its ball-like form restricts its use. But to their credit be it said, the growers have been equally devoted and enthusiastic in their culture of the reflexed, the anemone-flowered, the pompon, and, as they are called, the dishevelled Japanese varieties. The last is the dearest to the artistic nature, and is evidently alike the favourite of the ornamentist at home and in far Japan.

As I shall have occasion to use the words conventional and conventionalism somewhat frequently, this may be a not altogether unfitting opportunity to attempt some clear definition of this much-abused, because misunderstood, term.

To many, not only of the general public, but also to our art workers, unfortunately, it is understood to simply mean the flattening out of an object. South Kensington is supposed to have originated and propagated this idea; certainly the department is responsible for a multitude of drawings in which this definition has been practically shown. It may also claim the honour of instituting the exact turn-over, and the sub-division of the circle; the result of which is a lifeless and irritating repetition of aimless form, conventional indeed, but not in the sense desired. This convenient word is, moreover, relied upon by many, as an excuse for want of truth, consequent upon superficial observation. As I understand the real meaning of the word, conventionalism is the principle of selection, the discerning and adapting of the most salient characteristics of a flower, so that in the best conventionalised ornament the growth may never be an outrage upon nature, but rather a clearer delineation of the same. This playful rendering of a spray of chrysanthemums is designed to suggest a stork on the wing, and demonstrates how possible it is to idealise the true growth and characteristics of nature for a definite purpose, and further, that conventional treatment does not necessarily restrict invention or fancy. The effect is so natural, that we can discern but little difference at the first glance from a drawing of the actual bird. Indeed, we can quite imagine a spray of the flower growing by a freak of nature in this manner. I am aware that this question of nature in art is but a small factor, inasmuch as a growth may be conventionalised, as in much of the Chinese work, beyond recognition; yet it by no means follows that it is not a good ornament, and fit for its purpose, but it at least lacks that interest which association always gives, and therefore I take it there is a distinct loss. But for a plant that is to appeal to us as such to be delineated false in growth, and excused on the plea of conventionalism is nothing less than an outrage on the principles of art and our common sense.

It is important to observe that the flower and foliage growths that have stamped a nation's ornament with individuality and character for all time, are invariably conventional in treatment. We have no instance of a naturalistic treatment possessed of sufficient vitality to live, much less to form a vowel in the grammar of decorative art. The lotus of Egypt in its conventional rendering alone would serve to prove the high civilization and antiquity of Egypt, and to this day it stands the finest instance of conventionalism known, and yet in no way does it outrage true growth.

The Lily of France, is destined to immortality as the Fleur de Lis, a rendering of the iris, while the selection and use of the Tudor Rose of England stamps the best period of our own art, although it existed in its adopted form long before that date. And with the true instincts of an artistic people, we find the chrysanthemum is rendered by the Japanese more or less conventionally, according to the purpose or material for which it is selected.

Everyone knows that the chrysanthemum is the imperial badge of Japan, but it may not be generally known that it shares this honour with the Paulownia Imperialis, a growth equally capable of conventional expression and recalling in its form our purple foxglove.

We find the simplest expression and severest form of the chrysanthemum—as we might expect—in its adaptation to heraldry, as the imperial badge, in which it is shown as a simple rosette or daisy composed of sixteen petals. Even in the later adaptation of the flower for postage stamps this simple and severe form was adopted. We may rest assured that its selection for this important function was not mere haphazard, prompted by personal caprice, or even some incident connected with the flower, but rather because it had within itself possibilities of a simple and satisfactory conventional treatment. The conventional rendering of an object is not due to either tradition or what is called taste, it but is the outcome of necessity, and simply means that the material to be decorated delineated the *motif* and method of treatment. Recurring to its use as a badge, the reason for its simple expression is at once apparent. First, that it might be seen clearly, and from a distance, without possibility of confusion, and secondly, that it might be capable of execution upon, and in every kind of material. Hence we see it in the hardest alloy for weapons and armour; carved in metal and crystal; beaten in high and low relief in brass; carved in wood and ivory; woven in fabric of dress and banner, and raised in lacquer, simple but unmistakable.

But apart from being the badge of the Royal House of Japan, the flower is evidently dear to the people for its beauty alone. It appeals to them in its general adaptability for the ornamentation of their domestic surroundings, while it is by no means uncommon. I gather from one of those delightful letters from Sir Edwin Arnold, which appear from time to time in the *Daily Telegraph*, to find the Japs naming their daughters after these favourite flowers, O-Kiku-Sau, the Hon. Miss Chrysanthemum, in much the same way that we call our girls Rose, Violet, Lily, &c.

The chrysanthemum is the leading, if not the most characteristic feature in the ornament of this nation, who have taught us so much, and who are destined to still further revolutionize many of the ideas connected with applied ornament of the Western world—a nation whose history is so interwoven with the adaptation of this beautiful flower that I venture to say Japan is better known to the multitude to-day by the flower of her choice than by her civilization of thousands of years, or by the character and history of her patient and talented people. As I have before said, we find it used in every imaginable way, from the severest possible form, as shown in the Imperial Badge, to the naturalistic paintings on silk or paper or the fanciful expression of form, as shown in the bird and butterfly adaptations. It would be nothing short of a calamity to lose the varied expression of this flower, while it would be difficult to imagine the art of Japan without it. It stamps the native work with individuality, and in conjunction with the Bamboo serves to typify their art. Having taken a general though hasty view of the subject it may be profitable to ask ourselves why this flower over and above its claim to beauty, was and is so readily selected as a decorative *motif*? The fact of it being the Imperial Badge of a distant and still almost unknown people can have had with us, at least, little influence, however much it may have affected the Japs themselves. It rests its claim for admiration and selection upon a beauty of form as remarkable as it is varied, upon a wide colour range, and a growth strong yet graceful with foliage no less beautiful than the blossom.

Many flowers have been grown in obedience to the demands of the fashion of the day, and their contributions to the art world have been of a negative nature. But in the flower we have met to honour, we find it not only adapted to a variety of treatments consistent with the principles of applied ornament, but that, too, with little, and in many cases no alteration. Nature indeed seems to have been so enamoured of her production that she was half tempted to turn artist.

The flower as such is perfect. It is left for the genius of man to make it equally so for his defined purpose. For the very reason that it is so decorative in itself we should resist the desire for imitative realism.

The Japanese, to their credit and glory as an artistic nation, never fall into this mistake. If they use the flower as a *motif* for chasing in hard metals, as steel, alloys, iron, &c., they select blooms simple and defined in form. On the other hand, in chasing in soft metal—gold or silver—or carving in soft woods, they choose blooms, the beauties of which are better displayed in a more modelled form. In metal work the treatment may be convex or concave.

In their paintings we at once perceive that they allow themselves a wider selection, almost every kind and variety of flower finding recognition with greater latitude in treatment. Foreshortening, interlacing, and intricate arrangements are indulged in, and what may be termed an intermediate course is taken in their pottery and fabrics.

It is not possible to more than briefly allude to the extensive use made of the flower by designers and ornamentists in our own decorations and manufacturers. Attention should be directed to the matter, inasmuch as I am compelled to admit that the flower is often either misapplied or adapted without sufficient simplification. As pointed out, Nature has done much of the designer's work, and we are too apt to rely upon this fact, utilizing the flower as it is, instead of making it consistent with our requirements. As an instance, we not infrequently see in repoussé, pointed-petalled blossoms, selected for high relief, and attempts to render shapeless outlines, a method of expression suitable only for imitative painting. In woven fabrics, too, we see the flower over burdened with petals and necessarily confused in form. The same attempts at naturalism are to be found in wood carving, wall-papers, &c. We should do well to study the methods of Japanese adaptation, not necessarily to copy, but for the principles involved, and we should more conscientiously study the flower itself, and not accept as accomplished that which nature has still reserved for us to do, in the doing of which we invest the growth with a human interest. These conditions pre-suppose no arbitrary restrictions, inasmuch as the probabilities of variety are practically endless.

Finally we may all concede that we owe it a deep debt of gratitude, for it has made bright a period of our year that heretofore had been dull and flowerless. No longer can the poet sing—

> "No warmth, no cheerfulness, no healthful ease,
> No comfortable feel in any member;
> No shade or shine, no butterflies, no bees,
> No fruits, no flowers, no leaves, no birds—
> November!"

Chrysanthemum Exhibitions.

CRYSTAL PALACE CHRYSANTHEMUM EXHIBITION,

November 7 and 8.

The horticultural exhibitions which formed such an important part of the Crystal Palace programme for the current year were brought to a close on the above dates with an exhibition of chrysanthemums, remarkable alike for its magnitude and the high quality of the plants and flowers staged in competition for the liberal prizes. In a few of the cut flower classes the entries were hardly so numerous as at the corresponding exhibition of last year, but as will be seen in the course of the report the competition was in every instance very keen. On the other hand there was an increase in the number of competitors in the classes for specimen plants and groups, the latter being so numerous as to form a great feature. The plants and flowers were staged in the north nave, and in association with palms, ferns, and other plants, remarkable for the beauty of their foliage, produced an extremely rich and tasteful effect.

Cut Blooms formed a most attractive and highly interesting feature, for all sections were fully represented. There were thirteen entries in the great class for forty-eight blooms to consist of twenty-four Japanese and twenty-four incurved, and to comprise not less than eighteen varieties of each section or more than two blooms of any one variety. The whole of the collections were more or less good, and Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, may be heartily congratulated on the success he achieved by occupying the post of honour. His Japanese and incurved blooms were alike good, the latter being of especially high quality and wholly free from the coarseness characteristic of those in some of the collections. The incurved varieties were: Queen of England (two blooms), Princess of Wales, Mrs. Heale (two blooms), Empress of India (two blooms), Miss M. A. Haggas, Barbara, Golden Empress, John Doughty, Jardin des Plantes, Miss Violet Tomlin (two blooms), Jeanne d'Arc, Empress Eugenie, Prince Alfred, White Venus, Mrs. S. Coleman, Lord Wolseley, Barbara, Lord Alcester, John Salter, and Princess of Wales. The Japanese were: Carew Underwood (two blooms), Puritan, Sunflower (two blooms), Stanstead White, Val d'Andorre (two blooms), Mr. J. Laing, Edwin Molyneux (two blooms), Boule d'Or, Avalanche (two blooms), Comte de Germiny, Condor, Marsa, M. J. M. Pigny, Maiden's Blush, Etoile de Lyon, Lady T. Lawrence, Fair Maid of Guernsey, Stanstead Surprise, and Sarah Owen. Mr. C. Gibson, Morden Park, Mitcham, Surrey, was a very close second, his collection being especially strong in Japs, but his incurved were a trifle weak in finish. Mr. J. Blackburne, gardener to J. Scott, Jun., Esq., Elmstead Grange, Chislehurst, was third, and Mr. J. Aplin, gardener to W. M. Baker, Esq., Hasfield Court, Gloucester, was fourth, the blooms in both collections being remarkably good.

There were eight competitors in the class for eighteen Japanese varieties, distinct, and the premier award was made in favour of Mr. Glen, Worth Park, Crawley, who had grandly developed blooms of Stanstead White, Thunberg, Mons. Bernard, Stanstead Surprise, Comte de Germiny, Mdlle. Lacroix, Ralph Brocklebank, Baronne de Prailly, Golden Dragon, Mrs Falconer Jameson, Avalanche, Maiden's Blush, Meg Merrilies, Marthe Hardinge, Etoile de Lyon, Sunflower, and Madame Baco; Mr. J. Blackburne was a very close second, his blooms being only one or two points behind those forming the first prize collection; and C. E. Shea, Esq., The Elms, Foots Cray, Kent, was third with blooms distinguished both by their large size and high finish. There was the same number of entries in the class for twelve as in that for eighteen, and the stands were throughout of good quality. Here Mr. H. Harker, gardener to H. Shindler, Esq., Oakwood Lodge, Epsom, occupied the first place with blooms not over large but of grand quality. The varieties were Stanstead Surprise, Madame C. Audiguier, Edward Molyneux, Stanstead Surprise, Val d'Andorre, Maiden's Blush, W. Holmes, seldom seen so finely developed as in this instance, Blanche Pigny, Mons. Bernard, Sunflower, Japonais, and Avalanche; Mr. E. Mawley, Rosebank, Berkhampstead, was an uncomfortably close second, the blooms being very large; Mr. G. Carpenter, gardener to Major C. Brown, Broad Oak, Byfleet, who was third, had a fine stand of blooms. There were fifteen entries in the class for six Japanese, one variety, and the blooms were so closely matched as to render it difficult to determine their relative merits. In the result Mr Glen was placed first, Mr. W. Howe, gardener to H. Tate, Esq., Parkhill, Streatham Common, second, and Mr. E. Mawley, third.

The competition was very keen for eighteen incurved distinct, there being nine collections all more or less good. Mr. C. J. Salter was first with superbly finished blooms of Lord Wolseley, Jeanne d'Arc Baron Beust, Golden Empress, Miss Violet Tomlin, Princess of Teck, Queen of England, Mrs. S. Coleman, John Doughty, Mrs. Heale, Prince Alfred, Jardin des Plantes, John Salter, Miss M. A. Haggas, Empress Eugenie, Empress of India, Princess of Wales, and Barbara; Mr. H. Shoesmith, gardener to M. Hodgson, Esq., Shirley Cottage, Croydon, and Mr. C. Cox, gardener to John Trotter, Esq., Brickenden Grange, Hertford, were second and third with admirable stands. For twelve incurved, Mr. J. Carpenter was first with large, well-finished blooms of Lord Alcester, Alfred Salter, Golden Queen, Lord Wolseley, Jeanne d'Arc, Princess of Wales, Empress of India, Golden Empress, James Salter, Prince Alfred, Queen of England, and Princess of Teck; Mr. A. Felgate, gardener to the Duchess of Wellington, Walton-on-Thames, was a close second; and Mr. A. Turner, gardener to C. F. Murray, Esq., Woodcote Hall, Epsom, was a good third.

Seldom are reflexed and anemone-flowered varieties staged in such large numbers and excellent condition as on this occasion. For twelve reflexed, to comprise not less than eight varieties, Mr. G. Carpenter was first with blooms large in size, bright in colour, and high in finish. The finest varieties were Cloth of Gold, Peach Christine, Pink Christine, White Christine, Golden Christine, King of Crimsons, and Cullingordi; Mr. A. Coombes, gardener to the Earl of Dudley, Hinley Hall, Dudley, was a capital second; and Mr. A. Felgate third, both staging similar varieties. There was a long row of boxes of large anemones, and several had to be disqualified in consequence of their containing M. C. Leboscqz, Mons. Pankoucke, and other Japanese anemones, which were expressly excluded by the conditions of competition. The premier award was made in favour of Lady Margaret, Gluck, Laing's Anemone, Mrs. Judge Benedict, Nouvelle Alveole, Acquisition, Mrs. Pethers, Miss Annie Lowe, George Sands, Ruche Toulousaine, and Gluck; Mr. A. Coombes was second with neat blooms, and Mr. W. A. Searring, gardener to R. Monckton, Esq., Oak Lodge, Sevenoaks, was a close third. In competition for six Japanese anemones in not less than three varieties, Mr. G. Carpenter occupied the first place with good blooms of M. Pankoucke, James Weston, and Souv. Madame Blandeneries; Mr. Sullivan and Mr. A. Coombes who were second and third respectively, also had finely developed blooms. Anemone pompons ran especially good, and the several stands constituted a very pleasing picture. Mr. C. Slade, gardener to Lady Bowater, Richmond Park, obtained premier honours with exquisitely beautiful blooms; Mr. E. Chadwick, gardener to E. M. Nelson, Esq., and Mr. S. Ballard, gardener to C. Davidson, Esq., Sydenham Hill, followed closely for second and third places. Pompons presented an appearance at once bright and elegant. The most successful of the competitors in the class for twelve bunches was Mr. E. Chadwick, who was first with excellent examples of Adonis, Rubrum Perfectum, Mdlle. Marthe, Fanny, Golden Marthe, Mdlle. Elise Dordan, Sœur Melanie, Black Douglas, Marabout, Prince of Orange, Fimbriatum, and Perle des Beautes; Mr. C. J. Salter, and Mr. S. Bowman, London, West Croydon, were second and third respectively. Mr. Chadwick obtained premier honours in the class for twelve singles; and Mr. S. Ballard, Sydenham Hill, was third.

Specimen Plants were considerably above the average in numbers, and the majority of the collections represented cultural skill of the Crystal Palace. At the Crystal Palace separate classes are provided for incurved and Japanese, which enables the growers to compete under better conditions than is the case when both classes are allowed to be shown in the same collection. The collections of specimen Japs produced a very rich display of colour, and proved singularly attractive. Mr. W. Clarke, gardener to J. H. Lile, Esq., Devon House, Brixton Hill, obtained premier honours for six, with specimens perfect in contour and splendidly flowered of Elaine, Source d'Or, Dr. Macary, L'Isle des Plaisirs, La Triomphante, and Jupiter; Mr. W. Wesker, gardener to A. Heaver, Esq., Upper Streatham, was a good second, with neatly-trained specimens; and Mr. G. H. Cooper, Sydenham, Croydon, was third, with large, profusely-flowered, back-trained specimens. Mr. E. Cherry, gardener to Mrs. Gabriel, Norfolk House, Streatham, occupied the first place in the class for four Japs, with excellent specimens of Elaine, M. Bernard, Margot, and Etoile de Lyon, the flowers of good size, but perfectly white; Mr. J. Weston, gardener to D. Martineau, Esq., Clapham Park, and Mr. R. Clarke, gardener to W. Griffiths, Esq., Palace Road, Streatham, followed for second and third places. Turning to the class for six incurved we find Mr. Wesker first, with specimens not over large, but finely flowered and otherwise good, the varieties being Mrs. George Rundle, Lord Wolseley, Mrs. Dixon, Prince of Wales, Lord Alcester, and Baron Beust; Mr. Cherry was second; Mr. J. Hughes, gardener to Mrs. Longston, Beaulieu, South Norwood, was successful in taking the first prize for six pompons, with well-bloomed but very stiffly-trained specimens. The principal varieties were the white and golden forms of Cedo Nulli, Maroon, Model, and Aurore Borealis; Mr. W. Clarke and Mr. Weston were second and third.

Groups for which there were three classes formed a very important feature, the groups being numerous and highly effective. Messrs. J. Laing and Sons, Forest Hill, were first in the open class for groups of incurved with an arrangement remarkable both for the high quality of the blooms and the taste evinced in the disposition of the colours. Messrs Laing were also first for Japanese varieties, with a group with which they surpassed themselves, the arrangement being remarkable for the taste displayed, and the plants for the excellence of their foliage and the high development of the flowers. Messrs. J. Carter and Co., High Holborn, were second for Japanese, and Messrs. J. Mobsby and Son, Thornton Heath, third, both firms staging arrangements considerably above the average. In the amateur classes for groups to occupy a space not exceeding fifty square feet, the prizetakers were Mr. J. Gravett, gardener to Dr. Hetter, Norbury Lodge, Upper Norwood; Mr. T. R. Wilks, gardener to T. R. Ralph, Esq., Cranbrook Villa, Upper Norwood; and Mr. J. Ford, gardener to Sir C. Pigott, Bart., Wexham Park, Slough, were the prizetakers in the order of their names, and deserve a liberal measure of praise for the excellence of their groups.

Potatos were largely shown in competition for the prizes for six dishes offered by Messrs. Sutton and Sons. The awards were made to Mr. J. Hughes, Eydon Hall, Byfield; Mr. J. Friend, gardener to the Hon. P. C. Glyn, Rooksworth, Godstone; Mr. E. G. Wiles, Edgcote Park, Banbury; Mr. F. J. Hazell, Histon Road, Cambridge; Mr. W. C. Howard, Bridge, Canterbury; and Mr. E. Cherry. Messrs. Sutton and Sons exhibited—not for competition—a large collection of varieties introduced by themselves.

Miscellaneous Contributions included a group of new chrysanthemums from Messrs. Reid and Borneman, Sydenham, in which were several English-raised varieties of great promise. Amongst other varieties were Album odoratum, a Japanese variety with medium-sized white flowers, having a perfume resembling that of mignonette; and Robert Hamell, a promising incurved Jap, with large flowers of a bright lilac-rose colour.

Novelties were numerous, and first-class certificates were granted as under. To Messrs. J. Laing and Sons for *Mdlle. Marie Hoste*, *Viviand Morel*, and *Mrs. C. H. Wheeler*; to Mr. G. Stevens, Putney, for *M. Charles Lebocqz*, and to Messrs. Reid and Borneman for *Mrs. Falconer Jameson*, all of which are now so well known as not to need description.

The judges were Messrs. R. Ballantine, W. Coomber, L. Carter, R. Dean, J. Douglas, W. Earley, George Gordon, J. Hudson, John Laing, E. Sanderson, J. Wright, and B. Wynne.

TOTTENHAM AND EDMONTON CHRYSANTHEMUM SOCIETY,

November 6 and 7.

Although this society was only founded some two or three years since, it has made so much progress as to now take a foremost position amongst the numerous suburban associations. The exhibition was held in the Drill Hall, Lower Tottenham, and the contributions were so numerous as to compel the committee to provide additional space under canvas for their accommodation. Cut blooms were staged in considerable numbers and excellent condition, and specimen plants and groups arranged for effect were alike good.

Cut Blooms were well provided for, and the competition in the majority of the classes was keen. In the class for twenty-four Messrs. G. Prickett and Son, Floral Nursery, Stamford Hill, were awarded the first prize, showing good blooms of Mrs. Heale, Princess of Wales, George Glenny, Miss Violet Tomlin, Princess Beatrice, Jardin des Plantes, Miss M. A. Haggas, Nil Desperandum, Empress of India, Mrs. Rundle, Golden George Glenny, Lord Wolseley, Madame de Sevin, Mrs. J. Wright, Sarah Owen, Avalanche, Belle Paule, Ralph Brocklebank, Sunflower, Madame C. Audiguier, Mons. Bernard, Elaine, Madame Baco and Lady Lawrence. Mr. W. Davy was a good second. Mr. G. W. Hendon, gardener to J. Spiers, Esq., Tottenham Park, was first for twelve large flowered anemones, his stand comprising Nouvelle Alveole, J. Thorp, jun., Cincinnati, George Sands, Grand Alveole, Fleur de Marie, Gluck,

and La Marguerite; Mr. G. Chalkley was second; and Mr. H. J. Ives third. For six incurved Mr. G. W. Elliott was first, with finely developed blooms of Beverley, George Glenny, Mr. Bunn, John Salter, Beauty, Lord Alcester; Mr. W. Welfare, gardener to Mrs. Hodson, second; and Mr. A. Thompson, gardener to A. Sanders, Esq., Catalpa House, third. For twelve reflexed Mr. G. W. Elliott was first with Annie Salter, King of the Crimsons, Phidias, Cullingfordi, Dr. Sharpe, Pink Christine, Golden Christine, White Christine, and Temple de Solomon; Mr. A. Thompson and Mr. H. J. Ives were second and third respectively. Mr. C. J. Mander was first for six Japanese, staging good blooms of Elaine, Maiden Blush, La Triomphante, and other well-known varieties. Mr. E. Bull, High Cross, and Mr. J. Garrod, Bruce Grove, followed closely for second and third places. In the class for twelve pompons Mr. G. W. Hendon received the premier award, showing Sœur Melanie, Fremy, Scapion, Marabout, Mr. Holmes, and Black Douglas in capital condition; Mr. H. J. Ives was second, and Mr. J. W. Elliott third, with good stands.

GROUPS AND SPECIMEN PLANTS were remarkably good, and proved highly attractive. In the class for four standards the prizes were awarded to Mr. W. Davey, Mr. G. W. Hendon, and Mr. A. Thompson, in the order of their names. The varieties forming the winning collections were Dr. Sharpe, Bertier Rendatler, Mandarin, and Source d'Or; and for two trained specimens the first prize was awarded to Mr. A. Thompson, who had Bouquet Fait and Boule d'Or. The second and third awards were made in favour of Mr. H. J. Ives and Mr. H. G. Chalkley. For collections of chrysanthemums in pots Mr. G. W. Hendon received the first prize, Mr. G. W. Elliott being second, and Mr. H. J. Ives third. In competition for the prizes for a group of chrysanthemums Mr. G. Bull received the premier award; Mr. E. Winisett was a good second. Mr. J. Maller contributed a group of table plants. Miss Else, Lincoln Road, was first for a bouquet of chrysanthemums; Miss E. Hodson, Downhills, was second, and Mrs. Russ third.

FRUIT was not shown in large quantities, but that staged was of good quality. Mr. W. Davey was first for two bunches of white grapes with good Muscats; and Mr. W. Welfare and Mr. H. J. Ives were placed in the order of their names for two dishes of apples, and for two dishes of pears the awards were to the same exhibitors.

VEGETABLES were comparatively limited in quantity, and the awards for a collection were made to Mr. G. W. Hendon, Mr. F. Palmer, and Mr. H. J. Ives, all of whom had good produce. Messrs. Prickett and Sons contributed an interesting collection of tomatos.

ROMFORD CHRYSANTHEMUM SOCIETY. Nov. 6 AND 7.

The annual exhibition of this comparatively young society was held on the 6th and 7th inst., and the great interest taken in the work of the society was abundantly shown by the number of entries in the majority of the classes and the large attendance of visitors. The Corn Exchange was secured for the purposes of the exhibition, and as the arrangements were admirably carried out, the interior of the building presented an attractive appearance.

CUT BLOOMS, although variable in quality, were, on the whole, sufficiently good to do credit to the exhibitors. The class for twenty-four was rather poor, there being only one entry, for which the award of the second prize only was made. For twelve Messrs. T. J. Saltmarsh and Son, The Nurseries, Chelmsford, were awarded the first prize for a stand in which were excellent blooms of Ralph Brocklebank, Lord Wolesley, Jeanne Marty, George Daniels, Stanstead Surprise, Queen of England, Mons. Pankoucke, Golden Empress, Nelson, Carew Underwood, Miss Violet Tomlin, Miss A. Lowe; and Mr. C. J. Simpson, Chelmsford, was second. In competition for the prize for twelve Japanese, the prizes were awarded to Mr. C. J. Simpson, Messrs. J. T. Saltmarsh and Son, and Mr. F. Brown, gardener to T. Matthews, Esq., Worley, in the order of their names. For six distinct Japanese blooms Mr. T. Vagg, gardener to J. Theobald Esq., M.P., Romford, was first, Mr. J. Little, Brentford, second, and P. Amey, gardener to A. H. Hunt, Esq., Romford, was a good third. In the class for one Japanese, Mr. P. Perry was awarded the first prize for a superb bloom of Etoile de Lyon, and Mr. J. Smith, High Street, Romford, and Mr. E. Brown, gardener to F. Matthews, Esq., were second and third respectively. Messrs. Saltmarsh and Son were awarded the first prize for six blooms of any one variety, not Japanese, staging examples of Lord Alcester, remarkable for finish, and Mr. J. Frost, and Mr. G. Reid, were second and third. The premier award was given to Mr. R. Farrance, Chadwell Heath, for a bouquet of chrysanthemums, while the second and third prizes went to Mr. R. Perry and Mr. D. Nairn, gardener to R. G. Price, Esq., Romford.

GROUPS were a splendid feature, and were in every way worthy of the attention they received from the visitors. For the best collection of chrysanthemums, Messrs. Saltmarsh and Son were first, Mr. P. Perry was second, and Mr. G. Read, gardener to E. Bryant, Esq., Harold Wood Hall, was third. Mr. J. Knowles received the premier award for six trained specimens, which evinced high class cultural skill. Mr. G. Nicholls, Brentwood, was first for collections grown by amateurs, whilst Mr. J. Knowles, Rainham, and Mr. J. Spencer, Western Road, Romford, were second and third respectively. Mr. T. Vagg, Mr. P. Perry, and Mr. J. Smith received awards for table plants in the order of their names. There was but one entry for six primulas, and the second prize only was awarded.

FRUIT was well represented, and in the class for two bunches of black grapes, Mr. W. Green, Harold Court Nursery, received the first prize, and in the class for white grapes Mr. Green was again first, staging well-finished clusters of Muscat of Alexandria, whilst Mr. J. Little was awarded the second prize. Apples were largely shown, and the first prize for three dishes was awarded to Mr. J. Purrett, gardener to the Rev. F. E. Allen, Romford, who had good dishes of Blenheim Orange, Ribston Pippin, and King of the Pippins, and the second and third prizes fell to Mr. T. Vagg and Mr. P. Perry. For three dishes of pears, Mr. D. Nairn was placed first, showing Gansel's Bergamot, Beurre Bachelier, and Beurre Diel.

VEGETABLES were exhibited in great quantities, and the first prize, for a collection to comprise six kinds, was awarded to Mr. D. Nairn, while Mr. P. Perry and Mr. T. Vagg were second and third respectively. Mr. P. Perry was first for six parsnips; Mr. J. Spencer, Western Road, Brentwood, second; and Mr. T. Vagg was a good third. Mr. P. Perry. Mr. W. Green, and Mr. T. Vagg were first, second, and third respectively for six onions, and the premier award for the best collection of salading went to Mr. T. Vagg, the second being Mr. T. Brown, and Mr. J. Smith third. Mr. W. Green was first for the best twelve tomatos, and Mr. J. Smith and Mr. R. Tarrance were second and third.

Mr. R. Bacon, "Wheatsheaf," Romford, sent a gourd remarkable for its size, and the Romford Sewage Farm contributed a fine collection of vegetables, including celery, leeks, parsnips, beet, and Brussels sprouts.

TORQUAY, November 5.

The exhibition was held in the commodious rooms of the Bath Saloons, and was most successful, chrysanthemums appearing to be much appreciated by a large number of visitors. Especially keen was the competition in the cut bloom classes, whilst the quality left nothing to be desired. Groups of chrysanthemums were numerous, but on the whole not of high excellence.

Cut blooms were provided for by twenty-five classes, the principal one being that for eighteen incurved and the same number of Japs, and for which a silver cup was offered as the chief prize. Four competed. Mr. W. Dolling, gardener to Mrs. Wild, Newton Abbott, was placed first, with well-developed and particularly fresh blooms in both sections, the varieties being Alfred Salter, Golden Empress, Queen of England, Empress of India, Lord Wolseley, Lord Alcester, Mrs. W. Shipman, Princess of Wales, Miss M. A. Haggas, Prince Alfred, Jeanne d'Arc, Violet Tomlin, Barbara, Lady Hardinge, Mrs. Heale, Baron Beust, and Mrs. Norman Davis; Japs: Comte de Germiny, Mrs. Beale, Etoile de Lyon, Edwin Molyneux, Avalanche, Belle Paule, Mons Bernard, Mr. Cannell, Sarah Owen, Alba Fimbriata, Madame C. Audiguier, Grandiflora, Meg Merrilies, Madame J. Laing, Jeanne Delaux, Stanstead Surprise, Mr. Ralph Brocklebank; second, Mr. G. Foster, gardener to H. Hammond Spencer, Esq., Teignmouth; third, Mr. A. Searle, gardener to J. N. Whitehead, Esq., Gnaton, Torquay.

For twelve incurved distinct Mr. Foster was successful in taking first honours; second, Mr. J. Stiles, gardener to Miss Fripp, Teignmouth; third, Mr. W. B. Small, Toire Park Nursery. For the same number of distinct Japanese blooms in a close competition Mr. Dolling led the way, followed by Messrs. Stiles and Searle. For six reflexed distinct varieties Messrs Dolling and Searle occupied first and second positions respectively for fully developed blooms. The best large anemone kinds in six blooms were staged by Messrs. Stiles, Searle, and Foster. For twelve anemone flowered including Japanese in not less than six varieties, Mr. Dolling was awarded premier honours for blooms with fully developed centres.

Strong competition took place for six incurved any one variety, Mr. Foster with finely developed Empress of India taking precedence over the Golden Empress staged by Mr. Stiles. For the same number of any white variety Mr. Dolling depended upon Avalanche for premier honours, which he easily secured; Mr. Searle second, with Boule d'Or. Mr. G. Foster took leading position, followed by Mr. A. Searle in the class for any yellow variety. For six blooms of any other colour of Japanese, Mr. A. Searle led the way with Sarah Owen, followed by Mr. Foster's Madame C. Audiguier. For the same number of Japanese one variety in a duplicate class of the former Mr. G. Cocks, gardener to W. Fitzherbert, Esq., Kingswear, staged magnificent examples of Etoile de Lyon; Mr. Dolling followed closely with Edwin Molyneux. For twelve blooms of any one variety Mr. Stiles and Mr. Searle took first and second in the order named, both staging Mdlle. Lacroix. The premier incurved bloom in the show was Golden Empress in Mr. Foster's cup stand. The premier Japanese was Etoile de Lyon from Mr. Cocks.

For the best group of chrysanthemums in pots, not less than eighteen varieties arranged for effect in a circle eight feet in diameter, which is considerably too small to allow of a proper effect being secured, Mr. Searle succeeded in obtaining the coveted reward, closely followed by Mr. F. Ferris, gardener to J. W. Kimber, Esq., Cockington.

For the best miscellaneous group of plants arranged for effect on a stand seven feet square and raised one foot from the floor, Mr. W. Satterly, gardener to A. Matthew, Esq., Braddon Villa, Torquay; second, Mr. Ferris. The best specimen plant of Japanese was Val d'Andorre; first, Mr. C. Alder, gardener to W. B. Fortescue, Esq., Coton. A splendid specimen of Sœur Melanie came from Mr. J. Hunt, gardener to P. D. Drinkwater, Esq., Lyncombe, Torquay, measuring five feet in diameter, and freely flowered.

For three orchids in bloom Mr. G. Lea, gardener to W. Lavers, Esq., Upton Leigh, was placed first with Cattleya guttata, Cypripedium Harrisianum, and Oncidium ornithorhynchum, all well-flowered. Messrs. P. Veitch and Co., Exeter, staged, not for competition, two boxes of cut chrysanthemums of various sections and of good quality. This firm also staged twenty-four dishes of apples of large size and rich colouring, besides novelties in plants. Messrs. Curtis, Sandford, and Co., Devon Nurseries, Torquay, arranged a very fine bank of chrysanthemums, not for competition, as also did the Messrs. Horn and Sons, nurserymen, Torquay, and Messrs. Phillips and Co., Torbay Nurseries, Torquay. Mr. G. Lea had a neat bank of plants, mainly remarkable for the beauty of their foliage, mixed amongst them were several choice orchids; this group likewise was not for competition.

PORTSMOUTH, November 5, 6, AND 7.

Once more the Chrysanthemum Society of this busy seaport town have another grand triumph to chronicle, as another magnificent exhibition was held, as usual, in the capacious Drill Hall, Landport. Nowhere else in England can such a grand site be found for such an event as the one under notice; when it is stated that the largest furniture van can be driven into the hall and between the tables, it will be understood what a vast amount of space is available for the public. The institution of popular prices has done much to make the Portsmouth Chrysanthemum Show an event to be looked forward to by a flower-loving public, who flock to the exhibition in immense numbers. When it is stated that 2,300 cut blooms were staged in competition some idea may be gleaned of the magnitude of the exhibition in that department alone. Not only does this society equal the best to be seen anywhere in this line, but plants, fruit, and other exhibits are of a high standard of excellence. The honorary secretary (Mr. F. Power) deserves all credit for the capital method of management, and for his courtesy to all concerned.

Cut blooms formed perhaps the most important part of the exhibition, so numerously were they staged, and of such high quality. The principal class was that for forty-eight, twenty-four to be Japanese, and the same number of incurved. A handsome silver epergne, value £25, and £8 in cash, was the first prize, with other suitable sums of money for the remaining prizes. Four competed. Messrs. W. and G. Drover easily secured the premier position by the excellence of their Japanese blooms, which were of magnificent proportions, and there was high quality in the incurved also. The names were of Japanese, Pelican, Mrs. F. Jameson 2, Mons. Bernard 2, Sunflower 2, Etoile de Lyon, Avalanche, Gloriosum 2, Mrs. C. Wheeler 2, Mrs. A. Hardy, E. Molyneux, Comte de Germiny, Stanstead White 2, Ralph Brocklebank, Madame Baco, Condor, J. Delaux, Baron de Prailly, Meg Merrilies. Of Incurved, Golden Empress 2, Empress of India 2, Golden Queen of England 2, Lord Alcester 2, Queen of England, Alfred Salter, Mrs. Coleman, Lord Wolseley, Jeanne d'Arc 2, Alfred Lyne, Miss M. A. Haggas, Princess of Wales, Novelty, Violet Tomlin 2, Lady Hardinge, Mrs. W. Shipman, Prince Alfred,

Nil Desperandum. Mr. N. Molyneux, gardener to J. C. Garnier, Esq., Rooksbury Park, Wickham, Fareham, was a good second, the Japanese being somewhat lighter than in the premier collection, the incurved blossoms were remarkable for their symmetry and freshness. The most noteworthy blooms were Etoile de Lyon, E. Molyneux, Boule d'Or, Puritan, Empress of India, Lord Alcester, Mrs. Coleman, Mrs. R. Mudie, and Miss M. A. Haggas. Third Mr. C. Renford, gardener to Sir. F. Fitz-Wygram, Leigh Park, Havant.

There was brisk competition in the next important class—that for twenty-four distinct varieties, half to be incurved and the remainder Japanese. Mr. N. Molyneux here secured leading honours easily from five other competitors with heavy Japanese and perfectly formed incurved blooms; Mr. G. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, was second; and Mr. Russell, gardener to Dr. C. Lewis, Henfield, Sussex, third. For twelve incurved and the same number of Japanese in separate classes, Mr. Inglefield succeeded in gaining premier awards with substantial blooms; Messrs. Penford and Payne, gardeners to Mrs. Ernald Smith, took second honours in the order that their names are here given; Mr. Russell, third. For twelve reflexed, in not less than eight varieties, Mr. Russell was first, with medium sized even blooms; Mr. Woodfine, gardener to E. G. Poyd, Esq., Emsworth, second; and Mr. Penford, third. In the large anemone class, twelve blooms in not less than six varieties, Mr. Penford led the way with medium-sized blooms of good quality; second, Mr. Payne; third, Mr. Russell. Mr. Penford secured leading honours in the class for twelve Japanese anemone blooms with a good lot, the competition in this case being limited. For six blooms, any one variety of Japanese, and the same number of any incurved sort, Mr. N. Molyneux easily carried off premier awards in both classes with E. Molyneux and Miss M. A. Haggas in good order. Mr. Abrahams, gardener to T. H. Wilson, Esq., Hazelholt, Bishop's Waltham, with capital specimens of Avalanche; Mr. Agate, nurseryman, Havant, third.

Pompons in twelve bunches of three blooms, in not less than eight varieties, produced keen competition; as many as ten entered. Much the best blooms came from Mr. Agate, followed by Mr. G. Hawkins, gardener to E. Lapthorne, Esq., Gosport, and Mr. Russell, in the order named. For the same number of fimbriated blooms in bunches similar to the pompons, Mr. Hawkins led the way, Mr. Agate following; Mr. Hatch, gardener to the Victoria Park Committee, third. Single varieties in bunches of three blooms each made a charming feature of the show. Mr. Hatch led the way with Nellie, Jane, Admiral Sir F. Symonds, and Queen of Yellows; Mr. Agate second; Mr. G. Hawkins third. The premier incurved bloom was a fine one of Empress of India in Messrs. Drover's cup stand. The premier Japanese was an Avalanche belonging to Mr. Penford. Bouquet of chrysanthemums and ferns was best shown by Messrs. Perkins and Sons, Coventry; Mr. Agate second. The best dressed epergne with berries and autumn foliage was one belonging to Mrs. Conway, Havant, as also was her arrangement of a glass stand with chrysanthemums, much the best in the class.

Table plants were a strong feature, in the class for twelve Mr. Abrahams won easily with a grand lot, followed by Mr. G. Wills, gardener to Mrs. Pearce, Southampton, and Mr. Agate, both staging well.

Fruit made an imposing display. For fifty dishes of apples and pears Messrs. J. Bunyard, The Nurseries, Maidstone, were distinctly ahead with splendid examples; Mr. J. Watkins, Pomona Farm Nurseries, Withington, Hereford, second; Messrs. Cheal and Son, Crawley, third. For twenty-four dishes of apples Mrs. Evans, Morton Court, Morton-on-Lugg, Hereford, was a good first; Mr. J. Hall, gardener to S. Montagu, Esq., South Stoneham House, was second. For three bunches of black grapes Messrs. Quertier and Co., The Nurseries, Fordingbridge (manager, Mr. Stephen Castle), was an easy first, with Alicante good in every respect; Mr. Hall, second, with the same variety; Mr. Inglefield, third. For the same number of white bunches Mr. Inglefield, with Muscat of Alexandria, was placed first, competition in this class being weak. For two bunches of both black and white Mr. G. Chalk, gardener to G. Read, Esq., Westwood, Wilton Road, Salisbury, was successful in both classes; Messrs. N. Molyneux and Quertier followed in the order named. The heaviest bunch was one of Gros Colmar, weighing 5½ lbs., from Messrs. Quertier and Co.

Vegetables were a strong class, the competition being very keen and the quality quite of the best. Mr. Inglefield led in both classes for nine and six varieties. Messrs. G. Hawkins and Mr. E. Carlyon, Hants County Asylum, Fareham, following for second honours. The best salading of not more more than eight varieties was best shown by Mr. Abrahams, a neat fresh lot.

Plants made an imposing display. For eight specimens, for which £10 was offered for the first prize, Mr. J. Busby, gardener to Captain Long, Blendworth Lodge, Horndean, for neatly-trained and freely-flowered specimens, about three feet diameter. The most important plants were Madame Bertie Rendatler, Hiver Fleurie, Chevalier Domage, Margot, Dr. Sharpe, and Elaine. Mr. Penford, second; Mr. G. Lambert, Gordon Terrace, Chichester.

For six plants Mr. J. Burridge, nurseryman, North End, Portsmouth, first; Mr. G. Lambert, third. Pompons were well staged in eight varieties by Mr. Hawkins, Fanny, Maiden's Blush, and Bob were especially noteworthy, being freely flowered and not too formally trained. Messrs. G. Lambert and Hatch second and third respectively. For the best groups of chrysanthemums, in a space of fifty square feet, substantial prizes were offered. Mr. H. Gate, gardener to G. Cook, Esq., Langton House, Gosport, was awarded leading honours for an excellent arrangement of well grown plants. Mr. Hatch, second.

The best group of miscellaneous plants arranged for effect was from Mr. J. Burridge, a neat arrangement of suitable material.

Messrs. G. Bunyard staged "not for competition" fifty dishes of apples which were much admired for their bright colour and immense size in many instances.

NATIONAL CHRYSANTHEMUM SOCIETY, November 11 to 14.

Centenary Exhibition.

The centenary exhibition of the National Chrysanthemum Society, which has been anticipated with so much interest during the past twelvemonths, was held at the Royal Aquarium from Tuesday to Friday, and as regards its extent and the quality of the plants and flowers, fully realized the expectations of the most sanguine. As a display it left much to be desired, the arrangement of the building making it necessary to so divide the collections as to render it impossible to produce a rich and tasteful effect, notwithstanding the wealth of material at command. The groups arranged for effect, a few of the collections of specimen plants, and the collections contributed to the principal classes for cut blooms, were arranged in the main building; the chief collections of trained specimens, the arrangements of cut chrysanthemums, and the entries in the minor classes for cut blooms had a place in St. Stephen's Hall, while the fruits and vegetables, which were very largely shown, occupied the south gallery.

In accordance with the general arrangements, which were duly published in these pages, the exhibition was formally opened at mid-day on Tuesday by Lady Brooke, who was presented with an address by Mr. R. Dean, in which the object and work of the society were set forth at some length. Her ladyship was also presented with an elegantly bound copy of the centenary edition of the society's catalogue. On the same day a conference was held under the presidency of Sir Edwin Saunders, when Mrs. Marian Thrower read a paper on "Chrysanthemums in Tasmania." Mr. Shirley Hibberd gave a lecture on "The Origin of the Florist's Chrysanthemum," which was illustrated by dried specimens of wild chrysanthemums and diagrams, and Mr. G. C. Haité gave a lecture on "The Chrysanthemum in Art," which was fully illustrated by diagrams and examples of art workmanship, in which the chrysanthemum had been employed. The second conference was arranged for Thursday, with Sir Guyer Hunter, M.P., as president, and Mr. H. Briscoe-Ironside and Mr. C. Gibson as the readers of papers. On the evening of the same day the banquet was held in St. Stephen's Hall, and with this festive gathering the centenary meeting was brought to a close.

Plants.

Trained Specimen Chrysanthemums were shown in larger numbers than at any previous exhibition of the society, and on the whole were exceptionally good. In the important class for nine specimens, including Japanese, the premier award consisted of a ten-guinea cup, presented by Messrs. Wood and Son, and £4 in cash; and it was not surprising that the competition should have been severe. In the result Mr. J. Brooks, gardener to W. Reynolds, Esq., The Grove, Highgate, was first, his collection comprising specimens remarkable alike for their large size, healthy leafage, and splendidly-developed blooms. The varieties, it may be useful to add, included Dr. Sharpe, Madame Baco, Mr. J. Laing, Margot, and Avalanche. Mr. Donald, gardener to F. G. Barclay, Esq., Knotts Green, Leyton, was second, with a collection having the impress of skilful cultivation; and Mr. J. Weston, gardener to D. Martineau, Esq., Clapham Park, was third. There was a brisk contest for the prizes for six trained specimens, and the post of honour was occupied by Mr. W. Clarke, gardener to W. H. Lile, Esq., Devon House, Brixton, S.W., for admirably-flowered examples of Jupiter, Dr. Macary, La Triomphante, Source d'Or, Elsie, and Val d'Andorre. Mr. W. Worker, gardener to W. A. Heaver, Esq., Streatham Elms, Upper Tooting, followed closely for second place; and Mr. W. Davis, gardener to C. C. Paine, Esq., Cedar House, Stamford Hill, was a good third. Mr. W. Clarke obtained premier honours in the class for four trained specimens, with neat finely-flowered specimens of Mrs. Dixon, Etoile de Lyon, L'Isle des Plaisirs, and L'Adorable; Mr. W. Davey was a capital second; and Mr. Donald a close third. Standards were considerably above the average, and Mr. D. Donald occupied the first place in the class for six with very fine examples of Edwin Molyneux, La Chinoise, Bertier Rendatler, Stanstead Surprise, M. Charles Hubert, and Edouard Audiguier; Mr. Davey, and Mr. F. Richards, gardener to Sir James Fergusson, Bart., Hever Court, Gravesend, were second and third respectively with admirable specimens. Mr. Donald was first also in the class for four standards, having good examples of Mrs. J. Wright, La Triomphante, La Chinoise, and Ferand Feral; Mr. Richards and Mr. W. Clarke followed closely for second and third places. Specimen pompons were rather poor, and the first prize in the class for six was properly withheld. In the class for bush-grown specimens, Mr. Easey and Mr. Vince were first and second with good collections.

Groups Arranged for Effect formed one of the most attractive features of the exhibition as the entries were numerous, and the whole of the arrangements more or less tasteful. In the great class for a group to occupy a space equal to one hundred square feet, the competition was especially severe, and it was no light honour to obtain a place. In the result the premier award was made in favour of Mr. George Stevens, St. John's Nursery, Putney, who had a magnificent group, the plants being furnished with healthy leafage and finely-developed blooms, and the arrangement of the colours remarkably tasteful. The incurved varieties were employed with singularly good effect. Messrs. J. Laing and Sons, Forest Hill, were a close second with an extremely beautiful group in which the plants were distinguished by the cultural skill that had been brought to bear upon them. Mr. J. Townsend, Putney, was third with an attractive arrangement. The groups to occupy a space equal to about sixty square feet, and consisting of plants not exceeding five feet in height presented an attractive appearance and were interesting as showing what may be accomplished in dwarfing chrysanthemums by the cutting down system. The prizetakers were Messrs. Reid and Borneman, the representative of the late Mr. W. Holmes and Messrs. J. Laing and Sons.

Cut Blooms.

Centenary Class, which occupied such a prominent position in the schedule, contained no less than eighteen entries, and Messrs. George Gordon, J. P. Kendall, C. Orchard, and Harry Turner, to whom was entrusted the awarding of the prizes in this important class, had no light task in determining the relative merits of the several collections. According to the conditions governing the competition in the class, forty-eight blooms, to comprise equal numbers of incurved and Japanese varieties, had to be staged, and the prizes amounted in the aggregate to £75. Although variable in quality, the collections were all remarkable for the cultural skill they evinced, and produced of themselves a surpassingly beautiful display. The premier award (£25) was made in favour of Messrs. W. and G. Drover, Fareham, whose collection was strong both in incurved and Japanese, the blooms throughout being remarkable alike for their large size, freshness, and finish. The incurved varieties were: Lord Alcester, Beauty, Emily Dale, Empress of India, Golden Empress, John Doughty, Queen of England, Mrs. S. Coleman, Charles Gibson, Nil Desperandum, Miss Violet Tomlin, Alfred Salter, Miss M. A. Haggas, Empress Eugenie, Princess of Wales, Prince Alfred, Mrs. N. Davis, Alfred Lyne, Lady Dorothy, Mrs. W. Shipman, Jeanne d'Arc, Lady Hardinge, Princess of Teck, and Mrs. Heale. The Japanese varieties represented were: Mrs. C. H. Wheeler, Avalanche, Boule d'Or, Meg Merrilies, Mrs. Irving Clarke, Pelican, Edwin Molyneux, Etoile de Lyon, Gloriosum, Lady Lawrence, Mrs. Falconer Jameson, Stanstead White, Mons. Bernard, Ralph Brocklebank, Baronne de Prailly, Sunflower, Madame Baco, Comte de Germiny, Mrs. Alpheus Hardy, Criterion, Jeanne Delaux, Sarah Owen, Mons. E. A. Carrière, and Condor. Mr. R. Parker, gardener to J. Corbett, Esq., Impney Hall, Droitwich, was second with splendidly developed blooms, the Japanese being of great excellence. Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Surrey, followed very closely for third place. Mr. Lambert, gardener to Colonel Wingfield, Onslow Hall, Shrewsbury, was fourth with finely-developed blooms; and Mr. J. Myers, gardener to the

Earl of Sandwich, Hinchingbrooke, Hunts, was fifth, with blooms that did much credit to his cultural skill.

AFFILIATED SOCIETIES' class was better filled than was the case last year, and the average quality of the blooms was decidedly higher. As in the centenary class, forty-eight blooms, consisting of twenty-four Japanese and twenty-four incurved, had to be shown, but it was not necessary to have more than eighteen distinct varieties of each section. The first prize, consisting of the challenge trophy and £10, was awarded to the St Neots Chrysanthemum Society for a well-balanced collection, both incurved and Japanese varieties being of high quality. The incurved varieties were Lord Wolseley (two blooms), Mrs. S. Coleman (two blooms), Queen of England (two blooms), Emily Dale, Alfred Salter, Golden Empress, Miss Violet Tomlin, Jeanne d'Arc, Lord Alcester, Prince Alfred, Mrs. Heale (two blooms), Empress Eugenie, Miss Haggas, Princess of Wales (two blooms), Mabel Ward, Mrs. W. Shipman, Novelty, and Eve. The Japanese varieties represented were Madame C. Audiguier, Mr. H. Cannell, Sunflower, Etoile de Lyon, Avalanche, George Daniels, Stanstead White, Madame Baco, Val d'Andorre, Ralph Brocklebank, Triomphe de la Rue des Chalets, Criterion, Lady T. Lawrence, Mrs. F. Thompson, Edwin Molyneux, Meg Merrilies, Sarah Owen, Jeanne Delaux, Thunberg, Mons. Bernard, Volunteer, Mdlle. Lacroix, and Gloriosum. The Wimbledon Horticultural Society and the Cheshunt Chrysanthemum Society were second and third respectively with good stands of blooms.

INCURVED varieties were shown in much larger number than in previous years, and generally the flowers were of excellent quality. There were four or five entries in the great class for forty-eight blooms, to include not less than twenty-four varieties or more than three blooms of any one variety. The post of honour was occupied by Mr. W. S. Ray, Mount Pleasant Nursery, Teynham, Sittingbourne, who had rather large well-finished blooms of Empress of India (two blooms), Lord Wolseley, Golden Empress (two blooms), Emily Dale (three blooms), Lord Alcester (two blooms), Alfred Salter (two blooms), Queen of England, Miss M. A. Haggas (two blooms), Miss Violet Tomlin (two blooms), Empress Eugenie (two blooms), Princess of Wales (two blooms), Guernsey Nugget, Hero of Stoke Newington, Jeanne d'Arc (two blooms), John Salter, Mrs. Heale, Mr. Brunlees (two blooms), Lady Hardinge, Charles Gibson (two blooms), Princess Beatrice, Barbara (two blooms), Princess of Teck (two blooms), Mrs. N. Davis, Lady Dorothy (two blooms), Mrs. W. Shipman (two blooms), and Hero of Stoke Newington; Mr. R. Parker was a capital second, and Mr. H. Shoesmith, gardener to M. Hodgson, Esq., Shirley Cottage, Croydon, was third with an admirable collection of blooms. For twenty-four distinct, Mr. Sullivan, gardener to D. B. Chapman, Esq, Downshire House, Roehampton, was first with excellent blooms of Golden Empress, Jeanne d'Arc, John Salter, Empress of India, Queen of England, Lord Alcester, Miss Violet Tomlin, Emily Dale, Lord Wolseley, Princess of Wales, Hero of Stoke Newington, Prince Alfred, Miss M. A. Haggas, Beauty, Mrs. Heale, Mrs. S. Coleman, Barbara, Princess Beatrice, Mrs. Shipman, Refulgens, Nil Desperandum, Mrs. N. Davis, Lady Dorothy, and Princess of Teck; Mr. E. Sanderson, St. Mary's Road, Harlesden, was a very close second, his blooms being very heavy, but somewhat wanting in freshness; Mr. A. Ives, gardener to E. C. Jukes, Esq., Hadley Lodge, Barnet, was third with a fine box of flowers. The class for twenty-four blooms to be shown with at least eight inches of stem, in which the Veitch Memorial medal and £5 were offered as the first prize, was not particularly good, there being two entries, and the first and second prizes were awarded to Mr. C. Blick, gardener to R. Smith, Esq., The Warren, Hayes Common, Kent, and Mr. M. Sullivan.

There was a brisk competition in the class for eighteen incurved, from which all the varieties belonging to the "Queen" family were excluded, and the several collections proved highly interesting. The first prize, presented by Dr. Hogg, was awarded to Messrs. W. and G. Drover for finely-developed blooms of Lord Wolseley, Jeanne d'Arc, Lady Carey, Miss M. A. Haggas, Nonpareil, Princess of Teck, Princess of Wales, Alfred Lyne, Mrs. N. Davis, Prince Alfred, Beauty, Mrs. Shipman, Mrs. S. Coleman, Charles Gibson, Lady Hardinge, Miss Violet Tomlin, Mrs. Heale, Nil Desperandum. Mr. Sullivan was second, his blooms being remarkable for their freshness and finish. Two open classes were provided for twelve incurved, and in one Mr. W. H. Lees, gardener to the Duchess of Montrose, Sefton Lodge, Newmarket, was first, and in the other the post of honour was occupied by Mr. H. Brown, gardener to E. Barclay, Esq., Roydon Lodge, Roydon, Essex. Other successful competitors in these two classes were Mr. H. A. Page, gardener to F. Crisp, Esq., White House, New Southgate; Mr. C. Edwards, gardener to W. Owen, Esq., The Elms, Castle Bar, Ealing; Mr. C. Cox, gardener to J. Trotter, Esq., Brickenden Grange, Hertford; and Mr. B. Calvert, gardener to J. A. Houblon, Esq., Great Hallingdean, Bishops Stortford. For six blooms of any one incurved Mr. Cox was first with Golden Empress, and Mr. Calvert was second with Princess of Wales. In the classes for amateurs, single-handed gardeners and cultivators resident within three miles of Shoreditch Church, Mr. J. Broughton, Mr. Jordon, Mr. Jones, Dr. G. Walker, Mr. H. Fincham, Mr. Glasscock, Mr. W. G. P. Clarke, Mr. H. Briscoe-Ironside, Mr. F. Bingham, Mr. J. Brooks, and Mr. Turk were the principal competitors.

JAPANESE VARIETIES were staged in immense numbers, and produced a splendid display of colour. The collections contributed to the class for forty-eight, not less than twenty-four varieties, were especially good, and the post of honour was occupied by Mr. G. Hawkins, gardener to W. H. Fowler, Esq., Claremont, Taunton, with splendidly developed blooms of Etoile de Lyon (two blooms), Fair Maid of Guernsey, Stanstead Surprise, Japonais, Ralph Brocklebank (two blooms), Album fimbriatum, Mr. H. Cannell (two blooms), Carew Underwood, Puritan (two blooms), Baronne de Prailly, Stanstead White (two blooms), Boule d'Or, Edwin Molyneux, Sunflower (two blooms), Avalanche (two blooms), Japonais, Mr. John Laing, Blanche Pigny, Soleil Levant, Madame C. Audiguier, Mrs. Falconer Jameson, Meg Merrilies, Madame Baco, Madame J. Laing, Golden Dragon, Mons. F. Freeman, Mrs. H. C. Wheeler, L'Or du Japon, Mons. Bernard, La Purité, Mons. H. Elliott, Mrs. Cannell, Moonlight, Sarah Owen, Val d'Andorre, and Lady Lawrence; Messrs. W. and G. Drover, and Mr. G. King, gardener to W. Farland, Esq., Glenlees, Rickmansworth, were second and third respectively. Mr. G. Hawkins was first also in the class for twenty-four, staging excellent blooms of Puritan, Avalanche, Mr. J. Laing, Edwin Molyneux, Ralph Brocklebank, Fair Maid of Guernsey, Etoile de Lyon, Baronne de Prailly, Sunflower, Madame Baco, Meg Merrilies, Sarah Owen, Stanstead White, Soleil Levant, Madame C. Audiguier, Japonais, Fimbriatum, Mr. H. Cannell, Florence Percy, Jeanne Delaux, L'Automne, Mons. Freeman, William Holmes, and Stanstead Surprise; Mr. C. J. Waite and Mr. B. Calvert were second and third respectively. The Veitch Memorial class for twenty-four Japanese blooms to be shown with foliage was a strong one, and the several collections presented an attractive appearance. Remarkably good was the competition for twelve Japs distinct, and Mr. H. Brown was first with finely developed blooms of Pelican, Val d'Andorre, Meg Merrilies, Japonais, Ralph Brocklebank, Criterion, E. Molyneux, Avalanche, Etoile de Lyon, Mr. H. Cannell, Belle Paule, and Stanstead White; Mr. Bettesworth, gardener to R. Ewing, Esq., Burton Grange, and Mr. Hawkins were second and third respectively. In a second open class for twelve Japs Mr. J. Doughty, Angley Park, occupied the first place; Mr. W. H. Lees and Mr. J. Myers were second and third. The first and second prize-takers for twelve Japanese reflexed were Mr. C. E. Shea, The Elms, Foots Cray, Kent, and Mr. D. Hill, gardener to F. D. Brookman, Esq., Bradborough Park; and in the corresponding class for incurved Japs, Mr. C. E. Shea and Mr. H. Turner, gardener to C. P. Monckton, Esq., Stamford, were first and second respectively.

REFLEXED AND ANEMONE FLOWERED varieties were fairly well represented, and contributed materially to the interest of the exhibition. Mr. Russell was a capital first for twelve reflexed, with fine blooms of the several forms of Christine, and of Chevalier Domage, King of the Crimsons, Cloth of Gold, and Distinction. Mr. R. C. Notcutt, Ipswich, and Mr. F. Moore, Bexley, were second and third. In competition for the prizes for twelve large anemones, Mr. A. Ives occupied the post of honour with superbly finished blooms of Empress, Grand Alveole, Cincinnati, Acquisition, J. Thorpe, jun., Lady Margaret, Miss Annie Lowe, Mrs. Judge Benedict, Laing's Anemone, La Marguerite, and George Sands; Mr. C. J. Salter, Reigate, and Mr. Sullivan were second and third. Mr. W. B. Carpenter, Gravesend, had the premier award made in his favour for twelve anemone pompons, and Mr. Salter and Mr. Cornish were second and third. In the corresponding class for pompons the successful competitors were Mr. Russell, Mr. Neary, Hornsey, and Mr. J. Agate.

ARRANGEMENTS of CHRYSANTHEMUMS formed an attractive feature. For a table of bouquet sprays, &c., Messrs. Perkins and Sons, Coventry, were first with an extremely beautiful collection; Mr. R. Chard, Stoke Newington, was a good second, and Mr. G. Newman, Bromley, was third. The premier award for three vases was made in favour of Mr. D. B. Crane, Archway Road, Highgate, and Mr. Chard and Mr. Chadwick were second and third. The best vase for a drawing room was that from Mr. Orchard, Stoke Newington, and Mr. Chadwick and Mr. Edwards were second and third.

SPECIAL CLASSES included one for twelve Japs and twelve incurved, in which Mr. R. Beale offered a silver trophy of the value of seven guineas as the first prize. In the result, the trophy was awarded to Mr. Easey, Highbury New Park.

FRUIT.

APPLES AND PEARS were admirably shown, the competition in the several classes for apples being rather severe. In the class for six dishes of dessert apples, the premier award was made in favour of Mr. C. Ross, gardener to Lieut.-Colonel Eyre, Welford Park, Newbury, who had admirable dishes of Baumann's Reinette, Blenheim Orange, King of the Pippins, Cox's Orange Pippin, and Cornish Aromatic; Mr. C. Davis, Mote Park Gardens, Maidstone, was a good second; and the third prize was awarded to Mr. G. Duncan, gardener to C. T. Lucas, Esq., Warnham Court, Horsham. In the class for six dishes of culinary apples, Mr. C. Davis was first, with fine dishes of Emperor Alexander, Bismarck, Gascoigne's Seedling, Peasgood's Nonsuch, Loddington, and Lord Derby; the second and third prizes were awarded to Mr. C. Ross and Mr. C. Richings, gardener to W. Lindsey, Esq., Beddington, respectively. Pears of fine quality were shown by Mr. C. Davis, who was first with splendid dishes of Durondean, General Todleben, Thompson's Beurre Diel, Beurre Bachelier, and Pitmaston Duchess; Mr. G. Duncan came in second; and to Mr. T. Betterworth, gardener to R. Ewing, Esq., Burton Grange, Cheshunt, was awarded the third prize.

GRAPES were very fine, the bunches of Gros Colmar being large and superbly coloured. For three bunches of black grapes (not Gros Colmar), Mr. C. Griffin, gardener to Miss Christy, Coombe Bank, Kingston, was a good first, with splendid bunches of Alicante; Mr. Castle, of Fordenbridge, was a close second, with bunches of the same kind; and Mr. C. Davis third. In competition for three bunches of white grapes, Mr. C. Griffin was again first, with well-finished bunches of Muscat of Alexandria; while Mr. C. Davis and Mr. W. Wilson, gardener to R. C. Christy, Esq., The Elms, Roehampton, were second and third respectively. The contributions to the class for three bunches of Gros Colmar were excellent. Mr. F. Davis, gardener to C. Tautz, Esq., Queen's Walk, Castle Bar, Ealing, who staged three magnificent bunches, was awarded the premier prize; while to Mr. A. G. Hookings, gardener to S. W. Graystone, Esq., Hurst Side, West Molesey, and Mr. J. Craven, gardener to S. Wells, Esq., Osborne Park Gardens, Potters Bar, were awarded the second and third prizes in the order of their names.

VEGETABLES.

Potatos were shown in large numbers, and the contest for the prizes was very keen. In the class for twelve dishes Mr. H. Ridgewell, The Gardens, Histon Road, Cambridge, who staged fine collections of Schoolmaster, Vicar of Laleham, King of Brussels, Fidler's Clipper, Peachblow, Pink Perfection, White Elephant, Fidler's Reading Giant, Cambridge Prolific, Edgcote Purple, Snowdrop, and Mr. Bresee, was placed first. Mr. J. Hughes, gardener to Captain Cartwright, Eydon Hall, Byfield, Northampton, was a close second, while Mr. E. S. Wiles, gardener to R. A. Cartwright, Esq., Edgcote, Banbury, was a good third. Mr. Wiles was, however, first in the class for six dishes, staging good specimens of Reading Russet, Windsor Castle, Mottled Beauty, Snowdrop, Purple Perfection, and Satisfaction. Mr. J. Hughes was awarded the second prize, and Mr. H. Ridgwell the third. There was a good competition for the prizes offered by Messrs. Sutton and Sons for twelve dishes of potatos, Mr. E. S. Wiles, gardener to R. A. Cartwright, Esq., Edgcote, Banbury, obtaining the premier award, while Mr. J. Hughes, Mr. Pope, Highclere Castle, Newbury; Mr. J. Hazell, Histon Road, Cambridge, and Mr. W. Robins, gardener to E. D. Lee, Esq., Hastwell House, Aylesbury, were second, third, fourth, and fifth respectively. For four dishes of potatos Mr. E. S. Wiles was again first, and Mr. T. Tooley, 23, Albert Street, Banbury, was second, while Mr. J. Hughes and Mr. Pope were placed third and fourth. Mr. A. Miller, gardener to W. H. Long, Esq., Rood Ashton Park, Trowbridge, received the premier award for twelve bulbs of Sutton's Improved Reading Onion; and to Mr. Pope, Mr. E. S. Wiles, and Mr. L. Haines were awarded the second, third, and fourth prizes. For the prizes given by Mr. C. Fidler, for six dishes of potatos, the awards were as follows: Mr. J. Hughes, first; Mr. E. S. Wiles, second; Mr. H. Ridgwell, third; and Mr. C. Osman, South Metropolitan District Schools, Sutton, Surrey, fourth. Mr. E. S. Wiles was again first in the class for four dishes of potatos, and Mr. J. Hughes was a good second, and Mr. H. Ridgwell third. Mr. J. Lye, Sydmonton Court, was first in the class

for Messrs. Webb's prizes for a collection of vegetables, and Mr. Waite second.

Miscellaneous.

Chief among the miscellaneous contributions to the exhibition was the beautiful collection of chrysanthemums and zonal pelargoniums from Messrs. H. Cannell and Sons, Swanley. Mr. E. Molyneux sent an interesting collection of single chrysanthemums. Large and important collections of potatos were shown by Messrs. Sutton and Sons and Mr. Fidler, of Reading. Horticultural buildings included fruit and plant houses and portable frames from Messrs. Foster and Pearson, Beeston; greenhouses from Messrs. Peel and Son, Wood Green; and plant houses from Messrs. Newton, of Hitchin. Horticultural sundries were contributed by Messrs. R. Beale and Co., Southgate, Messrs. Wood and Co., and other exhibitors.

KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY,

November 11 and 12.

This society, which has done so much to promote the cultivation of the chrysanthemum, held its annual exhibition on the above dates, and a more successful gathering could not well have been obtained. The competition, as is customary at Kingston, was very keen throughout, the quality of the plants and blooms was such as to reflect much credit upon the cultural skill of the large body of exhibitors. The show was considered one of the best that has yet been held by the society, and as the material at command was arranged with much taste by Mr. G. Woodgate, the courteous secretary, the effect produced was at once rich and tasteful.

Cut Blooms were exceedingly well shown, and the competition for the challenge vase offered as the first prize in the class for forty-eight blooms, comprising twenty-four incurved and twenty-four Japanese, was spirited, there being five entries. Mr. C. Beckett, gardener to T. H. Bryant, Esq., Juniper Hill, Dorking, was the winner, staging highly-developed blooms of Condor, Sarah Owen, Jeanne Delaux, Mdlle. Blanche Pigny, Sunflower, Madame C. Audiguier, Mons. Bernard, Lady Lawrence, E. Molyneux, Boule d'Or, Madame Baco, Belle Paule, Marguerite Marrouch, George Daniel, Stanstead Surprise, Alba Fimbriatum, Mons. H. Elliott, Stanstead White, Balmoreau, Val d'Andorre, Ralph Brocklebank, Soleil Levant, Avalanche, Etoile de Lyon, John Lambert, Mrs. Heale, Mrs. W. Shipman, Lord Alcester, Miss Violet Tomlin, Eve, Beauty, Miss M. A. Haggas, John Salter, Empress of India, Prince Alfred, Barbara, Golden Empress, Princess of Wales, Refulgence, Alfred Salter, John Doughty, Mr. Brunlees, Mr. S. Coleman, Jeanne d'Arc. Mr. N. Davis, Queen of England, Lord Wolseley, and Lady Hardinge. Mr. G. Carpenter, gardener to Major Collis Browne, Broad Oaks, Byfleet, was a capital second; Mr. W. Mease, gardener to A. Tate, Esq., Downside, Leatherhead, a good third; and Mr. J. Quartermain, gardener to E. Smith, Esq., Silvermere, Cobham, was fourth. For twenty-four incurved, Mr. W. Mease was awarded the first prize, showing good blooms of Lord Alcester, Mrs. S. Coleman, Princess of Teck, Jeanne d'Arc, Mr. W. Shipman, Lord Wolseley, John Salter, Mrs. Heale, Princess Beatrice, Queen of England, Mrs. N. Davis, Cherub, Golden Empress, Empress of India, Jardin des Plantes, Miss Violet Tomlin, Miss M. A. Haggas, Charles Gibson, Emily Dale, Hero of Stoke Newington, Mr. Brunlees, Princess of Wales, Lady Dorothy, and Empress Eugenie; Mr. E. Coombs, gardener to H. Furze, Esq., Roselands, Teddington, was second; Mr. C. Beckett, third; and Mr. G. Woodgate, gardener to Lady Wolverton, Coombe Wood, Kingston, fourth. There were seven entries in the class for twelve incurved, and the first prize was awarded to Mr. R. Cawte, gardener to J. P. Robinson, Esq., Brookleigh, Esher, who had good blooms of Empress of India, Prince Alfred, Miss M. A. Haggas, Golden Empress, Princess of Wales, Barbara, Lord Wolseley, Emily Dale, Princess of Teck, Lord Alcester, Mrs. Coleman, and Miss Violet Tomlin; Mr. W. Higgs, gardener to Mrs. Bryant, Woodlands Park, Leatherhead; Mr. A. Felgate, gardener to the Duchess of Wellington, Burhill, Walton-on-Thames; and Mr. C. Slade, gardener to Lady Bowater, Richmond Park, were second, third, and fourth respectively. The prizes for six incurved were awarded to Mr. J. Thorne, gardener to A. E. Flood, Esq., The Bush, Walton; Mr. J. Wilkins, gardener to J. M. Pearson, Esq., The Grange, Kingston; and Mr. W. Skeets, gardener to J. F. W. Ponsford, Lillesworth, Esher, in the order of their names; and for six blooms of any variety the premier award went to Mr. G. Carpenter, Mr. J. W. Reed, gardener to E. Pettitt, Esq., Broadwater, Oatlands Park, and Mr. A. Felgate were second and third respectively. In the class for six incurved, open only to those who have never taken a prize for chrysanthemums in open competition, the prizes were awarded to Mr. Turner, gardener to E. Murray, Esq., Epsom; Mr. W. Sutton, gardener to J. S. Sassoon, Esq., Walton-on-Thames, and Mr. W. Atkins, gardener to R. W. Monro, Esq., Oakfield, Coombe Warren, in the order of their names.

For twenty-four blooms, twelve Japanese, and twelve incurved, Mr. Cawte was first with a fine stand comprising Miss Violet Tomlin, Miss M. A. Haggas, Mr. Brunlees, Empress of India, Lord Wolseley, Eve, Prince Alfred, Princess of Wales, Mr. Coleman, Guernsey Nugget, J. Salter, Mabel Ward, Lady Lawrence, Etoile de Lyon, Val d'Andorre, Criterion, Baron de Prailly, Sunflower, Condor, Maiden's Blush, Ralph Brocklebank, E. Molyneux, Mdlle. Lacroix, and La Triomphante; Mr. A. Felgate was second; and Mr. W. Palmer, gardener to the Right Hon. Hume Dick, Thames Ditton House, Surrey, was third. In the class for twenty-four Japanese there was a keen competition, there being seven entries. The premier award went to Mr. W. Cawte who staged good blooms of E. Molyneux, Sarah Owen, Mrs. Cannell, Japonais, Baronne de Prailly, Mrs. J. Wright, Stanstead White, Criterion, Miss Marrouch, Val d'Andorre, Condor, Avalanche, Album Fimbriatum, Golden Dragon, Sunflower, Stanstead Surprise, Mrs. C. Wheeler, Mr. J. Jameson, Ralph Brocklebank, Jeanne Delaux, Volunteer, Etoile de Lyon, Lady Lawrence, and Maiden's Blush. Mr. W. Mease was a good second; Mr. G. Holden, gardener to C. W. Izod, Esq., The Lammas, Esher, and Mr. C. Beckett were third and fourth respectively. Mr. W. Higgs, gardener to Mrs. Bryant, Woodlands Park, Leatherhead, was first for twelve Japanese, his stand including fine flowers of Stanstead White, E. Molyneux, Mrs. H. Cannell, Lady Lawrence, Belle Paule, Carew Underwood, Madame Baco, Val d'Andorre, Ralph Brocklebank, Madame C. Audiguier, Mrs. N. Davis, and Avalanche; Mr. A. Felgate, Mr. W. Sutton, and Mr. A. Turner were second, third, and fourth respectively. For six varieties of Japanese Mr. C. Slade was first with fine blooms of E. Molyneux, Etoile de Lyon, Sunflower, Avalanche, Mons. Bernard, and Stanstead White; whilst Mr. W. Skeets was second, and the third award was made to Mr. J. Plowman, gardener to C. L. Laversmith, Esq., Long Ditton. Mr. A. Felgate was first in the class for six blooms of any one variety with well finished blooms of Etoile de Lyon; and Mr. G. Carpenter, and Mr. R. Cawte were second and third respectively. In the class for six Japanese open only to those who had never taken a prize in open competition Mr. W. Sutton was first, Mr. J. Palmer, gardener to A. Lafone, Esq., M.P., Hanworth Park, Feltham, a good second; and Mr. H. Farr, gardener to H. Spier, Esq., Manor House, Thames Ditton, was third.

Reflexed Chrysanthemums are evidently in great favour at this show, for there were no less than nine entries for twelve reflexed. The premier award went to Mr. G. Carpenter, who showed grand flowers of Amy Furze, King of the Crimsons, Mrs. Forsyth, Cullingfordi, Pink Christine, Cloth of Gold, and Peach Christine; Mr. R. Cawte and Mr. W. Mease being second and third respectively. Mr. G. Carpenter was first for twelve anemone-flowered, staging Nouvelle Alveole, Miss Annie Lowe, La Marguerite, J. Thorpe, jun., Laing's Anemone, Lady Margaret, Fleur de Marie, and Grand Alveole; other prizes were awarded to Mr. E. Coombs and Mr. C. Slade. There were only two entries for twelve Japanese anemones, and the prizes went to Mr. C. Woodgate and Mr. G. Carpenter, who were first and second. Mr. Woodgate's stand included fine flowers of Jeanne Marty, M. Cabrol, Mr. Charles Lebocqz, Madame Clos. Mr. Woodgate was also first for twelve bunches of pompons, showing Mr. Astie, Eynsford Gem, Elise Dordon, Mdlle. Marthe, Golden Mdlle. Marthe, Exposition de Chalons, Model of Perfection, Marabout, Black Douglas, Mustapha, President, and St. Michael; the second and third prizes went to Mr. W. E. Clark and Mr. J. W. Reed. There were four entries in the class for twelve bunches of anemone pompons, and the prizes went to Mr. W. E. Clark, Mr. C. Woodgate, and Mr. C. Slade in the order of their names. Mr. Clark's stand included fine bunches of Antonius, Madame Chalonge, Marie Stuart, Mabel, Madame Senter, Perle, Regalia, Miss Nightingale. For the four best blooms of Mrs. G. Rundle, Mr. G. Glenny, and Mrs. Dixon, Mr. R. Cawte was first with magnificent flowers, and Mr. W. Skeets was a close second. In the amateurs' class for six incurved, the prizes went to Mr. W. Holt, Norbiton; Dr. Walker, Wimbledon; and Mr. T. Bowden, Kingston, and for the best three incurved and three Japanese, Mr. W. Batten, Basingstoke, was first, and Dr. Walker and Mr. W. Holt were second and third respectively.

A special feature of the show was a class for twenty-four distinct varieties, to consist of incurved, Japanese, and reflexed, in equal number. The first prize was awarded to Mr. W. Mease, who staged grand blooms of Puritan, Princess of Wales, Christine, Jeanne Delaux, E. Molyneux, Mrs. Forsyth, Avalanche, Miss M. A. Haggas, Dr. Sharpe, Ralph Brocklebank, Miss Violet Tomlin, Cloth of Gold, Condor, Jeanne d'Arc, Cullingfordi, Sunflower, John Salter, Golden Christine, Meg Merrilies, Mrs. Heale, King of Crimsons, Etoile de Lyon, Golden Empress, and Amy Furze. Mr. A. Felgate was second, and Mr. C. Woodgate was a close third.

Groups and Specimen Plants had ample provision made for them and both in number and quality they surpassed those of previous years and formed a very interesting feature of the show. For the miscellaneous groups, Mr. W. Sutton was placed first with a good selection of stove and greenhouse plants. Mr. W. Palmer was a good second, and Mr. J. W. Reed third. There were five entries for the best collection of chrysanthemums and the prizes were awarded to Mr. H. W. Pitcher, gardener to Mrs. Dunnage, Albany House, Surbiton; Mr. A. H. Rickwood, gardener to the Dowager Lady Freake, Fulwell Park, Twickenham; and to Mr. Dorset, gardener to Mrs. Welsh, West Croft, Kingston Hill. For six trained specimens Mr. R. Cawte was placed first his collection including a splendid example of George Glenny, and Mr. Sallows, gardener to Miss Vaughan, Windsor House, Twickenham was second. In the class for three standards the first prize went to Mr. Higgs, who showed good specimens of Mrs. Dixon, G. Glenny, and Mrs. G. Rundle; Mr. W. Skeets and Mr. R. Cawte, were second and third, and for three trained Japanese Mr. R. Cawte received the premier award for grand specimens of Sunflower, Margot, and W. Stevens, while Mr. R. Skeets and Mr. J. Sallows were also awarded prizes, Mr. R. Cawte and Mr. W. Sallows were placed for four trained pompons, and for one trained pompon Mr. R. Cawte was first with a superb plant of Prince Victor while Mr. J. W. Reed and Mr. J. Sallows were second and third respectively.

Plants for Table Decoration were shown in good numbers, and the prizes for nine were awarded to Mr. J. Portbury, Ripon House, Putney; Mr. A. Carter, gardener to Alderman Evans, Ewell; and Mr. J. Wilkins, gardener to J. M. Perron, Esq., The Grange, Kingston, in the order of their names; whilst Mr. G. Holden was first, Mr. G. Mileham, gardener to A. J. Miller, Esq., Leatherhead, was second, and Mr. C. J. Waite, gardener to Colonel Talbot, Glenhurst, Esher, was third for six. Mr. T. H. Cushion, gardener to P. Bancroft, Esq., Norbiton Park, was the only competitor for six solanums, and was awarded the first prize. Mr. F. Billings was first for six bouvardias; and for six carnations, Mr. A. H. Rickwood received the premier award. Mr. A. Masters, Matlan Road, East Molesey, was first for six Chinese primulas; and Mr. A. Carter, Mr. A. Masters, and Mr. J. W. Reid were first, second, and third respectively for six double primulas.

Bouquets and Vases of chrysanthemums were well shown, and formed a pleasing relief to the other objects. The first prize for bouquets of chrysanthemums with ferns and autumn leaves was given to Miss E. Clarke, Rosalind Villa, Hounslow; and Mr. W. Atkins was second. For the most tastefully-arranged stand for table decoration of hardy shrubs, ferns, and grasses, there were five entries, and the prizes were awarded to Mrs. W. J. Bultz, High Street, Kingston, and Miss M. Clay, Kingston. For the best six button-hole bouquets, Miss Parslow, Bath House, Kingston, was first; Miss E. L. Clarke second; and Miss M. E. Clay third; whilst the prizes for the best hand bouquet went to Miss E. L. Clarke, Mrs. Billings, Coombe Wood; and Mrs. Gridley, Ham, Surrey. Mr. J. Buss, gardener to A. W. Aston, Esq., Epsom, and Mr. J. W. Reid were first and second respectively for three bunches of violets; and for a lady's spray, Miss Clarke was first; and Mr. J. Hawke, gardener to E. Pearson, Esq., Old Malden, was a good second.

The Premier Japanese bloom in the society was Etoile de Lyon, and the premier incurved bloom was Lord Alcester, both exhibited by Mr. W. Mease.

Fruit was in every way worthy of the show, and formed a pleasing feature. Mr. C. Griffen, gardener to Miss Christy, Coombe Bank, was first with three well-finished bunches of Alicante; Mr. A. Hookings, gardener to S. P. Graystone, Esq., Hurst Side, West Molesey, was a close second, and Mr. G. Batten, gardener to A. Venables, Esq., Hollywood, Wimbledon Park, was third. For three bunches of white grapes Mr. C. Griffen was first with well-coloured Muscat of Alexandria; Mr. Billings second, and Mr. A. Carter third. Apples and pears were well shown, and Mr. C. J. Waite was placed first for his collection of apples, comprising Bismarck, Alexander, Warner's King, and New Hawthorden; Mr. J. Wilkins and Mr. A. H. Rickwood were second and third. Mr. W. Pitcher was first for dishes of pears, including Beurre Superfin, Marie Louise, Duchesse d'Angouleme, and Durondeau; Mr. C. J. Waite was second, and Mr. G. Smith, gardener to H. D. Phillips, Esq., The Maples, Hampton Wick, was third. Mr. W. Laytham, Royal Kitchen Gardens, Hampton Court, contributed an interesting collection of grapes, including Black Hamburgh, Gros Colmar, Alnwick Seedling, and Alicante.

VEGETABLES were not numerous, but the quality was very high. There were four entries in the class for a collection of six distinct kinds, the first prize going to Mr. W. Cawte, who exhibited good examples of Deverill's Cocoanut Onion, Cutbush's Crystal White Celery, Exhibition Brussels Sprout, Perfection Tomato, Autumn Giant Cauliflower, Reading Giant Potato; Mr. J. W. Reed was a good second.

The judges were Messrs. J. Douglas, W. Earley, E. Molyneux, E. Wills, and J. Wright.

TUNBRIDGE WELLS CHRYSANTHEMUM SOCIETY,

NOVEMBER 12 AND 13.

This admirably managed and flourishing society held its annual exhibition in the Assembly Rooms and Corn Exchange on the above dates, and so numerous were the contributions to the several classes that both of these spacious structures were filled to their utmost capacity. Specimens for which the exhibitions at Tunbridge Wells have from the first been distinguished were less numerous than on the occasion of some previous gatherings, but those staged were fully equal to the average, and contributed materially to the attractions of the show. Groups were more numerous and of better quality than at the shows previously held, cut blooms evinced a marked advance, and of fruits and vegetab'es there were large and excellent displays. The arrangements were admirably carried out, and did much credit to Mr. E. Charlton, the energetic honorary secretary, Mr. H. Millborough, and other members of the executive.

FRUIT formed such an important and attractive feature as to fully justify its having the precedence. Apples were very plentiful and the numerous dishes of highly coloured fruit produced an exceedingly attractive display. Mr. F. Bridger, gardener to Lord de Lile, Penshurst, obtaind premier honours in the class for six dishes of dessert varieties, with exceptionally fine examples of Mother, Ribston Pippin, Cox's Orange Pippin, Queen Caroline and Wealthy, the last named a brightly coloured and heavy cropping variety of high quality. Mr. C. Davies followed closely for second place. Mr. Bridger was first also for three dishes of dessert apples with Cox's Orange Pippin and Wealthy, all of which were represented at their best. Mr. A. Henderson, gardener to the Hon. Miss Canning, Frant Court, and Mr. J. McFeate, Hungershall Park, were second and third. The best single dish of dessert apples was that of King of Tomkins County, from Mr. F. Bridger. Mr. Standen, gardener to E. Bean, Esq., Paddock Wood, was second, with highly coloured fruit of Blenheim Pippin, and Mr. J. McFeate was third with Cox's Orange Pippin. Mr. Bridger had the premier award made in his favour in the class for six dishes of culinary apples with immense fruit of Stirling Castle, Pott's Seedling, Queen, Warner's King, Emperor Alexander, and Lord Derby. For three the same exhibitor was first with Pearsgood's Nonsuch, Bismarck, and Warner's King. Mr. Berwick, gardener to Paul Gedham, Esq., Fairholm, Southborough, and Mr. Davies were also successful in the classes for culinary apples, Messrs. Bunyard and Co. offered prizes for eighteen dishes, to comprise twelve of apples and six of pears, and the first and second went respectively to Mr. Bridger and Mr. Berwick. Mr. W. Johnston, Bayham Abbey, was especially successful in the classes for pears, being first for six and three dishes; and also for a single dish; Mr. Bridger was second in each class. The varieties especially well shown by Mr. Johnston were Doyenne du Comice, Beurre d'Anjou, Duchesse d'Angouleme, Beurre Bachelier, and Gansel's Bergamot. There was a good competition in the class for black grapes, and Mr. H. Scammell, gardener to C. Reilly, Esq., Nevill Park, Tunbridge Wells, was first with large, well finished clusters of Alicante; Mr. G. Pain was second with the same variety; and Mr. Legg, gardener to the Rev. E. H. Boardman, Glen Andrea, Groombridge, Tunbridge Wells, was third with Gros Maroc. In the corresponding class for white grapes Mr. Legg and Mr. C. Davies were first and second with well finished clusters of Muscat of Alexandria. For a collection of fruit Mr. Johnston and Mr. Scammell were first and second respectively.

CUT BLOOMS were somewhat above the average and produced a rich display of colour. The open class for twenty-four incurved contained several excellent collections, and Mr. W. Wallis, gardener to J. Mews, Esq., Hartwell, Southborough, occupied the post of honour, with finely developed blooms of Miss Violet Tomlin, Mrs. W. Shipman, Empress of India, Isabella Bott, Princess Beatrice, Princess of Wales, Jardin des Plantes, Hero of Stoke Newington, Lady Hardinge, Miss M. A. Haggas, Alfred Lyne, Queen of England, Duchess of Manchester, Mrs. Heale, Barbara, Eve, Lord Wolseley, Golden Empress, Cherub, Golden Queen, Sir Stafford Carey, and Lord Eversley. Mr. J. Snow, Wadhurst Park, was a very close second with well finished blooms. Mr. G. Tegg, had the premier award made in his favour in the class for twelve incurved, his blooms being large and well finished, and the varieties represented were Prince Alfred, Salter, Mrs. George Rundle, Mr. Bunn, Venus, White Venus, Lord Wolseley, Mrs. Dixon, Nil Desperandum, Novelty, Lady Hardinge, and George Glenny. As in the preceding class Mr. Snow followed very closely for second place, and Mr. Avis, Wadhurst was a good third. In competition for the prizes for twenty-four Japs, Mr. Wallis was first with large brightly-coloured blooms of Madame C. Audiguier, Mrs. F. Jameson, Grandiflorum, M. J. M. Pigny, Pink Lacroix, Stanstead Surprise, Le Sceptre Toulousaine, Florence Percy, Marsa, Ralph Brocklebank, Gloriosum, Avalanche, Jeanne Delaux, Madame Baco, Sarah Owen, Mrs. Alpheus Hardy, Volunteer, Mons. Bernard, Soliel Levant, Duchess of Albany, George Daniels, and Madame J. Laing; Mr. C. Lewis, and Mr. J. Snow were second and third respectively. For twelve Japanese varieties, Mr. J. Snow was first with superbly-developed blooms of Fair Maid of Guernsey, Etoile de Lyon, Mr. H. Cannell, Madame C. Audiguier, Soliel Levant, Lady Lawrence, Mrs. J. Wright, Mr. H. Elliott, Sunflower, Stanstead White, and Madame J. Laing; Mr. Scammell was second with a fine stand of blooms; and Mr. Avis was a good third. Mr. J. Snow and Mr. Scammell were first and second in the class for twelve reflexed, with blooms not over large, but fresh and bright in colour. Mr. Snow was first in the open class for twelve large anemones; and in that limited to growers within the Tunbridge Wells district, Mr. J. Woodward occupied the post of honour. Mr. Scammell had the finest stand of pompon anemones. Other successful exhibitors in the anemone classes included Mr. G. Ware, gardener to Mrs. Morgan, Hungershall Park; Mr. H. Simmonds, Broadwater Down; and Mr. E. Luff.

GROUPS were better than in any previous year, and produced a brilliant effect. In the open class, Mr. H. Helmsley, gardener to J. R. Brewston, Esq., Broadwater Down, was awarded the silver cup, offered as the first prize, for a group distinguished both by the high quality of the blooms and the taste shown in the arrangement; Mr. H. Scammell was a close second, with an arrangement in which the plants were remarkable for the high quality of the blooms; Mr. Luff was third. The prizetakers in the limited class were Mr. George Ticknor, gardener to H. Hewetson, who had a very beautiful group of cut-down plants; Mr. G. Pain, Sion Lodge, Tunbridge Wells; and Mr. W. Ellis, Wyham Grange, Tunbridge Wells, were second and third with excellent arrangements.

SPECIMEN PLANTS, although not so largely shown as in some previous years, were well represented, Mr. Ticknor was first in the classes for four, two, and one specimens of large flowered varieties, with neat admirably flowered examples. The silver cup offered as the first prize in the class for eight specimens was awarded to Mr. J. Smooker, gardener to Mrs. Hall, Brathy Hall, Tunbridge Wells, who had superb specimens of Cullingfordi, Chevalier Domage, Baron Beust, Prince Alfred, and other well-known varieties. For six dwarf-trained large-flowered varieties, Mr. J. Smooker was first, staging excellent examples of Baron Beust, Mrs. George Rundle, George Glenny, Barbara, Prince Alfred, and Jardin des Plantes. Mr. Scammell was second with well-bloomed bush specimens.

MISCELLANEOUS PLANTS had numerous classes provided for them, and the most important of these were the poinsettias and solanums. The latter were especially good, and Mr. J. Ticknor, Coomberhurst, and Mr. G. Ticknor were first and second for six, with medium-sized specimens bearing heavy crops of finely-coloured berries. Poinsettias were presented in particularly good condition, and the splendidly-developed heads of bracts produced a brilliant effect.

VEGETABLES were much above the average, and as the whole of the collections were arranged in a tasteful manner, they proved at once interesting and attractive. In the class for twelve kinds, the prizetakers were Mr. E. Luff, Mr. W. Berwick, and Mr. J. T. Harris; and in that for nine kinds, in which the prizes were offered by Mr. Charlton, the first and second awards were made in favour of Mr. Johnston and Mr. Avis.

The judges were Mr. G. Bunyard, Mr. J. Douglas, Mr. G. Gordon, and Mr. J. Hopgood.

Replies to Queries.

Walnuts.—Write to Messrs. Webber, Covent Garden Market.

Chrysanthemum Jeanne Delaux.—Subscriber: The bloom of Jeanne Delaux, although not of exceptional size, is so highly developed as to do much credit to your cultural skill.

W. W. and Son.—We have expressed an opinion agreeably with yours, but it would be a mistake to urge the matter in public at the present time. Your proposal might more advantageously be communicated to the managing body, although we believe the same opinion prevails there.

F. M.—Ewell: You must secure cuttings from the new growth, but we advise you not to cut the plants down until February, when the new growth will come in time to propagate from it advantageously. The lamps you intend to use may prove safe if carefully managed, but any defect in trimming them will cause the production of injurious fumes. A clear flame is of the first importance.

Potatos for Exhibition.—Exhibitor: The following varieties are especially adapted for exhibition. Abundance, Adirondack, Beauty of Hebron, Chancellor, Chiswick Favourite, Fidler's Prolific, Fidler's Success, International, Lady Truscott, Matchless, Reading Ruby, Reading Russet, Satisfaction, Snowdrop, Sutton's Seedling, and Vicar of Laleham. It will be necessary to grow at least sixteen varieties if you wish to stage a collection of twelve.

Forcing Lilies.—F. G.: One of the most important points in forcing lilies is to have them potted early in the autumn, to ensure their being well rooted when they are taken to the forcing pit. The most useful kinds for potting are the Common White, Harrisii, and Longiflorum, and although the season is now well advanced it is not too late to pot up the bulbs. Bulbs potted thus late ought not to be forced so early in the year as those that were potted early in the season, and are now well furnished with roots. On their being potted place them in a frame or pit, from which the frost will be excluded.

Tuberous Begonias.—R. W.: There has been so little frost that it is not likely the begonia tubers have received any injury, but it is not safe to leave them in the ground after the end of October without protection of some kind. If it is not convenient to lift the corms at once cover the surface of the beds to a depth of six or eight inches with some loose material to prevent the frost penetrating the soil to a sufficient depth to reach them. When they are lifted lay them on the stages of a plant house, or the shelves of an airy shed until the soil has become moderately dry about them, and then place them in pots or boxes with a little dry soil put over them.

Obituary.

ON the 5th inst., at his residence, Duneevan, Oatlands Park, Weybridge, JAMES MCINTOSH, Esq., in his 77th year. Very many of our readers will join in our lament for the loss of a good man whose life was an example of well doing, and of unobtrusive wisdom in things practical. Through long years of devotion to horticulture Mr. McIntosh succeeded in many interesting undertakings in which success is by no means universal, and his sympathies extended far beyond the range of his practice in support of movements he recognised as salutary in aim and deserving of encouragement. He was ever ready to subscribe to funds that were organized for the promotion of florists flowers, and for special exhibitions and educational endeavours, or for purposes of pure charity. His health had long been precarious, and it was only by great care he was preserved to the years he attained.

WE have to record the death of Mr. RICHARD CATCHPOOL, the hon. secretary and superintendent of the Reading Chrysanthemum Show, which occurred at Reading on the 8th inst. A few years since he instituted on a larger scale than had been before attempted the Reading Chrysanthemum Show, setting it upon a broader basis, and making it in every way a distinct success. Mr. Catchpool was taken ill on Thursday, the 6th, and died on the following day. The annual show at Reading being fixed for Thursday, the 13th, and he worked hard to make it successful, probably over-taxing his strength. His age was sixty-eight years. Mr. William Smith, who has acted as assistant secretary, undertook the duties of superintending the show.

"A SIMPLE FACT ABOUT" KEATING'S COUGH LOZENGES.—Ask throughout the world, in any country that can be named, you will find them largely sold. There is absolutely no remedy that is so speedy in giving relief, so certain to cure, and yet the most delicate can take them. One Lozenge gives ease. Sold in 1s. 1½d. tins.—[ADVT.]

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Noon.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.		Day of Yr.
1890			H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.			1890
23	S	**25th Sunday after Trinity.**	7 33	13 25	4 2	3 0	3 17	11 20	11 48	8 13	8 45	41·6	Lælia albida superba	Oaxaca.	327
24	M	John Knox died, 1572.	7 34	13 8	4 0	3 18	4 36	—	0 13	9 13	9 38	41.5	Grammatophyllum speciosum	Java.	328
25	Tu	Sir Francis Chantrey died, 1841.	7 36	12 50	3 58	3 39	5 57	0 35	0 58	10 0	10 23	41·5	Grammatophyllum Ellisi	Madagascar.	329
26	W	○ Full Moon.	7 37	12 31	3 57	4 5	7 15	1 21	1 42	10 46	11 7	41·4	Dendrobium Lowi	Borneo.	330
27	Th	Princess Mary (of Teck) born, 1833.	7 39	12 12	3 56	4 39	8 31	2 1	2 21	11 26	11 46	41·4	Goodyera discolor	Brazil.	331
28	F	The "Times" first printed by steam, 1814.	7 40	11 51	3 55	5 18	9 40	2 41	3 0	—	0 6	41.4	Goodyera Domini	Gar. hyb.	332
29	S	The La Plata wrecked, 1874.	7 42	11 30	3 55	6 9	10 39	3 18	3 38	0 25	0 43	41.4	Goodyera pubescens	N. America.	333

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ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

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THE GARDEN ORACLE FOR 1891

Will be published in the usual form at 1s., and will be as heretofore, a complete review of horticulture and floriculture in the past year, and a guide for cultivators, exhibitors, and purchasers of plants, flowers, fruits, &c., in the year that is before us. This is the oldest horticultural almanac extant, and as it contains the latest information on new varieties, forthcoming exhibitions, and undertakings of various kinds in prospect, it cannot be published so soon as the general run of almanacs, that are chiefly made up by hasty compiling. The Oracle now preparing will be rich in reports, announcements, and selections, all condensed into the smallest possible space, and arranged for handy reference. The Oracle is a business almanac and diary, in addition to its special floricultural features. Published at the GARDENERS' MAGAZINE Office, 4, Ave Maria Lane, London, E.C.

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The Gardeners' Magazine.

SATURDAY, NOVEMBER 22, 1890.

THE DEATH OF MR. SHIRLEY HIBBERD, who has occupied the position of editor of this journal during the past thirty years, has removed from amongst us one who had not only exercised an enormous influence upon horticultural pursuits during a period of exceptional activity, but had endeared himself to all who enjoyed his friendship, or were associated with him in business. It is a melancholy satisfaction to his colleagues to know how highly appreciated were his labours by all classes of the community, and how deep and widespread has been the regret caused by the announcement of his death. A biography and portrait will be found on page 743. Friends and correspondents will, we are sure, excuse for a time our acknowledgment of their communications.

THE PLANTING OF TREES AND SHRUBS has in many instances been so materially delayed in consequence of the excessive dryness of the soil early in the autumn, that where extensive operations are in progress special efforts will be required to complete the planting operations during the period in which they can be carried on under the conditions most favourable to success. In some cases it may perhaps be necessary to carry over some portion of the work to the spring months, but speaking in a general way the less planting of trees and shrubs in the spring the better. The spring season may be even more unfavourable than the winter, and invariably the routine work presses so heavily as to tax the resources of the gardener to the utmost and to render additional work undesirable. Especially is it important to avoid carrying over planting operations to the spring in gardens where the labour is hardly sufficient for their maintenance in proper order. With too severe a tax upon both the hands and the head there must of necessity be more or less hurry, and work hurriedly done is seldom satisfactory. In urging the importance of completing, as far as practicable, the lifting and planting of trees by the end of the autumn, it is necessary to guard against giving the impression that the work cannot be engaged in with the assurance of satisfactory results after the commencement of the winter season. To state the case briefly, it is desirable the planting operations should be finished by the end of November, but if that is not possible it will be better to complete them by the end of December or the end of February, than to leave them over until the spring, provided of course that in all cases the weather and soil are alike favourable. Failing their completion during the autumn or winter, it will as a rule be better to complete them by the end of March or even during the month following, than to defer them until the autumn, and thus lose a season's growth. Numberless instances might be cited of both evergreen and deciduous trees and shrubs being moved as late as the end of April with the most satisfactory results. We could also point to fruit trees that have been replanted late in the spring bearing crops in the summer following, but the practice is one that cannot be too strongly condemned, for the production of fruit by trees that have been moved late in the spring imposes a check from which they do not fully recover for at least two seasons.

The conditions which obtain at the present time are so eminently favourable to the planting of trees of all descriptions that we would strongly advise its having precedence of other work when practicable. Delays are in all cases undesirable, and in many cases dangerous, the risk being in some degree proportionate to the skill for carrying on the work. As will be at once understood by those who have had much practice, the experienced hand will make the best of unfavourable circumstances and surmount difficulties in the moving of trees, that those who have had but little practice would be utterly unable to contend with. As the season proceeds the difficulties increase, and those who have the best knowledge of the details will have the most favourable opportunity for bringing the work to a successful conclusion. Not less important is it to state that as the conditions become less favourable the more carefully must the several details be carried out.

In the months of October and November, when the ground temperature is comparatively high, and the atmosphere heavily charged with humidity, trees will bear with but little injury an amount of rough usage that would be disastrous in its effects later on, as the abundance of moisture checks rapid evaporation, and the warmth of the soil promotes the production of new roots. Notwithstanding this fact the greatest care should at all times be bestowed upon the smallest detail. The trees should be lifted with due regard to the safety of the roots and when divested of soil, measures should at once be taken to prevent undue exposure to atmospheric influences. It may, perhaps, be thought by those who have but few opportunities for making observations over a wide area that reference to the importance of preserving roots from injury is altogether unnecessary. But it is by no means a rare occurrence to see in gardens the trees being so roughly handled that much injury is done to the roots in the process. It is also a common experience during the planting season to meet with cart loads of trees with their roots wholly unprotected. Trees that are to be sent any distance should be so packed that their roots will be thoroughly protected, and as the season advances the greater will be the necessity for efficient protection. Their safety in transit having been secured, it is essential they should not suffer on reaching their destination. When received, the packages should be taken to an outhouse or some other suitable position, where the trees can be unpacked and prepared for planting. This having been done, they should be placed where the roots can be covered with litter from the stable or other loose material. Almost anything that will keep them moist and shelter them from the wind may be utilised for the purpose. They ought not to be laid

about on the ground for some hours, or it may be days, with their roots exposed; even with proper protection they ought not to remain unplanted for any length of time, for every day they are out of the ground is a distinct loss, and, moreover, the frosts and rains may for a considerable period prevent their being transferred to their permanent quarters.

As far as circumstances will permit, the ground should be ready for planting when the trees are removed from another part of the garden or received from the nursery, as the case may be. The preparation it should undergo will depend upon the character of the staple, and the trees to be planted. To break up the ground to a depth of about two feet will, in most cases, be advisable, but the lower spit ought not to be brought to the surface. For the larger trees and shrubs the holes may be prepared in advance. If the soil becomes frozen, it is simply necessary to wait, when that exposed to the effects of the frost will be in a pulverulent condition, and in every way suitable for placing immediately over the roots. Soil that is frozen must not be used in filling in about the roots, nor should it, when in a wet and pasty condition, be used for the same purpose. The trees will not suffer to any appreciable extent from being out of the ground for a few weeks, provided the roots are carefully protected, and it will be better to wait until the conditions are favourable than to proceed with the work at a time when it is practically impossible to do it satisfactorily. In planting where the surface has not been nicely pulverized by the weather, it is important to obtain moderately fine soil with which to cover the roots, and the laying up of supplies should engage attention at the commencement of operations. There is much risk in planting in land that has been broken up roughly; independent of well-pulverized soil being essential to the rapid production of new roots, there is considerable difficulty in fixing the tree or shrub securely in position, without the risk of injury to the roots.

The depth at which trees are planted is an important consideration, and to plant deeply is to do the work in an unsatisfactory manner. It is a good rule not to plant to a greater depth than the tree was before, but in this, as in other points, some judgment must be exercised, for it may have been previously too deep. In all cases the long roots should undergo some amount of shortening, and the remainder be spread out regularly, it being a good practice to provide them with a bed of mellow soil and cover them with a layer of the same description. As the filling-in proceeds, the soil must be well trodden, and especially is it necessary to make the new soil firm when the tree has been lifted with a ball, or the water will pass through the loose soil and fail to moisten that about the roots. To water the trees as the holes are being filled in, in accordance with the practice which obtains in some places, is altogether unnecessary at this season of the year, and it may prove injurious, as when water is used the soil almost invariably worked into a pasty condition, and thus rendered it unfit for the healthy development of the roots. Providing the trees with suitable supports is a point of much importance, for if allowed to sway about with the wind they become so loosened as to have the chances of their quickly becoming established heavily discounted. For trees of small size one stake will suffice, but for those with moderate-sized heads two or three should be provided. These should be placed aslant, with a band of straw made secure round the stem to prevent injury to the bark.

MR. J. B. GRAY, the well-known manager of Messrs. Backhouse and Son's Nurseries, has been returned without opposition as a councillor of the City of York.

AN EXHIBITION OF HORTICULTURAL APPLIANCES will be held at the Crystal Palace from March 3 to 21, 1891. During the exhibition there will be trials of lawn mowers and spraying apparatus.

MR. JOHN MCLEOD, late gardener at Brentham Park, Stirling, has been engaged as head gardener to Earl Temple at Newton Park, near Bristol.

NATIONAL CHRYSANTHEMUM SOCIETY will have a busy time of it next week. The General Committee will meet on Monday at Anderton's Hotel, at seven p.m., and on Tuesday the Floral Committee will meet at the Royal Aquarium, at two p.m.

GARDENERS' ORPHAN FUND.—A concert will be given by the Lee and Blackheath Horticultural Society at the Institute, Old Road, Lee, on the evening of Wednesday next, in aid of this excellent charity. The arrangements made by Mr. Frank Helmer on behalf of the committee are of an extremely liberal character, and an enjoyable evening may be anticipated.

THE HOLMES MEMORIAL FUND.—Captain Molesworth having generously proposed to give a special benefit at the Royal Aquarium on behalf of the above fund, it is proposed to hold a floral fête and bazaar, the proceeds of which will be devoted to the same object. A meeting of the committee was held at the Royal Aquarium on Thursday, when considerable progress was made with the arrangements. Suggestions and offers of assistance in carrying out the details should be sent, with as little delay as possible, to the hon. secretary, Mr. Lewis Castle, Hotham House, Merton, Surrey.

MR. P. BLAIR, of Trentham, was successful in winning the valuable challenge vase offered by the Hull Chrysanthemum Society at its exhibition on Wednesday and Thursday, and as the vase has been won twice by him, it now becomes his property. The show was one of the best that has been held by the society, but, in consequence of the pressure on our space, we are compelled to hold over the report, with several others, until next week.

MR. E. R. CUTLER will, in January next, enter on the fiftieth year of his secretaryship of the Gardeners' Royal Benevolent Institution, and many of the supporters of the institution consider that advantage should be taken of his jubilee year of office for showing in a tangible form how highly his services are appreciated. A committee is being formed for carrying out the project, with Baron Schroder as chairman, and Mr. Harry J. Veitch as hon. secretary.

ROYAL SOCIETY will hold its annual meeting on December 1, when the following persons, who have been selected by the Council, will be submitted for election to the respective offices: President, Sir William Thomson, D.C.L., LL.D.; treasurer, John Evans, D.C.L., LL.D.; secretaries, Professor Michael Foster, M.A., M.D., and Lord Rayleigh, M.A., D.C.L.; foreign secretary, Archibald Geikie, LL.D. Members of the council: Professor William Edward Ayrton, William Henry Mahoney Christie, M.A., Professor W. Boyd Dawkins, M.A., James Whitbread Lee Glaisher, D.Sc., Hugo Müller, Ph.D., Professor Alfred Newton, M.A., Sir William Roberts, M.D., William Chandler Roberts-Austen, F.C.S., Professor Edward Albert Schäfer, M.R.C.S., Sir George Gabriel Stokes, Bart., M.A., Lieut.-General Richard Strachey, R.E., Professor Joseph John Thompson, M.A., Professor Thomas Edward Thorpe, B.Sc., Sir William Turner, M.D., Professor Sydney Howard Vines, M.A., General James Thomas Walker, C.B.

FRUITERERS' COMPANY, encouraged by the success that attended the recent exhibition of hardy fruits at the Guildhall, propose to materially extend their operations in the promotion of profitable fruit culture. On Monday the Court of the Company, headed by Sir J. Whitehead, had an interview with the Lord Mayor for the purpose of obtaining his aid in raising the sum of £20,000, which it is estimated will be necessary to enable the Company to carry out its proposed scheme. This includes the holding of fruit shows in various parts of the country in conjunction with the exhibitions of local societies, arranging for lectures on fruit culture, and holding monthly meetings for considering questions that may be submitted on points of practice and giving advice upon them. The Lord Mayor was invited to convene a public meeting to be held at the Mansion House, and to organize a Mansion House fund, with a view of raising the necessary sum. His Lordship, in response, said he would have pleasure in convening and presiding over such a meeting as was proposed, but he would reserve until then his decision as to raising a Mansion House fund.

WATERLOW PARK received a considerable share of attention at the meeting of the London County Council, on Tuesday. The Parks and Open Spaces Committee reported that they had considered the question of this park. The property was estimated to be worth £50,000, and at present was enclosed by a high wall, which they proposed to remove. There were other works necessary to be carried out, such as the provision of a water supply, the cleaning out and rendering safe of the lake and a pond, the fencing in of shrubberies, &c. They were endeavouring to make arrangements with the owner of Fairseat House and grounds, which were held on lease, so that the Council might be enabled to remove it altogether, or to let it for other purposes than those of a private dwelling, for which it did not appear to be in demand. Hertford House was neither useful nor ornamental, and the committee proposed that it should be at once pulled down. The other house on the estate, Lauderdale House, was possessed of certain historical interest, and the committee proposed that it should be retained if it were found possible to repair it at a moderate cost. The old garden attached to it was laid out in the style of the seventeenth century, and the committee proposed to restore it, with the terraces. The committee recommended that the Council should authorize an expenditure of £9,485 to carry out the necessary alterations in the park, thirteen items of expenditure being specified. After a long discussion on the various points referred to in the report, it was resolved by a large majority to send the report back for further consideration.

EXHIBITIONS AND MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, NOV. 26.—NATIONAL CHRYSANTHEMUM SOCIETY.—Meeting of Floral Committee.

FRIDAY, NOV. 28, AND SATURDAY, NOV. 29.—DUNDEE CHRYSANTHEMUM SOCIETY.—Annual Exhibition.

AUCTION SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY, AND SATURDAY, NOV. 24, 26, AND 29.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs.

MONDAY, NOV. 24.—Messrs. Protheroe and Morris, at the Merton Abbey Nurseries, Merton Abbey; Glass Erections.

MONDAY, NOV. 24.—Messrs. Protheroe and Morris, at the Cooksbridge Nurseries, near Lewes; Nursery Stock.

MONDAY, THURSDAY, AND SATURDAY, NOV. 24, 27, AND 29.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

TUESDAY, NOV. 25.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies and other Bulbs.

TUESDAY, NOV. 25.—Messrs. Protheroe and Morris, at the Leamington Nursery, Leamington; Nursery Stock. (Two days.)

WEDNESDAY, NOV. 26.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Plants, Bulbs, Tuberoses, &c.

THURSDAY, NOV. 27.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Importations from Japan.

FRIDAY, NOV. 28.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

ORCHIDS AT LOW-FIELDS.

By James Douglas.

Some remarks were made by me about the collection of orchids grown here in a previous number of the Gardeners' Magazine, and I stated how much had been done without a lavish expenditure. The Rev. F. D. Horner and Mrs. Horner are one in their devotion to orchids, and the collection yearly increases in numbers and importance, and in that vigorous development of leaf and bulb which makes a collection so interesting to a cultivator, or to one who can at least appreciate good cultivation. Since last year the large Orchid house of lean-to construction has been much lengthened to afford more breathing space for the old plants which became much too crowded, and to admit the new arrivals which may be introduced during the season.

This collection is noteworthy for the numerous distinct species and varieties it contains not usually found in the ordinary orchid collections. Many collectors make a point of limiting their culture to a few species, and purchase, perhaps, a hundred plants of, say, Cattleya Mendeli, C. Mossiæ, Lælia purpurata, Odontoglossum crispum, &c. In the Low-fields collection are many species and varieties in such luxuriant health as would surprise some of the best cultivators in England.

For instance, here is to be seen suspended from the roof of the house alluded to above a row of plants, thirty feet in length, of Cattleya citrina placed closely together, not recently imported, but many of them have been grown into good specimens from plants that had got into bad condition in another collection. They have during the past season formed a mass of tough fibrous roots as much as two feet in length below the blocks on which they are fixed, and the plants are naturally under these conditions full of life and growth. This remarkable cattleya has been introduced from Mexico many times since Mr. Robert Smith sent it from Oaxaca in 1838 to the Duke of Bedford at Woburn, where it flowered in April, 1839, but few cultivators can keep it in vigorous health for many years in succession. Indeed, I would be glad to know of anybody with the exception of Mr. Horner.

Cattleya citrina is figured in Bot. Mag. 3,742. It is there stated that the Jesuit Hermandez discovered the plant in the seventeenth century, and described it under the name of Corticoatzoatecoxochiti. Some of the oncidiums, not easily kept in health for successive seasons, have made themselves quite at home in the Low-fields collection, and it is rather remarkable to see plants which are supposed to grow only in the Intermediate house, and others of the warmest compartment growing freely side by side. Maxillaria nigrescens is a mass of bloom; the queer looking rich dark flowers are really handsome. Cœlogyne speciosa, in a good variety, flowers twice a year, and is a very remarkable species in its tawny sepals and petals, with the large lip yellow, white, and dark brownish crimson in colour. Also in flower and interesting at this dull season is Lælia monophylla, and in contrast with it is Epidendrum Brassavolæ, a night-scented orchid sweeter after dark than any tea rose.

Another orchid, flowering twice a year with Mr. Horner, is Cattleya Aclandiæ. There is also a good stock of the remarkable and very handsome orchid Maxillaria Sanderiana. Fortunately it is a free growing species, and the flower spikes are just showing with leaves two feet long and four inches across. It is placed a good distance from the glass, and does not seem to need a period of rest. Of Vanda cœrulea there are strong spikes, and Oncidium Lanceanum has brightened the dark months with a handsome spike; the variety is a good one.

Many lælias are showing for flower or are full out, such as L. acuminata, L. peduncularis, L. Perrinii, L. anceps, L. autumnalis. L. anceps Dawsonii, is in flower. It is even more free than the lovely L. anceps Stella, which made an immense bulb; and as it did not produce a flower sheath has unfortunately spent its latent force in another new growth, which will place its flowering period at a still remote date. The way to flower these beautiful white forms of L. anceps is to keep the plants near the glass, and when it is seen that the growth is not to be a flowering one, keep the plant dry and in a rather cool place until it has had a good rest. The true L. furfuracea grows very freely here, but the plants are placed close to the glass.

The moth orchids do well without any special provision being made for their wants, Phalænopsis violacea is showing a spike, the plant grows like a weed. P. grandiflora aurea is also doing admirably. There are three large plants of P. grandiflora doing splendidly and showing strong spikes, which will continue to produce their lovely white flowers for months. P. amabilis is also doing well, so is the very distinct species P. Esmeralda; it is a sturdy specimen but has not yet flowered. The phalænopsids are kept here only moderately damp, and they get a free supply of fresh air daily; but all of them are kept well out of any direct draught.

Mr. Horner thinks that Oncidium Jonesianum is a slow thing; so do I; and have not much hope of keeping it in good health. In teak baskets it is doing fairly well at Low-fields. The plan pursued is to fix the plants to a block, the blocks to be placed in teak baskets with a light packing of peat and sphagnum.

The Stanhopeas are great favourites, and have again bloomed freely this year; they are certainly very extraordinary productions of the vegetable kingdom; the flowers are handsome, and many persons like the heavy perfume which pervades the house when the flowers expand.

There is a fine group of plants of the Cattleya labiata group. C. aurea and C. Dowiana grow well, and the recent C. aurea chrysotoxa is making good growth with the recently introduced C. Warocqueana. which last has proved itself to be a very fine cattleya. Two forms of it from Mons. Lucien Linden were certificated at a recent meeting of the Orchid Committee of the Royal Horticultural Society.

Dendrobium Brymerianum (true), made growths two feet six inches in length last year. This year they are three feet six inches; the old growths studded with flower buds. Mr. Horner has failed to flower D. Hookerianum (chrysotis). It has made growth five feet in length, and as the plants have been grown near the glass, they should flower in the autumn after a season of rest. I have not found any difficulty in getting it to produce its rich yellow flowers freely at the ends of the long stems.

The good old Odontoglossum grande is flowering freely, and is an ever welcome favourite. The odontoglossums of other species will follow up all through the winter and spring months, O. nebulosum, O. madrense, O. Cervantesi, and others brighten the dull dreary winter months. The wants of each plant are carefully considered, and some pains are taken with the watering, and to maintain the right degree of moisture in the atmosphere. But a good deal depends on Mr. Horner's method of covering the glass roof on cold nights with thick canvas or sheeting to prevent radiation and retain an uniform temperature.

Mrs. Horner has kept careful account of the species and varieties of orchids in flower in the garden month by month since the collection was first formed, and for what it is, a comparatively small collection, the list is worthy of a most careful consideration. We know that July, August, and September are not the months for being prolific in orchid bloom, but in the Low-fields collection there were in July sixty-six species, and ninety-three plants; in August fifty-three species and sixty-five plants; in September fifty-one species and fifty-nine plants.

Plants in Bloom.—Low-fields Orchid Score, 1890.

July.

Aerides odoratum	D. Pierardi	Oncid. Papilio
Aerides expansum	D. infundibulum	O. pyramidale
A. Robinsonianum	D. Bensoniæ	Odont. Schlieperianum
Brassia verrucosa	D. Dearei	Palumbina candida
Bee orchis	Epid. cochleatum	Pholidota pallida
Acineta Barkeri	E. Parkinsonianum	Phalænopsis amabilis
Anguloa Clowesi	E. species	P. Luddemaniana
Catasetum sp.	Fly orchis	P. Sanderiana
Cattleya Eldorado	Eria pubescens	Promenæa citrina
C. Mossiæ	Lycaste aromatica	P. stapeloides
C. Forbesi	L. Schilleriana	Staticaria Hadroni
Cyp. barbatum	Maxillaria venusta	Stanhopea tigrina
C. Hookeræ	M. tenuifolia	S. inodora
C. spectabilis	Mormodes luxatum	Saccolabium cæleste
C. bellatulum	Masdevallia chimera	L. præmorsum
C. Curtisi	M. Ionocharis	Thunia Marshalli
Cœlogyne speciosa	Mesospinidium sanguineum	Vanda species
C. Massangeana	Odont. nebulosum	V. Denisoniana
Dend. Jamesianum	O. citrosmum	Ornithocephalus grandiflorum
D. suavissimum	O. Alexandræ	Odont. vexill. rubrum
D. cucumeratum	O. Pescatorei	Vanda teres Andersoni
D. chrysanthum	O. vexillarium	66 species, 93 plants.
D. Dalhousianum		

August.

Aerides odoratum	D. infundibulum	O. vexillarium rubrum
A. expansum	D. Bensoni	Oncid. Papilio
A. Sanderiana	D. Pierardi	O. pyramidale
Anguloa Clowesi	Eria pubescens	O unbigineum
Acineta Barkeri	Epid. ciliare	Ornithocephalus grandiflorus
Bee orchis	E. odoratum	Phal. Sanderiana
Cyp. barbatum	Gongora atro-purpureum	P. Luddemaniana
C. Hookeri	Lælia Dayana	P. amabilis
C. Curtisi	Lycaste Schilleriana	P. grandiflora
C. Sedeni	Maxillaria venusta	Plomenea stapeloides
Cattleya Forbesi	M. tenuifolia	Palumbina candida
C. Eldorado	M. species	Stanhopea oculata
C. Gaskelliana	Masdevallia chimera	Saccolabium præmorsum
C. Harrisoni	M. Ionocharis	Vanda teres Andersoni
C. crispa	Mesospinidium vulcanicum	Zygopetalum caulescens
Cœlogyne speciosa	Odont. bictonense	Epid. cochleatum
C. Massangeana	O. Schlieperianum	53 species, 65 plants
Dend. Dearei	O. Pescatorei	
D. Dalhousianum		

September.

Aerides Sanderiana	Epid. ciliare	O. Pescatorei
Cattleya crispa	E. dichromum	Oncid. bicallosum
C. Eldorado	E. odoratum	O. incurvum
C. Gaskelliana	E. Brassavolæ	O. glabelliferum
C. Harrisoniæ	Angræcum Ellisi	O. Papilio
Cyp. Hookeræ	Lælia Dayana	Pilumna fragrans
C. Sedeni	L. monophylla	P. nobilis
C. Roezli	Miltonia spectabilis	Phal. grandiflora
C. Spicerianum	Mesospinidium vulcanium	P. amabilis
C. Lawrencianum	Maxillaria sp.	P. Luddemaniana
C. barbatum	M. nigrescens	Rodriguezia planifolia
Cycnoches maculatum	Masdevallia chimera	Stanhopea Wardianum
Cœlogyne speciosa	M. Ionocharis	Trichopilia speculum
C. Massangeana	Mormodes sp.	Zygopetalum caulescens
Dend. Dearei	M. pardinum	Ornithocephalus grandiflorus
D. infundibulum	Odont. Rossi	Stanhopea oculata
D. Dalhouseianum	O. bictonense	51 species, 59 plants.
D. Pierardi		

Sutton's Champion Swede.—Lord Wantage has this year grown on his Home Farm at Ardington, Berks, a crop of Sutton's Champion Swede, weighing just upon 40 tons per acre. The individual roots are of excellent shape and quality, and were awarded the Champion Prize given by Messrs. Proctor and Rylands. Some of them will be exhibited on Messrs. Sutton and Sons' stand at the Smithfield Club Cattle Show next month.

THE LATE MR. HIBBERD.

WE have received a large number of letters with reference to the death of Mr. Hibberd, and in all the most profound regret is expressed at the great loss sustained by horticulturists. We select the following for publication :—

IN MEMORIAM.

How busy is the reaper, Death !
And now he's laid his hand
On one whose name and zeal and fame
Resound through all the land.

One who has helped and taught and led
So many in his day
To utilize and benefit
And beautify their way.

Remembrances of him, we know,
Will evermore be found,
Where trees, and fruits, and flowers
Abundantly abound.

The good begun by him will flow
For ages yet ahead,
An ever-widening stream, to show
He speaketh though he's dead.

God grant he may renew his youth,
And rise again to see
The treasures that entranced him so
In immortality.

Glenfield, November 17, 1890. VICCARS COLLYER.

We shall all be the poorer for the loss of this genial friend, and gifted comrade in the gentle art. Leaving to others to estimate or measure up, if they can, his distinguished services to horticulture, I would pay grateful tribute to his social and philanthropic labours on behalf of gardeners. To see, hear, converse with Shirley Hibberd, was like a draught of cold water to many hungry thirsty provincial gardeners. He had also in a special degree the rare merit of clothing the dry bones of horticulture, theory and practice, with an alluring light and a cultured sweetness that won and kept for him a wide circle of readers and hearers to the last. Peace be to his memory ! and may his words and deeds live after him in a race of young botanists, gardeners and writers whose works shall show that they have sat at the feet and learned of Shirley Hibberd.

Nov. 17th, 1890. D. T. FISH.

I have read the account of the death of Mr. Shirley Hibberd in the *Daily Graphic* of Monday, November 17, with the deepest sorrow and the keenest, truest sympathy for his only and much-loved daughter.

My acquaintance began with Mr. Hibberd about the year 1860, and, by his invitation, I called upon him at Lordship Terrace, Stoke Newington, in the year 1862, when I came up to London to the Great Exhibition of that year at South Kensington. I was staying at that time with Mr. J. A. Summers, the first manager of Messrs. James Carter and Co.'s Nursery at Forest Hill. Mr. Summers was sometimes facetiously called "Spergula Summers" from his advocacy of, and experiments with Spergula pilifera as a lawn plant to supersede grass on small lawns, to do away with mowing. Mr. Hibberd, anxious that I should have no difficulty in finding him on coming up from Forest Hill, sent me his card with the omnibus and railway connection with Stoke Newington. (By the way, only last week my wife, on turning out one of my drawers, found the identical card. I enclose it to show the *bona fides* of the man).

I desired to consult with Mr. Hibberd as to a step in life which I, as a young man, had thought much of. This step would have altered the whole course of my professional career. I need not say what it was, but I felt from my correspondence with him that I could rely upon his judgment, and so I gladly accepted his kind invitation to call upon him. I did so, and he treated me as if I was an old and a personal friend. He showed me the freest and most generous hospitality, and spent an hour of his most precious time in showing me, in the house and garden, everything that he thought would interest me, and then we talked over my difficulty. He entered into every detail of it with that thoroughness of mind he brought to bear upon everything he took up, and then he gave me the benefit of his most practical advice, advice which ran counter rather to my own inclinations, but which commended itself to my judgment by its reasonableness and broad common sense. I acted upon it, and have been grateful to him for it from that day to this. For some years we did not keep up so close a private correspondence, though I occasionally heard from him, and one of my most treasured books (more treasured than ever now) is a copy of "Brambles and Bay Leaves," with my name written in, "from his sincere friend, the author." This was accompanied by one of his pleasant and chatty letters, and contained a photo of himself.

The last letter I had from him, not so very long ago, was in the same kindly, humorous spirit, and I write now to record a remote country gardener's opinion of Mr. Hibberd's character. He was, as I knew him, a high-minded Christian gentleman, and that is the highest type of a man. What he has been to the gardening world can scarcely be estimated ; certain it is that there was nothing brought forward to benefit gardening and gardeners but what had his hearty and most efficient support. I must leave others to bring out the other points of his character. N. H. POWNALL.

Lenton Hall Gardens, Nottingham.

Numerous and heavy have been the losses suffered at the hand of death during the present year, and that of Mr. Shirley Hibberd is not the least. Truly may it be said of him, "he died in harness," and in the full enjoyment of his unique powers of observation and descriptive, or characteristic eloquence, as the recent Chrysanthemum centenary number, his lecture at the conference, and speech at the dinner in connection with the Centenary festival of the National Chrysanthemum Society testify. His absence from the front ranks of horticulturists and the loss of his fertile pen will long be felt. Only those who have known him intimately can fully realize the great loss sustained, for with his charming manner and the large-hearted vein of humorous sincerity and goodfellowship pervading his private letters, one of which is beside me, the ink scarcely dry, he had endeared himself to all who came into contact with him. Deepest sorrow and respect will long be given to his memory by all horticulturists far and wide.

WILLIAM EARLEY.

LIFTING THE ROOTS OF FRUIT TREES.

IN every direction there are indications that fruit culture in the open air is receiving increased attention. When I was at Longford Castle the second week in October, Mr. Ward had already lifted several very large fan-trained fruit trees consisting of peaches, pears, plums, and cherries. In several cases he had changed the position of the trees. Where he had not done so they had been carefully lifted and replanted again with some fresh soil about the roots. It is Mr. Ward's intention to lift the whole of the trees in the garden; but of course they will not be all dealt with in a year or two, the work will probably extend over four or five years. An inexperienced person would no doubt think Mr. Ward was a bold man to move such large trees so early in the autumn, but I think he is to be commended for showing what can be done in dealing with trees of such dimensions. There is no doubt he is right when he says it is better to transplant large trees before the leaves have all fallen than after, as the ground being warmer, and a certain amount of activity going on in different parts of the tree, the roots make an effort to get established in the soil again much quicker in the autumn than in the spring.

A few days after I was at Longford Castle I called upon Mr. James, at Sandhill Park. Here also I found tree lifting had been going on for a fortnight previous, the subjects dealt with being apples, pears, and plums, all trained to walls in the fan form. The trees at the time they were lifted were in green leaf. Some of them had apparently suffered more than others, as the foliage in some cases was nearly black, yet still adhering, while others had not felt the disturbance so much. I examined the trees that had been lifted very carefully, and only in one instance did I find the growth any the worse for it. This was the case of a plum, the youngest shoots of which were certainly somewhat shrivelled, but not seriously so.

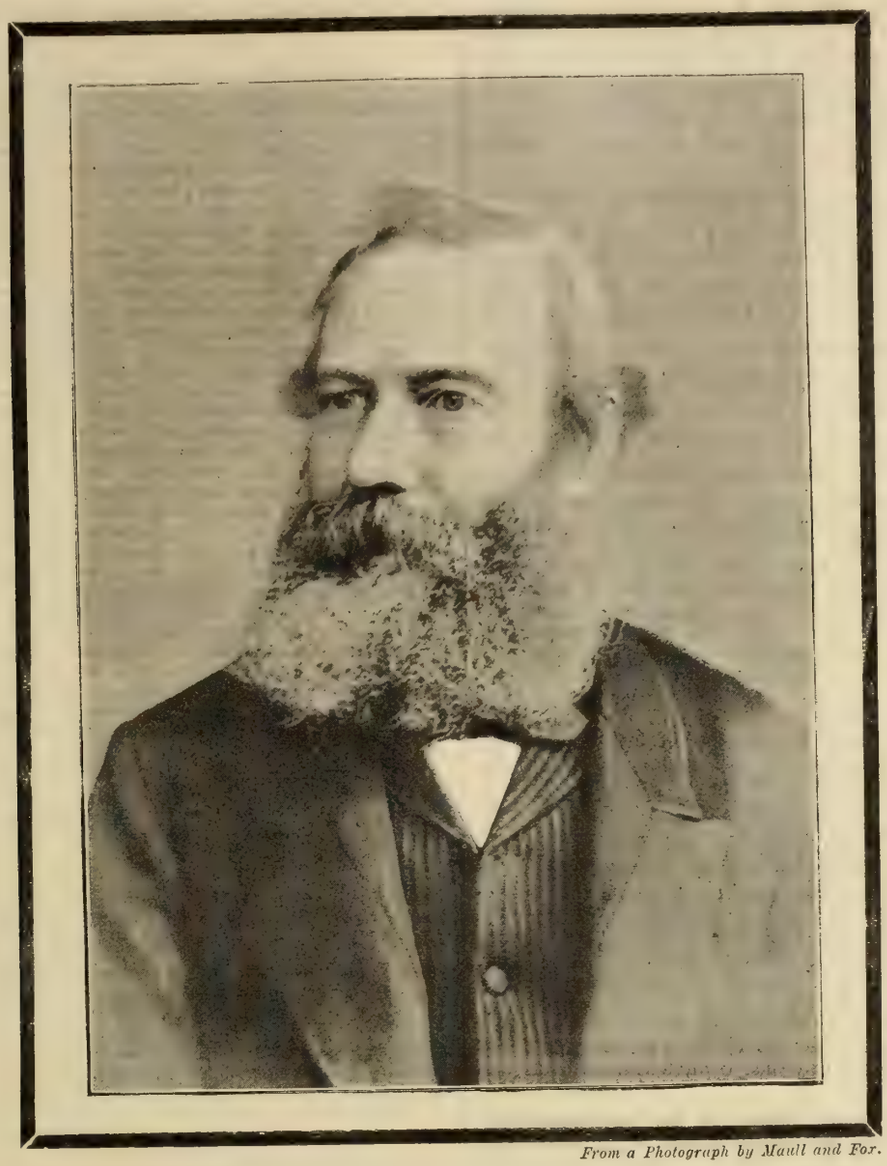
It is proper that I should remark here that in both the cases I have referred to the trees were lifted because they had become unfruitful. Acting on previous experience, both cultivators resorted to lifting the roots of the barren trees as the only way of making them fruitful. Mr. Ward assured me that he often got more fruit the first year after lifting than he had got from the same trees for three or four years previous.

To show how knowledge is extending in the direction of fruit culture, and that people are beginning to find out that it is better to prune the roots of a fruit tree than to be always hacking away at the branches, I should like to mention that I visited an amateur's garden a day or two ago, when I found the peach trees on the walls with their leaves flagging. On my inquiring the cause of it, the owner told me that the man who came two days a-week to attend to the garden, had the day before root pruned the peach trees because they had made so much growth during the summer. I do not know when I have seen so much sound judgment used in the management of fruit trees by a jobbing gardener. Whoever he may be, he deserves to be commended for the skill he brought to bear upon his work. The average jobbing gardener is, as a rule, an enemy to fruit trees, as he likes to be always cutting away at the branches, while the roots are left uncared for. But here it will be seen I have found an exceptional one, and I gladly record the fact. J. C. C.

EVERGREEN CLIMBERS.

THE question, Which is the best evergreen climber? is frequently asked. It will be understood, of course, that the ivy is excluded from the inquiry. The answer from many different sources at different times has been that the Fiery Thorn (*Cratægus pyracantha*) is the best. I am not going to dispute that statement here, or, for that matter, anywhere else. What I want to do is to direct attention to another evergreen, which if not strictly a climber, is a very good substitute. I allude to *Azara microphylla*. This is a comparatively new plant as compared to many of our well-known hardy evergreens. It is none the better for that I know, but most likely that is the reason why it is not better known. As regards its merits as a climber, I planted a small plant against a wall four feet high with a west aspect in quite a cold, sunless corner, only two years ago, and it has already grown two feet above it. During the past summer it has made shoots three feet long, and in two years' time I do not doubt it would reach to a height of ten feet or twelve feet if the wall was high enough to protect it. This plant holds its foliage all the winter with a wonderful persistency, although it has not a very hardy look about it. The growth is almost fern-like in appearance, as the leaves are small and thickly set on the branches. In colour they are dark green. My plant, I am reluctant to say, gets pretty well cut about during the winter, because those who attend to the floral decorations of the house have found out that it furnishes excellent greenery to associate with cut flowers. The young spray shoots have a certain amount of elegance in their bearing, but its most valuable feature is in this respect, that the small, glossy foliage is very enduring. Neither heat nor dust injures them for several days. L. L.

SALE OF THE LATE MR. ENOCH HARVEY'S COLLECTION OF ORCHIDS by Messrs. Protheroe and Morris a few days since created much interest. There was a large attendance of buyers, and the prices realized were highly satisfactory. The more important lots included Cypripedium tesselatum porphyreum, which passed under the hammer for 73 guineas; C. Sanderianum, 26 guineas; C. Morganiæ Burfordiense, 51 guineas; Lælia elegans Blenheimense, 50 guineas; L. anceps Dawsoni, 30 guineas; L. anceps Amesiana, 32 guineas; Cœlogyne cristata alba, 30 guineas; and Vanda cærulea, 30 guineas.



From a Photograph by Maull and Fox.

DEATH OF MR. SHIRLEY HIBBERD, F.R.H.S.

It is our inexpressibly painful duty to record the fact that Mr. Shirley Hibberd, who for nearly thirty years has been editor of the Gardeners' Magazine, has passed away. His death, although not perhaps a great surprise to those conversant with the state of his health for some time past, has come as a great shock, and those who have been associated with him in the work of the Magazine are filled with the sense of the loss they have sustained in having their able chief taken from them. For some years Mr. Hibberd's health has been such as to render it necessary that he should expose himself as little as possible to atmospheric influences during periods of cold and fog, and it was contrary to the strongly-expressed wishes of his more intimate friends that he took part in the Conference and banquet held in conjunction with the centenary festival of the National Chrysanthemum Society. On Thursday evening he was very unwell on reaching St. Stephen's Hall, in which the banquet was held, and in consequence he had to leave very soon after he had proposed the toast to "The Eternal Glory of the Golden Flower," as reported in these pages last week. On Friday he was very ill, but during the following day appeared rather better. That he was not so was proved by the results. Late on Saturday night there was a decided change, which gave rise to grave apprehensions, and early on Sunday morning he became unconscious, and shortly before seven o'clock passed away apparently without pain.

Mr. Hibberd, who was the son of a retired sea captain, was born in the parish of St. Dunstan's, Stepney, in 1825, and at the age of fourteen he entered a bookseller's shop in Stepney with a view to learning the trade, the death of his father having compelled him to abandon the idea of entering the medical profession, as was originally intended. Having but little taste for the bookselling trade, Mr. Hibberd soon turned his attention to literary pursuits, and at a very early age joined a small band of social reformers, and was a frequent contributor to the various monthly serials published under their direction for the advocacy of the principles of temperance and vegetarianism. Before he had attained his twenty-fifth year he had assumed the responsibilities of the editorship of a weekly newspaper, and was the author of a budget of delightful essays on rural life, published under the title of "Brambles and Bay Leaves," which soon attained a high degree of popularity.

Having married and taken up his abode in Pentonville, he soon turned his attention to the possibilities of urban horticulture, and the results of his experiments and observation were embodied in the "Town Garden," published in 1855, which, although unpretentious, had an important influence in extending and improving the cultivation of plants amid the bricks and mortar. His love for country life and natural objects induced him to move, as soon as circumstances permitted, from Pentonville to Stoke Newington, then, comparatively speaking, a rural village. Here he took full advantage of his increased opportunities, and materially extended his experiments in the embellishment of the house and its surroundings with natural history objects. The results of these observations and experiments were given in "Rustic Adornments," which reached a third edition; and the "Book of the Aquarium" and the "Fern Garden," both of which also passed through several editions. He first appeared as the editor of a horticultural journal in 1858. In January of that year the *Floral World* was published, with Mr. Hibberd as editor; and as that monthly appealed to a wide circle of readers, who had previously received but little attention from horticultural writers, it soon attained a wide circulation. This serial continued to increase in popularity until 1875, when Mr. Hibberd retired from its management. Further responsibilities as a horticultural journalist were assumed three years after the *Floral World* had been started, and on August 12, 1861, Mr. Hibberd commenced his connection with the Gardeners' Magazine, which continued until the day of his death. Of the ability with which his editorial duties were performed it is not necessary to speak beyond saying that under his management the whole character of the paper was changed, and that the circulation

increased by leaps and bounds, and that it quickly took a foremost position amongst contemporary horticultural journals, a position which it still maintains In addition to the books mentioned, Mr. Hibberd was the author of "Beautiful-leaved Plants," Clever Dogs and Horses," "The Ivy," "Familiar Garden Flowers," "Field Flowers," the "Rose Book," "Greenhouse and Conservatory," "Kitchen Garden," and the "Flower Garden," a series of useful works written in the interests of amateurs.

Whilst residing at Lordship Terrace, Stoke Newington, Mr. Hibberd developed the system of garden decoration known as the "plunging system," and carried it out with much success for a period of between ten and twelve years. Under this system a limited area may be maintained in the most attractive condition throughout the year, the plants being chiefly grown in pots and grouped in the beds and borders, and removed and replaced as becomes necessary. In carrying out this system, Mr. Hibberd had of necessity to turn his attention to hollies and ivies and to berry-bearing plants generally. At one of the meetings of the Central Horticultural Society he read a paper on the plunging system, and at the same time exhibited a remarkable collection of berry-bearing plants which had been grown in pots for the garniture of the garden during the winter season. Amongst other things were fruiting plants of the aucuba, which attracted much attention from the fact of their being some of the first examples in fruit that had been presented to public notice. Also during his residence at Stoke Newington Mr. Hibberd started several experimental gardens, one of which, at Park Street, was devoted to trials of potatos, peas, lettuces, and other vegetables, and various classes of budding plants. Another, occupying the site of Mr. Oubridge's nursery, was devoted to fruit trees. Here the various systems of pruning and training of fruit trees then in favour were put to a practical test, and the observations then made formed to a material extent the foundation of his famous lecture on fruit culture, given in 1875 before the Society of Arts. The rapid extension of building operations at Stoke Newington deprived Mr. Hibberd of his experimental gardens, and anxious to escape from the environment of bricks and mortar with which he was being surrounded he moved from Lordship Terrace, and took up his abode in a rural spot between Tottenham and Muswell Hill, to which access was alone obtained by a private road. Here the increased space at command enabled him to further extend his experiments in fruit and vegetable culture, and it was in the Hermitage Gardens that the trees employed to illustrate the lecture given before the Society of Arts were grown. Here also were made a series of experiments in the culture of fruit trees against "reversible walls." The idea, as in the case of growing potatos on tiles, to which he devoted considerable attention, was a good one, but the difficulties in giving practical expression to it were so great that it was necessary to abandon it. But he made no change in his views on the question of fruit trees as expressed in the lecture referred to, which has had such an influence upon fruit culture that cannot well be over-estimated.

That Mr. Hibberd took an active interest in the various societies carried on for the promotion of horticulture and floriculture, and the general welfare of gardeners is well known. He was one of the prime movers in the foundation of that excellent institution, the United Horticultural Benefit and Provident Society. He was a strong supporter of the Gardeners' Royal Benevolent Institution, and took a prominent part in the formation of the Gardeners' Orphan Fund. Of the last-named charity he was a vice-president and presided at the anniversary festival held in July last. For many years he was a Fellow of the Royal Horticultural Society, and a consistent advocate of what might be aptly designated the horticultural policy. As a member of the Floral Committee, the Chiswick Garden Committee, and of the several Conference Committees of the R.H.S., Mr. Hibberd did good service. Mr. Hibberd was one of the promoters of the series of International Potato Exhibitions which, commenced in 1875, exercised a healthy influence upon potato culture. He was the "discoverer" of Magnum Bonum, and at the end of last month he was consulted by the Government on the potato disease in Ireland. It is well known that Mr. Hibberd was one of the members of the committee by which the recent fruit show at the Guildhall was carried out. With others of the leading members of that committee, he had the honorary freedom and livery of the Fruiterers' Company conferred upon him, but on the ground of his time being so fully occupied, and the fear that his acceptance of the freedom would in some degree interfere with his literary labours, he declined the honour. The National Chrysanthemum Society and the British Fruit Growers' Association had his sympathy and support in carrying on their work, and he was a vice-president of the last-named body. It may be mentioned as a matter of some interest, that Mr. Hibberd was at the time of his death, chairman of the Williams Memorial Fund, to which he devoted a large share of his attention.

Mr. Hibberd, who was married twice, lost his first wife in March, 1880, and the second died in 1885, within twelvemonths of his marriage, leaving him with an infant daughter, who still lives to mourn his irreparable loss. The funeral will take place at Abney Park Cemetery, Stoke Newington, to-day (Saturday), at three p m., and the first part of the service will be said in All Saints' Church, Aden Grove, Stoke Newington.

The year now so rapidly drawing to a close will be memorable for the comparatively large number of distinguished horticulturists that have been taken from us. Early in the year we had to announce the death of that able gardener, Mr. W. Wildsmith; then followed the deaths of Mr. George Deal, Mr. B. S. Williams, Mr. J. James, and Mr. William Holmes.

CHRYSANTHEMUMS FOR EXHIBITION

By Mr. C. Gibson, Morden Park, Surrey.

Read at the Centenary Conference of the National Chrysanthemum Society, November 13, 1890.

One of the first things an intending exhibitor has to do is to ascertain how many plants can be properly housed, and also how many can be well grown through the summer. Better results will be secured from 300 well attended plants than from double that number partially neglected. Selection of varieties is another important matter; but with the valuable additions we have of recent years it is much more easy to obtain a good selection than formerly. The beautiful new Japanese seedlings have so enriched the collections that it makes us wish for new incurved seedlings besides the valuable sports we have in that class. Perhaps the most convenient way to ascertain which are the best varieties for exhibition is to take the National Chrysanthemum Society's catalogue for a guide, and then note the varieties in the winning stands at the exhibitions. Good novelties possess much interest, and should be added when possible. Directly the exhibitions are over, when the varieties seen are fresh in the memory, compare the list for the following season, marking against each variety the number of plants you intend to grow. Additional cuttings should be inserted to allow for losses and weak plants. It is much better to have a choice of plants in the spring, and be able to reject any that are weak or not quite satisfactory. The strong competition of the present time should induce the exhibitor to grow specially for the classes in which he has a chance to win. It is much better for him and for the exhibition too. A grower who has a small number of plants stands little chance of winning a prize in a large class; but by growing a few plants each of the best varieties, and entering the smaller classes, he is much more likely to be successful. Large exhibitors, too, are more successful in the end by not attempting to do too much.

Having determined the numbers and varieties to be grown, and so commenced for the season, make due provision to protect the plants from checks of all kinds. The chrysanthemum is subject to so many checks that constant attention is required throughout the year. Injury arises through suddenly exposing the plants to cold draughts, especially if struck in heat, by allowing them to become root-bound before repotting, and by the soil becoming dry at any period of their growth, or by excessive use of chemical manures. I will detail a few points of the system of culture I have followed with a fair amount of success.

Cuttings.

These are inserted at the end of November and the beginning of December, and are placed in a cold pit. I have inserted cuttings much later with good results, but it is convenient to have them early, and to be able to clear out the large pots. I prefer strong and sturdy cuttings about three inches long, taken off level with the soil in the pot in preference to those dug out of the soil or stem cuttings, although stem cuttings are used occasionally when others are not to be had. Small sixty-size pots are used, placing one cutting in each pot. A crock is placed over the hole of each pot, and the pot is filled with soil, consisting of half loam, half leafmould, and a fair amount of sand. The base of the cutting resting on a little silver sand, the soil is made moderately firm, and is then ready for the pit. Any good varieties that have deteriorated for more than a season are obtained from a fresh source, where they can be depended on being true to name. A change of stock is always desirable where good exchanges can be made. The cuttings are placed in a cold pit, or with only such heat as is desired from a melon bed made the previous spring, and are arranged a few inches from the glass. The cold pit has an inconvenience in the covering it requires, but I think the cuttings are improved in constitution by the cool treatment, though it would be injurious to cuttings taken out of heat to place them in a cold pit. Where large blooms are grown it is necessary to use fire heat for two or three weeks to protect them from damp, and in my opinion a cool after treatment is beneficial to them when the cuttings are hardy and vigorous. As the cuttings are struck we remove them to an adjoining pit, where they are gradually inured to air, and when well rooted they are ready for

Potting.

The strong-growing varieties are placed in six-inch pots, the weak growers in four-inch pots. The following I consider weak varieties: In the incurved, Empress Eugenie, Barbara, Mrs. Heale, Mrs. W. Shipman, Lady Hardinge, Nil Desperandum, Princess Beatrice, Cherub, Princess of Wales, Miss M. A. Haggas, Miss Violet Tomlin, and Mrs. S. Coleman; in the Japanese, Meg Merrilies, Ralph Brocklebank, Japonais, Madame John Laing, L'Adorable, Criterion, and Jeanne Delaux. The shift into six-inch pots is a large one, but it succeeds well with me. The plants are well watered before potting, and the soil being in a moist condition they do not require water for some time, and the roots quickly take to the new soil. The pit is kept rather close for a few days; the plants are damped over the foliage occasionally on bright mornings. When the soil is becoming rather dry they are given one good watering, after which the plants are separately watered as required. There is danger of the weak varieties not rooting quickly into the six-inch pots, the soil becoming heavy and possibly dry, and that is why the smaller pots are used, but they are transferred into the six-inch pots as soon as they are fairly rooted, and not allowed to become root-bound.

The soil at this potting consists of two-thirds loam, one-third of leafmould, a free addition of sand, and a six-inch potful of bone dust to each two bushels of soil. The pots are carefully crocked, and a little rough turf placed over the crocks. As the plants are established in their pots they are gradually hardened, until the lights are left off night and day. The final shift is given from the last week in May until the second week in June, placing the strongest growers into ten-inch pots, and the others in nine-inch pots. The soil is made up of two parts loam, medium for stiffness, half part of well decayed cow manure, half part leaf-mould from oak leaves, a liberal amount of sand, and a six-inch pot of bone dust to every barrowful of soil. A little soot and wood ashes is added, the whole well mixed together and placed under cover for used.

No detail in connection with the growth of this plant is considered of more importance than draining the pots, and it is quite equal in importance to the composition of the soil. Well crocked pots allow all superfluous water to escape; the free passage of air keeps the soil sweet, and assists the formation of healthy roots, capable of assimilating liberal supplies of liquid manure at a later stage. The soil is well rammed as potting proceeds, and the pots are then wheeled out to a sheltered position open to the sun, but sheltered from high winds. They are placed in rows eight feet apart, to allow plenty of sun and air to reach them to assist in ripening the wood, and they are arranged on boards to prevent worms entering

Manures.

Many artificial manures are recommended for application. For the use of amateurs, and where the use of natural manures is objectionable, they afford valuable aid when used with care. For those unable to get a good supply of natural manures, and for application during a long spell of wet weather, they are beneficial. I have had the best results from natural manures obtained from a cesspool with the drainings from cowhouses and piggeries, to which is added a little soot. After extended practice I am convinced a continued excessive use of artificial manures is one of the causes of damping in the lower florets of light coloured blooms.

Taking the Bud.

This is a mystery to a beginner, and requires a good deal of judgment in the experienced. It is difficult to specify exact dates, because varieties differ so much and localities also. Light or clay soils, hill and vale, as well as the part of the country the exhibitor resides in, all affect the time and manner of taking the bud for a given date. Seasons, too, vary, so that the course one season might have to be altered the next. During the present season many buds showed early in July. These were run on to terminals, were taken the second week in August, and have given fine blooms, where another season, with the terminals later, they would be useless for exhibition. The other buds were taken earlier than usual, but the cool weather we had in August kept them in check, and the blooms were somewhat later than usual. As a rule, I commence taking the bud the second week in August, and have generally finished the first week in September. The finest blooms for exhibition are generally obtained from crown buds taken the third week in August, but in the case of Boule d'Or the crown buds can be taken at the end of July, because they require so long a time to expand properly. Terminals run on after the first week in August do not attain exhibition size, consequently may as well be taken for early blooms. Although some of them may be too early for exhibition, a few good blooms are always acceptable for other purposes.

A few additional words will, I hope, enable those unacquainted with the subject to understand what "taking the bud" really means. If the plants have been grown as advised they will be from eighteen inches to three feet in height at the end of May, according to the varieties. At the end of May and early in June they will be making their first "break," that is, at the top of the plant a bud is formed which stops that growth, and three shoots form. These start away together and make a long or short growth according to the varieties. When the growth of these shoots is completed by the formation of another bud, it has to be decided whether this bud shall be reserved, or the plant be allowed to make another growth. This demands an acquaintance with the peculiarities of the varieties. If it is decided to reserve the bud, the three shoots around the flower bud are removed as soon as it can be done with safety, leaving only the flower bud. This is called "taking the crown bud." If it is decided that taking this crown bud would be too early or likely to cause deformed flowers, the flower bud is removed with two of the shoots, and the best shoot allowed to make another growth. At the apex of this other buds are formed, the best is preserved, the others are all carefully removed, and this is called "taking the terminal bud." I have found the buds of most incurved varieties to come from the plants not stopped. In the natural break the shoots start evenly together, but the condition of the wood as to firmness influences the artificial break. I once stopped half my plants of incurved varieties to try the system, but the result was so convincing it was never repeated.

Varieties run on to the terminal bud in a sunny position are Barbara, Refulgens, Mabel Ward, Eve, and the Teck family of the incurved, and Grandiflorum of the Japanese. Other terminals, taken in a position not quite so hot are Comte de Germiny, Stanstead Surprise, Mdlle. Lacroix, Etoile de Lyon, Lady Lawrence, Carew Underwood, and Baronnede Prailly of the Japanese, and Jeanne d'Arc incurved. L'Adorable and M. Tarin making short breaks have been taken on the third break. Japanese stand stopping much better than incurved. Before we had better varieties Elaine, Bertier Rendatler, and Thunberg were obtained by stopping in April. Edwin Molyneux and Mrs. F. Jameson amongst the newer varieties have come well from plants that have been stopped. In these cases early blooms lose their freshness, and terminals lack size and substance, but by stopping them they are obtained the right time for exhibition.

Housing the Plants.

Attend to this in good time, removing under cover the earliest as soon as they show their florets, and following up the others every alternate day until the stock is housed. Large numbers of early blooms damp through the large buds becoming saturated before being housed. The first week in October is the time most of the plants are housed, unless the weather is threatening, when they are housed at once, so as not to be taken by surprise.

Keeping the Blooms.

This is sure to engage the attention of exhibitors. I have tried various ways, but have found no plan better than allowing them to remain on the plants. The early ones are placed in one house, or at the end of a house by themselves, the temperature cool and the house airy, with enough warmth in the pipes to evaporate undue moisture. When the blooms are nearly developed a piece of tiffany is fixed over the glass to prevent the cold and moist air injuriously affecting them by night and the sun injuring them by day. Blooms kept in this manner have often surprised me in the length of time they have kept for exhibition.

Damping.

The early buds are most subject to "damping." Heavy winds and rains battering the large buds before they are housed is often the cause. Continued foggy weather and too much artificial manure cause the lower florets to decay quickly. Low night temperature with much moisture followed by bright sunny days result in hundreds of blooms being lost in a few hours. The best preventive is to have a small fire constantly, except on sunny days, with ventilation more or less at all times except during heavy fog. Where the temperature is not allowed to fluctuate too much, the blooms keep much cleaner and preserve their freshness for a long time. Some varieties are more subject to damp than others, and should be accorded the driest position in the house. Empress of India, Queen of England, Lady Hardinge, Mrs. W. Shipman, Mdlle. Lacroix, Fernand Feral, and Madame C. Audiguier are with me the most subject to damp. Prince Alfred and Lord Wolseley should also be placed in as dry a position as possible, being early to bloom, and likely to go quickly at the lower part of the bloom.

Insects and Diseases.

Numerous insects attack the plants in various stages of their growth, but they can be generally overcome with timely attention. They are subject to green fly in all stages of their growth, but these are readily destroyed by dusting with tobacco powder. Immediately the plants are housed they should be well fumigated to destroy any aphides secreting themselves around the buds. Blooms stand fumigation so well I have never found any injury arise from it. A maggot attacks the plants in May. It is readily detected by the manner in which it webs the top leaves of the plant together. They should be searched for occasionally and destroyed. Earwigs are troublesome, especially among the blooms. They should be trapped through the summer by bean stalks cut in length and placed among the plants, or inverted pots with a little dry moss. The cuckoo spit insect has been unusually prevalent this season, and destroyed many buds; it nips the stem and causes the bloom to heal over and cease swelling. The only plan I know is to catch them, which is sometimes a troublesome matter, as they are so lively, but their numbers are reduced. When mildew attacks the foliage sulphur should be applied, and this immediately arrests it.

Preparing for the Shows.

Where it is intended to exhibit the schedules of the societies must be carefully read and noted, otherwise mistakes readily occur through not meeting the conditions, and lead to disqualification. It is not desirable to send the entries until nearly the time for closing, because many losses of the blooms may occur from various causes, and the exhibitor may be unable to compete in the classes he intended. No more classes should be entered than the exhibitor has every reason to believe he can compete in. I knew one exhibitor who used to enter very early, and in more classes than he could fill, and boast of his number of entries. All this entails work on the secretaries to no purpose, and leads the society into additional expense in providing accommodation. Managers of exhibitions should fix their close of entries as late as is consistent with the proper working of the show. Exhibitors are anxious to enter certain classes, and are keeping their blooms for it, when perhaps a change to wet and foggy weather ruins a number of the blooms, and if no margin for losses has been allowed for, nothing can be done but cancel some of the entries. Where this does occur it should become more the general rule to give notice to the secretaries the day before the show, or perhaps a clause in the regulations to the effect that a fine would be imposed if notice was not sent would mend matters in the entry for competition.

The chrysanthemum has given those with an inventive turn of mind scope for using their abilities in discovering aids to the best manner of setting up for exhibition. Many forms of cups and tubes have been brought out to assist the exhibitor to raise his blooms and set them up to best advantage. Holders for tickets with the names of the blooms at the back of the stands seem to be on their trial now. The large varieties of Japanese blooms leave no space for the name to be seen on the board, and unless they are in a conspicuous position the names have to be passed, or the blooms have to be pushed on one side every time we wish to find the name, injuring the blooms and also the effect, as well as taking up a great deal of time, when in a crowded exhibition others are perhaps waiting to get near. Tickets fixed in front of the stands are too low down, and are liable to be unfixed by visitors rubbing against them.

The various requisites for exhibiting should be examined and in readiness. A support from a board, or leaky tubes, or an insufficiency of them, may cause much delay at the last moment. The best way to reach the exhibition, times of trains, &c, should be fixed beforehand, so that when the time arrives for setting up the blooms the whole attention can be given to it, and not divided by matters that should have been seen to before. As a rule the blooms are prepared the day before the exhibition, commencing with the incurved because they take the longest time to prepare. Incurved blooms vary in the length of time they require; if clean and well grown they take a much shorter time than many people imagine. Some seasons the Queen family come with scaly centres, and then they are rougher and take more care. When cutting look carefully over each variety, cut only those that are required, and select solid deep blooms, broad florets and fresh. Two pairs of tweezers are required, one long pair to remove any damaged florets, and deformed ones at the base low down amongst the florets, as if these are not removed it prevents the others going into proper position, leaving hollows and losing the symmetrical proportion which adds so much to the beauty of an incurved bloom. With the short pair arrange the florets in as regular a manner as possible, commencing at the centre of the bloom. Take pains to do it well, as they are much admired, and some that profess to dislike the method must inwardly prefer their appearance.

Japanese blooms are cut in the afternoon of the day before the exhibition. The colours are arranged by day, so that they have the same light as when judged. If arranged in the evening some colours look different. Take the Sunflower for instance, which loses its effect at night. Select fresh, large, well-coloured blooms with their centres well up, and as many of the true Japanese as possible when in their best condition; I mean such varieties as Boule d'Or, the Dragon type, Meg Merrilies, Ralph Brocklebank, Stanstead White, &c. Varieties in all classes should be shown in their true character, and distinct where distinctness is required by the schedule. Sports are especially liable to vary, and should only be shown in their true form. Where there a doubtful bloom it should be left out and a safe one substituted, and not run the risk of being disqualified. In arranging the stands the large blooms should be placed in the back row, the medium in the middle row, and the smaller ones in front; each row should be made level at their top by raising the low one or lowering the high one. All should be well set up from the boards, as they gain much in effect by this method.

An early start should be made on the morning of the exhibition, so that time is given to see that the blooms have travelled safely, and everything ready for the judges at the appointed time. It is the duty of exhibition managers, exhibitors, and judges to be punctual. It is most to the interest of the exhibitors themselves, so that the judges may have the full time allotted to them at their disposal. If shorn of a quarter of the time through the unpunctuality of one or two exhibitors, and there is a large competition, with the prospect of the opening of the exhibition close at hand, it means hurried work, and hurried work at judging, as at other work, is seldom satisfactory.

LÆLIA ANCEPS.

In the stove at Colonel Pepper's, Milford Hill, there is a fine piece of Lælia anceps about three feet across carrying over thirty spikes in a hanging basket suspended to the roof which will no doubt make a fine display in a few weeks. The plant in question was imported three years ago and has gone on improving each year. C. W.

CULINARY AND DESSERT APPLE, DUCHESS OF OLDENBURG.

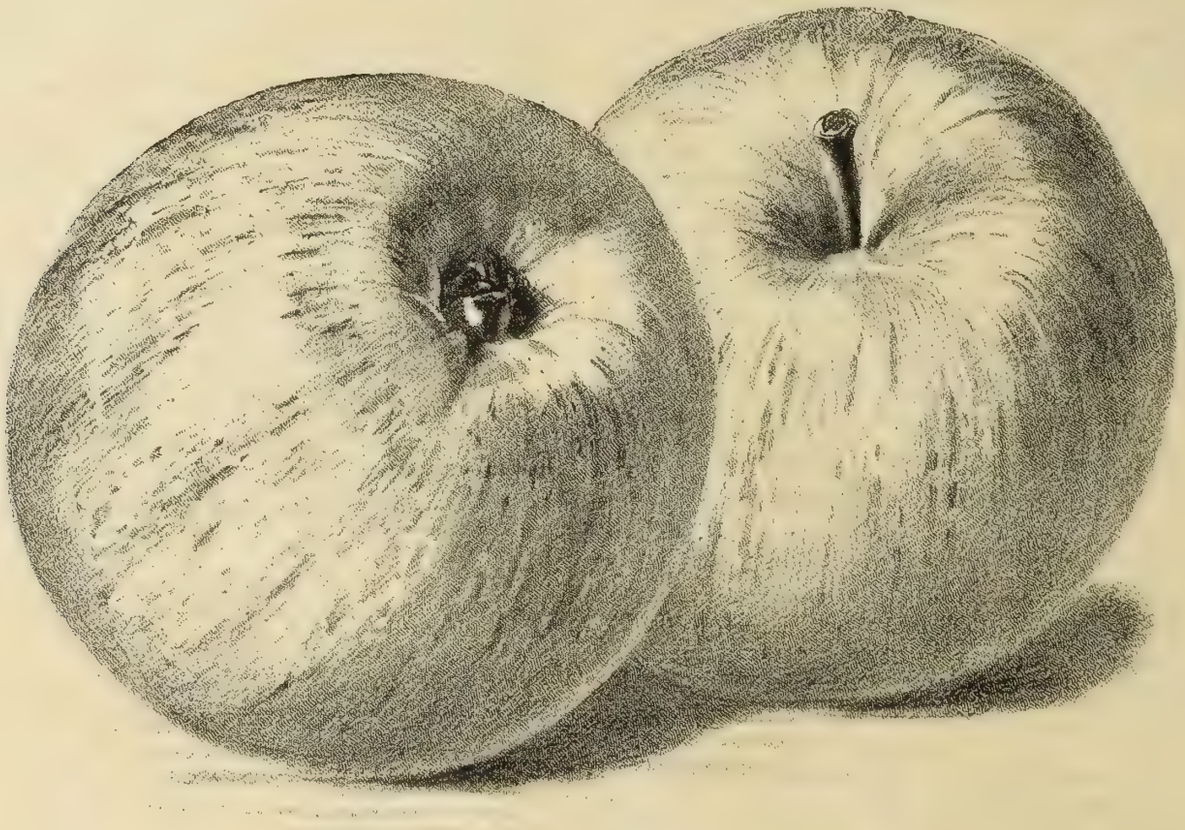
Syn. *Borovitsky, Charlamowiski.*

THOUGH not in any proper sense of the term a new apple, this is so little known in gardens that the figure and description will be new to many. Apples are undergoing a severe selection, and many that have acquired high repute will be discarded in favour of varieties that are found to be more constant, and at the same time attractive in appearance, and of good quality. And in the sorting process the variety now before us, *Duchess of Oldenburg*, will acquire increased importance for its sterling merit and that very precious quality that we designate "sure bearing." It was the most generally fruitful of all the varieties in the past summer; in that respect ranking with Lane's Prince Albert, Bramley's Seedling, and King of the Pippins. It is of Russian origin, but where or by whom raised we cannot say. It was sent by Mr. Martin Miller Call, from the Taurida Gardens, Petersburg, to the Horticultural Society of London in 1824, and has a place in the society's catalogue as No. 90. It is No. 1 of George Lindley's "Guide to the Orchard," and is figured in Dr. John Lindley's "Pomologia Britannica," No. 10.

The fruit is large or less than large. The samples figured, selected at the Old Nurseries, Maidstone, may be considered the full size; it is a trifle larger than Lindley's figure above cited, and the sample is smoother in form and has considerably more colour, Lindley's sample being greenish, and with a bold rib on one side, which is not noticeable in our samples. The form is round, smooth, the eye large, and closed in a deep and angular basin, the stalk slender, inserted deeply in a narrow cavity. The colour is greenish-yellow, richly streaked and patched with bright red on the side next the sun, and sometimes with a deep crimson cheek. There is sometimes a silvery shade, which gives it a peculiar appearance and is suggestive of transparency. The flesh is yellowish-white, crisp, juicy, of an agreeable and refreshing flavour, of the first quality for culinary purposes, and second quality for dessert.

The tree is a free grower, quite hardy, and thrives on crab or paradise, on the latter forming a handsome bush. It bears abundantly, and in an airy place and fully exposed acquires a beautiful colour so as to be comparable to a peach. The fruit ripens in August and September, and in most places keeps well until the end of October, beyond which we have not known it to maintain a good condition. It is of equal importance for market or garden culture.

Leroy ("Dictionnaire de Pomologie") says this apple was not known in France until 1844, and instead of deriving it from a garden in Petersburg, he quotes from Dittrich to the effect that it is of Caucasian origin. He cites Prevost of Rouen as having supposed it of English or American origin, an opinion he holds to be erroneous. He gives it a season from November to March, which it certainly has not in this country.



CULINARY AND DESSERT APPLE, *Duchess of Oldenburg*; also known as *Borovitsky* and *Charlamowiski*.

CŒLOGYNE CRISTATA.

IT is difficult to imagine a more beautiful sight than a house filled with healthy specimens of this plant, which in the dreary winter months produces its clusters of large delicate flowers, which would be absolutely pure white were it not for the deep orange stain on the lip. A pure white variety, known as "alba," however, does exist, and very beautiful it is, being quite as free flowering as the type, and having the recommendation of usually blooming a few weeks later than it. Last January there were some fine flowering specimens in Messrs. Sander's nursery at St. Albans. The flowers, which measured three and four inches across, numbered as many as seven and eight on a scape, and it was from one such specimen that the accompanying sketch was made

Besides the variety alba, mentioned above, the one known as "citrina," or "lemoniana," is also very handsome, the flowers, which are not so twisted as in the ordinary form, having a stain of lemon yellow on the lip instead of deep orange. The variety, "maxima," has large flowers, with broader and less twisted segments, while the Chatsworth variety is somewhat similar, but may be said to produce larger and stronger leaves as well as pseudo-bulbs.

CHRISTMAS ROSES.

IN a list of Hellebores, Roses, and climbing plants lately issued by Mr. T. S. Ware, seven varieties of Helleborus niger are named as distinct and handsome and the very best for garden culture, and more especially for the supply of cut flowers. It is important to note this list, for there has prevailed a certain amount of confusion in respect of the names and qualities of the varieties, and disappointments have risen in many instances through the confusions of catalogues and abels. Mr. Ware's list should be final so far as it goes. It does not preclude the cultivation of any, but it sets forth seven with the names that really belong to them, and abolishes such apocryphal names as "altifolius," &c., that ought never to have intruded in these lists. The varieties recommended by Mr. Ware are *Apple Blossom*, "a veritable red;" *Madame Fourcade*, snow white; *Major*, pure white when under glass, scarce, and often spurious; *Maximus*, the largest of the group, with handsome foliage, flowers white with tinge of rose; *Riverstoni*, in the way of Maximus, flowers in pairs, pure white; *St. Brigid*, very distinct, "the most beautiful of the family;" *Vernalis*, intermediate between Major and Maximus, flowers large and pure white, unless very much exposed, when they acquire a shade of rose.



CRESTED LILY ORCHID, *Coelogyne cristata*. Engraved from a drawing by Mr. John Weathers.

Chrysanthemum Exhibitions.

NATIONAL CHRYSANTHEMUM SOCIETY, NOVEMBER 11.

FLORAL COMMITTEE.

ON the first day of the centenary exhibition a meeting of the Floral Committee was held in St. Stephen's Hall, when sufficient novelties were submitted to engage the attention of the committee nearly two hours. E. Sanderson, Esq., presided, and the members present were: Mr. H. J. Jones, Mr. J. Mardlin, Mr. T. Bevan, Mr. C. Gibson, Mr. H. Shoesmith, Mr. J. Wright, Mr. R. Owen, Mr. G. Stevens, Mr. George Gordon, Mr. J. P. Kendall, and Mr. R. Dean. The following had first-class certificates conferred upon them:—

Camille B. Flammerion.—A fine incurved variety; the blooms similar in build to those of Venus, but deeper in colour and perfectly distinct. An excellent addition that will probably prove of much value for the front row. Exhibited by Mr. R. Owen, Maidenhead.

Mr. A. H. Neve.—A beautiful Japanese variety; the blooms of medium size, full and compact, the colour blush, changing with age to silvery white. Exhibited by Mr. E. C. Shea, Foots Cray, and Mr. Owen, the first-named having the finest blooms.

Lilium Bird.—A handsome Japanese variety in the way of Gloire Rayonnante, to which it is much superior. The blooms are rather large, with long quilled florets, and of a pleasing rose colour. Exhibited by Mr. R. Owen.

Aida.—A distinct Japanese variety; the blooms rather large, quite full, and somewhat regular in outline, but bold in appearance; the colour reddish bronze suffused yellow. Exhibited by Mr. R. Owen.

Marion.—A very distinct pompon with small finely-formed flowers of a rich orange-yellow colour. Exhibited by Mr. R. Owen.

W. W. Cowles.—An excellent Japanese variety; the blooms large, slightly reflexed and effective in appearance, the colour brilliant red. In general character similar to Val d'Andorre, but much brighter in colour. Exhibited by Mr. Brown, of Roydon.

William Westlake.—A useful pompon, the flowers of medium size, bright yellow, shaded orange-red in the centre. The plant is dwarf and free blooming, and the variety will prove useful for general decorations. Exhibited by Mr. T. L. Turk, Highgate.

Golden Star.—A distinct single variety, the blooms rather large with stout ray florets, and of a rich golden-yellow hue. Exhibited by Mr. J. Agate.

M. E. A. Carrier.—A beautiful Japanese variety; blooms large and of fine form; the colour delicate blush. Exhibited by Mr. F. W. Prior, Gordon House, Blackheath.

Emily Rowbottom.—A beautiful white anemone pompon, obtained as a sport from Marie Stuart. Exhibited by Mr. H. J. Jones, Ryecroft Nursery, Lewisham.

Messrs. Pitcher and Manda exhibited a small plant of *Louis Bœhmer* figured in these pages a fortnight since. The variety was regarded with much favour by the committee, but as there was only one bloom no award could be made.

BIRMINGHAM CHRYSANTHEMUM, PRIMULA, AND FRUIT SHOW, NOVEMBER 12 AND 13.

THE Birmingham and Midland Counties Society held its thirtieth exhibition in the Town Hall, Birmingham, on the above dates. The weather on the opening day was cold and dull, indicating rain. This exhibition stands fairly well for top place among provincial displays, the vast town hall, galleries, supper-rooms, corridors, &c., being filled to their fullest staging capacities.

Horticultural traders assisted with groups of decorative plants, fruit, &c. Hewitt and Son; Thomson and Co., Spark Hill Nurseries; the English Fruit and Rose Company, Hereford; Mr. J. Watkins, Withington, Hereford; Vertegans and Co.; R. Smith and Co., Worcester, and others staging novelties in their own particular lines, the fruit growers each putting up from sixty to seventy dishes each of apples and pears.

The society's schedule provided sixty-five classes, including about a dozen "special" classes for primulas, dinner-table plants, and collections of vegetables.

GROUPS STAGED FOR EFFECT were truly meritorious, each of the four arrangements being well worthy of the premier award; the £10 going to the Right Hon. J. Chamberlain, Highbury, Moseley (gardener, E. Cooper), for a dense mass of high class flowers and foliage, a few single flowering varieties and pompons having a good effect among the large globes of colour; the second prize, £6, being awarded to Mrs. Marigold, Park House, Edgbaston (gardener, W. H. Dyer), for a collection of plants tastefully set up, the varieties represented being much the same as those hereafter referred in the classes for cut blooms; F. A. Walton, Esq., The Friary, Handsworth (gardener, G. Thomas), third; the fourth prize being taken by Sir Thomas Martineau, Edgbaston (gardener, G. Braiser). In the small class for group with fern and other foliage, eight sets competed. J. Breedon, Esq., Park Road, Moseley (gardener, G. Fawdry); G. H. Kenwick, Esq., Edgbaston (gardener, W. A. Powell); and J. B. Manley, Esq., Oaklands, Harborne (gardener, S. Gibbs), divided the liberal prizes in the order of their names.

TRAINED SPECIMENS.—Not too numerous nor too bulky were the examples entered in the class for nine varieties, the £5 going to Rt. Hon. J. Chamberlain, for plants well furnished with foliage and bloom, the latter, however, scarcely equalling those exhibited last November—a disposition to open being noticeable. The varieties were golden and white Empress, pink and white Venus, Prince of Wales, blush and golden Queen of England, and John Salter; Sir T. Martineau taking second place, his selection being Queen of England, John Salter, Prince Alfred, Bronze Jardin des Plantes, Lord Alcester, Lord Wolseley, and Empress of India; the third card being affixed to a neat group from C. Showell, Esq., Park Vale, Edgbaston (gardener, F. Cooper). For six, Rt Hon. J. Chamberlain, led with varieties mentioned above; Sir T. Martineau second, whose best plant was Lord Wolseley; G. Cadbury, Esq., Selly Oak, third (gardener, John Maldron), whose premier plants were John Salter and Lord Wolseley. For one large flowering specimen, Mrs. Marigold, J. Chamberlain, Esq., and G. Cadbury, Esq., took the cards for good examples of Jardin des Plantes, Queen of England, and Lord Alcester. The pompons were generally dense bushes of the white, gold, and lilac forms of Cedo Nulli, with Sœur Melanie, the prizes going to G. Cadbury, Esq., J. Breedon, Esq., and Mrs. Marigold.

CUT BLOOMS.—This section was evidently the centre of attraction to visitors and exhibitors alike. Class 10, for forty-eight blooms (equal incurved and Japs). The blooms staged for the prizes in this particular class numbered 804, and filled one hundred linear feet of table space. The work of judging was somewhat tedious, as in every stand there were good blooms, although the balance of points turned in favour of Colonel Wingfield, Onslow, Shrewsbury (gardener, J. Lambert), who secured the £20 for a marvellous level lot of blooms arranged as under; Japs, back row, Mrs. Jameson, Sunflower, Avalanche, Etoile de Lyon, Edwin Molyneux, Mons. J. Pigny, Boule d'Or, Belle Paule; middle row, George Daniels, Thomas Stephenson, Madame Clemence Audiguier, Eynsford White, Jeanne Delaux, Sarah Owen, Meg Merrilies, Madame J. Laing; front row, Golden Dragon, W. W. Coles, Mrs. C. Wheeler, Ralph Brocklebank, Criterion, Val d'Andorre, Mdlle. Lacroix, and Madame Baco. Incurved, back, Golden Empress, Alfred Salter, Mrs. Heale, John Lambert, Lord Alcester, Queen of England, Princess of Wales, Empress of India; middle, Miss M. A. Haggas, Violet Tomlin, Mrs. S. Coleman, Hero of Stoke Newington, Lady Dorothy, Prince Alfred, Jeanne d'Arc, Cherub; front, Barbara, Lady Hardinge, Charles Gibson, Lord Wolseley, Refulgens, Mabel Ward, Princess Teck, and Mr. Brunlees; the second prize, £15, being awarded to the Duke of Sutherland, Stoke-on-Trent (gardener, P. Blair), who well won his position with the following selection: Sunflower, Condor, Stanstead Surprise, Soleil d'Or, Stanstead White, Madame Baco, Gloriosum, E. Molyneux, Puritan, Val d'Andorre, Meg Merrilies, W. W. Coles, Etoile de Lyon, Fair Maid of Guernsey, Sarah Owen, Mons. Bernard, Mrs. Falconer Jameson, Ralph Brocklebank, Madame C. Audiguier, Criterion, Maggie Mitchell, Holborn Beauty, Madame J. Laing, and Avalanche; the incurved being Golden Empress, Empress of India, Alfred Salter, Emily Dale, John Doughty, John Salter, Queen of England, Lord Alcester, Violet Tomlin, Mr. Brunlees, Mrs. Heale, Jardin des Plantes, Prince Alfred, Miss M. A. Haggas, Lord Wolseley, Princess of Wales, Nil Desperandum, Mr. Bunn, White Beverley, Empress Eugenie, Princess Beatrice, and H. Shoesmith; the third card, £10, going to R. N. Dale, Esq., Broomborough Hall, Cheshire (gardener, J. Gould), for a bright lot of big blossoms; fourth, £5, being secured by W. H. Watts, Esq., Elm Hall, Liverpool (gardener, A. R. Cox); Earl of Dudley, Witley Court, Stourport (gardener, J. Austin), fifth; and the sixth card went to Mr. A. Coombes, Himley Hall Gardens, Dudley. For twenty-four varieties, R. N. Dale, Esq., was placed first; W. H. Watts, Esq., second; and H. H. France, Esq., Hayhurst, Overley, Salop (gardener, S. Bremmell), third. In the class for eighteen incurves, Earl of Dudley led; Mrs. J. Foster, Moor Park (gardener, A. Haggart), second; and R. N. Dale third. For twelve Japs, Earl of Dudley was again first; W. H. Watts, Esq, second; and G. A. Everitt, Esq., Knowle Hall (gardener, W. Comfort), third. The prizes in class for a dozen anemones were severely contested, although the range of varieties was somewhat limited. C. S. Howitt, Esq., Norton, Worcester (gardener, J. Justice), was first, his varieties being Lady Margaret, Madame Cabrol, Jeanne Marty, Miss A. Lowe, Sabine, Ruche Toulousain, and Fleur de Marie; G. A. Everitt, Esq., second, with Madame Cabrol, Nelson, Duchess of Edinburgh, Jeanne Marty, Minnie Chate, Souvenir de Blendinaries, and Fabian de Medina; W. H. Watts, Esq., third, for Lady Margaret, Gluck, Dame Blanche, Gladys Spaulding, Jeanne Marty, and Miss A. Lowe.

The number of specimen blooms in competition was nearly 2000, classes not referred to including some small numbers in which the near neighbourhood figured as prize takers. In the miscellaneous competition may be mentioned the class for wedding or ball-room bouquet, Messrs. Pope and Sons, King's Norton; Messrs. Hewitt and Co., Solihull; and Mrs. Thewles, New Street Station, securing the cards for matchless arrangements. The last-named also secured a certificate of merit for a unique design for dinner-table decoration, filling about two yards length. Some very well-grown mignonette was staged by T. Martineau, Esq, who also led in the class for solanums. Rt. Hon. J. Chamberlain, was strong with epiphyllums, and also for twelve and six cyclamens. In a limited competition, Mr. Burberry, orchid grower to Rt. Hon. J. Chamberlain, headed the list with half-a-dozen orchids, very fresh and dwarf grown, including Odontoglossum grande, thirty-three large flowers; Calanthe Veitchi, twelve spikes; an unnamed oncidium, heavily blotched chocolate, four spikes; Dendrobium bigibbum, Oncidium varicosum, ten racemes; and Catt'eya Bowringiana. W. Bown, Esq, Beech Lanes, Birmingham, second, for examples of Cypripedium insigne, ten slippers; Cattleya Bowringiana, forty-four flowers; Lælia anceps, eleven flowers; Odontoglossum grande, twenty blooms; Oncidium Krameri, seven flowers; and Oncidium varicosum.

PRIMULAS.—Of these there were fully two hundred and fifty plants, the bulk white, blush, or crimson single forms, but there were a nice few examples of semi-double and double varieties. For twelve, Thomson and Co., Spark Hill, F. Denning, Esq., and Mrs. Horton took the cards; while for six, T. Martineau, Esq., and Mrs. Marigold were first and second. Seven special classes for primulas were provided beyond those in the schedule.

FRUIT.—This was a large division, for in addition to the traders' displays there were staged in the open classes eighty clusters of grapes, one hundred and twenty dishes of apples, and fifty of pears; the local competitors also staging sixteen clusters of grapes and seventy dishes of hardy fruit. In the big class for eight dishes of pears, Vincent Ames, Esq., Westbury-on-Trym, was an easy first with Beurre Clairgeau, Easter Beurre, Marie Louise, Conseiller de la Cour, Glou Morceau, Duchess d'Angouleme, Hacon's Incomparable, and Pitmaston Duchess; Mr. R. H. C. Neville, Grantham, second, for Beurre Diel, Huyshe's Victoria, Van Mons Le Clere, Duchess d'Angoulême, Louise Bonne of Jersey, Easter Beurre, Beurre Bosc, and Beurre Superfin.

For six bunches of grapes the card £5 went to Mr. Alderman Chaffin, Chalcombe Grange, Bath, for grandly finished clusters of Muscat of Alexandria, Gros Maroc, and Gros Colmar; Earl of Harrington, Elvaston Castle, Derby, second, for Gros Colmar, Mrs. Pearson, and Muscat of Alexandria; H. H. France, Esq., third, with Alicante, Lady Downe's Seedling and Gros Colmar; while for three bunches black J. T. Harris, Esq., The Hayes, Stone, was placed first for dual formed clusters of Gros Colmar; Mr. Alderman Chaffin, second, for the same variety, one immense cluster being a surprise for the experts; the third card went to W. M. Low, Esq., Willesboure House, Warwick, for Alicante; the prizes for white varieties going first to Major Bird, Cookley, Garstang, for Bowood Muscat; the second to Alderman Chaffin; and third to Earl of Harrington, for Muscat of Alexandria.

VEGETABLES were well put up for the special prizes offered. Mr. John Lambert, gardener to Colonel Wingfield, was awarded the premier prizes for Sutton and Sons special, and also for a prize offered by Mr. R. Sydenham, Tenby Street, Birmingham, putting up extra large Mammoth Autumn Giant cauliflower, Perfection tomatos, Sulham Prize celery, Exhibition Brussels sprouts, Student parsnip, Reading onion, and Reading Giant potatos; Mr. A. Smets, gardener to G. Taylor, Esq., Woolescote House, Stourbridge, second; Mr. W. Clement, gardener to Mrs. Horton, third. For Mr. Deverill's special prizes

for onions, Lady Theodora Guest was first with large handsome bulbs of Ailsa Craig; Mr. J. Lambert, second, for Improved Wroxton.

A certificate of merit was granted to Mr. H. Deverill, Banbury, for a very fine collection of onions in variety.

CROYDON CHRYSANTHEMUM SOCIETY, November 12 and 13.

This society held its third exhibition at the Skating Rink Hall, Croydon, on November 12 and 13. It was admitted on all sides that the show was fully up to the average of the two previous years, the several classes being well filled, and the productions throughout being of a high order of merit. The general arrangements were well carried out under the direction of Mr. W. B. Beckett, the able secretary.

Cut Blooms were well shown both in numbers and quality. In the class for eighteen Japanese and eighteen incurved the first prize was awarded to Mr. E. Whittle, gardener to C. H. Goschen, Esq., Addington, who staged finely developed flowers of Etoile de Lyon, Sunflower, Mrs. Irving Clark, Meg Merrilies, Carew Underwood, Stanstead White, E. Molyneux, Volunteer, Japanaise, Ralph Brocklebank, Baronne de Prailly, Mrs. Heale, Avalanche, Mrs. F. Thompson, Madame C. Audiguier, Mons. Bernard, Sarah Owen, Yellow Dragon, Empress of India, Mrs. S. Coleman, Lady Hardinge, J. Lambert, Barbara, Miss Violet Tomlin, Black Queen, Miss M. A. Haggas, Jeanne d'Arc, Golden Empress, Lady Dorothy, Alfred Salter, John Salter, Mrs. M. Davis, Lord Alcester, John Doughty, Princess of Teck, Mr. H. Shoesmith, gardener to M. Hodgson, Esq., Shird, second, and Mr. C. Ritchings, gardener to W. Lindsay, Esq., Beddington, third.

In competition for twenty-four incurved, the first prize went to Mr. E. Whittle, who had good blooms of Lord Alcester, Blush Queen, Hero of Stoke Newington, John Lambert, Alfred Salter, Mrs. N. Davis, Empress of India, Princess of Wales, Princess Beatrice, Golden Empress of India, Lady Dorothy, Jeanne d'Arc, Mr. Corbay, Miss M. A. Haggas, Queen of England, J. Doughty, Bronze Queen of England, and Miss Violet Tomlin; Mr. H. Shoesmith was second, and Mr. C. Welstead, gardener to Mrs. Lodge, Bramley Hall, was third. Mr. Whittle was also first in the class for twenty-four Japanese, showing Mons. Bernard, Mrs. Heale, Yellow Dragon, Stanstead White, Val d'Andorre, Mr. J. Wright, Baronne de Prailly, Boule d'Or, Marsa, Avalanche, Carew Underwood, and Mrs. Irving Clark; the second prize went to Mr. C. Evans, gardener to S. Underhill, Esq., Croydon, and Mr. H. Shoesmith was third. For twelve large anemone-flowered varieties, Mr. C. Evans was first, showing J. Thorpe Junior, Marguerite Sollivell, Prince of Anemones, Emperor, La Marguerite, Grand Alveola, George Sands, Miss Annie Low, Acquisition; and Mr. C. Bowman, London Road, was second. Mr. C. Bowman was first for twelve bunches of pompons, his stand including J. Forsyth, Marguerite, Golden Mdlle. Marthe, Madame Marthe, Mr. Astie, Adonis, Prince of Orange, Madame Chalonge, Black Douglas, and Victoria. Mr. C. Bowman also contributed a collection of pompons and anemones. Mr. Shoesmith had the premier incurved bloom of the show, Mrs. Coleman, and the prize for the best Japanese bloom in the show was awarded to Mr. Whittle, who showed a superb bloom of Etoile de Lyon.

Groups and Specimen Plants were well shown. Mr. C. Lane, gardener to E. H. Cole, Esq., Caterham; Mr. W. Carr, gardener to S. Clarke, Esq., Croydon Lodge; and Mr. S. Elsey, florist, Cherry Orchard Road, were awarded prizes for groups of fifty plants. For six trained plants, Mr. W. Carr was first with good specimens of Peter the Great, Rosea superba, Mr. G. Glenny, Cloth of Gold, Alba Striata, and Sunflower; and Mr. G. H. Cooper, Sydenham Road Nursery, Croydon, was second. Mr. Carr also received the first prize for six dwarf-trained pompon plants, showing Tousiante Maurisot, Prince Victor, Aurora, Astrea, Golden Cedo Nulli, and Black Douglas. In competition for nine foliage plants the prizes were awarded to Mr. C. Simmonds, gardener to H. C. Mayhew, Esq., Norwood, Mr. C. Lane, and Mr. W. Carr. Miscellaneous groups were contributed by Mr. J. Peed, Roupell Park Nurseries, Norwood Road; Mr. J. R. Box, nurseryman, Croydon; Mr. C. Chaff, Park Hill Nursery, Croydon; Mr. T. Butcher, nurseryman, Croydon; Messrs. J. Laing and Sons, Forest Hill; and Mr. W. Curd, Croydon.

Fruit formed an interesting feature of the exhibition, and was well shown, the collections of apples being remarkably fine. Mr. Smee, Hackbridge, was the only competitor in the class for twenty varieties of apples. Large collections of apples and pears were sent by Messrs. G. Bunyard and Sons, Maidstone; Messrs. J. Cheal and Sons, Crawley; Mr. J. Peed; and Messrs. J. Laing and Sons, Forest Hill.

Mr. H. G. Filbey, gardener to Mrs. B. Jenkins, Bramley Hill, was awarded the first prize for three bunches of Muscat of Alexandria, and Mr. C. Selter, gardener to Paul Gordon, Esq., Addiscombe, was second. There were four entries for three bunches of black grapes, and Mr. G. Lane was first with well furnished bunches of Alicante, Mr. A. H. Smee and Mr. C. Sten being second and third. Mr. W. Curd sent four boxes of black grapes.

Vegetables were well shown, and for the best collection not to exceed twelve varieties Mr. C. Reddings received the first prize. His collection included Veitch's strains of Exhibition sprouts, Matchless carrot, White celery, Savoy Germaine, Excelsior tomato, Main Crop potato, and Red Globe turnip. Mr. J. Johnson, gardener to Mr. A. Cowley, Bramley Hill, was second. Mr. J. Hagger, Cherry Orchard Road, sent a large collection of celery, and for one dish of cooked potatos the prizes were awarded to Mrs. Greengrass, Mrs. Deadman, and Mr. S. Webber.

WALTON CHRYSANTHEMUM SOCIETY, November 13.

For many years past the exhibitions of this flourishing society have been distinguished by the great excellence of the specimen plants, and the gathering on the above date was no exception to the rule, the great bank of specimens at either end of the hall forming an extremely attractive feature. Cut blooms were fully equal to the high average of previous years, and table plants, bouquets, and vases were admirably shown. The exhibition was held in the Village Hall, Weybridge, and as the excellent materials at command were arranged to the best advantage by Mr. George Masters, the able honorary secretary, the general effect was highly satisfactory.

Specimen Plants although weak in one or two particulars, fully sustained the fame which the cultivators in the Walton district enjoy for the excellence of their trained specimens. The competition was very close in the class for six large flowered varieties, and in the result the premier award was made in favour of Mr. F. Cawte, gardener to H. P. Thomas, Esq., Weybridge, whose plants were distinguished by the high quality of the blooms. Mr. Reed, gardener to E. Petitt, Esq., Oatlands Park, who was second, had excellent specimens. Mr. Millican, gardener to H. Cobbett, Esq., Walton, had the best three dwarf trained specimens, and Mr. Felgate, gardener to the Duchess of Wellington, was second. For a single specimen large flowered, Mr. Cawte, Mr. Millican, and Mr. Reed were awarded the prizes in the order of their names, and in the class for three standards Mr. Millican, Mr. F. Cawte, and Mr. Reed, were first, second, and third respectively. The pyramids were decidedly unsatisfactory in consequence of the practice that has been adopted of training them to a face. In some instances the practice was carried so far as to almost raise the question as to whether the collections conformed to the requirements of the schedule. The dwarf-trained pompons were particularly good, finer specimens being seldom submitted to public notice. The prizetakers were Mr. F. Cawte. Mr. Reed, and Mr. Millican, all of whom had Marie Stuart in capital condition. The best standard pompons were those from Mr. Reed, Mr. Cawte, and Mr. Millican, who had the principal awards made in their favour in the two classes provided. Grafted plants, for which a special class was provided, were particularly good, and proved highly attractive.

Cut Blooms were plentiful, and on the whole of high quality. In the open class for twenty-four, to comprise equal numbers of incurved and Japanese, there was a spirited contest, and Mr. G. Carpenter, gardener to Major Collis Browne, Broad Oak, Byfleet, was first with a grand stand of blooms. The incurved varieties were Empress of India, Miss Violet Tomlin, Lord Alcester, Princess of Wales, Mr. Brunlees, Mrs. Heale, Golden Queen, Golden Empress, Princess of Teck, Miss M. A. Haggas, Nil Desperandum, and Mrs. W. Shipman. The Japanese varieties were Condor, E. Molyneux, Stanstead White, Baronne de Prailly, Avalanche, W. W. Coles, Sunflower, Mrs. F. Jameson, Ralph Brocklebank, Album fimbriatum, and Mons. Bernard. Mr. Felgate was a capital second, and Mr. W. Sutton, gardener to J. S. Sassoon, Esq., Walton, was a good third. For twenty-four incurved, Mr. Thorne, gardener to A. E. Flood, Esq., Walton, was first for twenty-four varieties with a good stand, and Mr. Millican and Mr. Quarterman, gardener to C. E. Smith, Esq., Cobham, were second and third. The first and second prizes for twelve incurved were awarded to Mr. Hopkins, Walton, and Mr. Felgate. Mr. Caryer, gardener to A. G. Meissure, Esq., Weybridge, obtained premier honours in the class for twenty-four Japanese, and Mr. Felgate and Mr. Sutton were second and third, the blooms throughout being splendidly developed. For twelve Japanese Mr. Hopkins, Mr. Cawte, and Mr. Millican were the prize takers in the order of their names. Reflexed varieties were presented in superb condition, and the finest stand was that from Mr. Caryer, in which were exceptionally good blooms of Cloth of Gold, Golden Christine, Distinction, White Christine, King of Crimsons, Phidias, Pink Christine, and James Carter. Mr. Sutton, Mr. Reed, and Mr. Felgate were awarded the remaining prizes in this class. Large anemones were well shown by Mr. Reed and Mr. Millican; pompon anemones were represented by good stands from Messrs. Cawte, Reed, and Millican. These exhibitors were also the successful exhibitors in the class for twelve bunches of pompons. The entries were numerous in the class for six blooms of any one Japanese variety, and the premier award was made in favour of Mr. Hopkins, who had splendidly developed blooms of Mr. H. Cannell. In the corresponding class for incurved Mr. Thorne was first with Empress of India.

Bouquets and Vases of Chrysanthemums constituted as usual a very pleasing feature, and the most successful of the exhibitors in the several classes were: Mrs. Wardle, Mr. Reeves, Oatlands Park; Mr. Felgate, and Mr Millican.

The judges were Mr. George Gordon and Mr. G. Shepherd.

STAINES CHRYSANTHEMUM SOCIETY, November 13.

The exhibition of this society, which has recently been reconstituted, was held in the Town Hall on the above date, and although less extensive than the gathering of last year, was bright and attractive. Cut blooms formed perhaps the strongest feature, but the groups of plants in which taste in arrangement was the chief test of merit were remarkably good.

Cut Blooms were not so largely shown as could have been desired, but those staged were on the whole of excellent quality. There were three competitors in the class for twenty-four incurved, and the winning stand was contributed by Mr. J. Tomlin, gardener to T. Ashby, Esq., Sunnyhill, Staines; the blooms were well developed, and the varieties comprised Queen of England, Prince Alfred, C. Gibson, Golden Empress, Princess of Wales, Hero of Stoke Newington, Lord Wolseley, Lord Alcester, Princess of Teck, Miss Violet Tomlin, Golden Jardin des Plantes, Miss M. A. Haggas, Empress Eugenie, Mrs. Heale, Mrs. N. Davis, Lady Hardinge, and Jeanne d'Arc. Mr. A. Sturt, gardener to A. L. Cohen, Esq., Englefield Green; and Mr. G. Ager, gardener to Sir E. Clarke, Staines, were second and third. There were four entries in the class for twenty-four Japanese, not less than eighteen varieties, and Mr. J. Tomlin was first, staging well developed flowers of Avalanche, Sunflower, Condor, E. Molyneux, M. J. H. Laing, Criterion, Fair Maid of Guernsey, Madame C. Andiguier, Carew Underwood, Belle Paule, Stanstead White, Mons. Freeman, Mr. H. Cannell, Etoile de Lyon, Mons. Bernard, Miss C. H. Wheeler, Gloriosum, Val d'Andorre, Bertha Flight, Madame Baco. The second and third prizes went to Mr. A. Sturt, and Mr. T. Hutchings, gardener to C. Ashby, Esq., Staines, in the order of their names. The competition in the class for twelve reflexed, not less than six varieties, was very keen, there being no less than six entries, Mr. F. Orchard, gardener to Major-General Arbuthnot, Thorpe End, received the premier award for good flowers of Cullingfordi, Golden Christine, Peach Christine, Cloth of Gold, Amy Furze, and White Christine; Mr. G. Collings, gardener to J. Holgate, Esq., Staines; and Mr. G. Ager, were second and third respectively. Mr. W. Markham, gardener to Mrs. Hall. Wraysbury, was first for twenty-four Japanese, not less than twelve varieties, showing good blooms of Baronne de Prailly, Mdlle. Lacroix, Yellow Dragon, Thunberg, Madame C. Audiguier, Jeanne Delaux, Avalanche, E. Molyneux, Triomphe de la Rue des Chalets, George Daniels, Florence Perry, Val d'Andorre, Marguerite Marrouch, Roi des Japonais, Mrs. H. Cannell, and Criterion. Mr. E. Bubb, gardener to F. Purkiss, Esq., Ashford, was second, and Mr. F. Orchard a good third. In competition for the prizes for twenty-four incurved Mr. F. Orchard was first, his stand comprising Queen of England, Cherub, Venus, Lord Alcester, Refulgens, Mrs. Heale, Alfred Salter, Queen of England, Mr. Brunlees, Golden Empress, Princess of Teck, Hero of Stoke Newington, Jeanne d'Arc, Emily Dale, Lady Hardinge, and Miss M. A. Haggas. The second and third prizes went to Mr. W. Atherley, gardener to E. C. Haines, Esq., Staines, and Mr. E. Bubb, respectively. For twelve large-flowered anemones Mr. F. Orchard received the first prize, showing Lady Margaret, Sabine, Margaret Villageoise, Jeanne Marty, Mrs. Pethers, Miss Annie Lowe, Mdlle. Cabrol, Gluck, and Georges Sand. Mr. G. Ager was a good second, and Mr.

T. Hutchins third. Mr. F. Orchard was also first for twelve pompons, his stand containing fine trusses of Black Douglas, Rosinante, Antonius, Marabout, Orange Beauty, La Pureté, Mr. Holmes, La Vogue, Marie Stuart, Salamon, Mdlle. Marthe, Katherine Talfourd. Mr. T. Hutchings was second and Mr. J. Proudfoot, gardener to H. L. Manning, Esq., Staines, a close third. Mr. R. Ridley contributed six blooms of Etoile de Lyon and received a high commendation.

There were five competitors in the class for a hand bouquet, the prizes going to Mr. T. Wightman, gardener to W. B. Pucke, Esq., River Bank, Staines, Mr. J. Proudfoot, and Mr. E. J. Sims, gardener to J. N. Pimm, Esq., Staines; and for the best floral ornament composed of chrysanthemums and ferns the prizes were awarded to Mrs. Mieville, Duncroft, Staines; Mrs. Harris, Staines; and Miss Jessie Mieville, in the order of their names.

GROUPS AND SPECIMEN PLANTS were fairly numerous, and up to the average in quality. The prizes for the best group were awarded to Mr. F. Orchard, Mr. E. J. Sims, and Mr. T. Cox, gardener to D. Hackwood, Esq., Staines. Mr. T. Cox was the only exhibitor in the class for three dwarf-trained plants, and was awarded the first prize. Mr. T. Cox was also first for the best specimen, showing a good example of Sunflower. Mr. F. Orchard was first for two standards, and Mr. E. J. Sims first for a specimen standard. For three standards, the premier award was made to Mr. T. Cox, who had Avalanche, George Glenny, and Golden George Glenny. Mr. F. Orchard received the first prize for three dwarf-trained pompons. There were six entries in the class for six primulas, the prizes being awarded to Mr. G. Collings, Mr. R. Ridley, and Mr. T. Hutchins; and for six cyclamens, Mr. W. Markham was first, Mr. G. Collings second, and Mr. T. Hutchins third. Messrs. Barber and Co, Feltham, contributed an attractive collection of chrysanthemums, ferns, palms, and decorative plants.

FRUIT was well shown, and of good quality. Mr. G. Collings occupied the first place in the class for four dishes of apples with Lord Derby, King of Pippins, Ribston Pippin, and Blenheim Orange, in excellent condition; Mr. T. Hutchings and Mr. E. J. Sims were second and third respectively. For two dishes of pears, Mr. G. Ager received the premier award, showing Duchess d'Angoulême and Nouveau Poiteau; Mr. T. Hutchings was second; and Mr. E. J. Sims third. Mr. R. Ridley was first for two branches of grapes, having well-coloured Alicante; and Mr. J. Gammon, Geolt, Staines, was second.

VEGETABLES were not numerous, but of excellent quality. The prize-winners for six dishes were Mr. R. Ridley, Mr. T. Whiteman, and Mr. F. Orchard. The prizetakers for two dishes of potatos were Mr. Ware, Staines, and Mr. T. Blades.

TEDDINGTON CHRYSANTHEMUM SOCIETY, NOVEMBER 13 AND 14.

The seventh annual exhibition of this society was held on November 13 and 14, at the Town Hall, which was well filled, and presented a very attractive appearance. The undiminished popularity of this show cannot fail to be a source of satisfaction to all concerned, and should encourage the society to continue the work which has been attended with such excellent result.

The special feature of the show was formed by the blooms in competition for the challenge cup for twenty-four, comprising equal numbers of incurved and Japanese varieties. Mr. E. Coombs, gardener to W. Furze, Esq., Roselands, Teddington, was the successful competitor, and his stand contained finely-developed flowers of Mons. Bernard, Gloriosum, Etoile de Lyon, Avalanche, E. Molyneux, Madame C. Audiguier, Sunflower, Val d'Andorre, Condor, Stanstead White, Jeanne Delaux, Mrs. J. Wright, Emily Dale, Princess of Wales, Miss Violet Tomlin, Mrs. Coleman, Lord Alcester, Lord Wolseley, Golden Empress of India, Jeanne d'Arc, John Salter, Empress of India, Prince Alfred, and Miss M. A. Haggas. Mr. W. Higginson, gardener to General Vialls, C.B., Teddington House, was a close second; and Mr. W. Cave, gardener to Mr. Holberton, The Cedars, Teddington, was third. In competition for twenty-four incurved Mr. Coombs was again first, showing fine blooms of Emily Dale, Miss Violet Tomlin, Princess of Teck, Lord Wolseley, Beauty, Barbara, Queen of England, Alfred Lyne, Perle Precieuse, Lord Alcester, Mrs. Heale, Golden Eagle, Ada Spaulding, Prince Alfred, Hero of Stoke Newington, Miss M. A. Haggas, Princess of Wales, Mrs. W. Shipman, Jeanne d'Arc, John Salter, Empress Eugenie, Golden Empress, Mrs. Coleman, and Refulgens. Mr. W. Cave was second. Mr. Coombs was also first for twenty-four Japanese, showing highly-developed flowers of Etoile de Lyon, Stanstead Surprise, Florence Percy, Val d'Andorre, Sunflower, M. Delaux, Stanstead White, W. W. Coles, Mrs. Wellam, Marsa, Volunteer, E. Molyneux, Hamlet, Gloriosum, Madame C. Audiguier, Album Fimbriatum, Mrs. J. Wright, Mons. Bernard, Japonais, Belle Paule, Mons. Elliott, Avalanche, Duchess of Albany, and Condor. Mr. C. Futcher was second, and Mr. W. Davis, gardener to T. P. Chappell, Esq., Weir Bank, Teddington, third. The premier award for twelve anemones was made to Mr. E. Coombs, who had Miss Annie Lowe, George Sands, Nelson, Minnie Chate, Lady Margaret, and Fleur de Marie. Mr. Higginson was second, and Mr. W. Piper, gardener to F. Braby, Esq., Bushy Lodge, Teddington, third. Mr. W. Higginson received the premier award for twelve reflexed, showing Pink Christine, Golden Christine, King of Crimsons, White Christine, Cloth of Gold, Amy Furze, and Cullingfordi. Mr. E. Coombs and Mr. T. Gregory received the remaining prizes in the order of their names. In competition for the prizes for twelve anemone pompons Mr. W. E. Clark, gardener to A. Nagle, Esq., Bijou Cottage, Surbiton, was first with good blooms of Antonius, Marguerite de Coi, Madame Chalonge, Mabel, Madame Sentir, Perle, Regulus, Miss Nightingale, and Marie Stuart.

Groups were equal to the average both as to the number and quality. For a group occupying a space not exceeding sixty square feet, Mr. Rickwood, gardener to the Dowager Lady Freake, Fulwell House, Twickenham, secured the premier award; Mr. J. Brittain, gardener to W. Brigg, Esq., Bank Side, Teddington, followed closely for second place; and Mr. H. J. Attrill, gardener to the Rev. W. Wix, Rosehill, Hampton-on-Thames, was third. The prizes for a group of miscellaneous plants were awarded to Mr. T. Gregory, gardener to J. F. Weymouth, Esq., Bushy Park, Teddington; and Mr. J. Attrill. For three trained dwarf specimens, Mr. J. Sallows, gardener to Miss Vaughan, Twickenham, received the premier award, staging Madame Baco, Mrs. Dixon, and Bronze Jardin des Plantes; and for three trained specimens the first prize was awarded to Mr. J. Sallows, who was the only competitor, with excellent examples of Eve, George Glenny, and Jardin des Plantes. Mr. C. Garrod received the first prize for nine cyclamens.

Fruit was well shown, there being a spirited competition in each class. Mr. Morley, Grove Villas, Teddington, was first for two dishes of apples; Mr. C. Garrod, second; and Mr. J. K. Tindall, Oxford Lodge, Twickenham, third. Mr. H. Tite contributed an interesting collection of apples, and several baskets of black and white grapes. Mr. A. H. Rickwood was first in competition for two bunches of black grapes. Mr. D. Laytham, Royal Kitchen Gardens, Hampton Court, sent a large and interesting collection of black grapes.

Vegetables were well shown, and for a collection of vegetables Mr. J. Stroud, Police Orphanage, Twickenham, was first, showing fine examples of Cosmopolitan potato, Standard Bearer celery, New Intermediate carrot, Autumn Giant cauliflower, Perfection tomato, and Exhibition Brussels sprouts. Mr. Higginson and Mr. C. Garrod also received prizes. For twelve dishes of potatos, Mr. E. Childs, Waldegrave Road, Teddington; Mr. J. Bartholomew, and Mr. J. Jenkins, Church Road, Teddington, were the principal prizetakers.

SOUTHGATE CHRYSANTHEMUM SOCIETY, NOVEMBER 13 AND 14.

This society held its eighth annual exhibition on the above dates at the Village Hall, Southgate, when a large display of chrysanthemums and other objects was produced, testifying to the widespread interest taken in the work of the society throughout the district. The hall was hardly large enough for so extensive an exhibition, but owing to the excellence of the arrangements sufficient accommodation was found for the collections, and a highly satisfactory effect produced.

GROUPS AND SPECIMEN PLANTS were well represented, and as is usual at the shows of this society formed a pleasing feature. For a group not to exceed thirty square feet the first prize went to Mr. S. Burnett, gardener to R. D. M. Littler, Esq., Broomfield Park, Southgate, whose plants were finely flowered and furnished with ample leafage; Mr. W. Mills, gardener to J. Miles, Esq., Southgate was second; and Mr. T. Chuter, gardener to G. Malcolmson, Esq, Cockfosters, was a good third. Mr. F. Canham, gardener to C. H. Feeling, Esq., Southgate House, contributed an interesting collection of geraniums, chrysanthemums, ferns, and foliage plants; Messrs. R. and G. Cuthbert, nurserymen, Southgate, had a fine group of chrysanthemums; and Messrs. G. Braid and Sons staged a well-flowed collection of primulas, each of which was highly commended.

FRUIT was remarkably well shown, the apples especially being remarkable for their size and finish. In the class for three dishes of dessert apples the competition was very keen, there being eleven competitors. Mr. P. Cornish, gardener to J. Dowing, Esq., The Shrubbery, Enfield, received the premier award for fine examples of Cox's Orange Pippin, King of Pippins, and Ribston Pippin; Mr. H. Tilbury, gardener to J. E. B. Hilliard, Esq., Oak Hill, Southgate, was a close second; and Mr. J. Maynard, gardener to W. W. Wigan, Esq., Eversley, Winchmore Hill, was third. The competition for three dishes of kitchen apples was equally spirited. Mr. P. Cornish was the first of the twelve exhibitors, and had good dishes of Newton Pippin, Emperor Alexander, and Blenheim Pippin; Mr. Bridle, gardener to H. Barry, Esq., Bush Hill House, Winchmore Hill, and Mr. W. Palmer, gardener to J. T. Haddon, Esq., Holly Bush House, Southgate, received prizes. There was also a good contest for two bunches of black grapes, Mr. S. Burnett being first with well-finished bunches of Alicante; Mr. J. Wilden, gardener to C. Harris, Esq., Avenue House, Southgate, and Mr. J. Strudwick, gardener to W. G. Quihampton, Esq., Buckshin Hall, Cockfosters, were second and third. Mr. B. Phillips, gardener to F. Bevan, Esq., Ludgrove, New Barnet, was first in the class for white grapes with well-coloured bunches of Muscat of Alexandria, Mr. R. Rintoul, gardener to C. A. Hanbury, Esq., Belmont, East Barnet, was a close second, and Mr. S. Burnett third.

VEGETABLES were shown in great abundance and of good quality. Mr. P. Cornish was first for a collection of vegetables, showing Snowball turnip, Seedling tomato, Prizetaker leek, Exhibition Brussels sprouts, and Autumn Giant cauliflower; Mr. J. Bunting, Enfield, and Mr. J. Fryer, gardener to A. E. Coventon, Minchenden Lodge, Southgate, were second and third respectively. Mr. J. Fryer was first for six dishes of potatos, for which there were six entries, showing good tubers of Snowdrop, Sutton's Seedling, M.P., Early Puritan, and Beauty of Hebron; Mr. P. Cornish was second; and the third prize was awarded to Mr. M. R. Pratt, Roseneath, Winchmore Hill. Mr. P. Cornish was first for a collection of salads.

CUT BLOOMS were staged in large numbers and in splendid condition, the Japanese blooms having unquestionably the pre-eminence. For eighteen incurved, Mr. S. Burnett was first, with fine flowers of Lord Alcester, Mrs. W. Shipman, Empress Eugenie, Mrs. Heale, Barbara, Lord Wolseley, Golden Empress of India, Alfred Salter, Princess of Wales, John Salter, Princess Beatrice, Princess of Teck, Mrs. N. Davis, Hero of Stoke Newington, and Jardin des Plantes; Mr. Mills was a good second. Mr. A. Ives, gardener to E. C. Jukes, Esq., Hadley Lodge, Hadley, was first for twenty-four incurved, not less than eighteen varieties, staging well-developed blooms of Empress of India, Miss Violet Tomlin, Queen of England, Golden Empress of India, Alfred Salter, Jeanne d'Arc, Princess of Wales, Mrs. Heale, Beauty, Emily Dale, Empress Eugenie, Nil Desperandum, Miss M. A. Haggas, Princess Beatrice, Cherub, Barbara, and Lady Hardinge; Mr. H. Prickett, gardener to C. W. Mead, Esq., Boham Lodge, East Barnet. For twelve incurved, the prizes were awarded to Mr. S. Futter, gardener to E. H. Sewell, Esq., Winchmore Hill, and Mr. H. Tilbury, in the order of their names; while for six incurved, Mr. J. Armstrong, gardener to J. Allen, Esq., The Hermitage, Southgate, received the premier award; Mr T. Phillips, Winchmore Hill, the second, and Mr. W. Palmer, the third. In competition for twenty-four Japanese, not less than eighteen varieties, Mr. B. Phillips received the first prize, with a stand of remarkable quality, comprising Avalanche, Ralph Brocklebank, Mons. Freeman, George Daniels, Etoile de Lyon, Mons. Bernard, Condor, Japonais, E. Molyneux, Maiden's Blush, Madame J. Laing, Roi des Japonais, Stanstead White, L'Or du Japon, Madame Baco, Fair Maid of Guernsey, Madame C. Audiguier, and Sarah Owen; Mr. S. Burnett and Mr. H. Prickett were second and third respectively. Mr. W. Mills was first in the class for eighteen Japs, not less than twelve varieties, showing Mons. J. Laing, Ralph Brocklebank, Etoile de Lyon, Val d'Andorre, Madame C. Audiguier, Mdlle. Lacroix, Mons. Freeman, Le Sceptre Toulousain, Meg Merrilies, Jeanne Delaux, E. Molyneux, Sunflower, Stanstead Surprise, and Avalanche; Mr. A. Tilbury was a close second; and Mr. J. Strudwick third.

The competition for the prizes for anemone varieties, which are always well-shown here, was very keen, there being six entries in the class for twelve large flowered varieties. The first prize was awarded to Mr. S. Burnett, whose blooms were of superb quality. The varieties were Lady Margaret, Miss A. Lowe, Louis Bonamy, J. Thorpe, jun., La Marguerite, Gluck, Grand Alveole, Gladys Spaulding, Empress, and King of Anemones; Mr. A. Ives was second, and Mr. Futter third. Mr. B. Phillips, Mr. J. Phillips, and Mr. J. Armstrong received prizes for six anemones. Mr. S. Burnett was first in the class for six anemone pompons, showing good blooms of Mr. Astie, Mar-

guerite de Coi, Rose Marguerite, Marie Stuart, Regulus, and Madame Sentir. In the class for twelve bunches of pompons, Mr. G. French, gardener to Dr. Stanley Adams, Palmer's Green, was first, his stand containing good bunches of Rubrum Perfectum, Mdlle. Marthe, Mdlle. Elise Dordan, Golden Mdlle. Marthe, Cendrillon, Black Douglas, President, Prince of Orange, and Adele Prisette; Mr. W. Mills and Mr. J. Phillips were also awarded prizes. There were four entries in the class for twelve reflexed, and Mr. P. Cornish received the premier award, his blooms representing Cullingfordi, Peach Christine, Pink Christine, Golden Christine, Amy Furze, and White Christine; Mr. G. French was a good second. In the class for twelve Japanese, incurved and anemone, in equal numbers, Mr. A. Ives was first with Etoile de Lyon, Madame C. Audiguier, E. Molyneux, Avalanche, Golden Empress, Queen of England, Sabine, Mons. C. Lebocqz, Jeanne Marty, and Nelson; Mr. S. Burnett and Mr. W. Prickett were second and third respectively. For twelve incurved and twelve Japanese, Mr. S. Burnett, Mr. B. Phillips, and Mr. H. Prickett were awarded prizes. The flowers in the winning stand were Alfred Salter, Empress of India, Lord Wolseley, Lord Alcester, Golden Empress of India, Miss M. A. Haggas, Queen of England, Princess of Teck, Barbara, Princess Beatrice, Mrs. N. Davis, Princess of Wales, E. Molyneux, Madame C. Audiguier, Avalanche, Val d'Andorre, Lady T. Lawrence, Thunberg, Belle Paule, Mrs. H. Cannell, La Triomphe, F. A. Davis, Mons. Tarin, and Meg Merrilies.

REIGATE CHRYSANTHEMUM SOCIETY, NOVEMBER 14.

The second annual exhibition of the Reigate Chrysanthemum Society was held in the Public Hall on the above date and proved a brilliant success. The contributions to the several classes were so numerous that it could not have been a light matter to provide accommodation for them without unduly encroaching upon the space required for the visitors. The show was not less remarkable for the high quality of the competing collections than for its extent, and the finest of the stands of cut blooms and the best of the groups would have given a good account of themselves at any of the great metropolitan gatherings.

GROUPS ARRANGED FOR EFFECT had four classes provided for them, and in these the competition was very severe. The most important of the classes was that for groups of chrysanthemums to occupy a space not exceeding fifty square feet. There were five entries all more or less good, and the premier award was made in favour of Mr. C. J. Goldsmith, gardener to W. B. Waterlow, Esq., High Trees, Redhill, who had a magnificent group, the plants dwarf, and furnished with healthy leafage to the rim of the pot, and the flowers large and bright in colour. Mr. J. Brown, gardener to Mrs. Waterlow, Great Doods, Reigate, was a very close second with a group in which the plants were admirably grown and the arrangement very tasteful. Mr. H. Bailey, gardener to W. L. Barclay, Esq., The Briary, Reigate, was third. In competition for the prizes for groups of chrysanthemums occupying thirty square feet, Mr. W. Peters was first, Mr. E. Tickner second, and Mr. J. Port third with tasteful arrangements. The first prize group of mixed plants from Mr. R. V. Smith, gardener to G. Taylor, Esq., Margery Park, Reigate, consisted chiefly of palms and chrysanthemums, and was very tastefully arranged. Mr. A. Hayter and Mr. Hamilton, who were second and third, also had excellent collections.

CUT BLOOMS were highly meritorious, and the whole of the sections were well represented. The great class for thirty-six Japanese, distinct, was interesting, as showing that there are sufficient first-class varieties for a collection of this extent. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, was first with splendidly developed blooms of Edwin Molyneux, Ada Spaulding, Mr. H. Cannell, Fimbriatum, Japonais, Madame Baco, Yokohama Beauty, Mons. Astorg, John Thorpe (a high-coloured and very effective variety, but hardly large enough as shown), Blanche Neige, Belle Paule, Grandiflorum, Mons. Bernard, Maiden's Blush, Madame C. Audiguier, M. J. M. Pigny, Mrs. C. H. Wheeler, Charles Wagstaffe, Sarah Owen, Moonlight, Madame J. Laing, Avalanche, Jeanne Delaux, L'Adorable, Charlie Sharman, Soleil Levant, Amy Furze, Sunflower, Lady T. Lawrence, Stanstead White, Stanstead Surprise, Mdlle. Lacroix, Etoile de Lyon, Volunteer, Boule d'Or, and Mons. Tarin. Mr. J. Brown was a capital second, the flowers rather smaller than those in the first prize collection, but of superb quality. There was a keen contest in the class for twenty-four Japanese, distinct, and the post of honour was occupied by Mr. C. J. Goldsmith, who had large and otherwise finely-developed blooms, which it may be interesting to state had been produced by cut-down plants. The varieties were: Belle Paule, Carew Underwood, Lady Lawrence, E. Molyneux, Maiden's Blush, Comte de Germiny, Sunflower, Madame J. Laing, Peter the Great, Mrs. J. Wright, Mrs. C. H. Wheeler, Amy Furze, Mons. H. Elliott, Stanstead White, Duchess of Albany, Gloriosum, Madame C. Audiguier, Florence Percy, Elaine, Sarah Owen, Val d'Andorre, Album fimbriatum, and Etoile de Lyon. Mr. H. Bailey and Mr. E. Tickner, gardener to J. Watney, Esq., Shermanbury, Reigate, were second and third with stands of great excellence. For twelve Japs Mr. W. Slowgrove, gardener to Mrs. Crawford, Gallon Park, Reigate, was first with admirable blooms of Meg Merrilies, Madame J. Laing, Thunberg, E. Molyneux, Boule d'Or, Jeanne Delaux, Gloriosum, Val d'Andorre, Avalanche, Marsa, Stanstead White, and Comte de Germiny; Mr. J. R. Cotton, gardener to E. Bell, Esq., Wray Park, Reigate, and Mr. J. Port, gardener to J. C. Saunders, Esq., Shaybrook, Reigate, followed closely for second and third places. Mr. A. Hayter, gardener to the Marchioness of Anglesea, The Priory, obtained premier honours in the class for six blooms of any one Jap with Sunflower; and Mr. J. Brown was a very close second with Avalanche.

Incurved flowers were less numerous than the Japanese, but they were well represented. Mr. C. J. Salter had the premier award made in his favour in the class for twenty-four, his blooms being of average size and admirably finished. The varieties were Queen of England, Mr. Brunlees, Beauty, Golden Empress, Jeanne d'Arc, Golden Beverley, John Doughty, Barbara, Hero of Stoke Newington, Lady Carey, Miss M. A. Haggas, Baron Beust, Venus, John Salter, Jardin des Plantes, Princess of Teck, Princess of Wales, Miss Violet Tomlin, Cherub, Empress of India, Mrs. Coleman, and White Venus. Mr. C. J. Goldsmith distinguished himself in the class for twelve incurved by occupying the first place. The blooms were presented in a high state of perfection, and the varieties were Princess of Wales, Mr. Bunn, Hero of Stoke Newington, Lord Wolseley, Mr. Heale, Baron Beust, Miss M. A. Haggas, Barbara, Golden Empress, Jeanne d'Arc, Nil Desperandum, and Jardin des Plantes; Mr. Hayter was a good second. Mr. Salter was first for twelve reflexed, twelve anemones, and for twelve pompons; Mr. Tickner being second in the last-named of the three classes.

SPECIMEN PLANTS were not numerous, but those staged did much credit to the cultural skill of the exhibitors. Mr. Hamilton was first for four, and also for two specimens with excellent examples of well-known varieties; Mr. J. Reeves, gardener to J. Hart, Esq., Lochniven, Reigate, was second in each class.

TABLE PLANTS AND PRIMULAS were alike good. For six plants for the dinner table, Mr. Tickner was first with neat examples of crotons, dracænas, and palms; and Mr. J. Brown was second with admirably-grown celosias. The most successful of the exhibitors of primulas was Mr. J. R. Cotton, who was first for six and for twelve, staging in each case nicely-flowered examples.

The arrangements were admirably carried out by Mr. J. Brown, the honorary secretary, and the prizes were awarded by Mr. R. Dean and Mr. G. Gordon.

TWICKENHAM HORTICULTURAL SOCIETY, NOV. 18 AND 19.

This society held its annual exhibition of chrysanthemums at the Town Hall on the above dates. There was a good display, to which the groups materially contributed. The cut blooms, though not so numerous as in previous years, were fully up to the average in quality, and altogether the committee have every reason to feel satisfied with their efforts. The competition throughout was good, and the result was a highly interesting exhibition.

GROUPS were well shown, and in competition for an arrangement to occupy fifty square feet there were five entries. Mr. R. Mitchell, gardener to W. Cunard, Esq., was first, his collection containing some well-flowered plants. Mr. J. Parsons, gardener to T. Twining, Esq., was a close second; Mr. A. H. Rickwood, gardener to the Dowager Lady Freake, third, and the fourth prize was awarded to Mr. W. Fitzwater, gardener to H. Labouchere, Esq., M.P. Mr. Waldie, gardener to J. Bigwood, Esq., M.P., received an extra prize. Messrs. Hawkins and Bennett, nurserymen, Twickenham, and Mr. E. H. Fordham, nurseryman, Twickenham, contributed interesting collections of chrysanthemums, which were highly commended. A group of orchids and ferns sent by Mr. A. H. Tracey, The Nurseries, Amyand Park Road, made a pleasing relief, and was also highly commended.

SPECIMEN PLANTS were not numerously shown, but their quality made up for any lack of quantity. Mr. J. Sallows, gardener to Miss Vaughan, was the only competitor in the class for four trained specimens, and was awarded the first prize. He had good examples of Roseum, Superbum, Val d'Andorre, Mrs. G. Rundle, and Prince Alfred. There were four entries in the class for six primulas, and the prizes were awarded to Mr. J. Parsons, Mr. C. J. Waite, gardener to Colonel the Hon. W. P. Talbot, Esher, and Mr. Sanderhaus, gardener to G. G. Mackintosh, Esq.; and for six cyclamen, Mr. J. Parsons, Mr. G. Garrod, and Mr. W. Fitzwater were the prize winners. There were six competitors for the prizes for six plants suitable for table decoration, and the prizes were awarded to Mr. G. H. Sage, gardener to the Earl of Dysart, Mr. C. J. Waite, and Mr. J. Parsons.

CUT BLOOMS.—The Japanese were superior in quality to the incurved throughout the exhibition. In competition for twenty-four incurved and Japanese, in equal numbers, Mr. E. Coombs, gardener to W. Furze, Esq., was first, showing well-finished blooms of Avalanche, Mons. H. Elliott, Etoile de Lyon, Ralph Brocklebank, Madame C. Audiguier, E. Molyneux, Belle Paule, Val d'Andorre, Stanstead White, Mons. Bernard, Japonais, Sunflower, Emily Dale, Beauty, Mrs. Coleman, Ada Spaulding, Miss Violet Tomlin, Princess Teck, Lord Wolseley, Miss M. A. Haggas, Barbara, Golden Empress of India, J. Salter, and Empress Eugenie; Mr. C. Waite was second; and Mr. J. Parsons third. Mr. C. J. Waite was the first of the four competitors for twenty-four Japs, showing Etoile de Lyon (an especially good flower), E. Molyneux, Mrs. H. Cannell, Jeanne Delaux, Lady T. Lawrence, Gloriosum, Sarah Owen, Baronne de Prailly, Mrs. C. Wheeler, Mdlle. Lacroix, and Japonais; Mr. E. Coombs and Mr. Davis, gardener to W. P. Chappell, Esq., were second and third respectively. Mr. C. J. Waite also received the premier award for twenty-four incurved, staging well-coloured blooms of Lord Alcester, Mr. Brunlees, Miss M. A. Haggas, Emily Dale, Princess of Wales, Hero of Stoke Newington, Guernsey Nugget, Lord Wolseley, Mrs. Heale, Ada Spaulding, Barbara, and Alfred Salter; Mr. E. Coombs was second. Mr. E. Coombs was the only competitor for twelve anemones, showing grand blooms of Jeanne Marty, Lady Margaret, Minnie Chate, Nelson, Miss Annie Lowe, La Marguerite, Georges Sand, and Nouvelle Alveole. Mr. E. Coombs was also first for twelve bunches of pompons, six distinct varieties, his stand containing bunches of Perle, Marguerite, Antonius, Madame Montels, Margaret de Coi, Marie Stuart, and Mr. Astie; the second and third prizes were awarded to Mr. C. Garrod, gardener to J. R. Tyndall, Esq., and Mr. J. T. Hoar. Mr. Davis, Teddington, sent an interesting stand of Japs. Mr. E. Coombs was first for six blooms of any incurved, showing Miss M. A. Haggas; and also for six blooms of any Jap, staging Etoile de Lyon, which was not so well grown as those of the incurved. W. Furze, Esq., contributed a stand of twelve reflexed flowers, for which no provision was made in the schedule. Messrs. Hawkins and Bennett sent twenty-four trusses of zonal pelargoniums.

Great interest was taken in the classes for buttonholes and decorated vases. For four buttonholes and two ladies' sprays, the prizes were awarded to Miss Lena Mann, Miss Furze, and Miss E. Freshwater. There were five entries in the class for a single stand. Mr. J. Goodwin was first, his decoration being especially elegant; and Miss Prior and Miss E. L. Clark were second and third respectively. For a single stand of autumn leaves, flowers, and berries grown out of doors, Miss Prior and Miss Clark were the successful competitors.

FRUIT was well shown, especially apples; and there was a good competition in each class. For two bunches of black grapes Miss Christie headed the six competitors with finely-coloured Alicante; Mr. J. Selden and Mr. A. H. Rickwood were second and third respectively. For two bunches of Muscat of Alexandria the prizes were awarded to Mr. R. Mitchell and Miss Christie. There were seven entries for four dishes of apples, and the first prize went to Mr. C. J. Waite, who had fine examples of Bismarck, Peasgood's Nonsuch, Emperor Alexander, and Stone's Or Toddington. Mr. J. Stroud and Mr. A. H. Rickwood also received prizes. For four dishes of pears the competition was nearly as keen, and Mr. C. J. Waite was placed at the head of the five exhibitors. His collection contained Doyenne du Comice Beurre Diel, Glou Morceau, and Beurre Clairgeau. Mr. Davis was first for a collection of fruit, and Mr. F. Wadham, Marble Hill, was a good second.

VEGETABLES were shown in great numbers. There were five entries for a collection, and Mr. C. J. Waite was first, staging Intermediate carrot, Rousham Park onion, Hughes's Perfection potato, Perfection tomato, Autumn Giant cauliflower, Cutbush's Crystal White celery. Mr. C. Garrod was second and Mr. J. Stroud third. For twelve potatos there were eleven competitors, and the prizes were awarded to Mr. J. Bradford and Mr. W. Healey.

SEVENOAKS CHRYSANTHEMUM SOCIETY, November 12.

The annual exhibition of this society was held at the Club Hall on November 12, and was one of the most successful held in Sevenoaks. Both groups and cut flowers were shown in good number, and were fully up to the average in quality.

Groups constituted the best feature of the show, the quality of the plants and their arrangement being highly creditable to the exhibitors. For a group not to exceed thirty-five square feet there were four exhibitors, and prizes were awarded to Mr. T. Cook, gardener to De B. Crawshay, Esq., Rosefield, Sevenoaks, in whose group the Japs predominated, and the colours were well blended; Mr. E. Hughes, gardener to J. Dixon, Esq., Edenhurst, Sevenoaks; Mr. T. Smith, and Mr. G. Latter, gardener to F. Troth, Esq., Sevenoaks, were also successful. In the amateurs' class for groups Mr. A. Farmer was first; Mr. W. Fox, gardener to H. Sowerby, Esq., Solefield, Sevenoaks, second; and Superintendent Waghorn, Sevenoaks, third. For one specimen plant Mr. W. A. Searing, gardener to A. Monckton, Esq., Oak Lodge, Sevenoaks, was first, with a fine plant of Maiden's Blush; Mr. J. Smith was second, and Mr. H. Heath, gardener to Mrs. C. R. C. Petley, Riverhead, was third. For three plants of incurved varieties Mr. Searing was first, with a fine example of Lady Hardinge, Prince of Wales, and Jeanne d'Arc. Mr. J. Smith was a good second. Mr. J. Smith was first, with three plants of Japanese varieties, showing Fair Maid of Guernsey, Source d'Or, and Mdlle. Blanche Pigny. The prizes in the class for six poinsettias were awarded to Mr. G. Latter and Mr. J. Smith.

Cut Blooms were in every way worthy to rank with the groups, the flowers being remarkable for their freshness and finish. For twenty-four Japs and incurved in equal numbers, Mr. W. A. Searing was first, staging E. Molyneux, Volunteer, Comte de Germiny, Etoile de Lyon, Sunflower, Madame Baco, Madame C. Audiguier, Avalanche, Criterion, Val d'Andorre, Mrs. Wheeler, Mrs. Wright, Miss Violet Tomlin, Emily Dale Improved, Lord Wolseley, Golden Empress, Queen of England, J. Doughty, Prince of Wales, J. Salter, Miss M. A. Haggas, Barbara, Princess Teck, and Jeanne d'Arc; Mr. S. Cook was second; and Mr. G. Latter third. Mr. W. A. Searing was first for six blooms of any variety, with well-developed flowers of Avalanche; Mr. Cook was second; and Mr. Hughes third. Mr. Hughes was first with not less than eight varieties of incurved, showing splendid blooms of Golden Empress, Queen of England, Lord Wolseley, Jeanne d'Arc, Miss Violet Tomlim, and Miss M. A. Haggas; and was also awarded the first prize for not less than eight Japs, staging bright and fresh flowers of E. Molyneux, Etoile de Lyon, Elaine, Avalanche, Comte de Germiny, Ralph Brocklebank, Thunberg, Comtesse de Beauregard, and Mr. H. Cannell.

Fruit was well up the average, and for two bunches of black grapes Mr. G. Latter was first; and Mr. W. H. Guest, Sevenoaks, second, with very fine bunches. Mr. J. Kingswood, gardener to A. Wilson, Esq., Oak Hill, was first for three dishes of kitchen apples; and Mr. R. Edwards, gardener to W. Barclay Field, Esq., received the premier award for dessert apples.

Vegetables were numerously shown, and of good quality. The first prize for a collection, to consist of six dishes, was awarded to Mr. W. A. Searing; and Mr. A. Farmer, gardener to J. S. Norman, Esq., The Beacon, Sevenoaks, was a good second.

HOUNSLOW HORTICULTURAL SOCIETY, November 12 and 13.

This society held its first exhibition of chrysanthemums at the Town Hall on the above dates, and the number of entries and the quality of the flowers fully justified the committee in holding an autumn show, and gave good promise for the future. There were numerous entries for groups and also for cut flowers, and the effect was such as to produce an effect that was at once striking and beautiful.

Groups were a prominent feature of the show, there being no less than eight entries in the class for a group occupying forty square feet. The prizes were awarded to Mr. J. Smith, gardener to J. Cobb, Esq., Cromwell House, Hounslow, who was first; J. Bigwood, Esq., M.P., The Lawn, Twickenham, being second, and Mr. W. Ford, gardener to W. H. Ellis, Esq., Clovelly, Hounslow, third. Mr. A. Debnam, gardener to A. Pears, Esq., Spring Grove, was the successful competitor for four trained specimens. Mr. A. Debnam was first in the class for six primulas.

Cut Blooms were well shown, the blooms being of good quality and high finish. For twenty-four incurved and Japanese varieties, Mr. W. Ford and Mr. F. Debnam were first and second respectively. Mr. J. Jordan, gardener to G. H. Barber, Esq., The Elms, Hounslow, was first for twelve incurved and Mr. F. Greengrass, gardener to — Lomax Esq., Cranford, and Mr. F. Debnam, were second and third respectively. Mr. J. Jordan, Mr. F. Debnam and Mr. F. Greengrass were awarded prizes for twelve Japanese in the order of their names. For twelve bunches of pompons, Mr. W. Ford was first and Mr. J. T. Hoare second. Mr. W. Ford and Mr. J. Hill, gardener to P. B. Burgoyne, Esq., were first and second in the class for six reflexed.

Fruit was well shown, the prizes for a collection going to Mr. G. Cottrell, gardener to — Davies, Esq., The Woodlands, Hounslow, and Mr. W. Ford. For two bunches of black grapes, Mr. W. Ford was first, Mr. G. Cottrell second, and Mr. J. Jordan third; and for three dishes of apples, Mr. E. Weatherley, Atterstone House, Staines Road, and Mr. J. Jordan were the principal prizetakers.

Vegetables.—For a collection of not less than six sorts, Mr. F. Greengrass was first and Mr. F. Debnam second; and for a dish of tomatos, Mr. G. Thompson and Mr. F. Greengrass were awarded prizes.

BEST AND REST.

He does well who does his best:
Is he weary? Let him rest.
Brothers! I have done my best,
I am weary—let me rest.
After toiling oft in vain,
Baffled, yet to struggle fain;
After toiling long to gain
Little good with mickle pain—
Let me rest. But lay me low
Where the hedge-side roses blow;
Where the little daisies grow
When the winds a-maying go;
When the footpath rustics plod;
Where the breeze bow'd poplars nod;
Where the old woods worship God;
Where His pencil paints the sod;
Where the wedded throstle sings;
Where the young bird tries its wings;
Where the wailing plover swings,
Near the runlet's rushy springs;
Where, at times, the tempest's roar,
Shaking distant sea and shore,
Still will rave old Barnsdale o'er,
To be heard by me no more!
There, beneath the breezy west,
Tir'd and thankful, let me rest—
Like a child that sleepeth best
On its gentle mother's breast.

Ebenezer Elliott.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Greenhouse Plants in bloom:—Acacia corymbosa, Camellias, Tree Carnations, Coronilla glaucea, Correa pulchella, Chrysanthemums, Chimonanthus fragrans, Cyclamens in variety, Cytisus Atleeanus, Erica gracilis autumnalis, E. caffra, Epacris nivalis compacta, Jasminum nudiflorum, Primulas, Roman Hyacinths, Salvia splendens.

THE HOUSE.

It is of great importance at this time of year to promote, so far as may be safe, the hardiness of all cage birds. It should be borne in mind by those who love them that they are not far separated from ourselves in their requirements and habitudes. The very same causes that promote phthisis in humanity will promote it in cage birds; bad air, close stoves, unseasonable warmth, are the causes often of the afflictions that cause birds to fail as human beings do. All the favourite cage birds are, without exception, nearly hardy, and should have plenty of fresh air during the prevalence of mild weather. A temperature of from 50 deg. to 60 deg. is sufficient for them, and therefore to keep them in rooms where there are fires is really injurious and tends to consumption. And having mentioned covering up at night, we feel bound to say that we do not approve of the practice at any time. The practice of covering them up is injurious, for it certainly robs them of air and is calculated to soften the constitution. As regards air, it may seem to many that the breathing of a bird is a matter of comparatively small consequence. But the people who cherish such notions must submit to be told that the temperature of a bird is higher than the temperature of a man, and this is a question of breathing *pur et simple*. But there should be no exposure at any time of any bird to what we call a "draught." About nine-tenths of all the parrots and cockatoos that throw off their feathers do it because exposed to draughts. Give your big birds enough substantial food, and let them have light and air without draughts, and you will have them always healthy and cheerful and companionable. They are so hardy that when they go wrong the event is a real disgrace to their owners. And a very large proportion of the smaller cage birds are equally amenable to simple management.

CONSERVATORY AND GREENHOUSE.

Conservatory.—It is undoubtedly desirable to keep the conservatory gay, yet climbers and other permanent occupants must not be forced into growth prematurely. Heat enough must be maintained to prevent mildew and to allow of giving air freely; but the cultivator must endeavour to hit the golden maxim of keeping things safe and in order without pushing anything into growth before its time. If mildew occurs on valuable subjects, apply sulphur directly, but any nearly worn-out subjects that are becoming mouldy had better be got rid of altogether. Be very cautious in giving water; give enough, and not a drop to spare. A good time for a general watering is on those bright mornings when a west wind blows, and it seems as if spring had suddenly set in. Another time when watering must be generally attended to is when fires are going to keep out frost, for then it is that plants are likely to be dried up and irreparably injured.

STOVE AND ORCHID HOUSE.

Orchids are so generally at rest now that this is a most convenient season for a general examination of the stock, and the renewal of blocks, baskets, &c., for improving the effect of the grouping and arrangement. Repot any that require it, and let every plant undergo an examination, during which the surface material should be wholly or partially removed.

FORCING AND FRUIT HOUSES.

Cucumbers to be kept safe as to bottom heat, or they will begin now to drop their fruit, or to show canker at the collar. Be prompt therefore to renew the linings, if needful, where fermenting material is used. Recently collected leaves will, with the help of dung once turned, yield a very steady heat, and the better in large masses.

Peaches to be forced early need now a thorough dressing; clean the house, prune the trees, tie in and wash the stems and branches with a paint made of clay and Gishurst; mulch the border, and give it a thorough good soaking with tepid water. Give the trees air on fine days, but shut up at night. This treatment will bring the roots into action in advance of the branches, and when the trees are started they will make safe and healthy growth.

Vines to rest from this time to be pruned at once; in fact, early pruning is the only safe method of preventing bleeding.

FLOWER GARDEN AND PLEASURE GROUNDS.

Roses are frequently left in "by the heels" for weeks together at this time of year, but it is very bad practice. The frost is sure to reach their roots; and in the event of mild and moist weather, they will throw out fresh roots, and those fresh roots are invariably destroyed when they are removed to be properly planted. Therefore plant at once, tread them up firm, and stake securely.

Tulip Beds now to have their hoops placed over, to be ready for mats or other covering in case of heavy rains, but the beds should be freely exposed for the present; there is nothing gained by covering too soon.

FRUIT GARDEN AND ORCHARD.

Planting Fruit Trees and Bushes should be proceeded with, for the sooner all bushes and trees to be planted are in their places the better. In forming new fruit gardens, select first the most noted of the established varieties before seeking after novelties. Perfect drainage of the soil is a matter of the utmost importance in districts where heavy loams and clays prevail; and on hot, chalky, and sandy soils drainage is seldom needed. All kinds of fruits require a substantial nourishing soil; apples, currants, and gooseberries will grow well almost anywhere, but better on a good loam in a warm climate than on a bleak sand. All stone fruits require a good loam, and on well-worked clay generally prosper. Soils containing calcareous matters are if of good texture and substance, well adapted for the production of fruit; and in preparing old worn-out soils for fruit trees it would be well to add a liberal dressing of chalk or old mortar.

KITCHEN GARDEN AND FRAME GROUND.

Asparagus and Seakale may be forced by the roughest of methods when there are plenty of leaves and large deep pits. Anyone can make up a forcing bed on a plot of spare ground by means of a few boards to form the boundary of the pit, or turf walls where turf is plentiful. Five or six feet of leaves,

without manure, will do very well, and when the roots are planted, rough boards put aslope to carry off rain and snow may be used to cover in lieu of glass frames. During hard weather any amount of dry litter may be heaped over, and a supply of either of these delicious vegetables be had for the mere cost of the roots in the first instance.

VILLA FARM.

To keep the hives dry is of essential importance, and although the maintenance of an equable temperature in the interior is less so, it is a point that should not be altogether overlooked. Keeping the interior dry is imperatively necessary, and if coverings have not been already applied to straw skeps and to bar-framed hives with flat tops, not a day should be lost in putting them on. Previous, however, to this being done, warm material of some kinds, such as pieces of old carpets or blankets, should be wrapped round the hives, for although severe frost will not injure the bees in the same manner as damp, there can be no doubt whatever that they go through the winter much better when not exposed to extremes of temperature. Whatever is put on the hives for keeping the interior warm must have a covering of some kind to protect it from the rains, for as soon as it becomes charged with moisture it is but little value. A little ventilation during periods of warm, mild weather, will be more or less beneficial in the case of hives of wood, and there is probably no better way of affording it than by removing the plug from the feed hole in the crown-board, and laying over it a wisp of straw. Indeed, when the hives have a super chamber above, the wisp of straw will suffice for the stoppage of the feed-hole, and it will have the advantage of allowing a part at least of the moisture arising from the bees to escape without promoting draughts or allowing the ingress of cold air.

PRUNING IN COMMERCIAL FRUIT CULTURE.

By Mr. G. Bunyard.

Read at Conference of British Fruit Growers' Association, Leicester, August 5, 1890.

The Object of Pruning.—This operation is designed to assist Nature in the production of superior fruit. Reducing the quantity of fruiting spurs and excess branches, enables the tree to concentrate its vital energy on a fewer number of buds to their better individual development. Further than this, a good pruner leaves all those buds in the best possible position to catch the sun and air with a view of obtaining not only increased size in the fruit, but to ensure that high colour which such exposure alone can produce. All growers are aware that the fruit from the inside of the tree is not so highly developed or coloured as that from the outside. Thus a careful man will operate with a view to create a natural balance between roots and top, so that each tree can produce a crop yearly, and not, as when left alone, a heavy crop every other year, which makes it require a year's rest to recover itself. I recollect a story told that the owner of a small garden had two large standard apples that produced a heavy crop every other year, and my grandfather advised him to cut off the blossom from one at flowering time. This brought them so that he had a crop every year. This exhaustion of the tree by an over-crop is emphasised by the fact that most early fruits (whether apples, pears, or plums) are as a rule more regular bearers than later kinds, because the tree has time to recover its lost power between the gathering of the crop and the fall of the leaf, when Nature's repose comes on. Evidently, therefore, it is on these lines that "rational pruning" should be done.

In dealing with this subject from a trade point of view, we are naturally at once met with the cost of the operation, and it is here that we are at a disadvantage compared with the cheap labour of the continent; but I would suggest that growers should teach their sons to look after this, which is, after all, a most interesting operation, and I am sure they would enjoy it as I did looking after our orchard some years ago. The next point is, "How to go to work." I can remind you that in dealing with some fruits you are always on the right track as cultivators, but I want to see the system extended. Take, for example, your red currants and gooseberries after pruning. A novice would at once say you had spoiled them entirely, whereas you know by experience that your berries are twice as large as when the trees are unpruned, and your currants, too, are larger in the berry and longer in the bunch, while, in some cases, you summer-prune as well to let in the sun to ripen the wood. If this pays in the case of the small soft fruits it will also pay in the case of the harder "top" fruit, and you all know too well that it is the best samples from reputed growers which command the highest price, under-sized fruits and spotted samples really bring down the value of the entire crop. In a warm summer your fruit would be super-excellent, and in a wet or cold one, what you produced would be much finer and clearer than from neglected trees. Again, in the case of raspberries, you cut off two to four feet of the canes, certainly to save staking on the one hand, but you also know that you get much larger berries, and jam makers do not like raspberries that are all seeds, as they would be if left uncut. In old neglected gardens the berries are not one-fourth the size of properly headed-back plantations. The most forcible example of the value of pruning is afforded by the cob nut. As pruned in Kent the tree appears a miserable object after the cutter has done his work, but as the result proves, we get a better crop, and the nuts are far larger than those on trees not pruned; in fact, if allowed to grow as they like, the nuts are but a trifle larger than those called Barcelonas in the shops.

Again, why is wall fruit so much finer than that from the open? Because such trees must be pruned to keep them in position, and moreover the spurs are always (in properly cared-for gardens) thinned out, and naturally all face one way to catch the sun, and have the additional benefit of the radiation of heat from the wall to assist in the ripening of the wood.

Having given you, perhaps, too much theory, I will now proceed to indicate how I would recommend the pruning to be done on young trees, say standards or half-standards. In planting, all that is necessary is to cut off any injured roots, and then to shorten back slightly the long anchor-like roots, taking care to cut in closely the tap root, or those roots that have a distinctly downward tendency. The tree should then have its head examined, the planter holding it so that he can, as it were, look it in the face on a line with the trunk. He will then see at a glance if there are more shoots than are required to form a symmetrical head, by preference three, five, or seven shoots placed at equal distances, like the spokes of a wheel. I mean, if we can get seven, so much the better, but it is, for the purpose of a foundation, preferable to have even three at a regular distance between each other, than to have four or five, the balance of which is uneven. All surplus shoots can be cut clean away, and the rest not cut or tipped in any way. The following winter (in February by preference, avoiding frosty weather) this head is to be cut back rather severely, say leaving five or six eyes at the base, but cutting so that there is one bud left pointing outwards at the extremity of the cut. From this cutting a mass of shoots will issue, and in July the pruner should go over his trees and cut back (leaving only one inch of wood) those that are in the middle of the tree, preserving at their full length all those that form a head like an inverted umbrella. The following February these are again shortened; but this time allow about six inches of the new wood, and continue the operation for a few years, when the trees will begin to bear on the old wood. Keep the centre of the trees thinned out, and do not allow too many shoots to encumber the tree, but cut so that all hang free and do not cross each other. Possibly, in a few more years, some of these may be cut away with advantage, and there will be stronger ones taking the lead, and provided they are in proper places, may be allowed to go ahead. I consider this severe pruning necessary at first, because some fruits (notably, Manks Codlin, Stone's, and Lord Suffield apples), if left uncut, form a mass of fruit buds, and come into bearing, and never afterwards get beyond a mop-sized head. Some pears and plums have the same tendency.

In planting plums (from the nature of their roots), if the planting is completed before Christmas, they may be pruned the first year of planting: but if done after that time it is better to allow them to wait one year. Their after attention is the same as that advised for pears and apples, but as they grow more freely they need not be cut back so hard, as they form a head rapidly.

In planting cherries I strongly advise planters to let them stand the first year without cutting at all (except the roots as advised for apples). In the following season cut them back as required, after which the "less" knifing done on them the better, merely removing the crossing boughs. As pears have fewer roots than apples they must not be so severely cut.

The management of bush or pyramidal trees will be the same as advised for standards, having regard to the form of tree desired, but as they are more protected from the wind, and the crop can be thinned, they may be left with longer shoots than standards. Apples upon the Paradise stock may be cut back the first season if planted early.

In soft fruits, the prevailing custom of cutting them hard the first year cannot be improved upon; but in case of late planting (say February or March) the resulting shoots are so thin and sappy that it may be best to let them stand a year to establish themselves before pruning. It is most desirable that they should be planted before December, as in that case the rootlets push and get a firm hold of the soil before winter sets in. In planting raspberries for market, they may be shortened before planting to about two feet.

I now come to a more important point in pruning—namely, that of old or neglected trees, which are far too prevalent, and where faggots must be taken out to make any impression on the mass of useless wood they contain. In dealing with such examples we need to be very careful, for it is well known that large boughs sawn off apples, pears, plums, and cherries will sometimes result in decay, and in that case the tree suffers loss by heavy-laden boughs giving way at a weak spot. I am of opinion that it would be well not to cut these so close to the main stems and branches as is usually done, and that after the saw has been used the surface should be planed over or smoothed with a knife, and the edges neatly rounded with a sharp knife, so that the new bark can creep over and cover the wound.

All old orchards have trees with holes in them—the favourite nesting-places of the starling and tom-tit. The wood decays, and the woodpecker first starts the aperture by searching for its food, and other birds take the opportunity to nest where they can readily make room in the soft spongy wood. All shoots over half-an-inch across should be rounded in the way indicated, and I strongly recommend that this pruning should be done as soon as the fruit is gathered, as the bark makes some progress to cover the wound the same season, and the air being dry, the wood hardens (so to speak, heals) more than in the winter; and, moreover, the shoots that are dead and leafless can at once be detected much more readily than when the leaf is off. Now that the strain of farm work is reduced by the grubbing of hop land, more labour is at command for this work, and I must repeat that all this severe pruning should be done in the summer or autumn. Especially should all broken and split boughs be removed from plums where injured by an over-crop. I have heard of trees being severely injured by being pruned in a heavy frost, when the men could not work on the land, but I cannot say that it is always so. In pruning these "old stagers" it is not advisable to tip the branches, as the most lively wood, which draws the sap up freely, is on the points, and they nourish the tree.

The next point which I think worth a trial on a large scale is the thinning of the spurs. I have before me a fruiting branch of the old Yorkshire apple, the Cockpit (a free bearer but too small for profit). When the trees bear, I have half the fruit taken off, but although that makes the fruit finer, I am now thinning the spurs so that they may be larger still, and I am persuaded that if half the spurs were taken from our old orchard trees, which is easy work with a tool like the one I am using, we should have much finer fruit, and the spurs if cut about an inch from the stem would, in some cases, throw out other spurs which in time would enable us to prune out those left in the former cutting, and thus we should have perpetual youth on the head of an ancient body. Pears are most profuse in the way they spur, and some kinds bear so freely that they are not inaptly said to crop like ropes of onions. In the case of plums it is the same. The Diamond would bear more freely if half its spurs were taken out, and the Victoria under this treatment would not be so liable to break as it does from carrying such heavy crops. Jefferson again is a mass of spurs; in fact, even in winter, an expert can tell the names of leafless trees by the form of the spurs, and the style they set on the branches.

In removing what I may term surplus spurs, those found on the under sides of the branches are of little value, and if I say, negatively, that the pruner should retain all those in the best positions, and remove the rest, you will get an idea how to work. The Crittenden, or Cluster Damson, is one which makes a mass of thorny spurs, and I think these require thinning, as if left too thickly on the boughs the fruit is very small, and you will have noticed that the trees from suckers are much more inclined to thorn than those budded, which take more of the plum nature. The King of the Pippins and Manks Codlin apples, for example, are very fruitful trees, and I know that those who prune them on the spur system and shorten all the young growth defy the inevitable canker which affects these sorts. These close pruned trees grow marvellous fruit, which sells at a price that pays for extra labour expended. Such kinds as Court Pendû Plat and Keswick Codlin again make too many spurs.

I can scarcely leave the subject of pruning without reference to the Kentish

Cob nut, a subject which requires more cutting and pruning than any other fruit.

When received from the growers these trees have a small head upon a stem of twelve to fifteen inches, and this stem is intended that the ground beneath the bush may be the more readily kept free from weeds and be dug. They are planted as received, and allowed to grow for one year, when they should be cut hard in, to make them throw out vigorous shoots from the base of the head to form the start of the future tree. This is done by annually cutting, so that the next terminal shoot is made from an under bud, which in course of time makes a tree formed like a washing basin. I note the best shaped trees have started with six to be doubled to twelve main branches. From these a set of spurs or short shoots are given off on which the nuts are produced, and the trees should be so managed that at the end of a hundred years old they should be fifteen or twenty feet across the top, but not higher than five and a-half feet from the ground. From the bent portion of the main boughs a number of strong yearling shoots will be given off, which in Kent are called wands. These are taken out in summer, or partially so, for packing the autumn fruit, and in winter the rest are broken out, and either sold for flower sticks or basket making, or reserved to pack soft fruit the next season. The male or catkin blossoms are produced most freely at the upper part of the trees, and should be allowed to remain long enough to fertilise the pistillate or female flowers, which are produced on the smaller boughs. When the weather is very still and warm it would pay to tap the boughs with a stick, to make this pollen fly. When winter pruning the spurs are thinned, and, if need be, stopped. Old wood is removed, and the stronger growths shortened and thinned, leaving the tree regularly balanced on all sides, and with free play for the air and sun among the branches, remembering that the foliage is large on pruned trees. If time permits, in July or August, it is a great help to the strength of the tree to break the stronger shoots off the upper boughs with the finger and thumb (a sharp twist being all that is required); this plumps up the buds below the fracture, and assists the ripening of the wood, and it is found better than cutting, as the broken surface allows some sap to exude, and this prevents the formation of a secondary growth, which would weaken the bush and be of no value to produce nuts. In pruning (in winter), these cut ends are smoothly severed with a sharp knife. A careful pruner will proceed so that there is always abundance of fresh young wood in his examples, and when a twig shows signs of age, he cuts so that a fresh young one shall succeed it in the next year's cutting, so that worn out twigs are never seen in ancient trees. Suckers from the roots should be hoed off in growth or severed with a sharp spade, and if well rooted some may be reserved to make future plants.

In Continental works on fruit culture much stress is laid on the tools used. A few which we find useful as labour-savers are: 1, Coppin's tree pruner, avoiding the use of ladders in young trees; made from six to ten feet long. 2, American lightning saw, very easy and rapid in its work; capital for green wood. 3, Belgian secateurs fur pruning. 4, Aubert's Parisian secateurs. 5, Clasp and sheath knives.

ROYAL HORTICULTURAL SOCIETY.

FLORAL AND FRUIT COMMITTEES, NOVEMBER 11.

ALTHOUGH this was a good meeting the effects of the prevailing excitement in other directions were visible, and many of the more active members of committees were conspicuous by their absence. Messrs. Sutton and Sons, of Reading, put up a grand collection of Chinese primulas, both to display the qualities of their own strains and to illustrate Mr. Arthur Sutton's lecture, which was given in the afternoon.

Mr. Anthony Waterer, of Knap Hill, presented Vaccinium purpuraceum, the Knap Hill Scarlet Oak, and other good things.

Messrs. F. Sander and Co., St. Albans, put up a lot of beautiful orchids.

From T. Statter, Esq., of Stand Hall, Manchester, came fine examples of Vanda cœrulea, Cattleya aurea. A cultural commendation was bestowed on the cattleya, and the same honour was awarded to Baron Schroder for Odontoglossum Sanderianum.

Monsieur J. Linden contributed Odontoglossum Davisianum, which was the subject of a certificate, and a well-flowered Cattleya Warocqueana.

Mr. W. C. Atkinson, Esq., Aigburth, Liverpool, sent Lælia anceps alba.

Messrs. Rivers and Son, of Sawbridgeworth, made a grand display of apples and pears, and were awarded a silver-gilt medal. Amongst the apples were fine samples of Lane's Prince Albert, Lord Derby, Dumelow's Seedling, Herefordshire Beefing, King of the Pippins, and Cox's Pomona, all in rich colour. The pears included Beurre de Capiaumont, Alexander Lucas, Duchesse d'Angouleme, Leon le Clerc, Durondeau, and Doyenne du Comice.

Mr. W. Ross, gardener to Colonel Eyre, Welford Park, Shrewsbury, brought forward a seedling apple. The seed was sown in May, 1882; the tree is now about seven feet high and ten feet through, and has this year provided 50 fruits, some of them on the ends of the branches. The new comer is called Charles Ross, and made a favourable impression on the Fruit Committee.

Mr. Jarvis, Essenden Place, Hatfield, sent a seedling apple, closely resembling Greenupp's Pippin.

Mr. T. Laxton sent a sample of Chou de Bedford, which was thought identical with Couve Tronchuda.

The Floral Committee, presided over by William Marshall, Esq, bestowed a first-class certificate on Mr. Waterer's *Vaccinium purpuraceum*, and also on his *Quercus coccinea*, Knap Hill variety.

An award of merit was bestowed on Japanese chrysanthemum *Arthur Wood*, an attractive orange-red flower.

The Orchid Committee, H. J. Veitch, Esq., in the chair, awarded a first-class certificate to *Cypripedium Antigone* from C. niveum × C. Lawrenceanum. An award of merit was bestowed on *Cypripedium Doris* from C. venustum × C. Stonei from Norman C. Cookson, Esq.; and the like honour on *Cypripedium Eyermannianum* from C. Spicerianum × C. barbatulum grandiflorum, from Messrs. Saunder and Co. Also on *Odontoglossum Duvivierianum*, a natural hybrid between O. caudatum and O. nebulosum, from M. J. Linden; *Cypripedium Muriel Hollington*, from A. J. Hollington, Esq., Enfield; *Cypripedium Cleola*, from C. Boisserianum × C. Schlimi grandiflorum from Messrs. J. Veitch and Sons.

The Fruit Committee, over which T. F. Rivers, Esq., presided, had an easy time, and as soon as possible hurried away to enjoy chrysanthemums.

Replies to Queries.

Early Gladioli.—R. S.: The best of the gladioli for flowering under glass are Colvilli, a handsome species with elegant spikes of flowers attractively coloured crimson and white; Colvilli The Bride, pure white, the best of all for pot culture, and invaluable for the supply of cut flowers for bouquets and decorative purposes generally; and Ramosus, an attractive species with bright rose-coloured flowers. Put them in five or six-inch pots, three corms in each, and use a rather light and moderately rich compost. Hard forcing is not desirable in the case of these gladioli.

Winter-flowering Fuchsias.—M. D.: The most beautiful of the fuchsias blooming during the winter months are Dominiana, a dwarf-growing hybrid bearing long flowers with bright crimson-lake and light sepals; Serratifolia multiflora, a beautiful form producing a profusion of rosy-scarlet flowers; and Splendens, a very handsome species with brilliant scarlet flowers. The last-named is, perhaps, the most useful of the several kinds mentioned, but they are all so good that they should be included in your selection. Although generally classed with greenhouse plants, it is necessary to ensure an abundant production of flowers, to place them where they will have more warmth than is afforded by that structure. They do remarkably well in the intermediate house with the bouvardias and salvias. When placed under precisely the same conditions as those two useful classes of plants they will bloom freely and continuously throughout the winter.

Propagating Seakale.—Young Gardener: Seakale may be raised by means of seed or from the thong-like roots, the latter being in some respects preferable. When the crowns are lifted for forcing, cut off the side roots, tie them into small bundles, and bury them in soil in the kitchen garden or frame ground, as may be most convenient. It is advisable that you should so mark the bundles that you will have no difficulty in determining which is the upper end of the roots when you proceed with the planting in the spring. The end of February or the beginning of March is the best time in which to plant the roots. It is essential that the quarter in which they are planted should be previously well prepared and liberally manured. Under good cultivation, crowns sufficiently large for forcing can be produced in one season, but probably you will find it necessary to allow them to remain in the quarter until the end of the second season. The variety known as the Lily White differs from the common form in the young leaves being milk-white instead of purple, the difference in the colour being a great advantage when seakale is forced in a structure from which it is difficult to wholly exclude the light.

Pleiones.—Amateur Orchidist: It is probable that the cause of some of the specimens of your Pleiones failing to bloom satisfactorily has been an insufficiency of moisture at the roots during the early part of the season. They all require a thorough season of rest, but when they are kept too dry, as is frequently the case, the pseudo-bulbs become so shrivelled and exhausted as to render the production of a satisfactory display of flowers impossible. The proper course to take in the cultivation of Pleiones is to repot them as soon as the flowers have lost their freshness and beauty, and then to encourage them to make a vigorous growth by supplying them rather liberally with water and placing them where they will have the advantage of a rather brisk temperature. The most suitable place is, perhaps, a shelf near the glass in the cattleya or intermediate house. Fill the pans to about one half their depth with crocks to ensure efficient drainage, and use a mixture consisting of fibrous loam, peat, sphagnum, and sand. During the season of rest maintain the material about the roots sufficiently moist to prevent the pseudo-bulbs shrivelling and no more.

Markets.

COVENT GARDEN.

FRUIT.

Apples.....per ½-sieve	3s. 6d.	to	7s. 0d.
Filberts, Kent, per 100 lb.	65s. 0d.	,,	70s. 0d.
Grapes.....per lb.	0s. 9d.	,,	2s. 9d.
Lemons .....per case	20s. 0d.	,,	40s. 0d.
Pine Apples, English, per lb.....	1s. 6d.	,,	3s. 0d.
Pine-apples, St. Michael's each.....	2s. 6d.	,,	6s. 0d.

VEGETABLES.

Artichokes, Globe, per doz.	4s. 0d.	to	6s. 0d.
Beans, Kidney .....per lb.	0s. 4d.	,,	0s. 6d.
Beet .....per doz.	1s. 0d.	,,	2s. 0d.
Brussels Sprouts,...per ½ sieve.....	1s. 6d.	,,	2s. 6d.
Cabbages.....per doz.	1s. 6d.	,,	2s. 0d.
Carrots .....per bun.	0s. 6d.	,,	—
Cauliflowers .....per doz.	4s. 0d.	,,	6s. 0d.
Celery.....per bun.	1s. 6d.	,,	2s. 0d.
Cucumbers .....each	0s. 4d.	,,	0s. 6d.
Endive.....per doz.	2s. 0d.	,,	—
Herbs .....per bunch	0s. 4d.	,,	—
Horse-radish.....per bun.	2s. 0d.	,,	3s. 0d.
Lettuces .....per doz.	1s. 0d.	,,	1s. 6d.
Mushrooms ...per basket	2s. 0d.	,,	—
Onions.....per bushel	2s. 0d.	,,	4s. 0d.
Parsley .....per bun.	0s. 4d.	,,	0s. 6d.
Savoys.....per doz.	1s. 0d.	,,	2s. 0d.
Scarlet Runners ...per lb.	0s. 2d.	,,	0s. 3d.
Seakale .....per pun.	1s. 0d.	,,	1s. 6d.
Shallots .....per bun.	0s. 4d.	,,	0s. 6d.
Small Salading...per pun.	0s. 3d.	,,	0s. 4d.
Spinach .....per bushel	3s. 0d.	,,	—
Tomatos.....per lb.	0s. 9d.	,,	1s. 0d.
Turnips..... per bunch	0s. 4d.	,,	—

CUT FLOWERS.

Abutilons ...per doz. bun.	2s. 0d.	to	4s. 0d.
Bouvardias.....per bunch	0s. 6d.	,,	1s. 0d.
Callas	4s. 0d.	,,	8s. 0d.
Carnations, per doz. blms.	1s. 0d.	,,	2s. 0d.
Chrysanthemums, per doz. blooms.....	1s. 0d.	,,	2s. 0d.
Chrysanthemums, per doz. bun.....	3s. 0d.	,,	12s. 0d.
Eucharis ...per doz. blms.	3s. 0d.	,,	6s. 0d.
Gardenias, per doz. blms.	2s. 0d.	,,	4s. 0d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Lapageria, per doz. blms.	1s. 0d.	,,	3s. 0d.
Maidenhair Fern, per doz. bun.....	4s. 0d.	,,	9s. 0d.
Marguerites, per doz. bun.	3s. 0d.	,,	6s. 0d.
Mignonette, per doz. bun.	2s. 0d.	,,	4s. 0d.
Pelargoniums, Zonal, per doz. trusses	0s. 4d.	,,	0s. 6d.
Primulas, Double, per bunch.....	0d. 6d.	,,	1s. 0d.
Roses, Coloured, per doz.	3s. 0d.	,,	5s. 0d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	2s. 0d.
Tuberoses, per doz. blms.	0s. 4d.	,,	0s. 6d.
Violets .....per doz. bun.	1s. 0d.	,,	2s. 0d.
Violets, Parme, per bun.	2s. 6d.	,,	3s. 6d.
Violets, French, per bun.	1s. 0d.	,,	1s. 6d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents .....per ton	60s.	to	90s.
Magnum Bonum .....per ton	50s.	,,	70s.
Beauty of Hebron .....per ton	50s.	,,	70s.
Imperator .....per ton	55s.	,,	80s.
Champions .....per ton	60s.	,,	65s.
Snowdrop .....per ton	90s.	,,	110s.
Reading Giant .....per ton	90s.	,,	100s.

Obituary.

ON the 13th inst., after a long illness, Mr. A. MCINTOSH, for many years head gardener at Paxton House, Berwick-on-Tweed.

"ANY DOCTOR WILL TELL YOU" there is no better Cough Medicine than KEATING'S LOZENGES. One gives relief; if you suffer from cough try them but once; they will cure, and they *will not* injure your health; they contain only the purest and simplest drugs, skilfully combined. Sold everywhere in 13½d. tins.—[ADVT.]

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Noon.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
30	S	**1st Sunday in Advent.**	7 44	11 9	3 54	7 10	11 25	3 58	4 16	1 3	1 23	41·3
		DECEMBER.										
1	M	Princess of Wales born, 1844.	7 46	10 46	3 53	8 16	0 1	4 34	4 52	1 41	1 59	41.3
2	Tu	Battle of Austerlitz, 1805.	7 47	10 23	3 52	9 23	0 26	5 12	5 32	2 17	2 37	41·3
3	W	Samuel Crompton born, 1753.	7 48	10 0	3 51	10 31	0 50	5 55	6 18	2 57	3 20	41·3
4	Th	(Last Quarter.	7 49	9 36	3 51	11 39	1 8	6 45	7 12	3 43	4 10	41·3
5	F	Loss of the Nile, 1854.	7 51	9 11	3 51	Morn.	1 24	7 41	8 18	4 37	5 6	41.2
6	S	*St. Nicholas.*	7 52	8 45	3 51	0 49	1 39	8 48	9 26	5 38	6 13	41.2

Orchids in Flower.		Day of Yr.
Limatodes rosea	Brazil.	1890 334
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Auction Sales for the Ensuing Week.

MONDAY, WEDNESDAY, AND SATURDAY, DEC. 1, 3, AND 6.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Dutch Bulbs, Liliums, Spiræas, &c.

MONDAY, THURSDAY, AND SATURDAY, DEC. 1, 4, AND 6.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

TUESDAY, DEC. 2.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilium auratum, and other Lilies and Bulbs.

WEDNESDAY, DEC. 3.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Greenhouse Plants, Ferns, Tuberoses, and Bulbs.

WEDNESDAY, DEC. 3.—Messrs. Protheroe and Morris, at the Bedford Nurseries, Haverstock Hill; Nursery Stock, Greenhouse Plants, &c. (Two days.)

THURSDAY, DEC. 4.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Importations from Japan, Lily of the Valley, Tuberoses, &c.

FRIDAY, DEC. 5.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column, £3; one page, £9.

Displayed Advertisements are charged according to the space occupied.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

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THE GARDEN ORACLE FOR 1891

Will be published in the usual form at 1s., and will be as heretofore, a complete review of horticulture and floriculture in the past year, and a guide for cultivators, exhibitors, and purchasers of plants, flowers, fruits, &c., in the year that is before us. This is the oldest horticultural almanac extant, and as it contains the latest information on new varieties, forthcoming exhibitions, and undertakings of various kinds in prospect, it cannot be published so soon as the general run of almanacs, that are chiefly made up by hasty compiling. The Oracle now preparing will be rich in reports, announcements, and selections, all condensed into the smallest possible space, and arranged for handy reference. The Oracle is a business almanac and diary, in addition to its special floricultural features. Published at the GARDENERS' MAGAZINE Office, 4, Ave Maria Lane, London, E.C.

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The Gardeners' Magazine.

SATURDAY, NOVEMBER 29, 1890.

THOROUGH PREPARATION OF THE SOIL during the autumn and winter has such a direct bearing upon its fertility that it is in the highest degree essential cultivators should fully recognize its importance and proceed with the work as expeditiously as circumstances will permit. It would also be well were they to become better acquainted with some of the principal changes effected in the chemical constitution, as well as the mechanical condition of the soil by proper cultivation, as they would then not only be more ready to take advantage of every favourable opportunity for pushing on the digging and trenching, but they would be better able to adapt themselves to the varying conditions under which the gardener is usually placed in the course of his career. To dig or trench deeply has long formed an important part in the teaching of practical horticulture, but sufficient attention has not been paid to the conditions which obtain as the result of this deep stirring of the soil, with the result that many failures have occurred in putting this teaching into practice. That the digging or trenching, as the case may be, is done to expose as large a surface as possible to atmospheric influences is well-known, but the fact is not so generally understood as it should be, that something beyond a mere mechanical change is effected in the soil by the exposure. The constituents of all fertile soils, and with these alone we are now concerned, include potash, soda, magnesia, lime, phosphoric acid, sulphuric acid, chlorine, oxide of iron, and alumina, all of which, with the exception perhaps of the last named, are essential to plant life. These may exist in varying proportions in the soil, and they may be either dormant or active, but usually they exist in both states. With reference to these constituents it may be stated in a general way that no matter how plentiful they are, they will be of but little service as plant food unless they are in an active state. Or to state the case in other words, each constituent must be in such a condition that it will readily dissolve in water or under the influence of carbonic or other organic acid, for it is in solution only that the plant can take up the food necessary to its healthy development. It follows, therefore, that not only must the practice adopted be such as to ensure a good tilth to allow the free passage of the roots, but it must also set free the plant food stored up within the soil.

The agents most active in converting the mineral constituents of the soil into a condition that will enable the plants to readily absorb them by means of their delicate root hairs, are carbonic acid and oxygen, which are incessantly engaged in their work of combination and disintegration. As these gases constitute a part of both air and water, the work they are able to accomplish is in some degree determined by the facility with which the air and water can pass through the soil. It therefore follows that they are able to attack the soil with the greatest vigour when it has been deeply stirred, and the top spit so left as to expose the largest surface possible to atmospheric influences. These two agents work steadily throughout the year, but at no season are they able to accomplish so much as during the autumn and winter months, when assisted by the frost and rain, which, under favourable conditions, render substantial service in improving the mechanical condition of the soil. Their effectiveness is to a certain extent increased in proportion to the depth to which the soil is broken up, and it is consequently necessary to stir the soil as deeply as the character of the subsoil will permit. Some years since, when the beneficial effects of deep trenching were demonstrated by the more experienced cultivators, many failures occurred in consequence of the fact being overlooked that it is necessary to adapt the practice to the conditions which obtain in each case. It was pointed out by those who had obtained such satisfactory results, that by bringing the bottom spit to the top when the ground was trenched over every second or third year, the soil was more thoroughly exposed to atmospheric influences than by the simple process of digging. So far the teaching was sound, but it was greatly reduced in value in consequence of nothing being said about the necessity for care in dealing with soils resting upon stiff clay and stony subsoils. In consequence of the failure to point out the precautions that should be taken in adopting the practice, there were many failures, and in some cases they were disastrous. In some instances were to be seen men engaged in burying the well pulverized top spit beneath some twelve or fourteen inches of stiff clay. In others the men were not less active in bringing the gravelly or brashy subsoil to the surface. As the result, the soil instead of being improved was rendered more or less unfit for the crops, and much labour had to be expended in restoring its fertility.

It may be stated in a general way that while the soil should in the course of the autumn be stirred to as great a depth as possible in no case should a strong clay subsoil, or one of which stones form a considerable part, be brought to the surface. To dig over light soils to a depth that would necessitate bringing any portion of the bed of gravel or rock to the surface is not desirable. On the other hand, in dealing with strong clays, the subsoil may be broken up with advantage, provided it is not brought to the surface. The proper course in trenching over a quarter when the staple is heavy and tenacious is to open out a trench as in ordinary trenching, and then fork over the bottom

to a depth of twelve inches. Under this course of procedure the soil is so well broken up as to permit both air and water to readily pass through it without incurring any of the risks involved in bringing the strong subsoil to the surface. When the ground is trenched in the ordinary way it is important that the work should be done in the autumn, or so early in the winter as to allow plenty of time for the soil brought to the surface to be thoroughly aërated and pulverized by the action of the weather before the quarter is cropped. To expose the largest possible surface to atmospheric influences is an important factor, and should it not be thought desirable to throw the top spit up into ridges it must be left in a rough state, which may be done without any apprehensions as to the difficulty of breaking down the lumps when the ground is being prepared in the spring for the crop with which it is to be sown or planted.

The preparation of the soil includes of necessity the application of some fertilizer adapted to the character of the soil and the requirements of the crops to be grown, and the question of manuring should have careful consideration. To discuss it at any length is not now practicable, but it may be useful to briefly refer to the relative advantages of applying manure in the autumn and spring. In the case of stable and farmyard manure it may be assumed that there is no great advantage in keeping it in heaps exposed to the weather or otherwise until the straw has had time to become thoroughly decayed. The decomposition can be as efficiently accomplished below as above the surface, with this important difference. When the manure is dug in within a short time of its being available the soil will seize the nitrogenous and other constituents as they are given off in the process of decomposition and, provided it is sufficiently retentive, will hold them securely until the crops are able to take advantage of them. Generally speaking, retentive soils should be dressed with manure in the autumn or winter. Those on the other hand that are light in character should not receive their dressing until spring, because when manured in the autumn or winter heavy losses occur through much of the nitrogen being washed out by the winter rains. Not only is it necessary to adapt the time of application to the character of the staple, but its condition must also conform to the season in which it is applied. In the spring it is necessary it should be more or less decayed that it may at once be available as plant food. On the other hand, when applied in the autumn no immediate demand will be made upon it by the crop, and it is, therefore, preferable that it should be fresh or only partly decayed when used. Artificial fertilizers should in all cases be applied in the spring.

IMPORTS OF ONIONS last month were 514,681 bushels, as compared with 525,608 bushels in October, 1889.

IMPORTS OF POTATOS last month show a marked advance upon the quantities received in the corresponding month of last year. The actual imports were 17,694 cwt. in 1889, and 55,938 cwt. in 1890.

GARDENERS' ROYAL BENEVOLENT INSTITUTION benefited to the extent of £6 10s. from the concert recently given in the aid of its funds at the Town Hall, Downham, Norfolk.

PRAGUE BOTANIC GARDEN suffered materially from the floods which recently did so much damage in the neighbourhood of the city, being for four days covered with between six and seven feet of water.

AN INDEX TO THE KEW BULLETIN has been recently published, and may be obtained in the usual way at the same price as the ordinary monthly issues.

APPLES IMPORTED IN OCTOBER amounted in the aggregate to 586,832 bushels, or 97,980 bushels less than were imported in the corresponding month of last year.

MASDEVALLIAS AND DISAS formed the subject of an excellent paper read by Mr. E. Burbery, orchid grower, at Highbury, Birmingham, at a recent meeting of the Birmingham Gardeners' Association.

MESSRS. SUTTON AND SONS have placed their large seed stores at the disposal of the committee in charge of the arrangements for the reception of the Duke of Clarence and Avondale, on the occasion of his visit to Reading about the middle of next month. It is proposed to serve the luncheon in one of the stores, no other room of sufficient size being available in the town.

NATIONAL CHRYSANTHEMUM SOCIETY'S exhibitions during the financial year 1891-92, will be held in the second week of September and the second week of November, 1891, and January 8 and 9, 1892. The exhibitions will, as usual, be held at the Royal Aquarium, but it is to be hoped that the committee will, in making the new arrangements, stipulate that a suitable room be provided for meetings on the days of the respective exhibitions, should it be required.

THE "MILDNESS OF THE SEASON" is evidently having a disturbing effect upon the minds of those who regard the absence of severe frosts and heavy falls of snow in November as quite exceptional. In consequence the newspapers are being flooded with paragraphs, in which we are told that a ripe raspberry or strawberry has been gathered in one garden, or that a few primroses have been picked in another. The correspondent of one of the papers sets forth in considerable detail the fact that he has recently been in a garden in which violets were in bloom!

DARWIN MEDAL, newly founded by the Royal Society, has this year been appropriately awarded to Mr. Alfred R. Wallace, for his independent origination of the theory of the origin of species by natural selection.

THE MAXIMUM RATES FOR THE CARRIAGE OF GOODS BY RAILWAY proposed by the Board of Trade will, it is asserted by the principal railway companies, involve a loss to the revenue, as compared with the existing actual charges. The chief railway companies having termini in London have submitted to the Board of Trade certain facts and figures in support of their contention, and printed copies of the statement submitted by each company can now be obtained at the head office of such company.

THE CANADIAN EGG TRADE has of late years assumed considerable proportions, and it is believed by the Dominion Authorities that the English markets afford an opportunity for its further extension. The Department of Finance has accordingly issued a bulletin, which announces that the department supplies shippers with full information upon the best methods of placing eggs upon the British market, and expresses the belief that an extensive and lucrative trade may be built up.

ROYAL BOTANIC SOCIETY'S GENERAL MEETING on Saturday was exceptionally interesting. Many attractive plants and tropical fruits, grown in the Society's gardens were exhibited, and the economic value of several explained by Professor Bentley, who also noticed a specimen of the Fly Agaric on the table from Somerset, presented by Dr. Prior, as containing a very poisonous narcotic alkaloid. In some north European countries where it is common, this fungus is said to be used to increase the intoxicating qualities of liquor. Its name is due to the fact that an infusion in milk is used to poison flies.

THAT FRUIT-FARMING IS PROFITABLE, when carried out on a large scale, is we are told in one of the monthlies, proved by Lord Sudeley's experiment in Gloucestershire. His farm, which covers some 500 acres, yielded it is said this year 500 tons of fruit; 150 tons consisted of plums, and these realised, on an average, £30 per ton. The 500 acres produced £10,000 this year. The figures given may be strictly accurate, but estimates founded upon them would be of but little value, even if they did not prove very misleading. Excepting in a few instances the plum crop was a complete failure in this country, and Lord Sudeley's farm was one of the exceptions, the crop of most kinds being remarkably good, consequently the fruit commanded a price far in excess of that obtained in an ordinary season.

COMPARATIVE VALUES OF WHOLE OR CUT POTATOS FOR SEED were practically tested at the Capello Experimental Station in the course of the past season. The experiments were carried out by M. Deprez, with a view to test the relative advantages of using whole or cut sets, and the effect of a mixture of sulphates of copper and lime, sprinkled over the crop, as a check to potato disease. The average results of several trials show a difference of about 7 cwt. per acre in favour of the whole seed, after allowing for the excess in the weight of the seed tubers over that of the cut seed. The use of the sulphates failed to show any effect in preventing disease, but it increased the average produce to the extent of nearly 60 cwt. per acre. The quantities of sulphate applied are not stated in the report. All the plots were liberally dressed with farmyard manure, and the difference in produce attributed to those treated with the sulphates is remarkable, as only the sulphate of lime could have been used by the plants as food.

GARDENERS' ORPHAN FUND.—A special general meeting of the subscribers will be held at the Cannon Street Hotel on December 9, at six p.m., to consider the question of changing the date of the commencement of the financial year from July to January, to alter the date of the annual meeting from July to February, and to elect the seven unsuccessful candidates at the last election to the benefits of the fund as a memorial to the late Mr. George Deal. The committee have found the month of July to be inconvenient for holding the annual meeting, and that great confusion has arisen from the financial year commencing in the middle of the summer instead of at the beginning of the year, as in the case of most other institutions of a similar character. To avoid the inconvenience and prevent the confusion, which has involved much additional secretarial work in sending out notices, the committee recommend the alteration of dates. With reference to subscriptions, it is proposed that payments made between July 1 and December 31 of the current year shall be carried forward to 1891.

THE WILLIAM HOLMES MEMORIAL FUND.—The directors of the Royal Aquarium, Westminster, in consideration of the late Mr. William Holmes' long connection with that institution as hon. secretary of the National Chrysanthemum Society, and as manager of the flower shows, have generously offered to give a benefit performance in aid of the Holmes Memorial Fund throughout the day of Wednesday, December 17 next. In order to render the occasion as attractive as possible, and with a view to augmenting the fund, it has been arranged that a Floral Fête and Bazaar shall be held in the building on the same day. The committee will be grateful for flowers to furnish the stalls, and though flowers are scarce at this time of the year, it is essential to the success of the fund that it be proceeded with at once, and an earnest appeal is made for assistance in so laudable an object. Flowers may be made into sprays or buttonholes, or packed separately, and should reach the Royal Aquarium before eleven a.m. on December 17, addressed to Mr. Lewis Castle. Fruit or miniature plants will also be acceptable, as the entire proceeds of the bazaar will be devoted to the fund. Tickets of admission are issued at one shilling each, and as those sold will afford a substantial addition to the fund, it is especially desired that application be made at once to the hon. secretary, Mr. Lewis Castle, Hotham House, Merton, Surrey.

A Directory of the Italian Horticultural Societies has been recently issued by the Minister of Agriculture and Commerce of Italy. In addition to the list of the horticultural societies and their members, the publication contains a list of the botanic gardens and of the schools of agriculture and forestry, with other useful information.

Messrs. Webb and Sons' Root Crop Competition has just been brought to a close with the most satisfactory results. England and Wales were for the purpose of the competition divided into seven districts, and the judges, Mr. J. Cummins and Mr. Z. Cartwright, report that the crops in the several districts were heavy and the produce of high quality. The heaviest crop of Webb's swede was grown by Mr. J. Harvey, Darlaston Grange, Stone, the average weight per acre being 43 tons 17 cwt. The cultivator also had the heaviest crop of Webb's mangold, of which the average was 63 tons per acre.

The late Mr. Hibberd.—It is generally felt that some permanent record should be made, expressive of the sense entertained by horticulturists, of the loss they have experienced in the death of Mr. Shirley Hibberd, and of their appreciation of his disinterested services to horticulture. As the representative society of the empire, and one which benefited so largely by his counsel, and by his active services on its committees, as well as in the direction of the gardens at Chiswick, it has been suggested that a meeting be held at the rooms of the Royal Horticultural Society, with the sanction and approval of the Council, on December 9, to take the matter into consideration. A request will be accordingly transmitted to the Council to take the necessary steps for carrying out this purpose.—*Gardeners' Chronicle.*

The Action of Earthworms in maintaining the fertility of the soil is exemplified in a remarkable manner in Yoruba Land. A recent issue of the *Kew Bulletin* contains a report by Mr. Alvan Millson, the Assistant Colonial Secretary of Lagos, on Yoruba Land, the native territory adjacent to Lagos. After describing the wasteful system of cultivation employed by the natives and the wonderful rapidity with which the soil recovers from it, he says the mystery is solved in a simple and unexpected manner during the dry season. The whole surface of the ground beneath the grass is seen to be covered by rows of cylindrical worm-casts. These vary in height from a quarter of an inch to three inches, and exist in astonishing numbers. It is in many places impossible to press a finger upon the ground without touching one. For scores of square miles they cover the surface of the soil, closely packed, upright, and burnt by the sun into rigid rolls of hardened clay. The rains ultimately break them down into a fine powder, rich in plant food and lending itself easily to the hoe of the farmer. These casts are very different in form from those familiar in English gardens. On digging down, the soil is found to be drilled in all directions by a countless multitude of wormrills, while from thirteen inches to two feet in depth the worms are found in great numbers in the moist subsoil. It is impossible to estimate their number per cubic feet, as the quantity varies according to the season and the locality. Having carefully removed the worm-casts of one season from two separate square feet of land at a considerable distance from one another, and chosen at random, Mr. Millson found the weight to be 10¾ lb., in a thoroughly dry state. This gives a mean of over 5 lb. per square foot and a total of not less than 62,233 tons of subsoil brought to the surface on each square mile of cultivatable land in the Yoruba country every year. This work goes on unceasingly year after year, and to the untiring labours of its earthworms this part of West Africa owes the livelihood of its people. Where the worms do not work the Yoruba knows that it is useless to make his farm. Estimating one square yard of dry earth by two feet deep as weighing half a ton, there is an annual movement of earth per square yard of the depth of two feet amounting to no less than 45 lb. From this it appears that every particle of earth in each ton of soil to the depth of two feet is brought to the surface once in twenty-seven years.

ORCHID NOTES—ORCHID ALBUM.

Vanda teres candida is figured in Part 103 of this valuable work. This is a very pretty variety of a well-known species. The sepals and petals are white, the lip lightly stained with rose. There are several distinct varieties of this vanda in cultivation, as, indeed, there are in all species of vandas. As the seedling forms are produced under varying conditions, all of them fertilized by native insects, sometimes with their own pollen, at other times with that of another variety, they are sure to be of different gradations of colour, as well as variable in the formation of the flowers. The white form has been hitherto of rare occurrence, and is doubtless an acquisition. This is an easily managed species, and under the right cultural conditions grows like a willow. I have had plants make eighteen inches of upright growth in one year. There used to be a difficulty in getting the plants to produce flowers, but this has been overcome by growing them in a high temperature, and freely exposed to the sun during the growing season. We flower every example we have annually, and during the growing season the stems are trained within a few inches of the glass. The editor recommends the culture which I have also proved to be successful. Our plants are simply trained to teak rods fastened together, and the roots of the plants are put in clean sphagnum and potsherds.

Zygopetalum crinitum.—The variety with bluish radiating lines on the lip is figured in the same number of the work above cited. It is a handsome free-growing species of considerable merit, and is grown as well in the nurseries of Messrs. B. S. Williams and Son as it is anywhere. The editor recommends a portion of fibrous loam to be mixed with the peat in which the plants are potted. I saw this plant in capital condition in the collection of Alfred Borwick, Esq., under the care of Mr. John Gilks, and on inquiring what treatment the plants had received, I was told the potting soil was mostly loam and the plant was grown in the Cattleya house, being freely supplied with water during the summer, and rested by being kept rather dry at the roots after the growths were completed, they flowered very strongly during the spring months. The plants were parted out very much like herbaceous plants, and they speedily grew into large specimens.

Dendrobium Schneiderianum, a very beautiful and distinct garden hybrid is well figured. It was obtained in the gardens of Oscar Schneider, Esq., of Fallowfield, Manchester. The flowers are very much like what one would expect from such a cross. The sepals and petals are creamy white and rosy tipped. The lip is deeply stained with orange yellow and tipped like the sepals and petals. It requires much the same treatment as the usual run of deciduous dendrobiums. These garden hybrids are now a numerous and important section of this genus, and their numbers are likely to be increased ten-fold during the next decade.

Miltonia (Odontoglossum) Bleuana splendens.—This is the result of a cross between Miltonia vexillaria and M. Roezli; and has been produced in the gardens of Mons. A. Bleu, of Paris. Other hybridizers have attempted to cross these two species, and have not yet succeeded in obtaining plants. The plate gives a three-flowered spike. The flowers are of large size, whitish; the base of the lip marked with brown, and the base of the petals stained with a lively rose colour. It is stated to require a structure nearly as warm as the Cattleya house to winter in, and as regards the general routine of its culture, this must be the same as that of its two parents, except as regards temperature. M. Roezli requires quite a warm house temperature; while M. vexillaria does best in the cool end of the Cattleya house. It will probably be found that the new hybrid will succeed best in a temperature intermediate between the two.

J. Douglas.

FUNERAL OF THE LATE MR. HIBBERD.

In the presence of a large and thoroughly representative gathering of horticulturists and many personal friends, the remains of the late Mr. Hibberd were, on Saturday last, laid to rest in Abney Park Cemetery. In accordance with the arrangements announced in these pages last week, the funeral cortége left his residence in the Priory Road, Kew, about noon, and reached All Saints, Stoke Newington, within a few minutes of two o'clock. Here were assembled many anxious to show by their presence their appreciation of the private worth and the public services rendered by Mr. Hibberd. The first part of the service was said by the Vicar, the Rev. H. Shrimpton, who, previous to the procession leaving the church, referred in eloquent terms to the many and important labours of Mr. Hibberd, and the great influence he had brought to bear upon matters affecting the public welfare. He also pointed to him as a bright example of what may be accomplished by well directed efforts in contributing to the happiness of the community. Leaving the church at the close of the address, the cortége proceeded to the cemetery, and amongst the relatives and friends who occupied seats in the carriages were—Mr. C. M. Mitchell, Mr. G. W. Mitchell, Rev. W. Wilks, who represented the Royal Horticultural Society, Mr. W. H. Collingridge, Mr. Hargrauve, Dr. Masters, Mr. H. J. Veitch, Mr. A. F. Barron, Mr. Alfred Slocombe, Mr. Knighton, and Mr. George Gordon. On reaching the cemetery about two hundred horticulturists and friends were found gathered round the grave, which is near the principal entrance. Amongst those present were—Colonel McKenzie, Mr. H. Cannell, Mr. J. Crute, Mr. J. Jackson, Mr. E. Hill, Mr. F. Q. Lane, Mr. C. Warden, Mr. B. Wynne, Mr. R. Ballantine, Mr. J. Wright, Mr. C. T. Druery, Mr. H. Balderson, Mr. W. Jordan, Mr. E. Sanderson, Mr. Robert Glendenning, Mr. T. S. Ware, Mr. Cochrane, Mr. H. Williams, Mr. W. Watson, Mr. F. Fitch, Mr. P. McKinlay, Mr. Lewis Castle, Rev. S. Goldney, Mr. A. Dean, Mr. R. Dean, Mr. H. Cordwell (representing Messrs. Sutton and Sons), Mr. J. Barry, Mr. C. B. Green, Mr. J. Weeks, Mr. A. Turner, Mr. G. W. Cummins, Mr. H. B. May, Mr. E. T. Cook, Mr. W. Brown, Mr. J. R. Chard, Mr. J. Willard, Mr. G. A. Gordon, Mr. James, Mr. J. H. Laing, Mr. F. Moore, Mr. L. Barron, Mr. W. G. Head, and Mr. W. Brewer.

The coffin was completely hidden by wreaths and other floral tributes of love and respect, all more or less beautiful. Within a short time of the announcement of Mr. Hibberd's death, floral offerings began to arrive at his residence, and so large was the number received in the interval, that the drawing-room at Priory Road, in which they were placed, was on the morning of the funeral filled to its utmost capacity with them. Sad as were the associations it was impossible not to admire the great beauty of the wreaths, crosses, anchors, and other devices so lavishly contributed. Amongst the numerous arrangements was one which immediately arrested attention, and that was a charming little basket of flowers bearing the inscription: "In loving memory of dear papa from Nellie." Wreaths were sent by Dr. Hogg, Mr. and Mrs. Barron, Messrs. H. Cannell and Sons, Mrs. Fitch, Messrs. W. H. and L. Collingridge, Mr. and Mrs. Knighton, Messrs. Sutton and Sons, Mrs. Charles Turner and family, Mrs. Dixon, Mr. George Bunyard, Messrs. B. S. Williams and Son, Mr. L. Barron and Miss Barron, Publishing and Printing Departments of the Gardeners' Magazine, Mr. James Crute, Mr. and Mrs. Gordon, Mr. George Stanton, Mr. and Mrs. Jackson. Crosses were contributed by Mr. and Mrs. Mitchell, Mr. Hargrauve and family, Miss Roberts and Mrs. Goldney, and the United Horticultural Provident and Benefit Society sent a tastefully arranged anchor, which may be regarded as symbolical of the services rendered by Mr. Hibberd in connection with the founding of that valuable institution.

The service completed, his friends and colleagues left the cemetery with the feeling that both they and the great world of horticulture had been made the poorer by his death. To them, however, it was no small comfort to leave him surrounded by flowers which he had loved so well in life and had done so much in promoting the extension and improvement of their culture.

Full and highly appreciative notices of the life and work of Mr. Hibberd appeared in the *Gardeners' Chronicle*, *Journal of Horticulture*, *Garden*, and *Gardening World*, last week, and we take this opportunity of tendering to our respected contemporaries our best thanks for their generous expressions of sympathy.

RENOVATING ORCHARDS.

By Mr. JOHN WRIGHT.

Read on behalf of the British Fruit Growers' Association, at a meeting of the Falmouth Horticultural Society, November 12, 1890.

I HAVE pleasure in complying with the wish of the secretary of the British Fruit Growers' Association in writing a paper on the subject in question, in the hope of its being of service.

There are no doubt thousands of orchard fruit trees, not only in the kingdom, but almost in every county, which are little less than cumberers of the ground. Some of these trees cannot be profitably restored, but unquestionably many of them may be materially improved.

The one great fundamental error which appears to have taken possession of the minds of the majority of men who have planted orchards is in apparently supposing that the trees would go on growing and bearing good fruit year after year, from generation to generation, without the soil having restored to it such mineral constituents as have been extracted from it by the wood, leaves, and fruit of preceding years. It is well known and recognized that all crops of a much more ephemeral character than fruit trees cannot be reproduced on the same ground year after year without returning to the soil in the form of manure the constituents removed by those crops, or so arranging successional crops in farms and gardens that require in the main either different foods, or at least widely differing proportions of the same kinds. All farmers know that they cannot obtain even half crops of grain, clover, or roots from the same field for half-a-generation if they put nothing into it; and it is the same with garden crops. They can only be produced year after year in a satisfactory manner when the ingredients necessary for their production are in the soil.

Now let us turn to orchard trees that need renovation. The first question that naturally arises is this. What is the cause of their unsatisfactory condition? It is only when the cause of an evil is determined that the best remedy can be directly applied. After what has been said on the necessity for adding fertility to the soil for annual or biennial crops, it will be seen how utterly impossible it is for trees that have been draining the soil of its virtues for half-a-century more or less to be otherwise than in a debilitated state. They are struggling for existence in famine-stricken soil. The fruit they produce is small, hard, juiceless, or more notorious for core, kernels, and skin than for thick, tender flesh and the red or rosy flush on the clear and speckless cheek. These are the fruits that are so much coveted, and they can only be produced by good sustenance or an adequate supply of suitable, well-digested food. If the fruit food, which consists mainly of lime, potash, phosphorus, and soda, is in the soil with sufficient moisture the roots will imbibe it in solution and good leaves digest it, then there can only be one result—healthier growth and better fruit, and it may be as good as the variety is capable of producing.

Some orchards are unproductive through the roots having passed deep down into water-logged soil. They first seized the food that was nearest, then sought for more further afield so to say, just as sheep do in pastures; but if they get into a bog they perish. Water is the first necessity of fruit trees, but if it is stagnant it is the reverse of nourishing, and may even be poisonous, the effects of this being seen in the form of gangrenous swellings, canker, gum, mildew, and a horde of insects that find suitable conditions in which to thrive. Orchards that are failing through the roots of the trees being in a quagmire can seldom be restored to health, and the only way of improving them is by fresh soil and manure placed in actual contact with the upper roots, from which new rootlets may be tempted to form, as they will when surrounded with a suitable medium. It is better to plant new orchards than to spend much money in the form of labour and material on old ones under those circumstances. Those who have established or inherited such orchards are now paying the penalty of the mistake that was made of planting the trees in the wrong places, or for not having kept the roots near the surface by periodical applications of food. In years of long ago any site appeared to be thought good enough for an orchard, and trees seem to have been planted in places that were too wet for growing potatos. We can only hope that the errors of the past may be taken as lessons that will teach the present generation wisdom in the cultivation of fruit. When an orchard is in a low wet site that cannot be drained, perhaps the best thing to do is to plant it with osiers. These give a fair return, draw much water out of the land, and the myriads of leaves that fall from them gradually enrich the surface soil and encourage the production of fibrous roots there, which never fail to benefit fruit trees. Osiers established in extensive orchards where the land is wet realise sufficient for paying a good rent and something more, while the trees above them bear excellent crops of valuable fruit.

But where one acre of orchard fruit trees needs renovating through excessive wetness of site, twenty or more, probably fifty, if not a hundred, acres of trees have been rendered comparatively effete from an exactly opposite cause —namely, soil so dry and poor that there is little to be imbibed from it by the roots of the trees, and certainly not half so much as is needed for enabling them to yield even moderate crops of scarcely marketable fruit. In such case the trees, if not too old and canker-eaten, are amenable to improvement, and they may give, as many have given, a good return for the assistance that has been rendered them in feeding the roots and thinning and cleaning the branches, also by grafting better and free growing varieties on the inferior, for it should always be remembered that a tree of a bad variety takes up as much room as a good one, and, moreover, a tree that neither bears good fruit nor makes little beyond cankered growth, may be transformed into a healthy specimen and bear fine fruit by putting a new head on old shoulders in the form of a number of grafts of a strong growing hardy sort, always provided there is nutriment in the soil for the roots to appropriate. Strong growing apples and other fruit trees established on weak stocks increase the root-action of those stocks, and if these can find the requisite support for the growths new layers of bark form on the old stems and a new lease of life is thus given to the trees.

Several instances of success resulting from grafting profitless trees could be given, but two will suffice. Mr. Robert Garrod, of Ipswich, planted a number of fruit trees some years ago in good soil. In the course of time some of them instead of growing and bearing commenced cankering, and were soon worthless. By simply cutting back the branches of these, and grafting them with varieties that flourished, he made the useless tree useful, and they have since borne profitable crops, and the stems are free from canker. In this case there was sufficient nutriment in the soil, but the paralysed roots of the stunted trees could not imbibe it, but the free growth of the grafts caused an extension of root action, and sufficient nutriment was appropriated for the continuance of healthy growth and the support of good crops of fine fruit. I am at liberty to mention Mr. Garrod's name, because it has appeared in the public press, but I am not free to mention the name of the owner of some apple trees in inferior varieties and of stunted growth. They did not afford him £5 worth of fruit a year. He was advised to cut them down and insert a number of scions on each of the hardy and strong growing Bramley's Seedling. They commenced bearing in three years, and the seventh after grafting yielded considerably more than £100 worth of fruit. Nothing was done to the roots. How, then, is the improvement to be accounted for? In this way. The stunted trees had roots, but they were of necessity weak, and did not extend far from the stems. They had impoverished the ground within the small occupied radius, but the strong variety established on the weak imparted strength to the roots, and these pushed beyond the impoverished radius into fresh feeding ground, and practically virgin soil. When endeavour is made to improve fruit trees by grafting, much stronger growing varieties should be chosen than those which are cut down for the reception of the scions, because of the increased power that is thus imparted to the roots, for the character of the roots is changed by grafting as certainly as are the tops of the trees.

The process of grafting cannot be made clear to the uninitiated without illustrations, but these, with concise details, are given in the essay which I wrote for the Fruiterers' Company, and which can be had by post for 1s. 3d. from 171, Fleet Street, London. I have the less hesitation in mentioning this, as I derive no advantage whatever from its sale.

I wish to make it quite clear that when old trees are renovated by grafting alone, it is because there is soil that can be reached by stronger roots which has not been deprived of its fertility. Where the whole surrounding ground is impoverished, grafting is not of much permanent value. Strong growing and rooting sorts will live where the weaker fail, just as active animals with good teeth have an advantage over others that are afflicted with the foot-and-mouth disease in getting the best share of the pasture: but where the food is scant it is soon devoured. And thus it is that we see grafted trees grow very well for a few years only, then collapse. They succumb because they have emptied the larder, for the earth is the great larder of Nature, and it is the duty of cultivators to keep it replenished with the food that is needed by the crops. The soil itself is not food, but only the medium for containing it, as a sponge contains water. We use the water aud leave the sponge, and fruit trees draw the food out of the earth and leave the soil. There are not many exhausted fruit trees that cannot be improved by enriching the soil or placing in it the fruit-growing constituents whioh have been drawn out, and especially when the trees are also judiciously pruned and cleaned from insects, moss, and other parasitic encrustations.

(To be continued.)

THE LATE MR. HIBBERD.

ALLOW me a short space to say a few words in memory of our departed friend. It will probably be known by many readers of the GARDENERS' MAGAZINE that I am one of the oldest contributors to that journal, having been connected with it before it was enlarged to its present proportions. During all these years my association with Mr. Hibberd has been of the most pleasant character. Many years ago I had learnt to regard him as a friend and brother. I had good reasons for doing so, because when I was stricken down by illness, he was a friend indeed. His generous liberality was also shown in the case of a certain widow in time of sickness. These instances are sufficient to show the generous character of the friend we all mourn. I had intended to say much more in the same way, but my pen fails to respond to the emotions of the heart. It has in fact, been a great effort to write so much, as so many kindly actions and pleasant associations flood the memory. It is indeed more agreeable to my present feelings that I should cherish in silence the good deeds and kindly actions that were characteristic of the friend I have lost. Turning to the good Mr. Hibberd has done for gardeners, I would specially refer to his labours in founding the United Horticultural Benefit and Provident Society. If it had not been for him, the probability is, that that useful society would not now have been in existence.

Taunton. J. C. CLARKE.

Doubtless a "memorial" of some kind will be proposed in due course to perpetuate the memory of Mr. Hibberd. I venture to make a suggestion, which I hope will meet with approval. It is well known that Mr. Hibberd took a great interest in Gardeners' Mutual Improvement Associations. The writer knows of some in his district in which he took an especial interest in, giving their members occasionally some of his charming never-to-be-forgotten addresses, the delivery of which has been of incalculable good to those who were privileged to listen to them. I should like to see a "Hibberd prize" or prizes given annually for competition amongst these associations, for suitable essays on horticultural subjects, varying the place of competition, as in the case of the "Veitch Memorial" prizes, and those of a kindred nature, year by year. I trust that the matter may be taken up and thoroughly discussed by your readers, many of whom, I feel firmly convinced, must be interested in what appears, to me at least, to be a laudable undertaking.

Chiswick. J. BARRY.

COCOANUT BUTTER.—The *Kew Bulletin* for October contains a number of documents describing the preparation of cocoanut butter. The chief of these is a report from the British Vice-Consul at Berlin, stating that the process of producing an edible fat from the marrow of the cocoanut was discovered about five years ago by Dr. Schlinck, of Ludwigshafen on the Rhine, and has been regularly carried out since 1888 by a Mannheim firm. Factories are also about to be established in Paris and Amsterdam. The article is described as having "at present an unlimited sale." The trade is chiefly with Germany and Switzerland; the sales are steadily on the increase. The supply is about 50 cwt. per day, but the demand is occasionally double this. From a report from the United States Consul at Mannheim, who first drew attention in other countries to the product, the number of workmen now employed in the factory is 25, and the price of the butter 6½d. to 7½d. per lb. The nuts are obtained from the South Sea Islands and the African and South American coasts. The butter contains 60 to 70 per cent. of fat and 23 to 25 of organic matter, of which 9 to 10 per cent. is albumen. It is of a clear whitish colour, and hardens at 66 deg. Fahrenheit. It is suitable for cooking, and is not disagreeable to taste or smell. At present it is chiefly used in hospitals and state institutions, but it is rapidly finding its way into the homes of the poor, who are taking to it instead of oleo-margarine. It is said to be free from acids and other disturbing elements found in butter, and thus to be easier of digestion. "There are those who do not hesitate to declare this new substitute as healthier and infinitely preferable to the too often bad butter bought in the markets, and not to be named in the same breath with the oleo-margarines made too often from the diseased fat of horse and sheep flesh."

CHRYSANTHEMUM ECHOES.

So far as the horticultural press is concerned the centenary show at the Aquarium, with its attendant festivities in the way of conferences and banquet, has resulted in a gigantic "squeeze," and there has been but little space available for the Echoes until this week.

The part that the late Mr. Shirley Hibberd took in connection with the centenary proceedings was by no means inconsiderable, for his paper at the conference and his speech at the banquet must have involved much preparation and careful thought. Like all who have been brought into direct contact with him, I was much surprised at his vast store of general knowledge and fund of literary and artistic information. He was a voracious reader, and for style as a writer had no equal on the horticultural press. During the past two years we frequently met, and the meetings were always looked forward to and enjoyed by me. Some of his apt, quaint sayings on those occasions will never be forgotten, for their striking originality so characteristic of the man.

There is no doubt that the labour attendant upon organizing the centenary celebration was a severe tax upon all concerned, and it is not surprising to hear that another gentleman who figured rather prominently in the proceedings has been a victim to the icy temperature of the iron room.

Messrs. Cannell and Sons, of Swanley, have forwarded a bloom of the latest Japanese hairy novelty, "Louis Boehmer," which they say has been sent to them all the way from America. At the time of writing these lines, it has been on my desk exactly a week, and the following is a description of the bloom: It is a full, deep, solid flower, measuring over five inches in diameter; the florets of the exterior are four inches in length and three-eighths of an inch in breadth. They are regularly incurving towards the centre, and deeply grooved; not rounded at the tips, but very pointed. The inner sides of the florets are smooth, and of a deep purplish amaranth, similar to Madame de Sevin in colour; the reverse veined, like most of the incurving Japanese, is of a pink wax-like shade, and plentifully covered towards the tips with those peculiar short hairy growths that render this and its companion, Mrs. Alpheus Hardy, so remarkable in the eyes of those who are always on the look out for novelties. The bloom now before me is about half as large again as the illustration of it in the Gardeners' Magazine, November 8.

The gentleman after whom the new chrysanthemum wonder was named is a nurseryman and florist at Yokohama, Japan. His price list, printed and got up in thorough Japanese style, is one of the prettiest and most artistic things in that line. It is, however, only proper to add that chrysanthemums form a very insignificant part of it, and that in the seed list there is no mention of chrysanthemum seed for disposal.

Two new books on the chrysanthemum are announced in America. One is reported to be an exceptionally fine piece of typographical work and colour printing.

The Americans are never at a loss for a little dry humour. A correspondent sends me the lines quoted below:—

Some Western sheet a prize puts up,
For rhymes to mate chrysanthemum;
And why should I not get the gold,
While gaily I my anthem hum?

A chrysanthemum show has recently been held in Leipzic for the first time. In France one was held at Orleans last week. The usual Paris Show, held under the auspices of the French Horticultural Society, took place at the Rue de Grenelle, from Thursday to Sunday last.

The chrysanthemum still retains its hold upon our Belgian friends. During the summer, M. O. de Meulenaere, a prominent member of the Ghent Society, and of our National Chrysanthemum Society, published a comprehensive catalogue, inclusive of all the new varieties for the current year. On the 16th, 17th, 18th, and 19th inst., another chrysanthemum exhibition was held by the Royal Agricultural and Botanical Society of Ghent. The schedule was of course not so extensive as last year's, but it comprised altogether eighty-one classes. Namur, also in Belgium, renowned for its cutlery and the reference to the purity of its water in the "Jackdaw of Rheims," must now rank still higher, for a show was held there a fortnight since, in which the famous autumn flower occupied a prominent position.

A friend in Japan recently sent me a ticket of invitation to the Emperor's Chrysanthemum Fête. It was, however, for last year's, but that is of little consequence, for under any circumstances it would have been impossible to have attended the one just over.

We have long been interested in the blue chrysanthemum, and in the short biographical note of our excellent friend, Mr. Falconer Jameson, it would appear that he is an upholder of the theory of its existence. In this Magazine for March 15 last a short note appeared concerning a *green* chrysanthemum, then recently figured in the transactions of the journal of the Japanese Horticultural Society. The compiler of this column is always on the look out for something new or novel, and was not long in getting on the track of the green "Mum." The account, as set forth in the next paragraph, is extracted in an abridged form from a French contemporary.

The plant attains the height of about a yard, and the blooms, which are quite dark green, are from eight to ten inches in circumference. It was noticed by a grower about twenty years ago in the collection of an amateur, who called it "Hekiundai." He obtained a plant of it, but somehow could not preserve it. Some time ago, having had occasion to speak about it to one of the leading Japanese chrysanthemum fanciers, a Mr. Midsumoto, the latter expressed a doubt as to the existence of such a rarity, and thought it must be merely one of the other species. The grower first mentioned, to be certain, endeavoured to procure another plant, but, unfortunately, found the owner was dead, and the flower had been lost sight of. Towards the close of last year, however, he succeeded in discovering it in the hands of another person. The plant was exhibited at a meeting of the Japanese Horticultural Society, and figured by them.

Mr. Charles Baltet, the eminent French nurseryman and writer, who has already received a good number of decorations on account of his services to horticulture, has recently been created a Chevalier of the Imperial Order of Japan. It does not appear very clear whether that and the Order of the Chrysanthemum are the same.

Ada Spaulding and Mrs. Alpheus Hardy, in spite of the "bold advertisement" they had previous to their introduction into England, do not as yet appear to respond to the expectations that were formed of them. A shrewd observer has remarked that out of all the new American varieties only the yellow ones are likely to be of any value from an English exhibition stand point. It will be interesting to compare notes when the floral meetings are all over to see the result of his prediction.

The Centenary Show of the N.C.S. has reminded me of an interesting little volume in my possession. Last year when the centenary of the introduction of the chrysanthemum into Europe was being celebrated in Belgium, Scotland, France, and elsewhere, I got together the schedules of every so-called "Centenary" show, and had them nicely bound up into one volume. In years to come that book will be of considerable service. C. Harman Payne.

MANAGEMENT OF CHRYSANTHEMUM EXHIBITIONS.

By Edwin Molyneux.

New societies for the encouragement of the chrysanthemum are so rapidly increasing that the general economy of such is a matter of public importance. The secretarial duties are often undertaken by gentlemen who have time to attend to such matters and a strong love for the work and the flower also. But it sometimes occurs that willing workers have had no previous experience in such matters, and would be glad of a hint or two from those who have had ample opportunities to judge between good and bad methods of managing an autumn show. The most difficult part of the business with the inexperienced seems to be how to manage the prize cards in the most efficient manner. Perhaps a note on the subject would not be inopportune just now in the pages of a paper that has always made a point of disseminating information on the glorious mum.

I take it as being perfectly an English feeling for one manager trying his best to equal or excel his neighbour in the matter of management of the exhibition on the day of contest. To have all preparations ready for exhibitors on the morning of the show, the prizes awarded and duly notified by the prize cards by the appointed time when the public are admitted, is the great aim of secretaries. Nothing speaks better or the reverse for the management than this part of the work. The most perfect arrangements, however, can be upset by exhibitors who lag behind in arranging their exhibits. Without the co-operation of these it is next to impossible for a secretary to be ready for the judges at the appointed time to commence making their awards, and it is absolutely impossible for the adjudicators to give that close attention to all classes they would like to give if exhibitors are so persistent in being behind the appointed time. As these notes refer mainly to the exhibition itself and not to the schedule of prizes or any of the financial business. I will suppose that all the entries have been received two days prior to the date of show, and have been duly recorded in the entry-book, which has a separate page, or part of one, set apart for each class, as the case may be, according to the size or importance of such a class. It is a good plan to cut out from the schedule each class which contains the number of blooms or plants, the amount of the prizes, first, second, or third, as the case may be. These separate classes are gummed into the entry book in the spaces set apart for them. Each entry, as it is received, is written under the said class, each exhibitor having allotted to him a number which shall be his throughout the whole exhibition. All exhibitors' names are entered on a separate sheet for future reference if desired; the number which each exhibitor shall bear throughout the show is given to him and placed opposite his name as the entries are received. Where one exhibitor has several numbers for the different classes he may be competing in, there is the possibility of confusion occurring in making the awards, but with the single number system to each, it is difficult indeed to get into a muddle, as I shall presently show.

As previously stated, the number and name in full shall be recorded in each class for every entry from the same exhibitor. The entering of the name in full opposite each number is for the convenience of the secretary, who shall at once see at a glance to whom such and such a number belongs at the time the award is made, and will correspond with the name on the card which has been previously written out, and which forms a kind of double entry so to speak. After all the entries have been received, prize cards having a blank space upon them for

the reception of the first, second, or third prize, as the case may be, should be written out; on the front side the name and address of the exhibitor in full, and in a space set apart generally at the left hand corner, where the word gardener is printed, this person's name should be written; thus both employer and gardener are acknowledged. This feature is not universally adopted, but it is nothing but right that both should have their share. Some societies ignore altogether the employer, making the gardener to appear to be the exhibitor, when he really is not; the owner certainly is the exhibitor and not the gardener. I believe many employers would take more interest in exhibitions were they to be acknowledged in a manner that they should be. It certainly is not the right thing for them to go around an exhibition and only see their gardeners' names on the prize cards. Many, perhaps, do not mind this omission, but I am positive that others object to such treatment. In any case it would be better for secretaries to adopt the plan of recording both names. It cannot do any harm, and is calculated to do much good to all concerned. I have dealt with this part of the prize card department rather lengthily, as I know that human nature will come in, and new secretaries should have all these suggestions put before them, for what is worth doing is worth doing well.

On the front of the card the number of the class should be printed, which will correspond with the class in the schedule. This is more for the convenience of reporters than anyone else, for, when taking notes, they are oftentimes under great difficulties of heated, crowded rooms, and have not time to write more in their notebook than the number of the class. The subject it refers to is easily found in the schedule when transcribing their notes. The class is written in full on the front of the card, whatever it may be—for instance, "Twelve incurved blooms, distinct." This is for two reasons necessary, first, that the public may know for what object the prizes are awarded in that particular class without the necessity of referring to the schedule of prizes; secondly, it is an official statement that such and such a class was won by the exhibitor, who claims the card afterwards. Such a plan meets with the approval of exhibitors much more so than would be the case were the wording to be left to be filled in by themselves, as I have been compelled to do before now. This constitutes, so to speak, the hall mark of the prizes won. On the reverse side of the card the class number is printed, and below this the words "Exhibitor's No." Whatever the number may be is filled in by the secretary or his clerk. As many entries as each exhibitor has cards are supplied to him on the morning of the show, and he is responsible for the proper placing in front of the exhibit to which they refer. These cards are laid on the table, as the case may be, their reverse side upwards, displaying nothing but the number of the exhibitor and the class. It is a point of honour amongst judges not to turn a card until after the prizes are awarded, which action would disclose the name of the competitor. Although this might not influence the award through disclosing the name of the exhibitor, it is best to avoid the appearance of evil, and leave no excuse for the suggestions of suspicious persons. For the quick despatch of duties on the morning of the show all the cards belonging to one exhibitor are placed in a large envelope ready for handing to him when he applies for them. His name being written on the envelope, no difficulty need be experienced in providing him with the cards. The day previous to the show being held the general plan of the staging is to be carried out. This is largely influenced by circumstances, such as convenience, number and class of entries received, and expectations of special exhibits. In any case the spaces for each exhibitor should be allotted, either individually fixing a small card containing the number on the table or space each has to occupy, or, in a more general way, allot so much space for each class, denoting this by a printed card in full of the articles demanded, in preference to the class number only. The former is much the better plan, and gives far more satisfaction to exhibitors, who see at a glance where their contributions should be arranged; but where the class number only is noted, continual reference to the schedule is required to see what is this class and what is that.

It often happens that an exhibitor will lend his schedule to some other person who has left at home his own schedule, or forty other things may occur to prevent the use of it at any moment. Presuming that all I will speak of as preliminary duties have been completed the night previous, the secretary should be early on the scene on the show morning, to direct and control any exhibitor who may need assistance. No matter how plain the instructions may be, there are sure to be one or two exhibitors who cannot see why so and so should have a better position than anyone else. Firmness, combined with justice should then be the aim of all promoters and officials to make the path smooth to all concerned, and to make it always apparent that there is no favouritism.

It is as well, perhaps better, that secretaries should be independent persons; certainly it is best they should not be exhibitors. Not that it would actually make any difference in the awards, but there are always some persons who will persist in thinking so, whether rightly or wrongly.

In all cases, if possible, exhibits in the same class should be staged together, both for convenience in judging and for comparison by the public. Cut blooms generally occupy both sides of long tables; a row of table plants, such as small palms, primulas, and miscellanies occupying a single line on an elevated stage down the centre of each table, which adds to the beauty of the show, breaking up the formal flat lines occasioned by the rows of boxes of uniform size throughout, upon which the cut blooms are arranged. A bell should be rung half an hour before clearing out time as a warning to competitors to put the finishing touches to their several exhibits. I heartily approve of giving a preliminary notice that the time of arranging the exhibits is drawing to a close, for it reminds many of matters of importance that may have slipped the memory. Every endeavour should be made to clear the room at the appointed hour. When this has been done, all is ready for the judges to commence their duties. None but the officers and reporters should be allowed in the room while the awards are being made. If one set of judges only are employed, the secretary goes around with them, entering the awards in the entry book opposite each exhibitor's name, simply first, second, and so forth. If there be two sets of judges at work at the same time, he goes with one lot, and enters the work of the other when convenient.

It is necessary that the entering of the awards be accurately done, as it is the official note in the payment of the prizes or the settling of any dispute in that direction.

When the judges decide in any class the relative positions of the exhibitors, they denote the same on the back of the card as it lays upon the table in front of the exhibit, simply by the figures 1, 2, 3, or 1st, 2nd, or 3rd, as the case may be. This is their official mark in the case of an objection, mistake, or otherwise. The card is then turned over with the exhibitor's name upwards in the space reserved, an assistant fixes an adhesive gummed label containing the words which gives so much satisfaction, viz., FIRST PRIZE, to the lucky individual who prepares himself to receive the congratulations of his friends. With the adjusting of the prize labels to the cards that part of the work is over, and all is ready for the inspection of the public. When all the awards have been made, the secretary should go round the show and verify them with the official entry, and see that all prize cards are correctly named and placed. It sometimes happens that a second or a third may be missing, through the exhibitor failing at the last moment to carry out his part of the arrangement. Another card must be found, written, and replaced where the missing one should be found.

The actual duties of the secretary for the day are at an end as far as the competition part of the affair is concerned, but there is another, and a very important one too, the financial matters have to be attended to. In societies of good standing the secretary is relieved of this responsibility, and where a properly appointed treasurer is in existence, the bulk of the cash taking should come under his management. The secretary during the afternoon must prepare himself to answer innumerable questions by the public; he is supposed to know all the best blooms or plants in the show; the reason why this collection is placed first; the cause of that one having no prize at all awarded, and how many points were given to each bloom, and so on. In fact, he is a sort of ready reckoner for the time being, and will find much to please, and perhaps a little to displease; but if of a persuasive turn of mind, as he should be, he will manage to get through his duties, and if success crown his first efforts, he will speedily forget the few little things which at one period were almost determining him to "chuck it up."

NOTES ON LILIES.

HEREWITH I send a few notes on our lilies during the past season. The spring was very fine, followed by a frost in the beginning of June, a long spell of cold, wet weather, and a beautiful autumn.

Lilium auratum was very good, some leaves and flowers were spotted during the wet time, but the later flowers were especially fine. The variety Rubro-vittatum, sometimes erroneously called Cruentum, in rather a cold quarter at Bisley, had the leaves much spotted, and I thought the flowers would suffer, and began to fear that this variety could not always be trusted out of doors. On visiting my friend Mr. McIntosh's garden I found these lilies as beautiful as ever, so was comforted, and soon afterwards ours bloomed and produced quite fine flowers. In the garden here, where we have few places for planting free from the roots of trees and shrubs, I am more than ever convinced of the desirability of securing lilies against the drying and impoverishing effects of these by sinking casks with the bottoms out a little below the surface of the ground, filling them up with lily soil, and planting the bulbs in them. We have some good evidence of the advantage of this, in two casks side by side. These were started with bulbs of L. auratum macranthum of the same size. The plants in the one, which have been protected against roots for two years, are much stronger and finer than those in the other cask, which suffered one year from the roots before they had the benefit of a cask. We had a number of examples of L. auratum rubro-vittatum in pots in the conservatory; these had grand flowers though, as in the case of the plants out-of-doors, the fine crimson colour before many days turns to a dull claret.

L. speciosum varieties were a good deal cut in the early season, but were especially fine later. Our finest were in a sunk cask in this garden, where they were in full beauty till quite the end of October. Others were nearly as fine in a new and perfectly different situation, planted on a miniature mountain of loam, these planted some about eight, others ten feet high, facing east, in full exposure, showed no spot on their leaves, and had very fine flowers.

L. giganteum made a great show. A bed of seedlings had twenty-three stems, all about the same height, between seven and eight feet; others planted with trees as a background had a very good effect.

L. cordifolium in a shaded part of the wood flowered well, but the colour was not so good as when in more open places.

L. superbum is always thoroughly happy at Oakwood, and gets finer and finer every year. Our tallest specimen was ten feet four inches, but plants of all heights produced flowers with much variety in the colouring. I have this year tried an experiment with these lilies, of which, with your permission, I will report the result hereafter. I have planted single bulbs at intervals in the shallow winding ditches by which our wood garden is drained, and if these thrive, as I think they will, the effect should be good.

L. Browni was fine, but not equal to last year. I do not think the plants liked the early cold. *L. pardalinum*, *L. Californicum*, and some plants of *L. Humboldti* were very good, but some of the examples of the latter went off.

Since I began to write I have heard of the death of my old and valued friend Mr. McIntosh, of Duneevan. He was for a considerable time the most successful cultivator of L. auratum in this country. The lilies growing among his choice rhododendrons were models of cultivation, and proved that, under favourable circumstances, the bulbs would continue to flower for many years without falling off in vigour. GEORGE F. WILSON.

Heatherbank, Weybridge, Herts.

CORDON PEARS FOR WALLS.

By C. WARDEN, The Gardens, Clarendon Park.

THE somewhat modern principle of covering walls with single or double cordons is in every way excellent for fruit production. It has been regarded favourably on account of the number of varieties that may be planted in a given space, but this was where the failing of the system generally arose owing to the hankering after so many kinds, instead of planting a greater number of plants of the most approved varieties. A good length of wall covered with pear trees on the cordon system is very effective, especially so when trained at an angle of 45 degrees and the trees carrying good crops of fruit, for in this position they show to the best advantage, and under this system the trees come into bearing much sooner than larger and more elaborately-trained trees. Many of the trees on the walls here are very old, a few, perhaps, running to fifty years, and many thirty years. Some have been re-grafted with several kinds, and where the wood is comparatively young they bear fairly well, but on the oldest of the stems and near the boles of the trees there is seldom any fruit. The reason for re-grafting these trees some time since was, no doubt, to get several varieties in the same space that one was occupying; probably for the two-fold reason of illustrating a greater number of varieties, and also to lengthen the season. Except where very high walls have to be covered, it would be far better to have several young cordon trees in the place of these old ones, and when these old trees get past all recovery or power of producing remunerative crops we root them out, and replant with half-a-dozen or so cordon trees.

Not one of the least advantages of cordons over large ones is their managability, for if one of these small trees is too gross it would be a small matter to lift it and relay the roots in some good compost near the surface; but not so one of these old monsters, for when the roots get deeply down into the cold subsoil it would be certain death to cut the large roots asunder. The only thing that can be done is to deal with what can be got at with safety, and encourage the trees all that is possible by placing good soil in contact with the roots near the surface. Another aid is mulching them with manure to keep all feeding roots near the surface, and as far as possible make them independent of the main roots that strike straight down. Under the cordon system of pear culture there would be no such difficulties as above mentioned in reference to old trees.

In planting these young trees the preparation of the ground must be looked to, and the manner in which this is to be carried out must depend upon the height of the wall or fence to be covered. For a wall ten feet high the border should be opened out at least three feet deep, and drainage of some kind put in the bottom, such as old clinkers, broken brick, and the like. A layer of chalk, if it can be secured, should be added, as this makes excellent material to put over the rougher kind of drainage. When it is trodden it makes an even surface that no earth will pass through, and yet does not impede the passage of water. But failing chalk, some finer material must be used, such as cinders, or the other materials broken much finer, on the surface. The width also of the border must to some extent depend upon the kind of training space, but a good width at planting time would be three feet.

I have in my mind at this moment, in recommending drainage, the ungenial sub-soil, such as cold clay, marly gravel, and marly chalk, that so often occur. But on chalk subsoils, porous gravel, and sand the depth of opening to be got out in the preparation for the trees must be deep enough to make room for good material for the trees to root into, and in this case no drainage will be necessary, neither will any barrier need to be set up to prevent the roots getting into such soils. Very few can afford to entirely displace the old soil and replace it by new, and in many instances it would not be wise to do so. The value of new loam is mainly owing to the amount of vegetable fibre it contains, and when this is decomposed the mass goes together much too close for the roots of fruit trees, unless porous materials are mixed with it, and often a few loads of old mortar rubble mixed with the staple would make better material to form the bulk. But by all means, if it can be had, use a little new loam around the roots to encourage them to grow freely.

In every instance the preparation of the ground for the reception of young trees should be done several weeks before the trees are to be planted, so that the soil may subside, and when planted they should not be secured too firmly to the wall until the earth has thoroughly settled. About two feet to thirty inches apart is a good distance to plant the young trees.

In the selection of varieties much will depend upon the requirements and tastes of those who are about to plant; but, as I have said at the commencement of this paper, a long list is not required. If the planter's object is the supply of the market, the list should be cut very low, and only such as produce large and handsome fruits will be of any use, as the public will have such fruit as takes the eye, even if it be at the cost of quality, which it very often is. A good selection will be found in the following varieties, which include both large and small fruit, which are placed somewhat in their order of ripening:—

Doyenné d'Eté, or *Summer Doyenné*.—Fruit small, of excellent flavour, and an abundant bearer. End of July.

Beurré Giffard.—Medium size and showy; a profuse bearer, and of good flavour. August.

Jargonelle.—A well known pear, of large size and handsome appearance, requiring to be gathered from the tree before it is fully ripe, and requiring some attention to catch it at its best. August.

Souvenir de Congres.—Very large, of handsome appearance, and of good flavour. August and September.

Williams' Bon Chretien.—Too well known to need any description; as it succeeds in almost any position it should be included in the smallest collection. August and September.

Beurré d'Amanlis.—A first-rate autumn pear, of good size and flavour. September.

Louise Bonne of Jersey.—One of the most prolific autumn pears, good alike for home use and for market; of excellent flavour, and should be included in the smallest collections. October.

Marie Louise.—One of the most richly flavoured pears, and one that succeeds in almost all soils and situations. It should be planted in several positions to keep a long succession. October and November.

Pitmaston Duchess.—Very large, the fruit taking on a beautiful golden colour when ripe, and when caught right is of excellent flavour. One of the handsomest of pears. October and November.

Beurre Bachelier.—Large and handsome, and of fair flavour on warm soils. December.

Beurre Diel (or *Beurre Magnifique*)).—A large and handsome pear, requiring a warm soil to have it at its best. October and November.

Doyenné du Comice.—In every way a grand pear, of large size, handsome appearance and good flavour, deserving of a position on several aspects, and should form part of even the smallest collection. October and November.

Glou Morceau.—Large, of a pale green colour, richly flavoured, and an abundant bearer. December to January.

Winter Nelis.—Small, deliciously flavoured, and one of the best late kinds. The tree is an abundant bearer. November to February.

Nec Plus Meuris.—Medium size, of good flavour, and free bearer. January to March.

Easter Beurre.—Very late; a handsome pear, and in good situations and seasons is of excellent flavour. January to March.

Amateur growers who may not have space for a large collection would find it best not to add any of the very late kinds to their collections, but depend upon those that ripen during August to December inclusive. Although there is a fair list of kinds recommended for Christmas onwards, goods fruits during that season are very seldom met with, even in the hands of those who well understand them.

There is nothing conduces to fruitfulness like root lifting, and under the cordon system of culture, this can be well carried out by lifting the trees entirely when they have a tendency to make a quantity of wood growth at the cost of fruitful spurs. The trees will usually carry a full crop of fruit the second year after lifting, and will continue to do so until over-exuberance again puts them out. The value of root-lifting of pear trees cannot be over-estimated, but every care should be taken to assist trees carrying heavy crops by good surface mulchings, and when carrying an over-crop to well thin the fruit.

MID-WINTER CHRYSANTHEMUMS.

By J. KIPLING, Knebworth.

THE great tournaments held in honour of the "Queen of the Autumn" are now over, and a larger number of those who took part in them will be busily engaged in cutting down their plants upon which so much loving care has been bestowed. On the other hand, those who do not limit their collections wholly to plants for the production of blooms for the November exhibitions will be now giving special attention to those grown for the supply of flowers at mid-winter. To myself it is satisfactory to know that these growers are steadily on the increase, for the chrysanthemums are of exceptional value for furnishing an abundance of flowers for indoor decorations during the festive season.

The bright sunny days we have had since the beginning of the month, combined with the very mild and close weather prevailing at the present time, have hastened on our late plants, and the buds are developing faster than I care to see them. We are, therefore, likely to have a goodly number of them in flower before December is well advanced. Under the circumstances, nothing can well be done beyond maintaining a free circulation of air through the structures in which the plants are arranged. By keeping both the top and front ventilators open night and day when the weather will allow, the temperature will be kept as low as is possible, and the development of the buds be materially retarded. Our late plants, some two or three hundred in number, are in our latest unheated peach-house, and we shall not begin to remove them to other warmer houses till a fortnight or so before Christmas, when the blooms will be principally wanted. They are, indeed, much appreciated at that season, as they fill the void created by a dearth of other flowers.

As large blooms are not wanted, or, indeed, desirable, we do but little in the way of thinning the buds, but where a few large flowers are desirable, now is the time to attend to the plants and thin the buds, leaving a few of the most promising on some of the plants. Such late varieties as the white and the yellow Ethel, Goldfinder, Ceres, Mrs. C. Carey, W. G. Drover, Golden Gem, and Boule de Niege are only just forming their buds, and the new year will be well in before the flowers open. Last year we made an experiment with these varieties by leaving them in the late peach-house to see if they would bloom satisfactorily there without assistance from artificial heat beyond keeping the frost out of the house by a couple of Rippingille's paraffin stoves. The results exceeded expectation, for the plants did not commence to open their flowers before the middle of February, and they continued blooming splendidly till the end of March.

DESSERT PEAR, FONDANTE D'AUTOMNE.

Although a considerable proportion of the pears ripening in the autumn are of great merit the number of good kinds is not so large that cultivators can well afford to neglect varieties of the highest excellence. It has, therefore, been thought desirable to direct special attention to Fondante d'Automne, one of the finest pears of its season, which, if not exactly neglected, is not grown in proportion to its merits. This variety combines productiveness, handsome appearance, and high quality in a remarkable degree, and in most cases the fruit may be had in the best possible condition for a considerable period. The fruits are of medium size, obovate, and even in outline, and the skin is pale yellow, slightly marked with light cinnamon-coloured russet. The flesh is white, melting and very richly flavoured, with a distinct and pleasing aroma. The variety is unquestionably one of the highest flavoured of the pears ripening in September and October, as proved by the fact that in competition with other kinds, in classes in which flavour has been the test of merit, it has frequently occupied the first place. It is a free bearer, and rather vigorous in growth, making an excellent pyramid upon the quince. In rather cold districts it should be grown against the wall, where the fruit attains a comparatively large size, and is invariably of high quality. The specimens represented in the accompanying illustration were produced by wall trees that have for many years past received the most careful attention, and are somewhat above the average in size. Knowing how far superior



DESSERT PEAR, *Fondante d'Automne.*

Fondante d'Automne is to many of the pears that attain maturity during the two months mentioned, and enjoy a high degree of popularity, we would recommend those of our readers who have not yet included it in their collections to give it a place either in the open quarters or against the wall as may be considered advisable.

STEPHANOTIS UNDER COOL TREATMENT.

Some time ago an instance was recorded in the Gardeners' Magazine where the stephanotis was behaving very satisfactorily in a much lower temperature than is usually accorded it. I happen to know that certain persons who read the remarks to which I allude regarded them with a certain amount of suspicion, as they did not believe that it was possible for a plant that would endure so high a temperature as this is known to bear could flourish, under cool circumstances, or, at all events, could prove at all satisfactory under the conditions then described. If I remember right, the plant reported on was in a temperature very little higher than an ordinary greenhouse. What the doubtful ones will think when they have read what I have to say about the behaviour of the stephanotis, which I have lately seen flowering and growing luxuriantly in a structure in which a fire has only been lighted to keep out the frost during the past two years, I do not know and cannot guess. I can, however, say that I shall record only facts as to what I saw and learnt of the treatment the plants had received, and which any are at liberty to verify if they choose. The plants—there are two—are growing in the garden at Hatch Court, near Taunton. Mr. Hunter, the courteous gardener and manager of the estate, will show them to anyone, as he did to me. I must here say that the plants are growing in a structure that was at one time used as a pinery. It is a three-quarter span in shape, the stephanotis being trained near to the glass on the back part of the roof, while the front space is quite clear. A bench about two and a-half feet wide runs the whole length of the house, against the back wall. Provision is made for the roots on this bench by placing a bed of soil upon it at each end about nine inches deep and three feet in length. In these beds of soil the two stephanotis are planted.

So far, the treatment does not differ materially from what may be seen in other places, but when we come to the question of temperature the difference is great. The width of the structure is about fourteen feet, and the height seven feet. Yet there are only two four-inch pipes—and these do not reach the whole length of the house—to afford warmth. Moreover, as I have already said, the fire is never lighted except to keep out frost. Every experienced gardener will know that means a low range of temperature all through the winter; very much lower, in fact, than the stephanotis is generally thought capable of enduring or to require. But that it will endure this cool treatment, and thrive in the most satisfactory manner, this case proves without any manner of doubt. For the growth these plants so treated have made is luxuriant, and the number of bunches of blossoms they have produced has been even greater than when subjected to more warmth.

It would have been a most instructive lesson had a record been kept during the past two years of the lowest temperature these plants have been subjected to, as my description of the house conveys but an indifferent account of it—it must be seen to thoroughly understand all the conditions under which the plants have lived for so long. I may, however, say that the sashes which form the roof were made when small squares of glass were used, the placing of which was so badly done that there is plenty of room for the young shoots of the stephanotis to come through the laps to the outside, which they have done. So that this case presents the peculiar, and not altogether uninteresting instance of the stephanotis making its growth in the open air. Altogether it is one of the most remarkable instances in the treatment of this plant that has come under my notice. J. C. Clarke.

CUPRESSUS LAWSONIANA GLAUCA.

This cyprus is plentiful in nurseries, but comparatively few plants of it are to be found in private gardens. This suggests the idea that it is not so well known as its merits deserve. It has a very neat habit, and the glaucous hue of the foliage is very distinct and pleasing at all times, but it is during the winter months that its distinctive colouring is the most apparent. A moderate sized specimen will produce a strong contrast to the deep green hue of the majority of the evergreen trees and shrubs grown in gardens, J. M.

THE VIRGINIAN WINDFLOWER.

The anemones, or windflowers as they are popularly called, stand pre-eminent not only as an ornamental and highly serviceable group of hardy flowers, but also in the varied time of flowering of the numerous species, and the great ease with which they may be managed, in small as well as large gardens. In seasons like the present, when good flowers may even yet be gathered from the late blooming kinds, until the new year, when Anemone blanda may be seen pushing up its lovely blue and white flowers, we might say, without much stretch of the imagination, that we have windflowers with us all the year round.

The beautiful A. blanda, as indicated, begins to flower early in the new year, not unusually before Christmas, followed by the early Pasque flower, A. apennina, A. ranunculoides, A. nemorosa, and its varieties, until the many summer flowering species come into bloom, carrying us on to the beautiful varieties of A. Japonica, and last, but not least, the lovely A. virginiana, so admirably pourtrayed in the accompanying illustration.

As an ornamental plant, the Virginian windflower is not to be compared with A. Japonica and its varieties; its charm is of a different stamp, and, though a little unruly in habit, it produces a succession of lovely white flowers all through the summer and autumn months. Indeed, we gathered some perfect blooms only a few days ago. It belongs to America, as its name indicates, and is often confused in gardens with an allied species, A. pennsylvanica, a veritable weed, and unfit for a garden of any kind. How these plants can be confused is very strange, so unlike are they in the size and beauty of their flowers as well as in general habit. The woodcut gives a fair impression of the one, while the other has small, inconspicuous flowers, with yellowish-green petals, and stiff habit. Indeed, we know of no redeeming point of sufficient importance to save it from the rubbish heap. A. virginiana does well under the most diverse conditions, its only fault being its propensity to spread among other plants, so rapidly does it extend and encroach by its numerous underground runners. This fault is, however, easily remedied, and if planted where it can roam at will it makes a pretty group, and requires no more attention than that entailed in keeping it within bounds. In the rough or more uncultivated portions of the rockery, such as amongst old tree stumps, shrubs, &c., it is without a rival, so effectually does it fill every crevice. It is propagated with the greatest ease either by offshoots or seeds. WEARD.



ANEMONE VIRGINIANA (Flowers white).

FORCING LILY OF THE VALLEY.

Very little can be done in forcing Lily of the Valley early without the command of plenty of heat. No matter how well the crowns are prepared, when they are wanted in flower by the middle of January, and from that time to the beginning of March, a strong bottom heat is necessary to assist them push up the flower spikes. Anything less than 100 deg. is of but little use at that time. I have before now heated a propagating pit up to 120 deg. in mid-winter, and have not found the temperature too high to ensure the crowns starting regularly. In many cases it is an advantage that the lily of the valley can be forced into flower in darkness, or at least can be pushed on sufficiently towards flowering, that no difficulty is experienced in completing the development of the spikes in a structure in which there is a lower temperature and a moderate light. All kinds of contrivances have to be resorted to in private gardens to secure the required degree of warmth. A friend of mine has to utilise the heat from the top of a saddle boiler, because there is not warmth enough in the houses. He puts a nine inch layer of coal ashes in a large box, and places the box on the brickwork over the crown of the boiler. The pots containing the crowns are plunged to their rims in the ashes, and by keeping the latter moist all the heat and moisture necessary is obtained. Sometimes the temperature is higher than is desirable. When that occurs the box is lifted a little farther on one side where the heat is not so great. By a little management he has lilies of the valley in bloom several weeks before he could do so if he only made use of the ordinary heat of the forcing house.

In my own practice I have been very successful when I have placed a rather deep, narrow box on the flow-pipe, and as near to the boiler as I could conveniently do so. I have always obtained all the heat necessary. As already observed, the flower spikes will start more regularly in the dark than when the crowns are exposed to light. That being the case, it does not matter what means are adopted to secure the necessary heat, provided a structure is available in which to complete the development of the flowers. With these appliances at hand there should be no scarcity of lily of the valley flowers after the third week in January. It is important that suitably prepared crowns or clumps be obtained, as, without these, failures more or less complete will be sure to occur. J. C. C.

CALANTHES FOR DECORATION OF ROOMS IN AUTUMN.

By GEORGE WYTHES, Syon Gardens.

THE deciduous calanthes are exceedingly useful for the embellishment of rooms in autumn, and when well grown they are charming for this purpose. The greatest drawback to their utility is the absence of foliage, but in many cases this can be atoned for by associating ferns or small palms with them, and the calanthes can be placed much closer together when in bloom, thus making room for other plants. A medium size arrangement is, however, the best, as when the blooms are crowded much of their beauty is lost. The calanthes form one of the most useful groups of orchids we have for room decoration. I have had them in bloom for six weeks without their being injured. They have lost a few of the bottom flowers, and of course the colour has become a little paler, but not much when they are sparingly supplied with water, of which very little is required when they are in a cool room and not near the fires. I have not found the pseudo-bulbs suffer in the least by their long stay indoors, as the resting period commences at that season, and the change of conditions does no harm. If watered excessively when in the house the flowers soon fade, and the pseudo-bulbs lose much of their vigour. I am referring to rooms in a country residence and without gas, as where gas is used they suffer materially. According to my experience it is better not to furnish gas-lighted rooms with valuable plants, as to grow them for twelve months and then lose their beauty in a few days is not desirable.

Calanthes may be employed with good effect for the decoration of large vases. They should be surrounded with an edging of fern or small grasses, and their long graceful racemes should not be staked, but allowed to assume a natural position. Under these conditions they produce a charming effect. For large halls or corridors they are able to do good service during the autumn, and I have had as many as between five and six dozen pots in the house for weeks, and they have not taken any harm, but we have been careful to place them where they have not been exposed to draughts, and to water them carefully. They should not be syringed overhead; at least, that is my experience, although abundance of moisture can be given them by damping the stages and floors. Small pots are the best to use. The preferable course is to employ six-inch pots and put one large bulb in each. I have often seen much larger pots used, and many of the bulbs in a semi-decayed state, producing weakly spikes, and requiring the support of sticks. A good bulb in a six-inch pot with a suitable compost will produce large spikes from three to four feet long, and produce new bulbs yearly over one foot in length. They also like a good substantial yellow loam and some quarter-inch bones, or bone meal and broken charcoal, with coarse river or silver sand. I do not approve of mixing peat with the compost unless the loam is of a very heavy nature. Also use some quarter-inch bones for drainage, placing them over one large crock, as it is not necessary to use so much drainage as for other orchids. In potting it is also advisable to place the bulbs well down in the compost, but not too low. This should be done when the bulbs have started into growth, and the young roots should be just covered with compost, care being taken to prevent injury to them. A small amount of fine compost should be kept for the tops of the pots, as the larger pieces necessary for the potting would be unsuitable for the young tender roots. Another essential to success is, I believe, starting the bulbs as soon as they show signs of active growth, as if any attempt is made to retard them they do not make up for the loss of time during the season. It is better to retard the growth by keeping them cool in the winter. I also advise turning them out of the pots as soon as the flowering season is over, and shaking off the old compost. The pseudo-bulbs are divided if desired, and the old roots shortened back. They are then placed in dry silver sand.

There are some difficulties in growing calanthes near large towns or foggy districts, as fogs are very destructive, and during the prevalence of dense fog much harm is done, as the buds quickly drop, and the flowers lose much of their beautiful colouring, especially C. Veitchii. To prevent this as far as possible the cultivator should keep the atmosphere comparatively dry, and also maintain a brisk temperature, with free circulation of air through the house. Much care is necessary to keep the plants in a healthy state when the foliage commences to fade, as in many cases too much moisture hastens the fall of the leaves, and they suffer in consequence. When they are in bloom a lower temperature is much better, and the flowers remain a better colour and last much longer, thus removing them from a hot stove to a sitting-room, with a temperature of fifty-five degrees, just suits them, as the cooler temperature and reduction of moisture are what they require.

I have grown these useful orchids in various ways, and the best results were obtained by placing them on shelves across the end of a plant stove with plenty of head room. They were not syringed in any way, but absorbed much moisture when making their growth. They received an abundance of liquid manure, and, in referring to manures, I would state that I have found cow and sheep manure the best, and also that feeding is, in some instances, commenced too early. It should not in any case begin before the pots are full of roots, and then only moderately, as a too liberal use of stimulants and an excess of moisture cause the spot or damping of the leaves from which the calanthes frequently suffer. Once they become unhealthy it is difficult to restore them to a vigorous condition. They do well grown in any house where a stove temperature can be given them, and they enjoy plenty of heat and moisture or cocoa fibre refuse in pans, and kept dry till the new growth commences. This greatly reduces the space occupied, as compared with the room required, when the bulbs remain in the pots till started into growth. It is also better for the bulbs as any dividing or shaking out when new growth is begun injures the roots and causes a check.

A moderate amount of sunlight while making their growth is also beneficial and promotes a sturdy growth. Some growers advise shade, but we find a little exposure does them good. I have also seen a dense shade when the plants are finishing their growth advocated. It is stated that it prevents the foliage going off, but with the growth completed and the formation of large healthy bulbs with several spikes no harm can ensue. Moreover, the leaves will have accomplished their work by that period. A long rest in a temperature of 50 to 60 deg. is also beneficial, and sufficient moisture only should be given to prevent the bulbs shrivelling. Careful handling when placing them in their resting quarters is necessary, as they are extremely brittle, and the tops are quickly broken, which weakens the old bulbs. Although the tops strike readily, there is no occasion to raise stock in this way, as the bulbs in most cases produce in addition to others of full size a few small offsets which should be taken advantage of for this purpose. If it is desired to raise a large stock quickly a few bulbs cut up into pieces in the spring and plunged in a warm bed of cocoanut-fibre refuse soon root, and are ready to place in small pots. When these few simple details are carried out there is no class of orchids more easily managed or that gives a better return. It is also worthy of note that they can be readily grown by amateurs possessing limited means.

ORCHIDS AT THE WOODLANDS.

No matter at what time of the year one may visit Mr. Measures' collection of orchids something very choice and interesting will surely be found. A few days ago under the guidance of Mr. Measures I made the following notes which may prove interesting. In every orchid house now may be found a quantity of that somewhat common, but very handsome orchid Cypripedium insigne. Mr. Measures has a splendid exhibition of these just now, and there is not a poor variety, nor a bad plant amongst them. On the other hand each flower is of very fine quality, and the plants are as healthy as anyone would wish to see. At the time of my visit, five hundred handsome flowers were expanded; truly a gorgeous show. A peculiarity pointed out to me by Mr. Measures with regard to the cultivation of C. insigne was, that while the plants which were grown cool during the year were now in flower, those which were grown in a temperature of ten degrees higher were not yet out of sheath. Mr. Measures' explanation of this was that while the plants which were grown cool finished up their growth as they went on, those which were grown in a higher temperature produced growths of a much softer nature, and consequently, after growth having been completed the plants must wait until the same growth has been ripened; hence the difference. This opinion is contradictory to that given in a contemporary some few weeks ago.

A plant of Oncidium aurosum was very handsome, having a flower spike bearing two hundred and fifty flowers all expanded, which made a very fine show. Cattleya Lawrenceana looks very happy in Mr. Measures' houses; there was a batch of about one hundred and fifty plants all looking the "pink of perfection" and making splendid healthy bulbs; one bulb which I measured reached the large total of eighteen inches. Cypripedium Wallaceii, a very handsome variety of insigne was flowering well, it is a very distinctly marked variety and has a broad white margin. C. Mooreanum is another very distinct variety of insigne; one peculiarity about this which Mr. Measures pointed out is the great length of the peduncle, which in some cases reaches the length of from fifteen to eighteen inches; this variety is very sparsely spotted.

C. insigne Macfarlanei is perhaps one of the most interesting of the slipper family now in flower, it is the shape and size of an ordinary insigne and is entirely spotless, the dorsal sepal being of a soft golden yellow. The petals of this variety are remarkable for their length as they will considerably overlap the pouch when bent forward, an unusual thing with insignes. C. Lawrenceanum was represented by one of the very finest varieties which it has been my good fortune to see; the whole flower was very large and the dorsal sepal broad, shapely, and of a claret like redness, contrasting beautifully with the other paler segments. Of C. Arthurianum there was a goodly show, no less than forty-seven flowers being opened. A peculiarity pointed out to me by Mr. Measures in connection with this plant was, that after a flower had expanded, the dorsal sepal would lean backwards, that is over the ovary, for a few days, when it would gradually revert to its former and no doubt natural position. From the quantity of flowers open, this peculiarity was particularly well illustrated. Several very fine specimens of Cattleya Bowringiana were in flower, one spike bearing thirteen flowers of a very rich substance. On the whole the orchids at the Woodlands may be said to be in a very thriving condition, and they reflect great credit on the care and attention bestowed upon them by Mr. Abrahams. ALPHA.

CHRYSANTHEMUM FAIR MAID OF GUERNSEY.

AT the Chrysanthemum Show just held at Swansea, this white Japanese variety was exhibited in giant-like form. Two specimen plants nearly seven feet high and nearly five feet in diameter were exhibited. The specimens in question had been allowed to grow uninterruptedly after the first topping of the main stem a few inches above the soil. The branches were tied out to a wire hoop, fastened about four feet six inches from the rim of the pot. They were profusely flowered, certainly were not formally trained, but they would perhaps have met with more general favour if the plants could have been reduced to a height of not more than four feet, and the unsightly material used in the training of the shoots kept out of sight. These monster specimens could not be termed beautiful in the usual acceptance of the term. E. M.

Notes of Observation.

MOCASSIN FLOWER.

I am surprised that amateurs do not more often take the hardy lady's slippers in hand than is at present the case. They are not expensive to purchase or difficult to grow, and I am sure there are no more interesting plants. I have grown many of them during the last fifteen years, but neither of them have given me so much satisfaction as Cypripedium spectabile. For a trifling outlay I secured a good clump from one of the nurserymen who make a speciality of hardy flowers, and I placed it in a pan six inches in depth. The pan had been previously filled with a mixture of loam and bog earth. The first year it flowered fairly well, every year since it has increased in size and beauty. I have had as many as nine spikes of flowers, sometimes each spike bearing two blooms. I keep the specimen in a cold pit, and the flowers are fully protected when they are developed. It does not, however, even require this protection, being quite hardy, but the specimen gives me so much pleasure that I like to have it where I can conveniently attend to it. I may mention that the flower stem rises about one foot in height. The flowers are white, tinted with rose. L. L.

EARLY SNOWBALL CAULIFLOWER.

It is rather surprising this useful cauliflower is not more extensively grown for an early crop. It takes a short time to turn in, and thus supplies a want which is often felt between the late broccolis and the early cauliflowers. For market purposes, no doubt, it is too small, but in private places it is exactly the right size required, a large, coarse cauliflower being undesirable, besides being strong-flavoured when cooked and, perhaps, discoloured. The chief merit of this variety is the short time in which useful heads can be obtained. Many of the kinds require sowing early in the autumn and protection through the winter; but this variety must be grown under widely different conditions. If sown in the autumn, the plants nearly always button, and are consequently worthless; therefore, the seed should be sown in a mild heat either in February or March, and then pricked off into frames or boxes. When sufficiently hardened off, they should be planted out on a warm border. If this practice is adopted by sowing early in February and growing rapidly without a check, nice compact small heads may be had as soon as the late broccolis are over, and very little trouble will be necessary in keeping up the supply. For successional supplies I prefer the Walcheren, as the heads do not open so quickly as the early kind named. I have seen several cauliflowers grown under the name of Snowball, and therefore care is required in obtaining the seed. It is excellent for small gardens or where only a few heads are required, as it takes up so little space; eighteen inches apart in the rows and fifteen inches from plant to plant will be found sufficient.

Syon Gardens. G. W.

CHRYSANTHEMUM MRS. ALPHEUS HARDY.

Many complaints have been heard this season about the growth and development of the blooms of Mrs. Alpheus Hardy Many growers have also expressed their determination that this shall be the last season that this variety shall be cultivated. But I should advise all those who are despondent over this novelty to give it another trial, because if it can be cultivated in its best form somewhat easily, the trouble expended will certainly be well repaid, it being a grand variety at its best. I have seen three or four good blooms during the season, especially at Portsmouth and Bristol, where they created much interest and proved very attractive. Assuredly if the variety can be cultivated by one person it can by others. I always consider that if any variety has been seen in good condition once there is no good reason why it should not again be had at its best. The fact of its once been seen in perfect order proves conclusively to my mind that the fault does not rest so much with the variety as with the cultivator. Undoubtedly this sort is given to freaks. I had perfect blooms of it as late as April, which indicates its adaptability for late cultivation as well as the production of blooms in November. This fact adds considerably to its value, and being pure white the blooms will always be sought after late in the season. The main cause of the want of success by the general body of cultivators this season is the weakening of its constitution caused by the rapid manner in which it was necessary to propagate stock to meet the great demand for the variety in the spring. The plants from which the cuttings were taken were quite exhausted, being driven along in heat for the production of large quantities of cuttings. It is indeed not surprising that the plants should have generally made a poor weakly growth, and in many cases been blind. I should strongly advise everybody to give the variety further trial, before discarding it. To exhibitors it is especially valuable, a good bloom telling well in a stand. E. Molyneux.

A GOOD LATE PEACH.

Although several late peaches have been introduced within the past twenty years, there is not, in my opinion, one to equal Comet. I have had this peach under observation for the past four years, and throughout that period it has proved thoroughly satisfactory in every respect. In size the fruit is above the average of late peaches. The flesh is yellow, and the flavour is as rich as can be expected in a late peach. I am here referring to peaches ripening in November, when the Comet is in proper condition for the table. In a fruit-room under the care of a friend of mine I saw, on November 12, a splendid dish of fruit just ready to send to table. Until within the past few years I used to grow the Salway for a late supply, and very good it proved. Comet is, however, preferable, as it has a more tender flesh, and is richer in flavour. Moreover, the tree has a better constitution, and is a more certain cropper. J. C. C.

EXPERIMENTS IN CHRYSANTHEMUM CULTURE.

By Mr. H. Briscoe-Ironside.

Read at the Conference of the National Chrysanthemum Society, November 13, 1890.

The text of my paper affords, as you will observe, considerable latitude, of which I propose to take full advantage. There exists amongst us a considerable divergence of opinion as to the cultivation of our favourite flower, and it seems to me that on this point we are never likely to agree fully.

The varied conditions under which we work, such as those of aspect, soil, water, &c., must so considerably affect the growth as to render results, attributed to the culture, inconclusive; moreover, we adopt many and dissimilar methods, and nevertheless attain fairly equal achievements—one grower being successful one season and his opponent the next. Hence, with the view of improving our plants, we resort to experiments, and some of my own endeavours in this direction I shall now have the honour of briefly describing.

I have pursued various systems of cultivating the chrysanthemum, such as striking in cold and heated frames, and have obtained more satisfactory results when the cuttings have been struck in frames placed in a moderately-heated glasshouse, and removed when rooted to cold frames.

I have found deep pots preferable for blooming in, as better drainage can be secured, the plants are safer against saturation during heavy rains, and are more easily top dressed.

Last year I experimented with fifty small plants flowered in 32-size pots. They were fed with various chemicals and manures, both singly and in combination. To express an opinion on the result is a most difficult task, as I found it impossible to adhere strictly to one chemical or one manure, except in the case of horse manure. I came to the conclusion, however, that half-a-dozen plants which were successively given liquid horse manure, soot water, Peruvian guano, and fish manure, and occasionally carbonate of ammonia, showed the most satisfactory results.

I would here mention, more as a curious circumstance than of any practical importance, that in the case of two plants which had occasional waterings of dissolved sugar, greatly diluted, a portion of the sugar reappeared upon the foliage. This I collected and dried, and on tasting it I could detect no alteration. At the same time, the leaves on which the sugar appeared changed to a deep red, resembling in colour the foliage of an Ampelopsis Veitchi in autumn.

I particularly observed the effects of the following forms of ammonia given to plants, viz.: Sulphate, phosphate, nitrate, muriate, and carbonate, and it semed to me that, although the colour of the foliage was considerably deepened, especially by carbonate of ammonia, the blooms did not last so long and the petals were nor so crisp nor firm, a condition of things greatly militating against successful exhibition. The last result was most noticeable when the plants were liberally supplied with ammonia during the flowering period.

I have found, however, when the buds are fixed and rainy weather sets in, thus preventing the usual waterings for some time, that carbonate of ammonia, at the rate of an ounce to three gallons of water, giving half a pint of the mixture to each pot, has maintained a healthy tone in the foliage; nevertheless, at such a time, when the air is moist and the light limited, I venture to think that it is advisable to avoid as much as possible forcing the growth.

The application of carbonate of ammonia produces an almost instantaneous result which may be readily observed in the following manner: A plant (say Golden Dragon), the foliage of which has a tendency to turn yellow, is selected, one or two leaves removed, and placed in water to keep fresh; carbonate of ammonia is now given to the plant, and the leaves thereon compared a few hours afterwards with those which were previously cut off, when there will be found a conspicuous difference in their colour.

My experience has not led me to consider top dressings of dry manures advantageous, as it has seemed to me that the surface roots are damaged thereby, and the manurial contents not evenly distributed. As witness of this, I daresay that some of you have noticed that after top dressings of artificial manures have been applied, the suckers immediately under the soil have become soft and pulpy, which in conjunction with the constant pinching of the suckers up to the blooming period has resulted in the formation of a compact, unnatural mass at the most vulnerable part of the plant. I suspect this is a cause for a scarcity of root-cuttings later on.

We are doubtless all alive to the fact that it is advisable to feed moderately plants having small and thin leaves, and that is a safe guide to generally consider all such plants as belonging to the category of weak varieties. I have observed that the life of the leaves of this section, when fully exposed to the sun's rays, has been of comparatively short duration, and that the blooms have been considerably improved when these plants have been placed in a partially shaded position.

Continually watching the foliage has been the most useful guide to me in the cultivation of the chrysanthemum. We know that when the cuttings are rooted a yellow appearance invariably denotes insufficient pot-room, and after the plants have been finally potted that a similar condition betokens insufficient nourishment; also that when the mid-rib of the leaves becomes contracted and the foliage curls, a too generous treatment has probably been the cause. This last feature I have frequently observed in cut back plants, which, as might be expected will not stand the same amount of feeding as those naturally grown.

One of the most difficult problems in the culture of the chrysanthemum, and that which requires a vast amount of experience, is, I suppose, "the Timing of the Blooms" for exhibition. The following system has enabled me to exhibit blooms in fairly fresh condition three, and in some cases four, weeks after they have fully developed. Take a plant, the flowers on which are three-fourths expanded, remove it to a dark room or shed, and when a bloom has fully opened cut it off with (say) about eighteen inches of stem immerse immediately in a jar or tumbler of water and cut off *underneath the water* about two inches of the stem. I imagine that in this way the air is prevented from penetrating the stem, and hence the access of the water to the bloom is unimpeded. A small quantity of charcoal placed in the water obviates the necessity of continually changing the same.

I should mention that I afterwards take off a small piece of the stem occasionally, this operation being likewise performed *underneath the water.*

With regard to mildew, I have found that sulphide of potassium, at the rate of two ounces to a gallon of water, syringed on the plants has been the most effectual remedy, but, when housed, I consider dry flowers of sulphur dusted on the foliage preferable.

Mildew generally begins during the months of August and September, sometimes in the latter part of July, and I have reasons for concluding that it originates from the varying temperatures for which these months are conspicuous, the days frequently being extremely hot and the nights cold and misty.

To confirm, in my own mind, my conjecture on this point, I housed half the plants of Val d'Andorre, Triomphe de la Rue des Châlets, Meg Merrilies, and Mr. Ralph Brocklebank, which are notoriously subject to this disease, at the end of July, the other half being housed at the end of September. No trace of mildew appeared on those first housed, while the others suffered in the usual manner.

It will be found on taking two leaves of equal weight (they can of course be cut to weigh the same), the one being healthy and the other showing signs of mildew, and burning them separately, that the ash of the former is the heavier. This, I imagine, proves that the mildewed leaf contained more liquid matter than the other.

It is not inconsistent, therefore, to conclude that defective, or checked transpiration, is the cause of mildew.

To a similar reason I venture to attribute Damping in Blooms, as a like result is obtained from the last experiment if blooms be substituted for leaves. The fact of the petals giving off water in the same way as leaves, though, of course, in a smaller degree, must not be overlooked.

Damping, I have observed, is generally confined to blooms grown for size, on plants which have lost a great deal of their foliage from a too early ripening. I am inclined to think that over-feeding has little or nothing to do with damping, inasmuch as I have experienced from over-feeding exactly the opposite result, viz., the bud displaying a dry rot, and refusing to develop at all.

I suppose a too early ripening of the plants is due to an exposed position, where they have practically no shade no shelter from the summer sun.

I placed some plants so as to be shaded from the sun between the hours of eleven a.m. and two p.m. during the months of June and July, and I fed them twice as liberally as those fully exposed. The former when housed were ripened about half-way up the stem, and the result appeared to afford weighty testimony to the validity of my conjecture. This was especially noticeable amongst the weak varieties.

Bearing on this point, in conclusion, I would draw your attention to the fact that whereas warmer countries easily ripen seed, in which we practically fail, they cannot produce blooms such as those exhibited by the National Chrysanthemum Society.

Chrysanthemum Exhibitions.

SALISBURY CHRYSANTHEMUM SHOW, NOVEMBER 18 AND 19.

THE Wilts Horticultural Society held its autumn show of chrysanthemums in the County Hall, Salisbury, on the above dates, and was, so far as the exhibits, both in quality and number and general arrangement, were concerned, all that could be desired, and it was by far the best exhibition of the kind held by the society. The first class of the schedule was that for a group of chrysanthemums arranged for effect in a semi-circular space ten feet by six feet, the first prize being a challenge cup value £10 10s., and 20s. in cash. Mr. F. E. Pearce, High Street, Salisbury, was first for a group almost perfect in every respect. The blooms throughout were of large size, fresh, and of good colour, and the plants dwarf in growth and carrying healthy foliage of a deep green colour. Mr. E. L. Brown, Wilton Road, who has held the cup the two previous years, was a good second, his plants being scarcely so robust, and the blooms smaller, but it was in every way an excellent group. The next group class was that for one of miscellaneous plants. Dr. F. W. Cotes was an easy first, for a very light and effective group, composed of palms with a groundwork of ferns and a good variety of orchids, their light racemes showing to advantage above the ferns. Among the orchids in this group were Lælia anceps, Odontoglossum Alexandre, Oncidium tigrinum, O. Forbesii, and O. crispum. Mr. Pearce was second in the next group class of chrysanthemums not open to exhibitors in the first class, Mr. C. Haskins was an easy first. The blooms in this class were also characterized by their large size, freshness, fine foliage, and dwarf habit, and were capital examples of the cutting down system. Mr. W. H. Pearce was second, there being but two exhibitors.

SPECIMEN PLANTS.—There is generally a small and meagre muster of these at this show, but on this occasion there was a larger competition than usual. For four trained specimens Mr. E. L. Brown was an easy first, his best being E. Molyneux, Golden George Glenny, and Roseum superbum; and for one trained specimen Mr. J. Kaines, Winchester, was first with a fine plant of Bertha Flight. Mr. E. Wills sent two fine specimens, not for competition. For two specimen plants, not chrysanthemums, Mr. Carey, gardener to Colonel Pepper, Melford Hill, was the only exhibitor, and was awarded the first prize for a well-bloomed azalea and a large calla.

CUT FLOWERS.—The competition in the larger classes was not so great as in the smaller, and in the cup class for twenty-four Japs and incurved in equal numbers, to include no more than two of any one variety, Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, was an easy winner. His stand contained Boule d'Or 2, Avalanche 2, Fernand Ferel, Meg Merrilies, Japonais and Triomphe de la Rue des Chalets, Empress of India 2, Lord Alcester 2, Bronze Queen 2, Alfred Salter 2, C. Gibson, Miss M. A. Haggas, Cherub 2, Barbara, Eve, Mrs. Heale, and Miss Violet Tomlin. Mr. G. Mann, Leighton Gardens, Westbury, was a fair second, having fine Etoile de Lyon, E. Molyneux, and Empress of India. Mr. C. Gill, gardener to the Earl of Nelson, Trafalgar, near Salisbury, was a creditable third. The next class was also a cup class only open to amateurs for eighteen blooms in not less than twelve varieties. Mr. Annals, gardener to Mr. Chaloner Shenton, Winchester, was successful in carrying off the cup which he had won two previous years, showing the following in good style: Gloriosum, Etoile de Lyon 4 blooms, E. Molyneux, Golden Dragon, Sunflower, Lady T. Lawrence, Volunteer, Ralph Brocklebank, Jeanne d'Arc, Barbara, Golden Christine, Princess of Wales, Lord Wolseley and Peach Christine; Mr. W. Follen, gardener to J. D. Wills, Esq., Codford, near Salisbury, was a good second, having fine blooms of Sunflower, Moonlight, now seldom seen, and Belle Paule; and Mr. W. Batten, Basingstoke, was third. In the next amateur class for twelve blooms, Mr. Batten was first with a good stand of blooms. There were seven stands of twelve blooms each put up in the open class for incurved, and here Mr. Neville, gardener to F. W. Flight, Esq., Winchester, was first with neat and well finished flowers of Miss Violet Tomlin, Princess of Wales 3, Lord Alcester, Mrs. Coleman, John Salter, Lady Dorothy, Hero of Stoke Newington, Nil Desperandum, Mrs. Shipman, and Empress Eugenie; Mr. G. Inglefield, gardener to Sir J. W. Kelk, Bart., Tedworth, was a good second, showing larger blooms, but not so well finished. His stand contained some excellent flowers of Empress of India; Mr. W. Robinson, gardener to Right Hon. Justice Lopes, Westbury, was third. In the corresponding class for Japanese there were seven competitors. Mr. Robinson was first with a massive stand containing E. Molyneux 2, Etoile de Lyon 3, Boule d'Or 2, Condor, Sunflower, Mdlle. Lacroix, and Sarah Owen; Mr. Neville was a good second; and Mr. George Inglefield was third. Mr. Neville was also the most successful in the class for reflexed, with a very bright lot of blooms, including Cullingfordi 2, Cloth of Gold 2, Golden Christine 2, King of the Crimsons, Madame M. Tezier, Pink Christine, Peach Christine, and White Christine. Mr. W. Robinson was a close second, with larger flowers, but not so good in colour. Mr. H. W. Ward was third. Mr. Neville was again successful with the anemone flowered varieties, having the following in good condition: Jeanne Marty, Empress, Minnie Chate, Fabian de Mediana, Ratapoil, Miss Annie Lowe, and Lady Marguerite. Mr. Tucker, gardener to Major Clarke, Trowbridge, was second, and Mr. Robinson third.

FRUIT.—The collection of fruit to consist of six dishes brought out several good lots, Mr. Ward being the most successful, showing two fine bunches of Gros Guillaume, and Muscat of Alexandria grapes, Queen Pine, Longford Castle melon, Glou Morceau pear, and Court Pendu Plat apple. Mr. Warden, Clarendon gardens, was a good second, having fine Gros Colmar grapes in his collection. Mr. Evans, Melchet Court, was third. For two bunches of Black Alicante Mr. J. Chalke, gardener to G. Head, Esq., Westwood, Salisbury, was a good first with heavy clusters, Mr. Ward being second, and for any other black kind Mr. Warden was an easy first with fine bunches of Gros Colmar. Mr. Chalke being second with Lady Downes. For two bunches of Muscat of Alexandria, Mr. Chalke was again first with two finely coloured bunches, Mr. Ward being second; and for any other white variety Mr. Ward was the only exhibitor and was awarded the first prize, showing some fine bunches of Trebbiano. Apples were well shown by Mr. T. Hall and Mr. Smith, the former showing Alfriston, Warner's King, and Flower of Kent, and the latter New Hawthornden, Warner's King, Emperor Alexander. Mr. T. Hall was also the most successful with dessert apples, having Harvey's Golden Russet, King of the Pippins, and Cox's Orange Pippin. Mr. R. West, gardener to J. R. Wigram, Esq., Northlands, near Salisbury, was an easy first with three dishes of pears, showing Doyenne du Comice, very fine; Beurre Bosc, and Van Mons. Leon Leclerc.

YEOVIL CHRYSANTHEMUM SOCIETY, NOVEMBER 19.

A most successful exhibition of chrysanthemums, fruits, flowers, and vegetables was held in the Town Hall on the above date. The society, of which Mr. E. H. Oakley is the honorary secretary, may be congratulated upon the result of the efforts of the executive.

GROUPS OF CHRYSANTHEMUMS AND SPECIMENS, together with groups of miscellaneous plants, were shown largely and well. In the open class there were several good arrangements, and Mr. Crossman, gardener to J. Brutton, Esq., Yeovil, was first with a grand group, the excellent condition of the plants, the size, and freshness of flowers, and the taste in arrangement being everything that could be desired. The plants forming the outline of the groups were in three-inch pots, and about twelve inches high, having rich green leaves from the rim of the pot to the apex, and bearing excellent blooms. Mr. Gillam, gardener to J. S. Cable, Esq., Yeovil, was a good second; and Mr. Anthony, gardener to Thomas Moore, Esq., a creditable third. Good groups of miscellaneous plants were arranged by Mr. Biss, gardener to Jabez Bradford, Esq, Yeovil; Mr. Appleby, gardener to J. W. Dampier-Bide, Esq., Yeovil; and Mr. Kidley, gardener to W. H. Hall, Esq., East Coker, Yeovil; and the prizes were awarded in the order of their names. The first prize group had palms, callas, heaths, cypripediums, dracænas, crotons, and poinsettias judiciously intermixed with well-flowered and carefully-selected plants of chrysanthemums, the whole being edged with adiantums.

In the classes for trained specimens Mr. Crossman was especially successful, being first in each of the following classes, namely, three reflexed with good examples of Peach Christine, Pink Christine, and Felicity, one reflexed with White Christine, three incurved, three Japanese, and one Japanese. Mr. Allen, gardener to the Rev. W. S. Cottes, West Coker, Yeovil, had the best specimen incurved, and Mr. Anthony the best three pompons. In the competition for the prizes for table plants, Mr. Lloyd, gardener to Vincent Stuckey, Esq., Langport; Mr. Appleby and the Rev. M. Hankey had the awards made in their favour in the order of their names. The dracænas, crotons, pandanads, and Caladium argyrites, forming the collections, were all well shown. In the class for two palms suitable for the dinner table, Mr. C. J. Bowers, gardener to T. Holford, Esq., Castle Hill, Cerne, and Mr. Lloyd were first and second. The class for primulas was a good one, and the prizes were awarded to Messrs. Anthony, Allen, and Lloyd. Solaniums were well shown by Messrs. Biss, Kidley, Troyte-Bullock, and Mr. Hobby, gardener to the Hon. Sir Ponsonby Fane, Brymton House, Yeovil.

CUT BLOOMS.—Several capital stands of twenty-four blooms (twelve incurved, and twelve Japanese), were staged in the three-guinea cup class. Mr. Copp, gardener to W. Erle-Drax, Esq., Halnest, Sherborne, was a capital first, showing Etoile de Lyon, Edwin Molyneux, Gloriosum, Boule d'Or, Mrs. Wheeler, Madame J. Laing, Mr. H. Cannell, Madame C. Audiguier, Thunberg, Sunflower, and Carew Underwood, all in fine condition. The incurved were also good, Empress of India, Lord Alcester, Alfred Salter, Charles Gibson, and similar varieties appearing to advantage. Mr. Crossman was second, the Rev. M. Hankey third, and Mr. Lloyd was fourth. Mr. J. S. Cable was a good first for a stand of twelve Japanese, Mr. Biss being second. Messrs. Copp and Lloyd were first and second respectively for reflexed varieties, staging good blooms of Peach Pink, and Golden Christine, Cullingfordii, and King of the Crimsons.

FRUIT was well represented, and the quality, on the whole, was very high. Two good collections of six kinds were put up by Messrs. Lloyd and Crossman, and both contained good black and white grapes, pears and apples. Colonel Macgregor, Mapperton; Mr. Lloyd, and Mr. Conolly, gardener to J. R. C. Talbot, Esq., Rhode Uplyme, Lyme Regis, were the successful exhibitors in this class for two bunches of Alicante. In any other black class Mr. Lloyd was a good first with well-coloured Gros Colmar, Colonel Macgregor being second with fairly good bunches of Mrs. Pince, and Mr. Hobby was third, staging small but well-coloured bunches of Black Hamburgh. In the muscat class Mr. Connolly was a long way ahead of other exhibitors, the bunches being about 4½lbs. each, and superbly finished. Colonel Macgregor and Mr. Crossman were second and third in this class, and in any other white class. Colonel Macgregor, Messrs. Lloyd and Crossman were the prizewinners, all showing fairly good examples of Foster's Seedling. Captain Dymond, Charminster, had the best dish of dessert pears, staging fine examples of Beurre Diel, and Mr. Lloyd had the finest dish of any culinary variety, showing good specimens of Uvedale's St. Germain. Mr. Lloyd also staged the best three dishes of dessert apples, his fruits of Ribston Pippin, Cox's Orange Pippin, and King of the Pippins being of good size, clear, even and well-coloured. Mr.

Kidley was a good second, the fruit of Coker Beauty, included in his triplet is a very handsome apple of good quality. Messrs. Lloyd, Crossman, and Kidley were the prizewinners, in the class for culinary apples which, like dessert varieties, were shown well, and in goodly numbers.

Vegetables.—Several good collections of ten kinds were staged, and the quality of the individual exhibits was very good. Messrs. Crossman and Bowers were first and second, their collections being very closely matched in point of quality. The collections contained asparagus, seakale, French beans, King cauliflower, Golden Ball and Snowball turnips, Telegraph cucumber, leeks (very fine), Rousham Park onions, Sulham Prize celery, and Brussels sprouts; Mr. Copp was a creditable third in this class. Messrs. Crossman and Bowers were the only exhibitors of collections of salading, and their collections were very extensive and attractive.

YORK CHRYSANTHEMUM SHOW, November 19 to 21.

This show is held under the auspices of the Ancient Society of York Florists, and they are to be congratulated upon the excellent display brought together on this occasion by their supporters in the Exhibition Buildings. A better place in which to hold a show could hardly be conceived; plenty of room to display the productions, and that, too, under an excellent light even for November.

Cut Blooms were staged in quantity, good competition in all classes being the rule. For thirty-six blooms, half incurved and half Japanese, not less than twelve varieties in each, there were thirteen entries, the chief prize being plate to the value of £5, and the same amount in cash. Mr. Folkard, gardener to Sir James Walker, Bart., won the premier prize with a very fine stand, his blooms being particularly strong in incurved. He staged, back row, Empress of India, A. Salter, Lord Alcester, Queen of England, Golden Empress; middle row, Miss Violet Tomlin, Mrs. Heale, Princess of Wales, Miss Haggas; front row, Lady Hardinge, Jardin des Plantes, Cherub, Princess Teck. The Japs were, back, Etoile de Lyon, Boule d'Or, Avalanche, Edwin Molyneux; middle, Mrs. J. Laing, Stanstead White, Condor, Madame Baco; front, Condor, Puritan, Coronet, Avalanche, Jeanne Delaux, Sunflower. The second prize was taken by Mr. Goodacre, gardener to Earl of Harrington, Elvaston Castle, Derby, whose incurved blooms were not so good as in the first prize lot. He staged of incurved, back, Empress of India, Prince Alfred, Miss Haggas, Lord Alcester, Golden Empress; middle, Princess of Wales, Mrs. Shipman, Mrs. Heale, John Salter, Jeanne d'Arc, Miss Violet Tomlin; front, Hero of Stoke Newington, Princess Teck, Princess Beatrice, John Lambert. For twenty-four varieties, distinct, equal numbers of incurved and Japanese, Mr. Folkard repeated his former success, winning in fine form, staging of incurved, back, Alfred Salter, Golden Empress, Queen of England, Empress of India; middle, Lord Alcester, Princess of Wales, Miss Haggas, Miss Violet Tomlin; front, Cherub, Jeanne d'Arc, Lady Hardinge, Mrs. Heale. Japanese, back, Avalanche, Madame Audiguier, Edwin Molyneux, Etoile de Lyon; middle, Jeanne Delaux, Mons. Elliott, Madame Laing, Sunflower; front, Stanstead White, Madame Baco, Val d'Andorre, Condor. Mr. Anderson, gardener to W. A. Milnthorpe, Esq., was placed second. For twelve incurved blooms, Mr. Folkard was again first, staging Empress of India, Golden Empress, Lord Alcester, A. Salter, Miss Violet Tomlin, Mrs. Heale, Princess of Wales, Hero of Stoke Newington, Jardin des Plantes, Lady Hardinge, Jeanne d'Arc, Cherub. For twelve Japanese, Mr. Short, gardener to Arthur Pease, Esq., M.P., was placed first in a strong and close competition, staging Mrs. J. Clark (a fine bloom, rosy-lilac, incurved), Etoile de Lyon, Edwin Molyneux, Avalanche, Ralph Brocklebank, Puritan, Baronne de Prailly, Mrs. J. H. Spaulding, Madame J. Laing, Meg Merrilies, Criterion, and La Triomphante; Mr. Anderson being placed second. For six Japanese, one variety, there were sixteen entries, Avalanche finding most favour with the judges, Mr. G. Finlay, gardener to Mrs. Proud, Darlington, taking first. Avalanche also won the second prize, a good half-dozen of Etoile de Lyon being passed over. With twelve anemone-flowered, in not less than six varieties, Mr. Midgley, gardener to H. Mason, Esq., Bingley, was first with capital flowers of Fabian de Mediana, Sabine, Lady Lawrence, J. Marty, Lady Margaret, Minnie Chate, Madame Robert Owen, and Annie Lowe; this was a good class. For reflexed there were sixteen entries, the best lot coming from Mr. Short, who had good blooms of Cullingfordi, Chevalier Domage, Peach Christine, Irene, King of Crimsons, and Dr. Sharpe.

For hand bouquet of chrysanthemums only with fern foliage, seventeen entered, Mr. Battensby, Blaydon-on-Tyne, taking first, with a good arrangement of light colours. An exceedingly fine box of mixed cut flowers was exhibited by Mr. Letts, gardener to the Earl of Zetland, Aske Hall, Yorks, and orchids were represented by Lycaste Skinneri, Cypripedium Spicerianum, Pleione maculata, Calanthe Veitchii, Dendrobium bigibbum, and Oncidium tigrinum. The same exhibitor came out on this occasion with grapes of superior quality and fine colour, easily beating Mr. Goodacre, who took second place. Mr. Letts showed Barbarossa, good in bunch, berry, and colour, superior Alicante, and well-kept Muscat of Alexandria.

Vegetables were staged in large numbers, several classes for collections being provided, and the produce exhibited of excellent merit. Pears and apples are not so good in the north as farther south, but some useful samples were put up.

Plants, both as specimens and in groups, were shown in large numbers, and the prizes in most instances keenly contested. The groups of most prominence were those staged in circles through the central part of the large hall, and they were in this form seen to great advantage from all parts whence a view could be obtained. The best arrangement, crowned by a fine Phœnix surrounded by chrysanthemums, and well-finished to the base, was put up by Mr. McIntosh, gardener to J. T. Hingston, Esq., Clifton, Yorks; the second prize group was somewhat similar to the preceding. In another class the best was by Mr. Everard, gardener to Mrs. Gutch, Holfull Lodge, York. With specimen plants Mr. Everard also came out well, taking firsts for four plants of incurved varieties with Jardin des Plantes, Prince Alfred, Lord Wolseley, and Pink Perfection, and also for two plants of Japanese with good examples of Val d'Andorre and Mdlle. Lacroix, and for specimens with Edwin Molyneux, a good plant, and second for four Japanese, Val d'Andorre and Madame de Sevin being superior. Mr. T. Smith, Norwood Nursery, Beverley, was first for four Japanese with finely-bloomed plants of Madame de Sevin, Mdlle. Lacroix, Val d'Andorre, and Dr. Macary, and second for four incurved plants; but again first for four pompons with well-flowered dwarf plants. Reflexed kinds were best shown by Mr. Vear, gardener to Miss Steward, York, who took the leading prizes, the Christines were the best of this section. Plants were also shown in good flower by amateur growers, but there was a disposition to allow them to grow too tall.

The show was thoroughly well attended on each day, especially in the evenings. The arrangements were excellent, and reflect great credit upon Mr. Lazenby, the courteous secretary, who has worked hard for this society since it took the chrysanthemum shows in hand in 1880.

THAME HORTICULTURAL SOCIETY, November 19.

This society held its first exhibition of chrysanthemums on the above date in the new Town Hall, and, for a maiden display, was most successful. The object of the show was to encourage the cultivation of the queen of autumn flowers, and, if possible, augment the funds of the society, which for a few seasons past have been getting "small by degrees," owing to the summer exhibitions not paying their way. The schedule was framed in a liberal spirit, but the competition was not severe except in the classes for table vases and the groups of plants for effect. Extra productions very largely aided the show, Mr. John Walker, florist, contributing about one hundred untrained plants, seventy specimen blooms of rare quality, a box of roses, in which were excellent examples of Souvenir de la Malmaison, Souvenir d'un Ami, Madame Falcot, Niphetos, Maréchal Niel, Lamarque, and Perle des Jardins; also fully developed blooms of Mrs. Alpheus Hardy. From S. Lacey, Esq., Thame, came a nice bank of ferns, and from John Parker, Esq, F.S.A., High Wycombe, a stand of Japanese blooms of large size and exquisite finish, a contribution of twenty-four Japs and a dozen incurved blooms being sent by Miss Thomson, Stanton St. John, Oxon.

Groups were well shown, and in competition for a group arranged for effect Mr. Munday, gardener to W. A. Wykeham-Musgrave, Esq., Thame Park, was first, a mass of colour being produced by the fine blooms of Etoile de Lyon, Boule d'Or, White and Golden Empress, Edwin Molyneux. Sunflower, Meg Merrilies, Dormillon; Mr. G. Briars, Royal British Schools, second, his arrangement containing large forms of many of the above-named and Edouard Audiguier, Val d'Andorre, Madame C. Audiguier, Fair Maid of Guernsey, Cullingfordi, Prince Alfred, Mrs. Forsyth, and Lord Wolseley. Several other groups deserved recognition, but the schedule provided two awards only; at the same time the unplaced collections were somewhat unequal in quality, there being a preponderance of white, yellow, or purple. The trained plants were fairly good, Mr. T. Anstiss, Brill, being first for six large flowering, his best plants being Mrs. Sharpe and Lord Wolseley; Mr. G. Briars presenting the best half-dozen Japs, his collection including L'Adorable, Peter the Great, Fair Maid of Guernsey, Val d'Andorre, and Edwin Molyneux. The best specimen plant was Mrs. Sharpe, exhibited by Mr. T. Anstiss.

Cut Blooms were good, and for twenty-four Japs, the Rev. J. Bennett, Tiddington House, secured the premier award with a very level collection, including E. Molyneux, R. Brocklebank, M. H. Elliott, Stanstead White, Etoile de Lyon, Sunflower, Margaret Marrouch, Mons. J. M. Pigny, Japonais, Duke of Berwick, George Daniels, Baronne de Prailly, Avalanche, Carew Underwood, Madame J. Laing, Charlie Sharman, Mons. Freeman, Mr. H. Cannell, Mdlle. Lacroix, Madame Baco, Holborn Beauty, Marsa, and Thunberg; Mr. G. Briars second, his best forms being Mrs. H. Cannell, Criterion, Madame C. Audiguier, Mr. H. Cannell, Golden Dragon, Stanstead Surprise, Thunberg, and Fimbriatum. For a dozen Japs, Mr. T. Bloom was placed first, his best blooms were Fair Maid of Guernsey, Mons. Freeman, Lady T. Lawrence, Madame C. Audiguier, Starlight, Mr. H. Cannell, and Baronne de Prailly; while for six Mr. Munday scored a first with Mrs. Alpheus Hardy, Madame C. Audiguier, E. Molyneux, Etoile de Lyon, Sunflower, and Elaine. For twenty-four incurved Mr. Briars led with a well-balanced lot of flowers, showing Queen of England, John Salter, Violet Tomlin, Empress Eugenie, Barbara, Mrs. N. Davis, Lord Wolseley, Princess of Wales, Jubilee, and Annie Salter; Rev. J. Bennett, presenting the best twelve distinct, his finest flowers being Barbara, Princess of Wales, Jeanne d'Arc, Mrs. Heale, Mabel Ward, Venus, and General Bainbridge. In the smaller classes there was a keen competition. Dinner-table vases were a very nice feature, a little wiring here and there would have helped in posing the bigger blooms; the bouquets of chrysanthemums and foliage being simple arrangements.

The judges were Mr. J. Walker and Mr. W. Greenaway, Oxford.

BANBURY WINTER FLOWER AND FRUIT SHOW, November 19.

Banbury, as representing North Oxon, may well be proud of its annual winter show, the display this season being far in advance of previous efforts, the only drawback being want of space to stage the bulk of exhibits to advantage with a fair allowance of promenading room.

Groups arranged for effect were well shown and a great feature, Mr. Baskett, gardener to W. Mewburn, Esq., Wykham Park, taking the card for a matchless arrangement of high quality, not too tall, but well furnished with foliage and carrying colossal heads of colour, giant flowers of J. Salter, Cullingfordi, Val d'Andorre, R. Brocklebank, Madame J. Laing, Pink Christine, Madame C. Audiguier, Prince Alfred, Cloth of Gold, Queens and Empresses; J. Gillett, Esq., The Elms, Banbury, was second, the flowers remarkable for size and finish; and Colonel North, Wroxton Abbey, was third. Trained plants call for no special note, save three from J. Gillett, Esq; Mr. M. Jefferies, Summertown, Oxford, was first in the class for single specimens showing Elsie; second, Mr. T. Tollitt, Oxford, with Mrs. Forsyth; Lord North third, with Julia Lagravere. The best three standards were from Mr. M. Jefferies. The groups of plants for dinner-table decorations were beautifully arranged, Colonel North first, whose varieties included neat crotons, ferns, Calanthes Veitchi and veratrifolia, cyclamens, pancratiums, &c.; Mr. P. J. Perry, Banbury, second. Primulas were numerously shown, F. J. Myers, Esq., first for six double; the prizes for six single forms going to H. C. Norris, Esq., F. J. Myers, Esq., and J. Gillett, Esq.

Cut Blooms.—This section contained a vast array of highly-finished large, fresh specimens. For twenty-four, distinct, Sir G. Russell, Swallowfield Park, Reading, was first with Lord Alcester, Miss M. A. Haggas, Hero of Stoke Newington, Empress, Eve, Barbara, Mabel Ward, Queen of England, Violet Tomlin, Princess of Wales, Lady Dorothy, and Lord Eversley, R. Brocklebank, Etoile de Lyon, Sarah Owen, Madame C. Audiguier, Meg Merrilies, Christmas Eve, Mrs. C. Wheeler, Madame J. Laing, Jeanne Delaux, Sunflower, and Miss M. A. Haggas; G. H. Nelson, Esq., Rousham Park, second, showing Etoile de Lyon, R. Brocklebank, Mons. Freemar, Thunberg, Mons. Bernard, Avalanche, Comte de Germiny, Madame Bac-, Stanstead White, Princess of Wales, Lord Wolseley, Mr. Brunlees, Cherub, Abbe Passaglia, Mrs. Heale, and Jardin des Plantes; and P. Southby, Esq., was a good third. He was also first for eighteen, the choicest specimens being Cherub, Miss Violet Tomlin, J. Salter, Mrs. S. Coleman, and Lord Eversley; while for twelve the premier award went to Lord Valentia, Bletchington

Park, for grand forms of Cherub, Lord Alcester, John Salter, Princess of Wales, Jeanne d'Arc, Isabella Bott, Prince Alfred, and Lord Wolseley, For eighteen Japanese, W. C. Cartwright, Esq., headed the competitors, the blooms being very large and well finished, showing E. Molyneux, Mdlle. Lacroix, Mrs. H. Cannell, Jeanne Delaux, Madame Baco, Mons. J. M. Pigny, Thunberg, Hiver Fleuri, Criterion, Elaine, Gloriosum, Avalanche, Etoile de Lyon, Mons. Burnet, Mrs. J. Wright, and Mons. Freeman; Sir G. Russell second, the premier flowers being Carew Underwood, W. G. Drover, Agnes Flight, Boule d'Or, and Striatum Perfectum. For a dozen of one variety G. H. Nelson first, with Avalanche; Miss Gillett second, with Lord Alcester; and Sir G. Russell third, with Christmas Eve. Large flower anemones were well represented, P. Southby, Esq., first, the chief forms being Empress, Miss Annie Lowe, Souvenir L'Ardenne, and Jeanne Marty; G. H. Nelson, Esq., second, with Mrs. Pethers, Gluck, Georges Sand, Fabian de Mediana, Fleur de Marie, and Mdlle. Cabrol; Lord Valentia third, for fine specimens of Grand Aureole, Acquisition, Lady Margaret, Laing's Anemone, Gluck, Miss A. Lowe, and Ratapoil. Reflexed forms were well shown. For twelve P. Southby, Esq., led with Cullingfordi, Madame Madeline Tezier, Pink Christine, Peach Christine, Amy Furze, Mrs. Forsyth, Cloth of Gold, and Golden Christine; Sir G. Russell second, showing James Carter, Putney George, Amy Furze, Cloth of Gold, and the Christines; W. Newburn, Esq., third, with the white, pink, peach, and bronze Christines, Cullingfordi, Phidias, and Madame Tezier. Pompons in bunches of threes were presented in splendid form, G. H. Nelson, Esq., first, with Rose Trevanna, St. Michael, Black Douglas, Adele Prisette, Golden Mdlle. Marthe, Maid of Kent, Reine d'Or, Osiris, Nelly Rainford, Rosinante, Brunette, and Rubra Perfecta; Lord Valentia was second, his best flowers being Model of Perfection, Golden and White Mdlle. Marthe, Fremy, Black Douglas, and Pygmalion; P. Southby, Esq., was a close third.

Bouquets and baskets of chrysanthemums were very chastely arranged, and the competition was very keen.

FRUIT was a fine feature, there being quite a strong muster of grapes, the premier three clusters coming from Mr. A. Macnaughton, Vineyard Nurseries, who had grandly-finished Alicante; H. C. Norris, Esq., leading in the white class with Bowood Muscat. About one hundred dishes of apples were staged in competition of the prime Oxfordshire size and colour, and about forty dishes of pears. Collections of vegetables occupied a long range of tabling, in which tomatos, potatos, celery, cauliflowers, beet, onions, carrots, parsnips, &c., the grand stems of Wroxton brussels sprouts being remarkable. Onions were, as usual, a strong point, and in the local class Messrs. E. Bolton, A. V. Cross, and Claridge produced grand bulbs of Anglo-Spanish. The winners of the prizes for the Ailsa Craig onion were Lady Theodora Guest, W. S. Portal, Esq., and R. A. Cartwright, Esq., with large bulbs.

POTATOS.—For one dish of round the prizes were awarded for dishes of Abundance. For nine dishes, R. A. Cartwright, Esq., was first for level, bright tubers of Reading Russet, Chancellor, Pink Perfection, Mottled Beauty, London Hero, Edgecote Purple, Satisfaction, Snowdrop, and Abundance; Lord North, second, for Hughes's Perfection, Schoolmaster, Reading Ruby, Sutton's Thirty-six, Mr. Bresee, Snowdrop, Adirondack, International, and Edgecote Purple; Mr. A. V. Cross third, with Abundance, Reading Ruby, Reading Russet, Sutton's Seedling, Satisfaction, Snowdrop, Vicar of Laleham, Mr. Bresee, and Reading Giant. For six dishes Mr. Rainbow, Hon. Miss Percy, and H. T. Gladwin, Esq., were awarded prizes. The varieties winning in the open class for one dish were Kidney, Satisfaction, Snowdrop, and Mr. Bresee.

CARDIFF CHRYSANTHEMUM SOCIETY, NOVEMBER 18 AND 19.

The Park Hall is an excellent place in which to hold a chrysanthemum show, being roomy and, what is a decided advantage, is well lighted. Cut blooms formed by far the most important feature of the show, although groups were strongly represented. Specimen plants were in quality much below what are generally seen at provincial exhibitions.

CUT BLOOMS.—For the prizes for twenty-four distinct varieties, irrespective of section, there were five competitors. The best stand came from Mr. J. Horne, gardener to J. T. Masters, Esq., Cardiff. The blooms were of medium size, even, and included equal numbers of incurved and Japanese. The incurved varieties were: Miss Violet Tomlin, Queen of England, Lord Alcester, Prince Alfred, Princess Teck, C. Gibson, Empress Eugenie, Miss Haggas, Mr. Brunlees, Princess Beatrice, Mr. Bunn, Mrs. Heale. The Japanese varieties were: Boule d'Or, Madame Baco, Mrs. Cannell, Carew Underwood, M. Burnet, J. Delaux, Duchess of Albany, Bertha Flight, Mr. H. Cannell, Belle Paule, Charlie Sharman, and Sunflower. The second prize was awarded to Mr. F. Case, who staged mainly Japanese varieties, and Mr. T. T. Wright, gardener to J. Lee Campbell, Esq., Glewston Court, Gloucester, was third. For twelve incurved distinct, Mr. N. Ryder, gardener to H. W. Thompson, Esq., Cardiff, took first honours with medium-sized blooms, Hero of Stoke Newington, Mr. Brunlees, Mabel Ward, Golden Empress, and Nil Desperandum being his best; second, Mr. W. Treseder, Cardiff, and Mr. H. Rex, gardener to C. Waldron, Esq., Cardiff, third. For twelve Japanese Mr. Horne was first with good blooms of the following; Ralph Brocklebank, Mr. H. Cannell, Edwin Molyneux, Stanstead Surprise, Duchess of Albany, Mdlle. Lacroix, Charlie Sharman, Sunflower, Florence Percy, Madame C. Audiguier, Sarah Owen, and Avalanche; second, Mr. Treseder; Mr. S. Clark, gardener to Colonel Hill, Cardiff, was a good third.

GROUPS OF CHRYSANTHEMUMS to occupy a space of sixty square feet were staged by five competitors. Mr. F. Case secured first honours with plants carrying good blooms and neatly arranged; Mr. Treseder second; Mr. J. Julian, gardener to J. Gume, Esq., Cardiff, third.

SPECIMEN CHRYSANTHEMUMS were best shown by Mr. H. W. Thompson. A capital specimen of Golden Christine was staged by Mr. G. Hawkins, gardener to Colonel Luberville, Cardiff, in the class for one incurved or reflexed, which had sixty fully-developed blooms. For specimen Japanese Mr. Hawkins was first with Madame de Sevin, freely flowered and loosely trained.

FRUIT made a good display. The best collection of five dishes was staged by Mr. S. T. Wright, the Muscat of Alexandria and Gros Colmar grapes and Beurre Diel pears being particularly good; second, Mr. Hawkins. For two bunches of black grapes Mr. Wright was first with Gros Colmar, Mr. F. Case following with the same variety. Mr. Hawkins was first for same number of bunches of a white variety with Muscat of Alexandria. The best pears were staged by Mr. Hawkins, and the first apples by Mr. Wright.

VEGETABLES were a strong feature, and for six varieties Mr. W. Moore, gardener to G. M. Treherne, Esq., was first, Mr. Hancock second, and Mr. Pugsley, gardener to General Lee Dymas, third.

NATIONAL CHRYSANTHEMUM SOCIETY.

GENERAL COMMITTEE, NOVEMBER 24.

A meeting of the General Committee of this society was held on Monday evening last at Anderton's Hotel, Fleet Street, E.C. Mr. R. Ballantine occupying the chair. The Honorary Secretary having read the minutes of the previous meeting, the Chairman alluded to the loss the society had sustained by the death of Mr. Shirley Hibberd, whose valuable services on the occasion of the Centenary Festival would not easily be forgotten, and he proposed a vote of condolence which was unanimously passed on the understanding that the same be forwarded to the deceased's executors.

Mrs. Marion Thrower, the lady Tasmanian delegate, wrote to thank the society for the kind reception afforded to her on all hands, and said that amongst all her recollections of her visit to England, the welcome she had received at the N.C.S. meetings would not be forgotten.

Mr. Ballantine reported on the Centenary Show, which he pronounced a great success, and stated that the Aquarium authorities were quite satisfied with the result.

Certain extra prizes and additional allowances to exhibitors were granted.

The Chairman then gave a rough estimate of the probable receipts and payments up to the end of the current year, by which it appeared that a total income of about £745 was expected to come in, and a probable expenditure of about £605, leaving something like a balance of £140 to carry out the late flowering show in January next.

A letter from Messrs. Cannell and Sons was read, offering certain prizes at the next November Show for blooms of the new variety, Louis Boehmer.

Mr. Briscoe Ironside then proceeded to give an interesting report of the number of varieties of chrysanthemums staged in the cut bloom classes at the Centenary Show. Altogether it seems that 299 distinct varieties were staged, of these 129 belonged to the four classes of Japanese, 64 belonged to the incurved sections, and the remainder were of the anemone, reflexed, and pompon types. He added that there were 266 entries in those classes, and a total of 3,837 cut blooms staged.

The dates were then fixed for the shows for the season 1891-92, and the arrangements made as follows: Early Flowering Exhibition, Wednesday and Thursday in the second week of September; Ordinary November Show, Tuesday and Wednesday of the second week in November, 1891, with the possibility of a third day being included; and the Late Flowering Show, 8th and 9th January, 1892.

Two societies in Tasmania, the Caterham Horticultural and the Sittingbourne Gardens Improvement Societies applied for admission in affiliation which was acceded to in each case; thirty-two new fellows and members were also elected.

Owing to Mr. Dean's appointment as secretary *pro. tem.*; a vacancy has occurred for a judge at the forthcoming January show at the Aquarium, and Mr. Prickett was elected for the purpose.

A discussion ensued as to holding future exhibitions at the Royal Aquarium and it was ultimately decided that those for the next season take place there as usual.

A silver gilt centenary medal was awarded to the members of the Catalogue Committee for preparing the new edition of the society's catalogue, which appears to be selling very steadily.

FLORAL COMMITTEE, NOVEMBER 25.

A meeting of the Floral Committee was held at the Royal Aquarium on the above date, Mr. R. Ballantine in the chair, and a large number of fine flowers were staged; indeed, more than could have reasonably been expected at this season of the year.

A first-class certificate was awarded to a singularly bold and striking single Japanese variety named *Sunset*, with long, broadish florets, red and brownish yellow, a bold and showy variety, occasionally semi-double, from Mr. C. E. Shea, Foots Cray, Kent. The same variety was shown by Mr. R. Owen, though in scarcely so good a character. The same award was made to Japanese, *Beauty of Castle Hill*, shown in fine form by Mr. Cox, gardener to John Trotter, Esq., Hertford, and Mr. E. Beckett, The Gardens, Aldenham House, Elstree. This is a fine variety in the way of Mrs. Wheeler, ruby-crimson, with a golden buff reverse, and fine bold broad petals; the flowers from both exhibitors being in fine character. The same award was made to Mr. R. Owen for an incurved, *Princess Waldemar*, a flower of the type of Eve; blush, very pretty, and possessing much refinement of character. This was thought very highly of by the cultivators of incurved varieties. The same award was made to *Mrs. E. W. Clarke*, a grand incurved Japanese of great fulness of character, and of a pale bright lilac colour; and to incurved Japanese *Violet Rose*, a flower of a rosy violet colour, and finely formed petals. The same award to Japanese incurved *R. C. Kingston*, a very fine and distinct variety, chestnut crimson, flushed with purple; and to incurved Japanese *Danae*, deep yellow, flushed with orange, and having fine broad petals; all from Mr. E. Beckett. A Japanese variety from Mr. J. T. Barker, The Gardens, Burton Closes, Bakewell, named Mrs. Needs, and like Belle Paule, but with more colour on the petals, was commended.

In addition Mr. C. E. Shea had a flat white Japanese named L. Canning; and George Atkinson, like Mdlle. B. Pigny. Mr. R. Owen had a Japanese incurved named Gladys Keyes, pale lilac and white; Mr. W. H. Grenfell lilac pink deepening to lilac; Countess of Lytton, a primrose sport from Meg Merrilies, but too much like Ralph Brocklebank, and incurved Matthew Russell, which appeared to be similar to Mrs. Coleman. Mr. Cox also had Violet Rose, but not so finely developed as those shown by Mr. Beckett; and Japanese incurved Ada Spaulding, which appears to be coarse. Mr. A. G. Hookings, Hurst Side, West Moulsey, had large-flowered anemone S. W. Graystone, blush, a sport from Dame Blanche; and incurved John Barry, a sport from Golden Eagle, but greatly resembling Angelina. Mr. E. Beckett had Mrs. Dunnett, a full blush Japanese in the way of Stanstead White; and Mont Blanc, a large pale sulphur variety, which the committee desired to see again. Messrs. H. Cannell and Son had J. R. Pearson, which is identical with Annie Clibran; reflexed Chalkhurst, pure white, full, and good, of the Christine type; and single Guernsey Sunset, a pale brownish-yellow variety. Mr. E. Molyneux, Swanmore Park, Bishops Waltham, sent Japanese Anatole Cordonnier, bright pale rosy pink, full and promising. Mr. A. Greaves Thwaite House Gardens, Cottingham, sent Edith A. Greaves, a blush sport from Fair Maid of Guernsey, but considered too thin as shown. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, sent pompon Howard Crane, a sport from Vesuve, chestnut crimson, tipped with gold; anemone James Weston, white, with yellow centre; Japanese Lady Peel, a golden sport from Sarah Owen; and an incurved sport from Sarah Owen. Messrs. Reid and

Bornemann, nurserymen, Sydenham, sent Japanese Shastra, a decorative variety, blush, almost white, with thread-like petals, and Miss Esmeralda, an incurved Japanese of a bronzy crimson colour. Messrs. J. Laing and Sons, Stanstead Park Nursery, Forest Hill, pompon anemone Bessie Flight, a pinkish-lilac sport from Madame Montels, but not considered sufficiently distinct; and Mr. E. Harland, secretary of the Hull and East Riding Chrysanthemum Society, on behalf of Mr. W. H. Hotham, of Brough, East Yorkshire, sent two blooms of a deep-coloured sport from Golden Empress, large and full, which the committee wished to see again early next autumn.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY, Nov. 19 and 20.

The annual exhibition of this society was held at the Artillery Barracks on the above date, and was in every way one of the most successful shows yet held under its auspices. The exhibits were considerably in advance of those of previous years, and the great hall and side rooms were filled to their utmost capacity, for there was not space for even one more stand of twenty-four blooms. In fact, two stands of twelve blooms had to be put upon boxes, so great was the pressure upon the available space. The groups and specimen plants were very fine, the latter showing a marked advance, and the cut blooms were above the average, and contributed to make the exhibition one of the finest of the provincial gatherings of the year. Considerable interest was evinced in the exhibition, for the visitors during the two days numbered rather more than eleven thousand, and the receipts were larger than those of last year.

Groups constituted a remarkably strong feature. The first prize group, shown by Mr. Wilson, gardener to J. Reckitt, Esq., Swanland Manor, Brough, was very tasteful, chrysanthemums and fine foliage plants being associated with good effect. The latter were well selected for the purpose, being light in character and suitable in colour. Mr. Wright, gardener to W. D. Wilson, Esq., Park House, Cottingham, was second, but his group was too formal in outline.

Specimen Plants were a great improvement upon those of last year, and in the whole of the classes there was a keen competition. For six trained plants, Mr. Henning, gardener to E. Leetham, Esq., Beecholme, Newland, was first, his plants carrying fine blooms, and Mr. T. Smith, Norwood Nursery, Beverley, was a good second. Mr. Graham, gardener to G. Lawson, Esq., was first for three trained specimens, showing very fresh plants of the Rundle family and Mr. Hemming was second. Mr. Graham was also first for three excellent standards, and Mr. Hemming was a close second. Mr. Wright was first for twelve table plants, and for six the first prize was awarded to Mr. Hemming. The plants shown in the amateurs' classes were very good, those shown by Mr. R. Thirsk, Gravehill Road, Beverley, and Mr. Petch, Prospect Street, Hull, being especially fine.

Cut Blooms were in every way worthy of the traditions of this society, being staged in great numbers, the competition was very keen throughout. The challenge cup, value fifteen guineas, was awarded to Mr. Blair, gardener to the Duke of Sutherland, Trentham, and now becomes his own property, he having won it twice. His finest incurved blooms were, back row, Golden Empress, Empress of India, Alfred Salter, John Lambert, Queen of England; second row, John Doughty, Miss Violet Tomlin, Lord Alcester, Mrs. Coleman, Princess of Wales; front row, Mrs. Heale, Mr. Brunlees, Jeanne d'Arc, Miss M. A. Haggas, Eve, Beverley, and Nil Desperandum, all of which were seen at their best. The Japanese included Mons. Bernard, Gloriosum, Lady T. Lawrence, Edwin Molyneux, Stanstead White, Madame Baco, Mrs. A. Waterer, W. Coles, Avalanche, Ralph Brocklebank, Thomas Stephenson, Etoile de Lyon, Sunflower, W. Clarke, Madame Laing, Sarah Owen, Puritan. The second prize was awarded to Mr. John Lambert, gardener to Colonel Wingfield, Onslow Hall, Shrewsbury, who had good blooms of Empress Eugenie, Alfred Salter, Lord Alcester, John Lambert, Empress of India, Queen of England (premier incurved bloom in the show), Miss M. A. Haggas, Hero of Stoke Newington, Jeanne d'Arc, John Doughty, Mrs. Heale, Miss Violet Tomlin, Princess of Teck, Mabel Ward, Barbara, Mrs. N. Davis, Refulgens, Princess of Wales, Lady Dorothy, Lord Eversley, Etoile de Lyon, Mrs. Beale, Edwin Molyueux, Madame Laing, Boule d'Or, M. J. Pigny, Mons. Bernard, Mrs. Wheeler, Avalanche, Mrs. F. Jameson, Condor, Madame C. Audiguier, Carew Underwood, W. Coles (the premier Japanese in the show), Belle Paule, Sunflower, Jeanne Delaux, Madame Baco, and Ralph Brocklebank. These two collections were exceedingly close, and careful pointing disclosed the fact that the winner of the cup was only two points in front. Mr. Blair was also first in the class for twenty-four blooms of Japs and incurved in equal numbers, staging Empress of India, Golden Empress, John Lambert, Queen of England, Miss M. A. Haggas, Mrs. Heale, John Salter, Lord Alcester, Miss Violet Tomlin, Mrs. Coleman, Princess of Wales, Mr. Brunlees, Etoile de Lyon, Edwin Molyneux, Mrs. A. Waterer, Gloriosum, Lady T. Lawrence, Sunflower, Mrs. Wheeler, Avalanche, W. Clarke, Puritan, Madame Baco. For twelve reflexed Mr. R. Walker, gardener to Colonel Clitheroe, Hothan Hall, Brough, was a good first, with well-developed flowers of Cullingfordi, Pink Christine, Alice Bird, Golden Christine, King of the Crimsons, Putney George, White Christine; and Mr. Davidson, gardener to Frank W. Jameson, Esq., Estella, Hull, was a very close second. There was a good competition for twelve anemone flowers of any type, and the first prize was awarded to Mr. Blair, who staged fine examples of Jeanne Marty, J. Thorpe, jun., W. G. Drover, Sabine, Lady Margaret, Dame Blanche, Laing's Anemone, Judge Benedict, and Madame Rose Owen: Mr. George E. Smith, Floral Cottage, Paull, was a good second.

In the class for twenty-four blooms, to comprise equal numbers of Japanese and incurved, open to competitors resident within twenty miles of Hull, there was a good competition. A silver cup was offered as the premier award, and an interesting point was raised by the exhibitor to whom it was awarded having his stand disqualified after the cup had been publicly presented to him, in consequence of its containing duplicate blooms of Golden Empress. The difficulty which arose in consequence has been overcome by the committee wisely deciding to provide a second cup for presentation to Mr. Watton, gardener to G. A. Carr, Esq., Waltham Grove, Grimsby, to whom the premier award was eventually made; Mr. G. Wilson and Mr. J. S. Graham were second and third respectively, with excellent stands.

Amateurs' Classes were well filled, the chief exhibitors being Mr. W. Howell, jun., Hessle, Mr. Briggs, Barton-on-Humber, Mr. J. W. Beerpark, Mr. W. K. Sanderson, and the Rev. W. M. Bennett, each of whom was awarded a first prize.

Table Decorations and other arrangements of natural flowers were largely shown, several of the exhibits being exceedingly tasteful. Miss Kathleen Todd was the winner of the challenge plate for a dinner table decoration, and Miss Waterlow was first for a bouquet. Mrs. Ruth Taylor had the best spray, and Miss Coupland had the best arranged stand. Messrs. E. P. Dixon and Son contributed a mixed group of flowering and foliage plants, and a fountain arranged with suitable subjects.

The continued prosperity of this society must be gratifying to the executive, and is in a great measure due to the hon. secretaries, Messrs. Harland and Dixon, and to the president, Mr. Falconer Jameson, whose whole energies are devoted to its management.

The judges were Mr. J. Hudson and Mr. J. Wright.

SWANSEA CHRYSANTHEMUM SOCIETY, November 19 and 20.

The Swansea Chrysanthemum Society held its first exhibition on the dates above named, in the Drill Hall, and the gathering was a success for an initiatory effort. A capital schedule had been prepared, and liberal prizes offered. A better system of placing the prize cards on the exhibits is desirable, as it was late in the afternoon before the visitors were able to ascertain who were the winners in each class.

Cut blooms were the most liberally encouraged in the schedule, and in consequence they were the most largely represented. The sum of £8 was given as the first prize in the principal class, which was for forty-eight varieties (twenty-four incurved and twenty-four Japanese). Mr. Ireland, gardener to Sir Hussey Vivian, Singleton, Swansea, was an easy winner, with medium-sized blooms very well staged. Groups of chrysanthemums were really a strong feature, the space allotted to each being sixty-four square feet. There were five competitors in this class, and as all the arrangements were fairly good, a bright display was the result. Specimen plants were in some instances very good, being dwarf, well furnished with foliage, and admirably flowered.

A few excellent orchids were exhibited, the calanthes being especially good. Fruit made an interesting display, and vegetables were a strong feature, both in point of numbers and quality.

Especially meritorious were the bouquets and wreaths, those from Mr. T. Barron, florist, Swansea, being especially of high quality. Non-competing exhibits were numerous. The last-named had a group of dwarf plants of chrysanthemums in small pots, freely flowered. Messrs. Clibran and Sons, Altrincham, Cheshire, sent four dozen cut blooms, and Messrs. Wood and Sons, Wood Green, London, contributed a stand of horticultural sundries.

Mr. Roberts worked hard in carrying out the details, and to his efforts much of the success of the exhibition is unquestionably due.

HORNSEY CHRYSANTHEMUM SOCIETY.

This society recently held its first annual exhibition at the National Hall, Hornsey, and its success was such as to encourage the committee in their efforts to extend the culture of the chrysanthemum in the district. The event created much interest, and a pleasing feature was the admission of about twelve hundred school children free of charge. The exhibition was not large, but it was distinctly encouraging, and we can only hope that the operations of the society may so extend as to make it one of the most influential in the suburbs. The opening ceremony was performed by the President, Mr. H. R. Williams, assisted by the Rev. R. W. Powell and other influential residents in the district.

Groups were well shown and contributed materially to the attractions of exhibition. The group staged by Mr. Rowbottom, gardener to H. R. Williams, Esq., The Priory, Hornsey, was greatly admired, the plants being well flowered and the arrangement tasteful. The trained plants from Mr. Saunders were excellent, and the contributions from Mr. Hutt, Mr. Bushy, and Mr. Giddens were well worthy of the awards given them. In the amateurs' classes Mr. Sears, Mr. Durrant, and Mr. Jones were the most successful, all exhibiting effective groups. Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Holloway, and Messrs. W. Cutbush and Son, Highgate, contributed collections of flowering and ornamental leaved plants, which constituted an extremely pleasing feature of the show.

Cut blooms were well shown, and Mr. Neary, gardener to the Rev. R. W. Powell, Hornsey, was the most successful exhibitor. The competition in the cottagers' classes was keen. The principal prizewinners were Mr. Newman and Mr. Legg.

CHRYSANTHEMUMS IN LARGE POTS.

During the season I have been very much interested in a collection of chrysanthemums that had been grown by a new hand at exhibiting for the production of large blooms. Thinking to surpass his neighbours in the size of the flowers, this cultivator had put about two dozen different varieties in twelve-inch pots, while the remainder of the stock occupied pots seven and eight inches in diameter. The experienced grower will not be surprised to learn that those in the smaller pots gave much the best blooms. They were not perhaps the largest, but they were of higher quality. Incurved varieties such as Lord Alcester and Queen of England, had blooms with large open centres that were most objectionable, while some of the Japs were quite out of character. Even that distinct and beautiful variety Japonais was so changed as to be quite beyond recognition, while the blooms of Meg Merrilies and others of that class were deficient in quality. As might have been expected, the grower was very much disappointed. He did not, however, regret the experiment he had made, because he was so thoroughly convinced of his having done wrong that there was no fear of his again using pots of such a large size. I certainly felt somewhat sorry not to see better results from so much time and labour. The case, however, clearly showed that the practice of the more experienced growers in using medium-sized pots is the best. J. M.

TRADE CATALOGUES.

Kelway and Son, Langport, Somerset.—*Gladioli.*

G. Bennett, Standard Nursery, Homebush, New South Wales.—*Chrysanthemums.*

Stuart and Mein, The Nurseries, Kelso, N.B.—*Forest Trees, Fruit Trees, Roses, &c.*

T. Laxton, Seed Grower, Bedford.—*Seeds and Roots.*

Wood and Ingram, The Nurseries, Huntingdon,—*Fruit Trees, Forest Trees, Coniferous Plants, Roses, &c,*

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

ORCHIDS in bloom include :—Angræcum bilobum, A. sesquipedale ; Barkeria Skinneri ; Calanthe Veitchi ; Cattleya Percivaliana ; Cypripedium villosum ; Dendrobium moniliforme ; Goodyera discolor, G. Domini, G. pubescens ; Grammatophyllum speciosum ; G. Ellisi ; Lælia albida superba, L. superbiens ; Oncidium reflexum ; Phalænopsis Sanderi, P. rotundifolia ; Sophronites cernua, S. violacea, S. grandiflora.

THE HOUSE.

AMATEURS who have to keep their whole stock of plants indoors may now with advantage be reminded that such things as fuchsias, zonal pelargoniums, and myrtles may be kept safely through a severe winter without much difficulty or expense. They should be placed in a small spare room, and on the floor away from the window and outer walls. In mild weather the window must be opened sufficiently both at the bottom and top to ensure a free circulation of air amongst the plants. During spells of frost keep the window shut as a matter of course, and suspend some thick woollen material in front of it. With these precautions the frost will not penetrate into the room until very severe, and then a large petroleum lamp or small stove will suffice to keep it out. The fuchsias and zonal pelargoniums should be kept perfectly dry, and the myrtles ought not to receive more water than is absolutely necessary, and advantage should be taken of a period of mild weather when the window can be opened, for watering.

STOVE AND ORCHID HOUSE.

STOVE PLANTS at rest may suffer if allowed to become too dry, especially those having porous foliage and soft stems. In giving air, take care not to expose tender plants to cold draughts ; in fact, air should never be admitted in a volume at this time of year. The general collection of stove plants will be satisfied with a temperature of 60 deg. by day and 53 deg. by night.

ORCHIDS require a watchful eye among them ; so many diverse climates are now represented in our collections that it is no easy matter to keep all at rest together, and it may be better to remove a few that require to be kept growing to the forcing pit, rather than risk the safety of others by too high a temperature.

FORCING AND FRUIT HOUSES.

CUCUMBERS that have been bearing some time may always be restored to a youthful condition by the use of the knife. If we have a length of lights occupied with bearing vines at this time of year, we prepare for their renewal by opening a trench all round the roots of every alternate plant, at a distance of one foot from the stem. This of course shortens in the roots to that length. We then fill the trench with a mixture of chopped turf, leaf-mould, and rotten dung. There will be new roots formed in this mixture at once, and a week after the operation we cut back the vines to within a foot of the soil, and then take up new runners, and stop and train as before. As soon as these show fruit the remainder can be dealt with in the same way. They want extra bottom heat after cutting back.

RHUBARB AND SEAKALE.—Those who have not begun to force should do so now, either in the open ground or by potting. As a very mild heat suffices, this season's leaves and litter, if plentiful in bulk, will do as well to make up a bed for the purpose as dung. If the latter is used it should be turned three times before making the bed or the heat will be too fierce and too transient.

FLOWER GARDEN AND PLEASURE GROUNDS.

EVERGREENS are generally planted at this season, because alterations are in progress, and it is found convenient to plant all at once—deciduous and evergreen trees together. But we question the propriety of moving any evergreen shrubs from November to February. We have always advised planting hollies, aucubas, bays, and other evergreens in August and September, and if not moved then they had best be left where they are till March. Nevertheless, it is often convenient to lift evergreens now, and almost everything except the holly will endure the process, if it is performed with care. On wet clays there is more likelihood of deaths occurring through removals now than on warm dry loams. When planters are compelled to move very large specimen evergreens at this season care should be taken to close in the roots with a mixture of leaf-mould, fine loam, and sand in a nearly dry state, so that the wounds of the roots will be encouraged to heal quickly, and at the first move they make they will run freely into the tempting mixture. Where it is intended to plant in spring let the ground be deeply trenched and laid up in ridges to pulverize.

FRUIT GARDEN AND ORCHARD.

PRUNING of standard trees should consist chiefly in opening out the head and regulating the growth, without severe measures of any kind. Where large boughs require removal it is a proof of neglect of some kind in times gone by ; and if many large branches are dead or dying, depend upon it the tree is in a bad state at the roots ; most probably the surface roots are gone altogether. In small gardens old fruit trees are frequently killed by raising the soil about them, and so year by year removing their roots farther and farther from the atmosphere.

ROOT PRUNING, where required, should be commenced without delay. The simplest method is to open a trench on one side of the trees, and cut back the roots to within two feet or three feet of the stems (according to the size of the trees), half round each tree. Next year open trenches and cut back the roots on the other half round, and so on year after year. This will prevent a rank growth, and increase their fruitfulness.

KITCHEN GARDEN.

CAULIFLOWERS, LETTUCES, &c., in frames and handlights must have plenty of air while this mild weather lasts, by removing the glasses entirely on fine days, and keeping them tilted during rains. If any signs of mildew, sprinkle with sulphur. The fine dust from the bottom of a peat stack or the bins of the potting shed will be found useful to strew on the surface amongst plants suffering from damp ; there is nothing to equal peat dust for the purpose.

PEAS AND BEANS just showing through the ground should be covered with a sprinkling of dry earth, and over that some dry light litter ; this will check their growth and keep them hardy, and in case of frost afford considerable protection. When sand is plentiful use it in preference to mould, because of its drying nature.

VILLA FARM.

The fattening of ducks, geese, and turkeys for the Christmas season must now be taken in hand, and proceeded with until completed, and such of the cockerels as are to be killed off shortly ought to have more liberal supplies of corn than they have hitherto received. Ducks and geese intended for home consumption will not require much beyond a slightly increased supply of oats or whatever corn they are being fed with, and all cramming should be avoided, for birds subjected to this process soon become objectionably fat. But those for sale should be placed in a rather confined quarter, and have in addition to the whole oats barley-meal or oatmeal. Turkeys also fatten more rapidly when kept somewhat confined, and their food should consist largely of oatmeal mixed with skim milk. The pullets commencing to lay may now be wholly fed upon maize and vegetables, as the heating tendency of the maize is more of an advantage than otherwise at this season of the year. Mixtures of meal and kitchen scraps must be given to the birds in a moderately warm state, as warmth is now of much value in promoting the production of eggs. Cockerels that from any cause are not required for breeding purposes ought within a brief period to be separated from the general stock, and breeds that are to be maintained pure must also be separated, otherwise it will be impossible to obtain eggs for early sittings that can be depended upon.

Replies to Queries.

Holly Hedge.—A. B. : The holly hedge might be pruned as you suggest, and the best time for the operation will be just before new growth commences. Cutting the lime trees back as you propose would completely spoil their appearance, and cannot therefore be recommended.

Giving up Possession of Allotment.—F. G., Longley : We fully sympathise with you in having to give up the allotment so soon after bringing the land into cultivation. We are afraid you will not be able to claim compensation from the railway company unless the land is held under a properly-drawn agreement in which provisions are made for compensation at the termination of the tenancy.

Tar on Hot-Water Pipes.—H. S., Arlesford, writes : As a reader of the GARDENERS' MAGAZINE, I shall be greatly obliged if any of your readers can advise me as to the best means of removing tar from hot-water pipes, as I find that when the water is heated the fumes given off are very destructive to the plants.

[The most effectual way of removing the tar is by burning the pipes, but if a less troublesome method can be suggested we shall be glad to give publicity to it.—ED.]

Scale on Peach Trees.—A. B., Reading : The trees must be thoroughly cleansed during the resting season, as but little can be done in the eradication of scale when they are in full growth. The first step will be to carefully remove the scale with a piece of pointed stick, and when this has been done the wood should be well washed with warm water. This having been done, paint the trees with a solution of Gishurst compound, or some other approved insecticide of a moderate degree of strength. Both in washing and painting the young shoots it will be necessary to exercise sufficient care to avoid injury to the buds.

Planting Vinery.—An Old Subscriber : The vines should be planted at once, and the canes be cut back to within twelve or eighteen inches of the point of their entering the house, as may be most convenient for training the horizontal shoot. When new growth commences select the three most promising laterals, and train that from the highest bud up the roof and the others to the right and left in a horizontal direction. It will be necessary to stop the central shoots at least twice in the course of the season. Grape vines ought not to be cropped the first season after they have been planted, but you could obtain a liberal supply of grapes from pot vines, which could be so placed as not to interfere with the growth of the permanent vines.

Markets.

COVENT GARDEN.

FRUIT.

Apples, Nova Scotia, per brl.	15s. 0d.	to	25s. 0d.
Apples, per ½-sieve	3s. 6d.	,,	7s. 0d.
Cobs, Kent, per 100 lb.	65s. 0d.	,,	70s. 0d.
Grapes, per lb.	0s. 9d.	,,	3s. 0d.
Lemons, per case	20s. 0d.	,,	40s. 0d.
Pine-apples, St. Michael's each	2s. 6d.	,,	6s. 0d.

VEGETABLES.

Artichokes, Globe, per doz.	4s. 0d.	to	6s. 0d.
Beans, French, per lb.	0s. 9d.	,,	1s. 0d.
Beet, per doz.	1s. 0d.	,,	2s. 0d.
Brussels Sprouts, per ½ sieve	1s. 6d.	,,	2s. 6d.
Carrots, per bun.	0s. 4d.	,,	0s. 6d.
Cauliflowers, per doz.	4s. 0d.	,,	6s. 0d.
Celery, per bun.	1s. 6d.	,,	2s. 0d.
Cucumbers, each	0s. 4d.	,,	0s. 6d.
Endive, per doz.	1s. 6d.	,,	2s. 6d.
Herbs, per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish, per bun.	2s. 0d.	,,	3s. 0d.
Lettuces, per doz.	1s. 0d.	,,	1s. 6d.
Mushrooms, per basket	1s. 6d.	,,	2s. 0d.
Onions, per bushel	2s. 0d.	,,	4s. 0d.
Parsley, per bun.	0s. 4d.	,,	0s. 6d.
Savoys, per doz.	1s. 0d.	,,	2s. 0d.
Scarlet Runners, per lb.	0s. 2d.	,,	0s. 3d.
Seakale, per pun.	1s. 0d.	,,	1s. 6d.
Shallots, per bun.	0s. 4d.	,,	0s. 6d.
Small Salading, per pun.	0s. 3d.	,,	0s. 4d.
Spinach, per bushel	3s. 0d.	,,	3s. 6d.
Tomatos, per lb.	0s. 9d.	,,	1s. 0d.
Turnips, per bunch	0s. 3d.	,,	0s. 4d.

CUT FLOWERS.

Abutilons, per doz. bun.	2s. 0d.	to	4s. 0d.
Bouvardias, per bunch	0s. 6d.	,,	1s. 0d.
Callas	4s. 0d.	,,	8s. 0d.
Carnations, per doz. blms.	1s. 0d.	,,	2s. 0d.
Chrysanthemums, per doz. blooms	1s. 0d.	,,	2s. 0d.
Chrysanthemums, per doz. bun.	3s. 0d.	,,	12s. 0d.
Eucharis, per doz. blms.	3s. 0d.	,,	6s. 0d.
Gardenias, per doz. blms.	2s. 0d.	,,	4s. 0d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Hyacinths, Roman, per dozen spikes	1s. 0d.	,,	2s. 0d.
Lapageria, per doz. blms.	1s. 0d.	,,	3s. 0d.
Maidenhair Fern, per doz. bun.	4s. 0d.	,,	9s. 0d.
Marguerites, per doz. bun.	3s. 0d.	,,	6s. 0d.
Mignonette, per doz. bun.	2s. 0d.	,,	4s. 0d.
Narcissus, Paper White, per doz. sprays	1s. 0d.	,,	2s. 0d.
Pelargoniums, Zonal, per doz. trusses	0s. 4d.	,,	0s. 6d.
Primulas, Double, per bunch	0d. 6d.	,,	1s. 0d.
Roses, Coloured, per doz.	3s. 0d.	,,	5s. 0d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	2s. 0d.
Tuberoses, per doz. blms.	0s. 4d.	,,	0s. 6d.
Violets, per doz. bun.	1s. 0d.	,,	2s. 0d.
Violets, Parme, per bun.	2s. 6d.	,,	3s. 6d.
Violets, French, per bun.	1s. 6d.	,,	2s. 6d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents, per ton	60s.	to	80s.
Magnum Bonum, per ton	60s.	,,	95s.
Beauty of Hebron, per ton	60s.	,,	90s.
Imperator, per ton	60s.	,,	70s.
Champions, per ton	60s.	,,	65s.

"THERE IS UNQUESTIONABLY" no better remedy in the whole world for all cough and throat troubles than KEATINGS LOZENGES—any medical man will assure you of this fact. Relief is speedy ; they contain no strong acting, but only simple drugs ; the most delicate can take them. Sold everywhere in 13½d. tins.—[ADVT.]

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.	High Water at London Bridge. Noon.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.
1890			H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.
7	S	**2nd Sunday in Advent.**	7 53	8 20	3 50	1 48	1 54	10 0	10 31	6 51	7 25	41·1
8	M	King Theatre, Vienna, burnt, 1881.	7 54	7 53	3 50	3 10	2 9	10 59	11 27	7 56	8 24	41.0
9	Tu	Washington died, 1799.	7 56	7 26	3 50	4 26	2 27	11 52	—	8 52	9 17	41·0
10	W	Royal Academy instituted, 1768.	7 57	6 59	3 49	5 45	2 51	0 14	0 35	9 39	10 0	40·9
11	Th	Grouse-shooting ends.	7 58	6 31	3 49	7 7	3 20	0 55	1 16	10 20	10 41	40·8
12	F	● New Moon.	7 59	6 3	3 49	8 26	4 1	1 38	1 58	11 3	11 23	40.7
13	S	Dean Stanley born, 1816.	8 0	5 35	3 49	9 39	4 57	2 18	2 39	11 43	—	40.7

Orchids in Flower.		Day of Yr.
		1890
Barkeria elegans	Guatemala.	341
Lælia albida	Oaxaca.	342
Lælia anceps	Mexico.	343
Lælia anceps Barkeriana	Mexico.	344
Lælia pedunculatis	Mexico.	345
Lælia prestans	Brazil.	346
Oncidium bicallosum	Guatemala.	347

BIRMINGHAM CHRYSANTHEMUM SHOW will be held NOVEMBER 11 and 12, 1891. The same Liberal Prizes for Groups, Cut Blooms, and Grapes will be offered as at late show. All other prizes equally liberal. Schedules will be issued in due course. J. HUGHES, Secretary.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY. President, G. C. SHERRARD, Esq., J.P. The FIFTEENTH ANNUAL EXHIBITION will be held in the DRILL HALL, KINGSTON-ON-THAMES, on NOVEMBER 10 and 11, 1891. GEORGE WOODGATE, Hon. Sec.

Exhibitions and Meetings for the Ensuing Week.

TUESDAY, DEC. 9.—ROYAL HORTICULTURAL SOCIETY.—Meetings of Floral, Fruit and Scientific Committees.
TUESDAY, DEC. 9.—GARDENERS' ORPHAN FUND.—General Meeting, 6 p.m.
TUESDAY, DEC. 9.—NATIONAL ROSE SOCIETY.—Annual Meeting, 3 p.m.
WEDNESDAY, DEC. 10.—NATIONAL CHRYSANTHEMUM SOCIETY.—Meeting of Floral Committee.
SATURDAY, DEC. 13.—ROYAL BOTANIC SOCIETY.—General Meeting.

Auction Sales for the Ensuing Week.

MONDAY AND THURSDAY, DEC. 8, AND 11.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.
TUESDAY, DEC. 9.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Cigars.
TUESDAY, DEC. 9.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Lilies from Japan.
WEDNESDAY, AND SATURDAY, DEC. 10, AND 13.—Mr. J. C. Stevens, at 38, King Street, Covent Garden; Roses, Fruit Trees, Border Plants, and Dutch Bulbs.
WEDNESDAY, DEC. 10.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilies, Bulbs, and Plants.
THURSDAY, DEC. 11.—Mr. J. C. Stevens, 38, King Street, Covent Garden; Orchids.
FRIDAY, DEC. 12.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

SCALE OF CHARGES FOR ADVERTISEMENTS.—Five lines and under, body type, 2s. 6d.; each additional line, 6d.; half a column, £1 15s.; a column, £3; one page, £9.

Displayed Advertisements are charged according to the space occupied.

No Blocks, Double Column, or Displayed Advertisements will be inserted on the First Page.

ADVERTISEMENTS of PUBLIC COMPANIES, OFFICIAL, &c., and those ordered on the front page, 9d. per line.

ADVERTISEMENTS of HORTICULTURAL or AGRICULTURAL SOCIETIES and SHOWS are inserted on the Leader Page at 1s. per line.

ADVERTISEMENTS OF SITUATIONS VACANT, or from persons seeking employment, 1s. each four lines (28 words), and 3d. per line after.

Advertisements for the Current Number must be sent not later than Wednesday, and for Monthly Parts not later than the 24th of each month, addressed to the Advertisement Office of the *Gardeners' Magazine*, 143 and 149, Aldersgate Street, London, E.C.

THE GARDEN ORACLE FOR 1891

Will be published in the usual form at 1s., and will be as heretofore, a complete review of horticulture and floriculture in the past year, and a guide for cultivators, exhibitors, and purchasers of plants, flowers, fruits, &c., in the year that is before us. This is the oldest horticultural almanac extant, and as it contains the latest information on new varieties, forthcoming exhibitions, and undertakings of various kinds in prospect, it cannot be published so soon as the general run of almanacs, that are chiefly made up by hasty compiling. The Oracle now preparing will be rich in reports, announcements, and selections, all condensed into the smallest possible space, and arranged for handy reference. The Oracle is a business almanac and diary, in addition to its special floricultural features. Published at the GARDENERS' MAGAZINE Office, 4, Ave Maria Lane, London, E.C.

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The Gardeners' Magazine.

SATURDAY, DECEMBER 6, 1890.

THE RESTING SEASON, in relation to plant life, is undoubtedly not so thoroughly understood by many horticulturists as the importance of its bearing upon the practical work of the garden would warrant. In consequence, numerous failures annually occur both in plant and fruit culture, that can usually be traced, without much difficulty, to the unsuitability of the conditions that obtained during the period in which there was a cessation of active growth. The mishaps of which we hear from time to time are not, as a rule, so much the result of a want of appreciation of the necessity for a season of rest to the various classes of fruits and ornamental plants that come under the gardener's charge, as of a misapprehension as to the conditions most conducive to their welfare when in a state of repose. It is, for example, supposed by some of those who are not familiar with first principles, that when plants are in a state of rest they require but little, if any moisture, and in consequence they are subjected to a drying process with more or less injurious results. Others, also, who hold more correct views upon this matter, have occasionally to complain of failures that have been caused by their not fully understanding the requirements in the matter of moisture of the plants or fruit trees as the case may have been. That a season of rest, as well as of growth, is absolutely necessary to plants of all classes there can be no doubt; but in submitting the proposition, it must be stated that they do not rest exactly in the manner in which the term is usually understood. Certain functions are ever being carried on within their structure, even when, as during the resting season, there are no outward signs of progress. A striking proof of the truth of this assertion is afforded by the bulbs of some of our most beautiful garden plants. If we examine well developed tulip, or similar bulbs immediately the leaves have died down, but little will be seen of the flower buds, which, we know, are enclosed within the scales; but in similar bulbs dissected two or three months later, when new growth is about to commence, the embryonic flowers will be readily distinguished, thus showing that changes have been in progress within the bulbs throughout the whole period. The lilies to which so much attention has been given of late years also show, but in a different manner, that there is not a complete cessation of growth during the season of rest. Bulbs that are lifted soon after the stems have perished and replanted or potted, commence to make new roots at once, and usually so much progress is made in the course of the autumn and winter, that before the development of the shoots commences in the spring they are well established in their new quarters, provided the soil is maintained in a moderately moist state. The activity of the roots during the autumn and winter months is also brought out in a striking manner in the lifting and root pruning of fruit trees. When they are lifted and planted towards the end of October or during November, the production of new roots proceeds at so rapid a rate that within a short time of the operation being performed the new material will be filled with the young fibrils. Ornamental trees and shrubs also afford similar examples, and many interesting cases could be cited were it necessary for the purposes of the argument.

The great importance of correct ideas upon this matter is strikingly exemplified in the cultivation of fruits under glass. We frequently see fruit trees in well-built houses receiving the most careful attention excepting in one respect. The houses are carefully ventilated, and have the frost excluded from them according to the weather, and the trees are skilfully pruned and washed, but they are kept dry at the roots, under the impression that watering, if not injurious, is quite unnecessary. The result, as so well known to experienced cultivators is the premature shedding of the flower buds as soon as the sap begins to circulate freely. The losses of the peach and other crops from this cause have become less numerous of late years than was the case in the early days of orchard houses; but the letters that reach us annually prove that there are still many fruit growers who either do not know that borders in which fruit trees are planted should be kept moist during the winter, or fail to put their knowledge into practice. The teaching of Nature shows that in a temperate climate such as that of the United Kingdom the lowering of the temperature is sufficient to ensure the proper degree of rest for fruit and other trees. We would suggest as a practical application that where there is any doubt as to the moisture in the soil being sufficient for the requirements of the trees, that the borders have a thorough watering with as little delay as possible. Moisture at the roots the trees must have, and in watering care should be taken to well moisten the border throughout its whole depth. It will be better to err on the side of giving the trees too much water than to fail in giving them sufficient, for there is not much danger of their being injured by a slight excess, provided, of course, the border is properly drained. Pot trees require special attention during the winter, and should be supplied with water at sufficiently frequent intervals, to ensure the soil being maintained in a thoroughly moist state.

With reference to greenhouse and other plants grown for the beauty of their foliage and flowers, it may be stated in a general way that, even in the dullest weather, the soil about their roots should be maintained in a moderately moist condition. There are, of course, exceptions to this as to other rules, and the cultivator who would achieve the highest degree of success must make himself well acquainted with the peculiarities of the several groups of plants that come under his care. The weather must, in some degree, regulate the use of the watering pot, but not to the extent sometimes recommended. The cultivator has to consider not so much the external conditions as those under which the plants are placed, and when watering is necessary, it should be done on the first favourable opportunity. Especially is this desirable during periods of severe frosts, when it is necessary to keep the fires burning briskly. Bulbous and a few of the hard-wooded plants, such as the allamandas, will require but little water, and tender plants that are wintered in unheated structures must be kept rather dry during periods of frost, or the losses will probably be heavy. Alpine and herbaceous plants, on the other hand, that require the protection of glass during the winter, must be kept moist at the roots or they will suffer. British and other hardy ferns grown in pots are especially susceptible to injury from dryness at the roots, and they should, therefore, be watered at intervals. Or, if preferred, they may be plunged to the rim of their pots in a bed of coal ashes or cocoanut-fibre refuse, made up in a sheltered part of the garden. This will ensure their having a sufficiency of moisture without the watering pot being called into requisition—a point of some importance in many gardens. The simple practice of wintering hardy ferns in the plunge bed has much to recommend it, for, by its adoption, the losses which annually occur in the collections of those not experienced in their culture would be materially reduced in number.

GARDENERS' ROYAL BENEVOLENT INSTITUTION will add twelve names to its pension list at the annual meeting to be held in January next, making a total of 158 pensioners on the books.

A COLLECTION OF PRESERVED FRUITS will be exhibited by Messrs. Beach and Co. at the meeting of the Royal Horticultural Society at Westminster on Tuesday next.

BIRMINGHAM CATTLE SHOW has been fully equal to the high average of previous years, and cattle, poultry, seeds and roots have all been well represented. Potatos, as will be seen from the report published in another part of this sheet, were of great excellence.

SOCIETY OF AMERICAN FLORISTS has issued, in a convenient form, the report of the convention held at Boston in August last. It contains the full text of the several papers read, and summaries of the discussions, with reports of the exhibition and other committees.

THE BUSINESS OF MESSRS. RYDER AND SON at Sale, hitherto carried on by Mr. Samuel Ryder, and Mr. Samuel Ryder, jun., has been purchased by Mr. John Ryder, and Mr. Alfred Henry Jones, and it will be continued by them under the same title.

SEEDS OF AILANTHUS GLANDULOSA from a tree growing at Reigate and supposed to be a hundred years old, were exhibited by Mr. D. B. Jackson on behalf of Mr. W. Matchwick at a recent meeting of the Linnean Society. The seeds were well ripened and created much interest.

A BOTANICAL LABORATORY AT FONTAINEBLEAU has been established under the direction of Professor Gaston Bonnier. Special attention will be devoted at the laboratory to the study of plant diseases, more particularly those affecting the grape vine and forest trees.

ROYAL AGRICULTURAL SOCIETY'S JOURNAL for the current quarter contains among other things of special interest to agriculturists an excellent paper by Mr. Punchard on "Farming in Devon and Cornwall," in which fruit and vegetable culture in those counties receive a full share of attention.

MR. ROBERT FARQUHAR, who for nearly fifty years has occupied the position of gardener at Fyvie Castle, has resigned his charge, and is about to leave for America, where several members of his family are engaged in business. A few evenings since Mr. Farquhar was entertained at a public dinner at Lyon's Hall, Fyvie, and the large and representative gathering testified to the high estimation in which he is held in the district.

THE MANUFACTURE OF JAM has now assumed such large proportions as to have a direct bearing upon the sugar market. As indicating the large quantities of sugar required, it may be stated that in an official document recently published it is estimated that seven of the principal jam makers in the metropolis use 34,000 tons of sugar per annum. It is also estimated that in Scotland, where the industry is largely on the increase, about 40,000 tons are annually used in jam making.

A NEW HYBRID CALANTHE was exhibited at the recent exhibition at Philadelphia, and produced such a favourable impression as to secure for Mr. Gardner, gardener to C. Vanderbilt, Esq., of Rhode Island, by whom it was exhibited, the award of a silver medal. This hybrid was obtained from a cross effected between Calanthe Veitchi and C. vestita rubro-oculata, the latter being the seed-bearing parent. The flowers are pure white, with a rose-coloured blotch on the labellum, and are larger than those of either of the parents.

NATIONAL ROSE SOCIETY will hold its annual meeting at the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Tuesday next, at three p.m. Immediately after the close of the annual meeting, the general committee will proceed to draw up the schedule of the exhibition of tea and noisette roses.

WILLIAMS MEMORIAL FUND will be closed at an early date, and subscribers who have not yet sent in their donations are requested to do so without further loss of time to Mr. Harry J. Veitch, hon. treasurer, 544, King's Road, Chelsea, S.W., or either of the hon. secretaries, Mr. John A. Laing, The Nurseries, Forest Hill, S.E., and Mr. A. Outram, 7, Moore Park Road, Fulham, S.W.

TUESDAY NEXT will be a busy day at Westminster. The Floral, Fruit and Orchid Committees of R.H.S. will assemble in the Drill Hall, James Street, at noon. At 1 p.m., a public meeting will be held in the Society's rooms, 117, Victoria Street, to consider the question of raising a memorial to the late Mr. Hibberd, and at 3 p.m., the National Rose Society will hold its annual meeting at the Horticultural Club, Hotel Windsor. In addition, Tuesday's business includes a general meeting of the Gardeners' Orphan Fund to be held at the Cannon Street Hotel, at 6 p.m.

ROSEA GIGANTEA is described by General Collett, in a recent issue of the *Journal* of the Linnean Society, as being in some districts of Upper Burmah particularly conspicuous, climbing over tall forest trees, from the top of which the long pendent branches, covered with very large white flowers, hang down in rich profusion. This rose, which has larger flowers probably than any other wild species, is seen from considerable distances in the jungle. Though apparently spread over the whole Shan hills, and extending to Muneypore in the north, where it was previously found by Dr. George Watt, it is only locally abundant, chiefly in dark, shady valleys. It is most nearly allied to R. indica, which has recently been found wild in China, and is, perhaps, only a fine variety of that species.

GARDENERS' ORPHAN FUND.—A meeting of the executive committee was held at the Horticultural Club on the 28th ult., William Marshall, Esq., in the chair. Previous to the commencement of the routine business, the following resolution was, on the motion of the chairman, unanimously passed: "The committee of the Gardeners' Orphan Fund desire to place on record their sense of the loss sustained by the fund by the death of Mr. Shirley Hibberd and Mr. J. McIntosh, vice-presidents." Mr. Barron announced that the special contributions received since the October meeting included £20 from the Chiswick Gardeners' Association; £10 from Mr. J. Smith, Mentmore; £5 from Mrs. Procter, Chesterfield; £11 16s. 6d. from Mr. G. W. Cummins, The Grange, Carshalton, £4 2s. 6d. from the collecting boxes placed in the Grange gardens; and £7 14s., the profit on the sale of flowers at the Croydon chrysanthemum show. It was also reported that the Deal Memorial Fund had been closed, and that the contributions to it amounted to £554 2s. 6d. Of this sum Mr. H. J. Veitch and Mr. N. N. Sherwood each contributed £126, in accordance with the generous offer made at the annual meeting in July last.

THE LATE MR. SHIRLEY HIBBERD.—A meeting will be held at the offices of the Royal Horticultural Society, 117, Victoria Street, Westminster, on Tuesday next, at one p.m., to consider the question of raising a memorial to the late Mr. Hibberd. With reference to the meeting and the object for which it is to be held, the Rev W. Wilks, secretary of the Royal Horticultural Society, writes: "The many paragraphs, not only in the gardening press, but also in several other London newspapers, testify how deep and wide-spread is the feeling of the loss sustained by the comparatively early death of Mr. Shirley Hibberd. A letter with several influential names attached to it has been forwarded to the Royal Horticultural Society, requesting the President and Council to take the initiation in promoting some public memorial of our friend's life and work. Mr. Shirley Hibberd's services to horticulture have been so many and varied, and his devotion to the interests of our society has been so enthusiastic and thorough, that the President and Council gladly accept the suggestion, and have desired me to announce that a public meeting will be held at the society's offices, 117, Victoria Street, Westminster, on Tuesday, December 9, at one o'clock, to consider the question of raising a suitable memorial to the late Mr. Shirley Hibberd."

ORCHARDS IN DEVON AND CORNWALL have undergone a material extension during the past ten years, and in Mr. Punchard's paper on Farming in Devon and Cornwall recently published in the Royal Agricultural Society's *Journal* it is stated that "the orchards in Devonshire extend to 26,555 acres or an increase of about 550 acres in the past ten years. In Cornwall in the same period the acreage rose from 4,842 to 5,092 acres. The bulk of the produce is made into cider, though of late years the growth and sale of table apples for dessert and culinary purposes has received attention. The average annual value of the produce is roughly estimated at £10 per acre, but this is considerably exceeded on farms where due attention and skill are devoted to the subject. Instances are known of returns of three or four times that amount from individual orchards in favourable seasons. Every farm has its orchard or orchards on a more or less extensive scale. The largest percentages are, however, to be found in the districts around Totnes, Exeter, Crediton, and Moreton Hampstead, and in the valleys of the Clist and Creedy. Here the climate and soil are most favourable to the growth of apples, and it is not uncommon to find from 30 to 40 acres of orchards upon a farm, although they are mostly in small detached portions of two or three acres, or even less, apiece, planted on sheltered slopes and hollows. One farm at Langridge has about 100 acres of orchards in a large number of small enclosures."

CHRYSANTHEMUM ECHOES.

The report of the chrysanthemum show at Orleans, recently held by the Horticultural Society there would lead one to think that never in France has such a fine show been held. The hall, measuring over 1,100 metres square, was well filled with pot plants and cut blooms from the most eminent cultivators, Delaux, De Reydellet, Phatzer, and Mr. Crawshay being the best known in England. The decorations were all in Japanese style, and a large number of works of art of all kinds of Japanese manufacture was on view. Mr. Ohy-ama, a Japanese gentleman, represented the Minister Plenipotentiary of Japan, and made a polite speech at the banquet which seems to have set the Frenchmen's hearts aglow. But Japanese gentlemen never do anything else, than act politely, and I am not surprised to find Mr. Ohy-ama complimenting the joyful Orléanais upon their skill in chrysanthemum cultivation and suggesting that the blooms he saw were actually finer than could be grown in Japan.

It is noticeable that Mr. Phatzer was a prominent exhibitor of large blooms at Orleans. As a grower he is certainly from our point of view, capable and successful, and has done much to promote the system of big-bloom culture in France. This season he had, I am informed, no fewer than 18,000 plants on single stems carrying no more than three and four blooms on a plant. It is doubtful whether any grower in the United Kingdom can claim to have ever had the same number in cultivation at one time.

Miss M. A. Haggas, the incurved yellow sport from Mrs. Heale, now so generally known and cultivated by exhibitors in that section, has apparently been a stumbling block with some recent writers. Will they kindly make a note that it is not "Haggis." As Irishmen are never supposed to eat anything but potatos, Italians, macaroni, Frenchmen, frogs and snails, so Scotchmen are usually considered to have no other diet but oatmeal and haggis. Perhaps the writers who spell the name of this capital flower in that way will try to avoid popular delusions.

Several references have appeared concerning the handsome Jap, staged by Mr. Gibson at a floral meeting at the Aquarium, called Gloire de Rocher. I do not know what is the proper name of that variety, but instead of the preposition "de," it seems to me likely that the partitive article "du," ought to be employed. Not knowing, I cannot say, but merely ask the question.

It is a great misfortune that the French gardening papers do not issue a regular list of chrysanthemum shows like most of our own papers do. I learn that one has recently been held at Caen, in Normandy. To find the hard-headed Normans indulging in such a weakness is passing strange, for they are generally looked upon as the Yorkshiremen of France. Horse-dealing and a keen appreciation of doing any sort of a "deal" in which a profit can be made have long been characteristics of the descendants of William the Conqueror, whose body lies buried, as every schoolboy knows, in the church of St. Stephen at Caen.

Not long ago one of the French editors poked fun at some English writers in gardening papers for their "original" spelling of some French names. We will reverse the position, and inquire how the following instances look which are printed this week in one of the principal Paris journals: Edwin Molygna, Montain of Snoff, Julien de la Gravière.

As usual at this season of the year several objections are being raised to the holding of the N.C.S. shows at the Royal Aquarium. It is amusing to listen to and read the circumlocutions employed by the objectors. At all events the National has never issued any chrysanthemum *posters*.

A question was asked me a few days ago, which I could not look carefully into at the time, nor has it been possible to do so since. It was "White chrysanthemums sport to yellow. Do you know any case of a yellow sporting to a white?" I could not recollect an instance.

There are a great many friends in different parts of the globe who send me letters and scraps on the chrysanthemum, and it is greatly to be feared that some of the most good-natured are frequently neglected for long intervals. But that is beyond my control, for during the season to answer separately all the letters received would be a task far too great for any man like me, who has only his spare time after business is over to devote to his hobby. One correspondent, however, in the Channel Islands, who has asked his name not to appear in print, frequently sends me regular "four-siders" brim-full of interesting matter. In the last he says that he has amused himself by ticking off all the varieties named in the new catalogue of the N.C.S. which he has grown during a period of sixty years, and finds they amount to over 400, besides a number of others not inserted. I sincerely wish he would send me a list of those not inserted, for there may be useful matter in such a list.

For the benefit of those who make experiments in chrysanthemum culture the following is extracted from an American contemporary:—

"A fortnight ago, among the numerous seedling chrysanthemums raised by Mr. John Thorpe, Pearl River, New York, there was a long frame filled with plants which had been produced by crossing the varieties Roi des Précoces and Gloriosum. With half of these seedlings Gloriosum was used as the seed-parent, while Roi des Précoces furnished the pollen. With the other half the process was reversed, Gloriosum in this case furnishing the pollen, and the early variety being used as the seed-parent. The plants were not mixed indiscriminately, but the seedlings of each kind were massed together, and the striking fact which appeared was that the line between these two classes of seedlings was as distinctly marked as if they had been different species of plants. At one end of the frame the plants which had originated with Roi des Précoces as the mother plant had bold foliage and stiff stems with the flowers all standing face upward. In the other, the foliage was more delicate, and the stems were weak and bent down under the weight of flower buds. In both cases the influence of the male parent could be noted in the character of the flower, although the Gloriosum type of flower seemed to be the most prevalent.

The result exhibited here suggests the question which has been often asked whether there is any special class of qualities mainly transmitted by the male parent and another class of qualities mainly transmitted by the female parent; that is, if we desire, for example, to cross a specially hardy plant with one which is more delicate in constitution, although it possesses other qualities which we wish to transmit in the cross-bred plant, which variety shall we use for seed and which for pollen?"

C. Harman Payne.

THE GLADIOLUS.

By J. Douglas, Great Gearies, Ilford.

The season is again upon us when it will be necessary to purchase any bulbs that may be required for next season's display, and a few general remarks on the gladiolus may be useful. No question can well arise as to the greatvalue of the gladiolus, whether for the flower garden, for exhibition purposes, or for indoors apartments, to arrange when cut in large vases or otherwise. They are very beautiful arranged with their own foliage, but it may not be very desirable to cut the spikes with the leaves attached, especially when the variety happens to be a choice and expensive one. It is highly injurious to the plants to cut away the leaves when they are perfectly green, for they aid in maturing the corms which must be ripened well, or they rapidly decline in vigour. An excellent substitute for the leaves of the plant itself is the fronds of such ferns as Athyrium filix-fœmina and Lastrea filix-mas, and their varieties, which are very numerous.

It may not be generally known that many distinct and beautiful species were imported from South Africa early in the present century, and it may be useful to mention the fact and state that many of the coloured illustrations of these and other beautiful bulbs are scattered through the early volumes of the *Botanical Magazine*. Some of them have, doubtless, gone entirely out of cultivation, but a few of the species and the varieties of them are yet found in gardens, and during recent years several good species have been introduced which cultivators have grown and improved by selection and hybridization. Those who have time and opportunity should obtain some of the gladioli that are sufficiently hardy, cross them with each other, and train up a race that will flower freely and succeed entirely in the open. Our soil here is too heavy, and such soils even if they are well drained are too wet in winter, unless the heavy soil has been removed and some of a lighter nature put in its place. In one garden where I was for many years, the hardy gladioli used to come up freely in a border that was not dug and could not become very wet. Flower spikes were produced year after year, and I believe that if anyone possessing a dry light yellow loam was to attempt the hybridization of some species, astonishing results might be obtained. That patient worker, the late Dean Herbert was the first to cross the gladiolus, and has left us a record of the work he performed in his garden at Spofforth. Unfortunately no one was ready to take up the work in which he was engaged when death came in and laid him low. It is stated that the garden at Spofforth was composed of "a good yellowish light loam, suitable for barley." There were also artificial borders of peat and sand, and in both of them the gladioli grew and increased freely, there being but little difference, except that those in the sandy peat required most water. They were established in the borders like other herbaceous plants, and the profusion of bloom was admirable. The hardiest crosses were between G. cardinalis, G. blandus, G. carneus, G. inflatus, G. angustus, and G. tristis, and it is stated that they varied "with every shade of colour from white to scarlet, rose, coppery, and blackish purple, and some are exquisitely speckled in consequence of the cross with tristis." The treatment of the seeds and seedlings was very simple. They were sown in pots, and sheltered in a frame until the seedlings were rather strong. The whole of the seedlings in the pots were turned out into the border with the ball of earth and roots unbroken, where they produced a crowded mass of flowers, and some of the bulbs would do so the first season.

There is much better material now to work with, for some of the recently introduced species are more beautiful than any named in Dean Herbert's work; indeed modern hybridizers are at work. Lemoine's seedlings are well known for their distinctness and beautiful decorative effect. Messrs. Kelway and Son, of Langport, also exhibited some distinct richly-coloured varieties equal in quality to their famous strain of G. gandavensis hybrids. What we especially want is a class of hybrids such as Dean Herbert established permanently in his garden, clusters of them undisturbed for twenty years flowering profusely. At the present time the beautiful varieties of what are termed hybrids of G. gandavensis are the most generally cultivated. Some of the more recent varieties raised by Messrs. Kelway, and other English growers, and also by the French raisers, are of undoubted merit. Not very long ago we used to think eleven blooms expanded on one spike was a wonderful production, whereas I counted fifteen fully expanded blooms on some of the spikes exhibited during the past season, the substance of the petals and form of the flowers being all that could be desired. There has therefore been progress in the improvement of the florist type of well-known garden varieties

and more than one step has been taken in the direction of introducing new strains of garden varieties from the best species at present obtainable. This is as it should be, and young aspirants for a niche in the Temple of Fame would do well to aim at obtaining hardy varieties such as Dean Herbert raised and cultivated so well sixty years ago.

The preparation of the ground for the planting of the corms is of considerable importance, and I used to see that it was trenched and well manured in the autumn before it was soaked by heavy rains. At that time I used to flower between 2,000 and 3,000 gladioli annually, and calling at Messrs. Stuart and Mein's nursery at Kelso the other day I was much surprised to note how small was the space of ground set apart for the culture of the gladiolus, and also to observe that it had not been trenched up, although we were in the last days of November. What was more remarkable still, and greatly to the credit of that old-established firm, is the fact that when they choose to exhibit they generally stand above all comers north or south for the quality of their gladioli spikes. I suppose they cannot grow on the short piece of border more than two hundred corms, conclusive evidence this that all the honours do not fall to the large battalions. Quality in this instance is before quantity.

Nevertheless, no one can err by early and carefully preparing their ground, and the less it is disturbed during wet weather the better condition will it be in for planting in the spring. I take the first chance early in the year, when the surface of the ground is dry, to lightly fork it over; it is thus in good condition, and a dry, fine day is also chosen to draw drills in which the flowering corms are planted. The drills may be drawn three inches deep and fifteen inches apart. The large corms should be planted about a foot asunder, and a little sharp clean sand ought to be placed under and over each corm; moreover, if the weather is unfavourable, as it sometimes is at planting time, fill the drills up with fine sandy dry soil, siftings from the potting shed will do as well as anything. Smaller corms may be planted closer than a foot, say, from six to nine inches. I have also seen it stated that large corms may be severed with a sharp knife and be planted in halves. Probably, but there is nothing gained by it, and if cold wet weather sets in a cut corm will be more likely to decay than a whole one. A very large corm may produce two, and sometimes three spikes, it will do this whether it is cut or not, and each spike will produce a large corm at its base.

Seedlings of the gandavensis type are easily raised, and they are also very readily obtained; in fact, for the expenditure of a few shillings to purchase half a dozen or a dozen good named varieties to produce the seeds, thousands of distinct and handsome seedlings may be obtained in this way.

Purchase the corms at once, or as soon as they are to be had. They may be planted as advised, early in March, in a favourable position for early flowering. As soon as the flowers open set about fertilizing them. The unburst pollen cases must be removed from the seed-bearer with the finger and thumb, and in twenty-four hours the stigmatic portion of the flowers will be ready to receive the pollen. About noon, or any time between that hour and six in the evening, fertilization may be performed. Try for distinct and decided colours. There is much room for improvement in the deep brilliant crimson and purplish crimson sections. Some of the new seedlings exhibited by Messrs. Kelway were a decided advance in this direction last year; but much yet remains to be done, and the humblest amateur may make his mark in this direction as well as the largest grower in the trade. The seed pods fill rapidly and do not take long to ripen after the flowers are fertilized, and may be gathered as they change colour and burst open at the top. Save each cross separately, and label them, for much of the enjoyment of seedling raising is lost, unless the parentage is carefully kept for future reference. Time and manner of sowing the seeds is of importance. The best time is in March or April. Some persons scatter the seeds in drills on an open border. This may do well enough if the supply of seeds much exceeds the requirements of the cultivator, but this would be but seldom, and it may so happen that the seeds possessing the lesser vitality might produce the best quality of flowers. At any rate, I prefer to sow the seeds thinly in six-inch pots, filled with good potting soil. The seeds vegetate freely in two weeks with the pots plunged in a gentle hotbed, and as the young plants increase in size admit more air, until by the end of May they may be placed out of doors altogether. They will form bulbs by the end of the season, and they will range from the size of a pea to a filbert. Shake them out as soon as the leaves begin to fade, and preserve them through the winter in dry sand. Plant out in drills in the spring exactly as advised for the named sorts, and most of them will produce strong flower spikes the same season; that is, within two years of saving the seeds.

CIDER PRODUCED ANNUALLY IN DEVONSHIRE is estimated by Mr. Punchard to amount on an average to about 250,000 hogsheads, whilst that in Cornwall is put at 20,000 hogsheads. In the latter county the bulk produced is consumed at home, or sold to local innkeepers, but from Devonshire between 50,000 or 60,000 hogsheads are exported annually by cider manufacturers, of whom there are several in the county. The value of this exportation is put at from £100,000 to £130,000, whilst the value of the whole produce may be taken at from £250,000 to £300,000. The manufacture of cider has long been associated with the farming of Devonshire. In 1630 cider making is mentioned by Westcote in his "View of the County," and in 1763 the then Chancellor of the Exchequer imposed an excise duty of 4s. per hogshead upon the beverage; but the inhabitants of the county agitated so strongly against the duty that it was shortly afterwards removed.

Notes of Observation.

MUSCAT OF ALEXANDRIA GRAPE.

AMONG the specially meritorious contributions to the recent exhibition of chrysanthemums and fruit at Salisbury were the beautifully-coloured examples of Muscat of Alexandria, staged by Mr. J. Chalk, gardener to G. Read, Esq., Westwood, Salisbury. The bunches were not large, but even, and the berries were of good size and of a beautiful amber colour throughout. They were, in fact, golden, and the skin perfectly clear, there not being the slightest trace of rust or browning from the sun so often seen late in the season. C. W.

HAIRY CHRYSANTHEMUMS.

In addition to the two American varieties, Mrs. A. Hardy and Louis Boehmer, which are a long way ahead of any other kind in this respect, there appears to be this season a tendency in many established kinds to produce hirsute appendages to the florets. I have seen many so affected; for instance, Refulgence, Mrs. Norman Davis, Charles Gibson, and Lady Dorothy have exhibited strong tendencies to this peculiarity, and now blooms of Cullingfordi represent the same innovation. The Japanese variety, Chang, now seldom grown at all, used to be remarkable in this respect. In the case of incurved kinds exhibiting this tendency, it is more to be deprecated than encouraged, because smoothness of floret is a strong point to aim for in the quality of this section, but in the Japanese it is not necessary to adhere to the same principle as regards smoothness of florets. However grotesque they may be, they will be admired by the general public. In a short time a class will be required specially for hairy varieties, as I hear there is already a yellow kind in existence similar in form to the two sorts named at the commencement of this note. Why there should be a greater tendency to exhibit these conspicuous features in the incurved section this season I cannot say, except that it may be owing to the adverse season for maturing the wood of the incurved varieties.
E. MOLYNEUX.

DOYENNE DU COMICE PEAR.

This fine pear is seldom seen in such excellent condition as were the grand examples which won for Mr. R. West, gardener to J. H. Wigram, Esq., Northlands, the first prize at the Salisbury chrysanthemum show. The fruits were large for the kind, clear in skin, and of a beautiful pale lemon colour. They were the finest fruits of this kind that I have yet seen. C. W.

CHRYSANTHEMUMS IN 1817.

It may not prove of much assistance in augmenting our knowledge of the chrysanthemum at this period of its history, but I wish to state that in *Page's Prodromus*, a General Nomenclature of all the plants cultivated at that time in the Southampton Botanic Gardens, a publication extending over 280 pages, and evidently prepared with great care by William Bridgewater Page, nurseryman, of Southampton, and accepted at the time of its appearance as one of the most reliable catalogues of the day, the list of the cultivated varieties of the chrysanthemum is given under the head of herbaceous and stemless greenhouse plants. With others, they make a separate section, as they were considered by the compiler as "unseemly when ranged with woody plants; and rather fitting to be kept on the shelves or bye-parts of the greenhouse until in flower; they have mostly an unsightly appearance when not in blossom." Chrysanthemum indicum is given as the type, and the varieties enumerated are eleven in number, viz., Chinese White, Quilled, Copper Colour, Golden Yellow, Lilac Colour, Purple, Purple Quilled, Purple Striped, Spanish Brown, Straw Colour, and Straw Quilled. In all cases where varieties of the flower are cultivated, such as the auricula, dahlia, &c., Mr. Page alludes to the number and sketches the types, but he says nothing of the varieties in cultivation other than those enumerated when treating of the Chrysanthemum indicum. As the plant was classed with greenhouse subjects at that time its hardihood might not have been understood, but it is probable that a year or two later this character became understood, and then a wider interest was taken in it. In the list of hardy plants given by Mr. Page the chrysanthemum, whether under the name of sinensis or indicum, does not find a place.
R. D.

PITMASTON DUCHESS PEAR.

Where this pear succeeds it is, without doubt, the finest of our market pears, and is also of good table quality. Mr. J. Amys, gardener to Hon. Mrs. E. York, Hambyle Cliff, Netley, had some exceptionally fine examples of this variety at the recent show at Winchester. The fruits was gathered from a standard tree which bore many dozens of fruit, some of which weighed eighteen ounces. The skin was free from speck, and of a beautiful colour. C. W.

HARVEY'S GOLDEN RUSSET APPLE.

This is, without doubt, an excellent dessert apple, and was the prime factor in winning for Mr. Thos. Hall, gardener to S. Montagu, Esq., M.P., South Stoneham House, the first prize in a class at Winchester, in which seventeen lots were staged. It also secured for him the premier award in a competition nearly as keen at Salisbury. By some of the unsuccessful competitors, it was spoken of as a gem, and one further added, "I shall have to grow that apple." C. W.

MR. JOHN BARRY gave an address at the meeting of the Chiswick Gardeners' Association on the 29th ult., in which he strongly urged the importance of forming a National Federation of Gardeners' Associations for the purpose of bringing the members of the associations in various parts of the country into closer relationship than is possible under the existing state of things.

NOTES ON LILIES.

Lilium Harrisii.

This is commonly known as the Easter Lily of Bermuda. The name would be very appropriate if the ordinary cultivator could depend always on its being in flower at that time, but he cannot in a general way. It evidently requires special treatment to flower it at Easter. More than that, a considerable number of bulbs are required from which to select the most promising for early flowering, so that they can be introduced into a slightly higher temperature as soon as the bloom buds are formed to persuade them to open more rapidly. I saw in my travels lately a whole houseful of these lilies that had just been introduced from the open air, and a very promising lot of plants they were. Few gardeners in private places could, however, devote the time and space as the market growers do for these, or, for that matter, any other class of plants that are grown in quantities. The cultural details as carried out by the market man are, however, to some extent applicable to the private gardener. For that reason I will briefly describe the treatment that the plants receive. Taking the plants in hand as soon as they go out of bloom, I find that almost as much care is taken of them as before. The grower is anxious at that time to ensure the proper development of the young offsets that are formed. To do this, the old flower stems are preserved from injury. If the outside temperature admits of it, the plants are taken to cold pits and the pots stood on a cool bottom; but if they have flowered in the spring they are kept in the house until summer weather sets in. The object of this treatment is, as I have already said, to assist in the formation of the young bulbs and increase the size of the larger ones. I may say here that a resting season is not recognised with this lily, as, indeed, it ought not to have one, as under proper management the plants do not rest. The roots are more or less active at all times, the more care taken of the foliage on the old flower stems the more activity they show. In the natural order of things the old stems slowly die, and are cut away from the bulbs, but this is not done until the foliage shows signs of getting yellow, and is no longer of any use to the roots.

The bulbs are repotted once a year. For this business the primary conditions appear to be, rather small pots (those six inches in diameter are used for large single bulbs), good drainage, and a fairly heavy and rich soil. The repotting takes place before there is any great amount of activity shown by the plants, or, in other words, before the flower stems show themselves above the soil. About two doses of concentrated liquid stimulant are given as soon as the flower buds show themselves. Some growers shift on their plants into larger pots as soon as they go out of flower; but if larger quantities are wanted in bloom at one time it is acknowledged that a single selected bulb in a single pot is the only safe plan to follow to secure early blooms.

Lilium auratum.

If the bulbs which flowered during the present season have not yet been repotted, no further delay should be allowed, for if there is no apparent activity above the surface the roots are more or less active. Bulbs that bloomed in small pots and were in vigorous condition at the same time may have a shift at once into other pots two sizes larger, but those in large pots may with advantage have a portion of the old soil removed and be returned to the same pots again. It will be quite safe to cut down level with the soil now the old flower stems, but it is not advisable to wrench them out altogether, as there is some risk of injuring the bulbs in doing so. There is nothing gained by potting directly they come to hand the newly imported bulbs; indeed there is danger in doing so, if they are not carefully attended to afterwards. If the soil in which they are potted is kept too wet the bulbs are likely to perish. The best way of dealing with them is to fill a pan or box half full of damp cocoanut-fibre or moss, and place the bulbs in it half their depth, a slate or piece of board placed on the pan will keep them in darkness. If left in this condition for a month or six weeks the scales of which the bulbs are composed will plump up and appear quite fresh. They may then be potted in the usual way. But, I forget: the "usual way," sometimes, is to put the bulbs in pots too large to be safe. When they are to be grown singly, bulbs eight inches in circumference do not require more than a 6-inch pot, smaller and larger bulbs in proportion. A suitable soil for this lily will be found in a mixture of three parts loam and one of rough peat. If the compost is fairly moist when the bulbs are potted they will not want any water for a fortnight; from that time until the flower stem is six inches above the soil very moderate supplies will suffice, after that it may be more liberal. This lily is often injured by being exposed to the direct rays of the sun through the glass. At a certain stage the foliage appears to be very susceptible to injury from that cause; it is therefore desirable to put a thin shade on the glass to protect them.

Lilium giganteum.

This noble lily is but little known; more's the pity, for it is one of the grandest plants that anyone can grow who has a fairly large house. When the flower spikes begin to rise, and from that time until the blossoms fade there is something very striking in the carriage of this lily. For some reason I failed some years ago to get this plant to do well in the open air. But I think it was because the soil was too dry and the position too much open to the sun, as I found afterwards when the plants were taken under glass, that they required rather large supplies of root moisture when in active growth, and that they have done better with a thin shade on the glass than without it. When I understood its requirements better, I had no difficulty whatever in getting the flower spikes seven feet and eight feet high with eight and nine blooms on a single stem. In the latter part of my experience with this lily, I grew it with a single bulb in a pot, which I found much the best. Beginning with a fairly large offset in the autumn, I could secure a noble plant with a stem the height I have mentioned in three years. This may appear to some a long while to wait, but it is not much trouble when once a start has been made to have a single plant, or more, according to the space available, in flower every year. All that it is necessary to do is to pot up the required number of the largest offsets every autumn, and grow them on always in a cool structure—the first season in 8-inch pots. For the last shift 16-inch pots are necessary. As a compost, I used principally loam with a little leaf-soil and sand. It will be seen that except to repot once a year, and to give the roots water when necessary they are no further trouble. When the plants can have plenty of light, they do best if the pots stand on the floor of the house, as the roots like a cool bottom. For the information of those who do not know the behaviour of this lily, it is perhaps necessary to say the old bulb dies when the plant flowers. As a matter of fact the bulb appears to waste itself in supporting the flower spike. This will explain the reference that has been made to the use of offsets in keeping up the supply of plants, there being no other way of doing so.

Inquiries are often made for the names of plants suitable for growing in large unheated houses, but it is not often this lily is mentioned, yet I know of no plant more suitable to associate with other plants of noble proportions. To return to the cultural details, I may tell the intending cultivator that this lily is immensely benefited by frequent doses of liquid manure during the summer months. J. M.

GOLD-LACED POLYANTHUS.

The reduction in the amount of the prize money hitherto offered for varieties of the gold-laced polyanthus in the schedule of prizes of the National Auricula Society need not be accepted as indicative of a declining interest in the flower; but it does signify that of late years this interesting section has not been well represented at the society's exhibitions. That is so undoubtedly, and last year quite a poor lot of plants was staged, probably the poorest since the society commenced operations in London. On the other hand, the bold and striking giant or fancy varieties have increased in beauty, and it was high time that more liberal prizes were offered for what contributes so largely to the interest and beauty of the show. While the gold-laced section has, if anything, gone back, the other has advanced with rapid strides.

Their marked absence from the exhibition table at the Drill Hall, in April last, was due much more to the incidence of the season than to any lack of varieties to cultivate. I had a few good plants of Cheshire Favourite, Exile, Lancer, Prince Regent, &c., in pots, but, for some reason, they nearly all went blind, or, what is sometimes the case with me, bloomed too late. Mr. Douglas, and others who grow named varieties for exhibition, find, in common with myself, that it is extremely difficult to keep the plants through the summer in health and vigour, and so we are obliged, if we would have named varieties at all, to obtain plants from the north in the autumn. They are small when they reach us, and unless two or three plants of one variety are employed to make a specimen, which is an expensive process, it is practically impossible to get individual plants into anything like size by the spring; in fact, they scarcely become active until then. If plants are to make headway, and grow into exhibition form by April, they should be potted into small pots by the middle of August, which is a good time to divide the plants, so that they may establish themselves, and have a shift into a larger pot by the middle of October.

I have treated some fine selected seedlings of last spring in this way. I wished to keep them through the summer, and so early in May I plunged them up to the rims of the pots in a bed in a slightly shaded position, and let them remain all the summer. The moist, cool weather suited them, and in August I divided the plants as above stated, and at the end of October they were shifted into their blooming pots.

If the plants need cool, moist surroundings at any time, it is when they are going out of bloom and maturing their seed pods. If the weather is hot and the soil becomes dry, red spider attacks the leaves, and the plants soon lose them and rarely clothe themselves with them again. My plunged plants were not only kept well watered when necessary, but they were also mulched with cocoa nut fibre, with the result that they grew freely all the summer. They were then divided and repotted, and commenced their term of autumn growth, which is essential to making exhibition plants in the spring. I have potted named varieties had from the north in November that did not start into root action until the spring, and during the intervening period retrograded rather than improved.

Much care is necessary in keeping established plants through the winter. If kept too moist and close there is the danger of wet rot, and if too dry, the danger of dry rot. The plants should never be allowed to become dry enough about the roots to flag. I have scarcely ever succeeded in restoring a plant to its full vigour when it has become dry enough to fall away into this condition. One needs, in the interests of safety, to hit the happy medium. An auricula may be allowed to go dust dry about the roots with nothing worse than a check, but it is very risky to prevent it in the case of a gold-laced polyanthus.

The old florists always contended that the polyanthus needs much more careful attention than the auricula, and they were quite right. I have housed my plants in a raised frame in the open, where air can circulate freely among them, but where, also, they can be screened from heavy rains when necessary. This is not the season of the year when the soil about the roots should be wet to saturation. They are at the resting period, when but little growth is made, and when water is necessary only at long intervals. A moderate amount of moisture is also advisable in the event of frost happening. When frost comes some

severity may be looked for, and when it fastens upon plants in pots with the soil and foliage saturated by recent rains bad results are certain to follow. I always cover up my polyanthus frames when sharp frost sets in. One also escapes broken pots resulting from the expansion by frost.

Newly-potted plants should have moist soil about the roots, but not be watered for a week. To pour water on to roots that are for a time inactive is folly, and a grower of gold-laced polyanthuses should not be guilty of it. I find that placing a little fine moist cocoa nut fibre about the roots causes them to become active as soon as anything, and polyanthuses will root freely in it.

What varieties of named gold-laced polyanthuses are obtainable? it may be asked. I may mention of black grounds, Lord Beaconsfield, Lancashire Hero, Cheshire Favourite, Exile, and Prince Regent; but the two latter have a good deal of red in the ground. Of red ground varieties there are George the Fourth, Lancer, Prince Regent, and Sir Sydney Smith. I have placed what I think to be best at the commencement of each list, but all are worth growing, and the selection of nine varieties make up an interesting collection. R. DEAN.

FRUIT AT CHRYSANTHEMUM SHOWS.

IN the western counties of England, what are nominally chrysanthemum shows might more properly be termed chrysanthemum and fruit shows. Great prominence is naturally given to the flower of the season, but this does not exclude many equally as serviceable plants and flowers, while every provision is made for fruits and vegetables in season. This is as it ought to be. Interminable rows of blooms are apt, and very often do, become monotonous. There is too much sameness about them, especially to non-enthusiasts; while the formally trained specimens must be very good indeed or they offend rather than please the taste of those who see them. Apparently there is little likelihood of any improvement being effected in the very formal method now in vogue of staging cut blooms, and if novelty is forthcoming at these shows, it is more likely to be in the classes provided for subjects other than chrysanthemums. What at this time of the year can be better than a good display of fruit? Not only is such a great attraction to many visitors to Shows, but they are both popular among, and instructive to, gardeners generally. Owners of gardens, or amateurs as well as the professional gardener, all have a good chance of figuring on the prize lists, and those needing information have every opportunity of learning what is worth growing, and the correct names of many varieties of apples and pears already in their possession.

The August shows are too early to attract displays of the later varieties of grapes, and as there are few held between that month and November, it is at the chrysanthemum exhibitions where these are to be seen at their best. Nor is there any necessity to offer large sums of money as prizes to bring together a lot of good grapes, though, as might be expected, the very finest bunches will usually to taken to where the most money is offered. At Birmingham, for instance, where the first prize for six bunches in three varieties is £5, a grand lot of grapes was shown, while the £3 and £2 10s. offered as first prizes for Muscat of Alexandria and any black variety respectively attracted some of the finest bunches of the former and Gros Colmar that were ever seen. From a gardener's point of view, the grapes shown at Birmingham were far more interesting than the chrysanthemums. At Bath, where the prizes were not half so high as at Birmingham, the competition was most keen, and many of the bunches of Gros Colmar, Alicante, and Muscat of Alexandria were far above the average. At Reading there were five classes provided for grapes, two bunches being asked for, and the highest prize £1 in each instance, and a very excellent display was made. For the comparatively small sum of £10 spread among eight classes, the Bristol committee had the satisfaction of seeing two grand rows of grapes, there being on an average seven competitors with each of the varieties for which prizes were provided. Offering prizes separately for Black Hamburgh, Alicante, Gros Colmar, Lady Downes, Mrs Pince, any other black variety, Muscat of Alexandria, and any other white variety, as at Bristol, is the most satisfactory way of apportioning a small sum of money, as it gives every grower a chance. At Exeter they make a mistake in offering very low prizes, 10s. being the highest for three bunches of about four different varieties, and the competition is strictly local accordingly. Not more than two bunches should be required, especially for small prizes. The grapes are always, and have been for many years, one of the features of the Liverpool exhibitions, and it is to be hoped many more compilers of prize schedules will follow the good example set them.

This season we had a great scarcity of apples and pears, yet, strange to relate, the competition in the various classes provided for these fruits was never better, while the quality of the exhibits generally has seldom been equalled. For about £10 twenty classes for apples and pears could be provided, and if another £4 can be added for small collections in each section so much the better. At all the shows I have named, and also at Wells, Taunton, Weston-super-Mare, and Tiverton, numerous dishes of such superior pears as Marie Louise, Doyenne du Comice, Marechal de la Cour, Glou Morceau, Huyshe's Prince of Wales, Beurré Diel, Pitmaston Duchess, and Josephine de Malines were staged, and with these various other less popular sorts. The most popular apples were Cox's Orange Pippin, Ribston Pippin, Margil, Blenheim Pippin, Fearn's Pippin, Adams' Pearmain, Court Pendu Plat, Cornish Gilliflower, Cornish Aromatic, and King of the Pippins. Culinary varieties were far more numerous, and in most instances made an imposing display. At some of the shows prizes were also offered for collections of fruit, and in these again there was much to admire. I. M. H.

FRUIT GROWING FOR PROFIT.

THE deputation from the Fruiterers' Company which waited on the Lord Mayor the other day, as reported in the GARDENERS' MAGAZINE, for the purpose of obtaining his co-operation in raising a sum of money sufficient to enable the company to hold exhibitions of fruit in various parts of the country, acted wisely. They did, perhaps, the wisest thing that has yet been done by those who are anxious to see this country produce sufficient supplies of the hardy fruits to meet the ever-increasing demand of the public. The proposals of those gentlemen with reference to holding fruit shows in different parts of the country, and thereby enlisting the sympathy of landholders, is in accordance with the views I have for several years past advocated.

It is true that I have not hinted at forming an association for that purpose, but I have suggested that landlords in fruit-growing districts should combine and offer prizes for the best display of late-keeping fruit for the purpose of showing how many excellent sorts of late apples there are in the country. I have also shown how great the difficulty is for the small growers in outlying villages to dispose of their fruit at a satisfactory price. To enable them to do better in this respect I have suggested that two or three neighbouring villages should combine and hold an annual fair on a certain date for the sale of the fruit by sample. By inducing the dealers to attend in large numbers, a healthy competition and better prices would be secured. Under the conditions which now obtain in the disposal of hardy fruits one or two individuals have the command of whole districts, and are thus able to obtain most of the produce at their own price. This is simply the result of the small growers not having any other means of disposing of their produce. I could mention numerous instances that have come under my personal observation where the grower has not received more than one-third of the value of his fruit. The landlord, although as a matter of course requiring his rent, makes no effort to help the producers in realizing better prices. For that reason I believe the gentlemen who waited on the Lord Mayor have taken a wise step. One part of their programme appears to be to endeavour to enlist the landowners in the subject. In my opinion, that is the most important point at which to aim in the future.

Fruit shows carried out on the present lines are all very well, but they stop short of what is really wanted. If fruit growing is to be extended with profit to the producer and advantage to the consumer, the landlords should be made to see that much rests with them in ensuring the success of the movement. They should either make suitable plantation on new sites, or offer the land on such terms that the tenant has a satisfactory security for the outlay necessary in the formation of new orchards. I am, however, convinced that the landowners can do more in this direction than the tenant. I would rather see landowners expending their money in the purchase of fruit trees to be distributed amongst the tenants on their estates than in disbursing it as subscriptions to the proposed fruit shows. There has been plenty of fruit shown of late years in all parts of the country; sufficient, in fact, to convince anyone that by the proper planting of the sorts we possess an abundance of fruit may be obtained. What is wanted now is deeds, not words. When we see farmers selling their apples instead of converting them into cider, we may be sure that they are in a condition to appreciate any efforts that may be made for enabling them to extend the culture of fruit.

If the proposed fruit shows can be made the medium of bringing buyers and sellers together, I should not have a word to say against them. Only those who know the disadvantages under which rural residents labour with regard to disposing of their fruit can fully realize how necessary it is to provide them with a better market. It is no use whatever to make the attempt to extend the area of land devoted to fruit, or to improve that already occupied by trees unless the small grower is in a position to obtain a fair share of the returns. It has been said that country people move slowly in these matters. That may be so. I, however, would not limit the attention to the landlords and tenant farmers. The cottagers on large estates should be encouraged to grow the best sorts and properly manage the trees. It must, however, be quite plain to those who are practically acquainted with hardy fruit culture that there must, in the case of the cottagers, be a directing mind. Farmers, as a rule, are not good fruit growers. For that reason, on large estates the head gardener, if he has been well-trained, should be intrusted with the superintendence of the work of choosing sites for the plantations, selecting varieties, and other details. This arrangement will meet the case in a few places only. What will be really required in most districts is a responsible man, who has a good knowledge of the business, to direct the work in the interest of the landlord. All other interest must be of a secondary nature, and if they are made so the results obtained will, in due time, balance all other matters.

Much nonsense has been written within the past few years against growing apples for the manufacture of cider. I give the writers credit for being sincere in their views, but they must allow me to tell them that they know nothing about the matter from a commercial standpoint. The farmer can generally rely upon having a crop of cider fruit when there is none of a better quality. Moreover, the apples that are grown for cider can be produced on land altogether unsuitable for the production of table or culinary fruit. There is plenty of land of a suitable character to grow both classes of fruit, and I would be the last man to deprive the farmer of the chance of securing a crop of cider fruit. I am, however, compelled to say, that he has neglected to divide his attention between the first class apples and those of inferior merit, and I shall not be sorry for him if his landlord now steps in and compels him to do what he ought to have done before of his own accord.

Greenway, Taunton. J. C. CLARKE.

PRUNING THE GRAPE-VINE.

By W. Iggulden, Marston House, Frome.

All well-ripened vines in early and successional houses will have shed most of their foliage, and that on the latest varieties will also be rapidly changing colour and falling off. This brings us within measurable distance of the period for pruning and otherwise preparing the rods for the season of 1891; in fact, there should be no further delay in the matter. The only exceptions are those vines in the very latest houses. The cultivator should complete the work of pruning, cleaning, and dressing now, and give the vines a good rest prior to starting them into active growth again. We will first discuss the pruning, and leave the other details for further consideration.

Pruning is not such a simple proceeding as some are apt to think it. No hard and fast lines can be laid down, but each cultivator must use some judgment in the matter, so much depending upon the state of the vines, the variety operated upon, and the requirements of the place. For instance, hard pruning, so as to preserve a very neat spur, may answer well in one instance and fail completely in another. Or, again, if some varieties are closely spurred back, nothing but small bunches will result, whereas the grower may desire much larger examples, fit, say, for exhibition purposes. I contend, therefore, that there is little wisdom in unduly studying the appearance of the rods, as, should the spurs become long and ugly in the course of five or six seasons, there is no reason whatever why young rods should not be laid in to take the place of the older canes. Or if this plan does not meet the views of some of my readers, they can adopt the alternative of having fewer spurs on a rod, and from each of these lay in two laterals instead of one, as previously. At pruning time, the lateral furthest away from the rods can, with a short length of old spur attached, be cleanly cut back to that nearest to the rod, a long permanent spur being thereby avoided. As will be seen, either plan must be anticipated early in the growing season, and what we have now to consider is, how best to treat the rods in the state they are now in. I cannot do better than offer a few comments upon each variety taken separately, commencing with the very popular

Black Hamburgh.—Vines of this variety must be in a poor plight indeed if they fail to produce bunches of some kind, and those in a healthy state and well-ripened will even produce bunches from back buds, of which the grower had no knowledge when pruning. For ordinary purposes, therefore, there is no reason why the laterals should not be spurred back to a visible bud nearest the rod; but if exhibition bunches are desired, then I would advise that more length be allowed, a good plump bud, or the third or fourth from the rod be selected. The breaks from the larger buds are usually stronger, and produce good-sized, compact bunches. Looseness of bunch and great length of stalk is decidedly objectionable in show bunches or for any other purpose, and that is why the spur system is preferable to the long rod pruning for this and a few other kinds, the bunches produced by young rods nearly always being very loose.

Madresfield Court.—Much that has been advanced concerning the Black Hamburgh also applies to this valuable grape. We obtain our largest and in other respects best, bunches from spurs shortened to the second or third bud from the old rod. Very old rods, however, find but little favour, ours being changed every five or six years. The bunches produced by young, well-ripened canes are not particularly loose, but they are far too thin and tapering to please me. If the berries are large, and keep sound, this length of bunch may be an advantage rather than otherwise; but if they are somewhat small, or a few are lost, the appearance of the bunch is quite spoilt.

Foster's Seedling is a very easily-grown, productive variety, it being hardly possible to make a mistake when pruning the vines. Serviceable bunches can be obtained by hard pruning, but they are finer from the second or third bud, and large, fairly compact clusters can usually be had from strong, well-ripened young rods.

Buckland Sweetwater.—With this the case is altogether different, there being few, if any, so shy in bearing, especially if fire-heat has not been largely employed in ripening the wood. Practise hard pruning, and the chances are that only a few bunches will be produced. Our wood is well ripened as a rule, and the reserve laterals are cut back to the third or fourth bud from the main rod. Thus treated, there are always bunches enough and to spare. Large, if somewhat loose, bunches are produced by long, well-ripened young rods, and this looseness can nearly always be corrected by very light thinning of the berries.

Gros Maroc has, in appearance, no equal among what may be termed early and mid-season black grapes, and if any fail with it, most probably the fault largely rests with the pruning. The wood and the fruit ripens well under the same treatment as does that of the Black Hamburgh, but if Gros Maroc is hard pruned the bunches most probably will be either few in number or much too small to please the grower. We are constantly laying in young rods in all directions, and, by sightly shortening these, obtain abundance of handsome bunches, fit for the exhibition stage or the table. The laterals on any old rods not cut out to make way for younger ones are spurred back to the first plump bud from the old rod. Supposing no young rods have been laid in, it is a comparatively simple way out of the difficulty to cut away a portion of old spurs and lateral growth attached, and to lay in other lateral growths to their full length. The latter will produce much better bunches than will the short spurs.

Muscat of Alexandria.—More heat is required by this, the most valuable of all white grapes, than by any other variety, and if sufficient of it has been given to well ripen the fruit, there is little doubt about the wood also being thoroughly matured. We prune Muscats much the same as we do Black Hamburgh, and, as in the case of that variety, the handsomest or most compact bunches are produced from moderately close-pruned spurs. Very large bunches are frequently produced by strong young rods, but, unless the vines are extra well established and liberally treated at the roots, these large clusters are very difficult indeed to set, preserve, and ripen properly.

Black Alicante.—It is not often this favourite late grape fails to produce bunches freely, even when rather hard pruned, but by far the heaviest clusters are obtained from young, well ripened canes. There usually being plenty to choose from, it is the cultivator's own fault if the bunches reserved prove too loose. On the whole, therefore, the long rod system of training and pruning answers best for this variety. At any rate, very hard pruning should be avoided, and those who have no young rods in reserve can adopt the plan of thinning out and laying in laterals as advised in the case of Gros Maroc.

Gros Colmar.—If large bunches as well as large berries are required, hard pruning must also be avoided in the case of this somewhat strong, soft-wooded variety. When the laterals are spurred back to the first or second bud very serviceable bunches can usually be obtained, but it is from the large, plump buds on either laterals or young rods that the big clusters are produced.

Lady Downes.—The circumstances in this case are exactly reverse to those just stated, much the best bunches, according to my experience, being obtained from laterals shortened to within one or two buds of strong rods. Young canes usually break weakly and irregularly, and the bunches produced are comparatively small. The spur system is therefore the best that can be recommended for Lady Downes.

Alnwick Seedling.—In freedom of growth and productiveness this is all that could be wished. It is amenable to hard pruning, but the finest bunches are obtained from young, well-ripened rods or laterals laid in to their full length. Laterals on old rods may safely be spurred back to the first or second bud, unless large clusters are required, in which case a plump bud should be selected.

Mrs. Pince's Black Muscat.—No fault can be found with the productiveness of this variety. Large and fairly compact clusters can best be had from young, well-ripened canes, and medium-sized to small, by cutting back the laterals to the first or second bud from the old rods.

Gros Guillaume.—As a rule, this is considered a shy fruiting variety, and, to a certain extent, this is the correct conclusion. Over-cropping when plenty of bunches are produced has much to do with the failure that follows in the next season, and hard pruning is another frequent cause of non-productiveness. If young canes are constantly being laid in and ripened, regard also being paid more to the eventual weight of grapes than to the number of bunches to be left on the vine, there would be few, if any, failures. Supposing there are no young canes available for bearing next season, then must the laterals be pruned only, or, say, cut back to the third or fourth bud from the main rod.

Other Varieties.—The foregoing list comprises all the most serviceable and popular kinds, but there are several others to be briefly alluded to. Muscat Hamburgh—perhaps the richest flavoured grape grown—rarely fails to show plenty of bunches, and may safely be pruned moderately hard. Golden Champion and Duke of Buccleugh, being of coarse growth, will not answer well under hard pruning, and what is advised for Gros Maroc is also applicable to both varieties. Mrs. Pearson and Golden Queen produce the finest bunches when treated exactly as recommended for one of their parents—the Black Alicante. Both Syrian and Trebbiano are of strong growth, and if extra fine bunches are desired the training and pruning must be the same as advised for Gros Guillaume. Calabrian Raisin and White Tokay are also of somewhat rank growth, and should not be very hard pruned, or the bunches may be scarce and small.

BROAD BEANS.

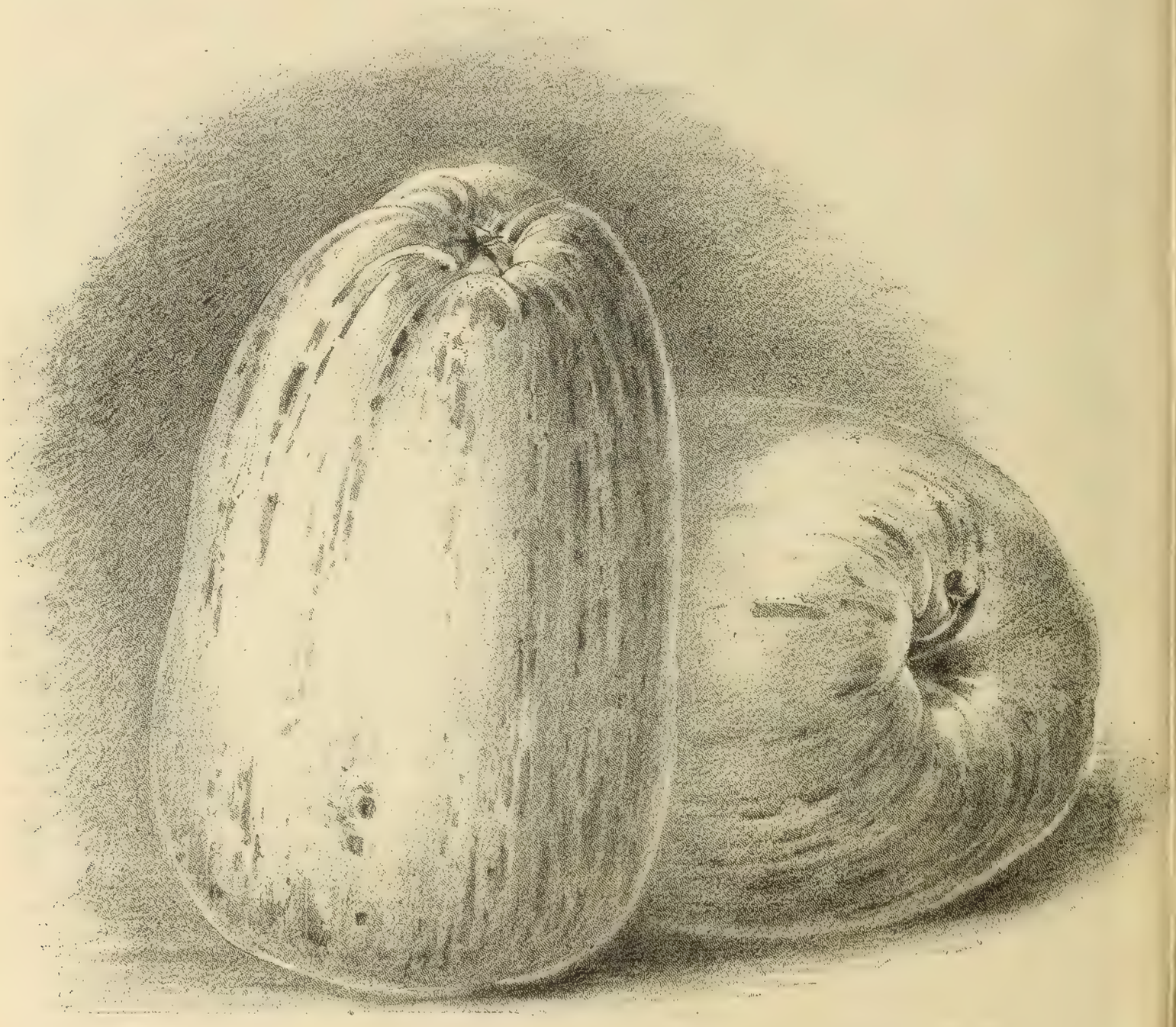
Those who have not taken advantage of the favourable conditions that have obtained for some time to sow their crop of broad beans should do so at once, or, at any rate, as soon after this note appears, as the state of the ground will permit. There is an immense difference in productiveness between those sown early and those planted after Christmas, and an early crop is more appreciated than a late one. I will undertake to say that the crop from the November planting will weight for weight, be at least quite one-third more than will the crop obtained from the January sowing. Some people have an idea that broad beans will grow anywhere, but to obtain a full crop they must be grown in deep, rich, well-prepared ground. With regard to the distance the plants should be apart, it may be said that the longest pods and the heaviest crop are produced when the plants have sufficient room for the free extension of their roots. The rows should be at least three feet apart, and the plants in the rows be about half that distance.

J. M.

Orange Culture in Malaga and its neighbourhood is evidently not a profitable undertaking. In a recent report we are told by our consul, Mr. Finn, that the shippers are ruined and replaced by others about once in every three or four years. The orange-growers, as may be inferred from this, are no better off. The causes of the decline of the trade in oranges and the increase in that of peel for candying in this once famous home of orange cultivation are the falling off in the quality of the crop, and the ruinous prices of the fruit in the English markets, in which it finds its principal sale. The immense production of Valencia produces a keen competition with the Malaga fruit, glutting the English markets and lowering the prices, with a disastrous result to the dealers and shippers.

CULINARY APPLE, GOLDEN SPIRE.

PROMINENT among the many good culinary apples that have obtained special attention at the great exhibitions held at Chiswick, the Guildhall, and elsewhere during the past few years is Golden Spire, a very distinct variety of great excellence. This apple has long been grown in the West of England, more especially in Gloucestershire, where it is known as Tom Matthews, and its fruit highly appreciated for cider-making. It was not, however, until quite recently that it became generally known, and its merits recognised to any appreciable extent outside the western counties. The fruit is large and conical, tapering but slightly from the base to the apex, the skin being light yellow on the shaded side and deeper yellow on the sunny side, with a tinge of orange, and the flesh is moderately firm, brisk, and richly flavoured. The season extends from October to nearly, or quite, the end of December, and experience has proved that during that period the distinctly formed and handsome fruit has a ready sale at good prices in the market. The tree is vigorous in growth, and is equally suitable for standards and bushes whether for the supply of fruit for the market or home use, as in both forms it is a heavy and sure cropper. It is perhaps one of the best of the culinary apples for profit, and growers for market who are acquainted with its distinctive characteristics are now planting it rather extensively.



CULINARY APPLE, *Golden Spire.*

COMMON TRUMPET LILY.

ALTHOUGH the Common Trumpet Lily as Lilium longiflorum is popularly designated, is in some degree surpassed by the Easter Lily of Bermuda, its elegant habit, and the peerless purity and delightful fragrance of its flowers, fully justify the high estimation in which it is held. Not quite so early in flowering as the Easter Lily, it is admirably adapted for forcing, and taking into consideration the great beauty of its flowers and the facility with which a successional supply can be maintained over a long period, it may be described as one of the most useful lilies we have. With a sufficient stock of bulbs and suitable conveniences, a plentiful supply of flowers may be had from early in the spring until the summer is well advanced, a fact of some interest to those who have to meet a large demand for flowers for the decoration of the house.

In forcing the Trumpet Lily, it is essential to pot up the bulbs as soon as they can be obtained in a properly ripened condition, and to select for the purpose those of comparatively large size. Five or six-inch pots should be used, and one bulb put in each. A light and rich compost is desirable, and in potting the bulbs should be placed low enough to admit of their being covered to the depth of an inch or so with soil. When potted stand them on a bed of coal ashes on a hard surface in a sheltered position in the

open, and cover lightly with some loose material. Here they should remain until frost is apprehended, when they must be taken indoors and placed near the glass in a pit or house in which they can be assisted with sufficient artificial heat to keep them safe from frost and maintain a steady growth. The subsequent course of procedure must be determined by the season in which the plants are wanted in bloom. If the flowers are required at Easter, when usually they are much appreciated, they must have the assistance of a temperature of about 40 deg. from within a short time of their being taken indoors until the end of the year. Soon after the beginning of January they must be removed to the forcing house or other structure in which a temperature of about 60 deg. is maintained. It is of great importance in forcing both Lilium longiflorum and L. Harrisi to start them sufficiently early to render hard forcing unnecessary during the later



COMMON TRUMPET LILY, *Lilium longiflorum* (Flowers white).

stages. The buds should be distinctly visible at least six weeks before the flowers are wanted, as it will then be practicable to maintain a moderately fair circulation of air during their development. As the result, the blooms will retain their freshness and beauty for a much longer period than will those subjected to a high temperature and close moist temperature when expanding. Moreover, plants that have enjoyed moderate exposure will be in a better condition for being placed in apartments in which they are subjected to cold draughts or other adverse influences. Those which have been forced should receive the most careful attention subsequent to their flowering, to enable them to complete their growth in a satisfactory manner.

The outdoor culture of the Trumpet Lily is a comparatively easy matter, provided the soil is moderately friable and well drained, as in beds and borders where the roots can readily extend and be free from stagnant moisture the plants grow vigorously and bloom satisfactorily. On the other hand, where the soil is heavy and rests upon a cold clay the results are invariably unsatisfactory. Much may be done to improve the staple by the liberal addition of coarse grit and decayed vegetable refuse, and also by raising the surface of the bed ten or twelve inches above the general level. The bulbs should be planted about twelve inches apart, and to a depth ranging from four to two inches, according to the character of the soil, it being important to keep them rather near the surface where the soil is naturally cold and wet.

The accompanying figure is interesting as illustrating the practice which obtains amongst the market growers and the cultivators of lilies for exhibition, of removing the anthers before they are sufficiently developed to shed their pollen. The bright yellow anthers present such a pleasing contrast to the pure white perianth that their removal greatly detracts from the beauty of the flowers, and should not be permitted in the private garden. The market grower, on the other hand, who has to supply flowers to his customers perfectly free from stain or discoloration may be able to offer a valid excuse, and justify, in his case, what, stated broadly, is a highly objectionable practice.

HARDY PRIMULAS.

By WILLIAM EARLEY, Ilford.

ALL hardy primulas, whether the cowslip, oxlip, common primrose, or its many double forms, including the well remembered paigles, are both interesting and beautiful; so pleasing, in fact, that few would care to uproot any stray wildling plant of either, which uninvited took possession of any corner of the garden. Beyond these many fine additions to the list of such plants have been made by the introductions from other countries, and the superior hybrid forms raised at home.

Probably of late too much has been made of the florists' view of those of our hardy plants, which after all are stereotyped repetitions of those of our grandfather's time. On the other hand too little attention has been given to the many distinct and beautiful species within reach of all, or to the sundry double-flowered forms.

I am anxious, in the present instance, to call attention to the best amongst the more attractive kinds, and to further emphasise that some of them may be grown on any aspect, or in any nook in the garden.

Primula cortusoides amœna, and its many beautiful seedling forms, raised by Mr. A. Dean, and more recently by Messrs. Ryder, are still too little known, or they would be universal favourites. They comprise charming forms with very ornamental leaves, deeply jagged, or serrated, of a lovely green tint, from which arise numerous umbels of the many tinted blooms. These plants are not only suitable for herbaceous borders, but also make charming displays in connexion with spring bedding. Indeed, for naturalising upon prominent ridges of rock work, and for planting in sites in villa gardens they are particularly well adapted. Besides, they are of great excellence for pots for conservatory decoration. Hence, once a stock is secured, they may be employed indefinitely for garden decoration. They succeed admirably in cold frames, where small tufts increase to large size, affording a plentiful supply of blooms for cutting at an early date. Some of the newer examples, half-a-dozen of which or more I assisted in certificating at the Royal Botanic Society last spring, not only possess very distinctly-defined colours, but flowers of much finer form than those of the species.

P. denticulata, a somewhat old Himalayan species; will grow freely in any sunny border, and produces annually in great profusion its umbels of bluish-lilac flowers. This species is of vigorous habit, and very desirable.

P. Parryi, from the Rocky Mountains, is a vigorous species, the flower spikes rising to a height of twelve or fourteen inches, with blooms of a deep purple colour. It has large leaves, being in the case of healthy plants six inches in length.

P. Stuarti, from Nepaul, is distinct from the above in colour, the flowers being bright yellow, and borne on stout stems amidst long or lanceolate foliage. The blooms are slightly incurved; nevertheless it is highly ornamental, owing to the beauty of its foliage.

P. farinosa, which bears rosy crimson flowers, is interesting even as a cold frame pot plant.

P. viscosa, although shade-loving and of small stature, is another desirable form. It has purple-coloured flowers of comparatively large size, and a good habit.

P. Japonica, a bold growing Japanese species, has handsome dark green leaves and rich crimson flowers. It thrives in borders and artificial bogs, and succeeds well in a shady place, where it can have a goodly depth of rich loam and leaf mould.

P. Cashmiriana is a very pleasing form, with bold spikes of flower variously tinted, lilac, purple, and yellow. It succeeds well in cool somewhat shaded situations and moist soil.

P. rosea is a charming Himalayan species, having intense rose, or brilliant rose-carmine coloured flowers.

It may be well, in conclusion, to draw attention to a peculiarity with regard to the sites most favoured by the common primrose. It is mostly observed occupying spaces and flourishing best on northern, eastern, or western aspects; seldom holding its own on full southern aspects. This will have been observed by travellers by railway who occasionally admire on their journey the fine masses seen on embankments. Such displays are all but invariably on the shady side of the line, or upon such sides as are not fully exposed to the sun. This simple fact should not be lost sight of by growers. Hardy primulas, therefore, delight in cool, moderately shaded situations, combined with a fair amount of moisture.

WINTER WORK IN THE FRUIT GARDEN.

By H. W. WARD, Longford Castle, Salisbury.

THE important operations of pruning and nailing should be pushed on with despatch as soon as the trees have shed their leaves. Mild or sunny days should, however, be selected for doing the work, because the men employed can perform not only more and better work than when their fingers are so benumbed with cold they can scarcely hold pruning shears or hammer, but they do it with pleasure and pride instead of with a feeling of hardship. Therefore, during frosty mornings the wheeling of manure on to vacant pieces of ground, to be subsequently dug or trenched in or applied as a mulching between rows of raspberries and strawberries should be proceeded with. Later in the day, when the sun shines forth, the work of pruning and nailing should be pushed on in earnest, shifting from one wall or position to another as the sun moves round to the west, so as to be working under its genial influence as long as possible.

Trees of the Morello cherry first claim attention in the matter of pruning and nailing, not only because they shed their leaves first, but on account of the great number of shoots which have to be manipulated. They require, like the peach, more time and skill to train them properly than either the plum or pear. Like the peach, the Morello only requires the shoots to be thinned out a little, leaving, of course, as many young shoots as necessary. The old shoots should be cut back to their base, and any fore-right shoots that may have been produced during the summer to one wood-bud. Strong bearing shoots should also be cut out where it can be done in order to secure a balance of growth; in other words, an equal distribution of the shoots over the space prescribed to each tree. The shoots ought to be from three to four inches apart to prevent overcrowding. These distances will admit of one young shoot being laid in between each pair of branches. These may be fixed in position with a birch or hazel twig during the months of June and July. Pinching out or otherwise remove at the same time all fore-right and superfluous shoots, as indicated above.

Young trees planted against a wall or fence at this time of year should have their shoots secured loosely to the wall or fence by means of shreds and nails. This is necessary to allow them to subside a few inches with the settling down of the fresh soil. In the spring, when they show signs of growth, their branches should be trained out regularly over as much of the space allotted to each tree as possible. The shoots should not be pruned beyond shortening by a few inches those of exceptional length, to ensure a proper balance of growth. To obtain well-furnished trees as quickly as possible, instead of cutting the extra strong branches, which are usually produced in the earlier stages of growth, back to within two buds of their bases, as is frequently done, leave them their full length. Secure the shoots in question to the wall in the ordinary way, at a point, say, six or eight inches from where young growths are desired; then carefully and gradually bend the shoots into a horizontal position, with their points inclining to the ground. One or two additional shreds should be used where needed to relieve the strain involved in the process of bending the shoots down. The temporary check thus given to the flow of sap will, in addition to strengthening the weaker shoots, cause every wood-bud to push into growth in due time. Then the several shoots should, as a matter of course, be made secure in the positions they are intended to occupy, and the young growths secured by the "bending process" over the intervening spaces.

In pruning pear, plum, and apricot trees, the shoots should be spurred back to the wood-bud nearest to their bases, and the old spurs, where too close together, be thinned out a little, as crowding of the spurs and shoots, whether on trees under glass or out of doors, is a great evil. Prior to nailing any trees that are infested with brown scale or thrips, the branches should be taken from the wall or fence and be thoroughly painted with a mixture of soft soap and petroleum in the proportion of four ounces of soft soap dissolved in a gallon of water to two wineglassfuls of petroleum. To this mixture add sufficient clay and a handful of fresh soot to give it the consistency of paint. It must be applied to the trees with a brush, care being taken not to injure the fruit buds. This is certainly a tedious process, but I find it is more effectual than a similar solution applied to the infested trees with the syringe. When the trees are syringed not only does the preparation fail to adhere to the wood a sufficient length of time to be effective, but the insect pests on the wall side of each branch escape. Hence the advisability—the necessity—of doing work thoroughly at first.

"A SIMPLE FACT ABOUT" KEATING'S COUGH LOZENGES.—Ask throughout the world, in any country that can be named, you will find them largely sold. There is absolutely no remedy that is so speedy in giving relief, so certain to cure, and yet the most delicate can take them. One Lozenge gives ease. Sold in 1½d. tins.—[ADVT.]

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

Hardy Flowers.—Aconitum autumnalis, Chrysanthemum tripartitum, Campanula coronata, Bupthalmum salicifolium, Eupatorium truncatum, Galium capillipes; Helleborus fœtidus, H. niger major, Tussilago fragrans, Violets.

THE HOUSE.

Baskets and vases of the most beautiful description for the decoration of the drawing-room and other indoor apartments may be formed with Roman hyacinths, Paper-white narcissus, and scarlet Van Thol tulips, which are now coming forward freely from the forcing pit. The whole of these bulbs can be turned out of the pots or pans in which they have been grown, and arranged in the ornamental receptacles without suffering any appreciable injury. A few small plants of Adiantum cuneatum, that have been grown in a cool structure, tastefully intermixed with the bulbs, will materially enhance the general effect. The ferns may also be turned out of the pots. Any light soil will suffice for putting in the baskets, and the surface should have a covering of green moss if obtainable.

CONSERVATORY AND GREENHOUSE.

Camellias.—Extremes of temperature, moisture or drought, will cause the buds to fall; and it will be as well now to see that all camellias are really moist at the roots, for sometimes after the soil becomes dry the water passes away on the outside of the ball without any benefit to the roots whatever. A dry heat is very injurious to camellias now.

Cinerarias should be coming on nicely now to bloom. Those selected for the first bloom to be near the glass and in a warm place; those to be grown on must have a shift, and be kept as cool as possible. Green fly must be kept down, and the cineraria grower has enough to do generally in this business. Plenty of air will be required by all alike, with regular supplies of water.

Heaths, in common with other hard-wooded plants, require at this season of the year a little extra care to protect them from injury by damp, undue fire-heat, and frost. It is a practice with many to nurse them too much, for they love air and light, and have little liking for artificial heat. They should now all be comfortably housed, and in such a way that they may have free ventilation. Watering must be performed with caution, and always endeavour to give them rain water. The best time to water is early in the day, so that the moisture will dry up before closing the house.

STOVE AND ORCHID HOUSE.

Orchid House.—The most complete rest should be secured now to all orchids that ought to rest. There are a few orchids that never rest in a decisive manner, and many others are properly active at this time of year. But the golden rule for the orchid grower now is to keep things quiet till February, heat and moisture being reduced to the lowest possible minimum.

FLOWER GARDEN AND PLEASURE GROUNDS.

Roses belonging to the tea-scented and noisette sections must now be protected where they are much exposed to north east winds. This is especially necessary in the case of standards, which in hard weather are often killed back to the work. If it is not thought advisable to take them up and pack their roots in earth in a shed, tie some haybands in and out among the shoots which form the head, so as to protect all the lower parts of the main branches, leaving the tops unpruned, to bear the full severity of the weather. The ends of the shoots may be killed back some inches, but the ripe and stout wood of the head will escape through being protected, and at the March pruning all the frosted parts will be cut away. Dwarfs on their own roots are the most easily protected by putting fern or straw loosely about them, and then laying a few heavy tiles or bricks over the roots; these keep the litter from blowing away, and preserve the roots from the effects of frost.

FRUIT GARDEN AND ORCHARD.

Bush Fruits to be propagated by cuttings of ripe stout shoots of last season, and the buds to be removed from the bottom of the cutting to within four inches of the top, so as to form a clear stem and prevent suckers. Lay on a thick coating of half-rotten dung between gooseberry and currant bushes, and in dry weather prick it in with a fork, so as to avoid injury to the roots. Raspberries to have a heavy mulch, which is not to be pricked in; any disturbance of their roots is a great injury.

Fruit Trees to be planted with all speed; if delayed much longer, the next year's crop may be lost. Always trim away by a clean cut all bruised and jagged portions of the roots; place the original collar at the level of the soil, so that the tree is no deeper than it was before, and fill in with soil in a friable condition. No tree will prosper if the roots are puddled in with wet pasty earth.

KITCHEN GARDEN.

Mushroom Beds in the open should be kept covered during bad weather with dry straw, and over that reed or straw hurdles, to throw off the wet and prevent entrance of frost. During mild, bright weather take off all the coverings, expose the beds to the air, and cover up again with fresh dry straw. This management will keep the beds in bearing, and without deterioration of the produce. Mushrooms frequently fail at this time of year, owing to the cooling down of the beds. It is impossible to maintain them in a bearing state at a temperature below 60 degrees, and an additional 10 degrees is an advantage. The safest order of procedure is to make up a fresh bed every month.

VILLA FARM.

To urge the importance of perfect drainage of farms as well as gardens may not perhaps be necessary, for it is now generally admitted by those who have had much experience in the cultivation of farm crops that it is practically impossible to achieve perfect success in the production of the hardiest of the crops grown if the soil is water-logged. In some instances the expense incurred in draining land yields but a poor return because of proper attention not being paid to outlets and main drains, and every effort made to keep them clear and thus secure the ready discharge of the water from the small pipes. In the first place, all ditches into which drains empty should receive attention and be cleared out if at all necessary, and the drains should be examined at their outlets to see if they are all right. If during the winter season, or after a long period of wet weather, the water runs freely from them, it will be safe to conclude that they are in a satisfactory state; but, on the other hand, if no water flows it will be as safe to assume that something is wrong. Very often drains are stopped up within a few feet of the mouth, sometimes by rats and sometimes by the roots of trees, and the examination should be commenced at the mouth and be pushed on until the cause of the stoppage is discovered and removed; for so long as there is any impediment to the flow of water along the mains, so long will the whole of the system in connection with them be thrown out of gear and rendered practically worthless. The making, mending, and clipping of hedges, the lopping of trees, and the clearing out of watercourses generally, should be proceeded with, so that the regular hands may be fully employed and the work pushed on ahead as far as is practicable.

THE CHRYSANTHEMUM IN TASMANIA.

By Mrs. Marian Thrower, Representative of the Northern Horticultural Society of Tasmania.

[Read at the Centenary Conference of the National Chrysanthemum Society, November 11, 1890.]

Tasmania is so small a speck upon the surface of the globe, and is so remote from the British Islands, that it is perhaps not very surprising that a great many persons in England know nothing more about it than that such a place actually exists, and some have vague ideas that the inhabitants thereof are still aboriginals, with little or no civilization. It is a matter for no little surprise when such individuals learn that Tasmanians keep pace as far as possible with all movements which interest their fellow subjects in England, and I can safely assert that in no part of the Australasian group is the culture of the chrysanthemum carried on with so much zeal and success as it is in the colony, one of whose leading horticultural societies I have the honour to represent at this Centenary Festival.

Tasmania possesses a climate which appears to be especially favourable to the growth of the chrysanthemum, being devoid of great extremes of heat and cold, and when the knowledge of its culture shall have been as completely mastered there as it has been by the growers in England, I do not think I am over-sanguine in predicting that it is there it will yet be seen to the greatest perfection. And as it can only be by experience extending over some years that this knowledge can be acquired, it will naturally be some time before our happiest results can be achieved.

You in England are celebrating the centenary of the chrysanthemum, whilst we, as a colony, have not yet reached so venerable an age. It cannot, therefore, be expected that we have arrived very far beyond the initiatory stages of chrysanthemum lore, but that we are progressing with rapid strides must be acknowledged by anyone who could compare notes between the position occupied by the flower in the year 1886 and that to which it has attained in 1890. It is only four years ago since the first actual chrysanthemum exhibition was held in Northern Tasmania. It is true that for many years previously the flowers held a subordinate position in the schedule at the autumn flower shows, when very frequently no entries at all were made, for there was never any competition in this class among amateurs, and our professional gardeners held it so little in esteem that when at length the tide of popular favour set in so strongly that they could no longer ignore it, the result was that they found themselves quite or nearly as much in the dark as to the best method of culture to be adopted in our far-off land as were the most inexperienced amateurs. Then recourse was had by both professionals and amateurs to the best English authorities upon chrysanthemum culture, and although much light was thus obtained it may easily be understood that the rules which apply to the English seasons and climates are not applicable to those of Tasmania.

In the year 1886, as I have mentioned, our first chrysanthemum show was held in Launceston, it having been rather hastily improvised by Mr. Ernest Whitfield, who must be regarded as the founder of our now flourishing autumn exhibitions; this gentleman is now president and honorary secretary of the society represented by me upon the present occasion. The flowers which were exhibited at this initial show were not grown upon the principles since followed with exhibition plants, having been allowed to grow in the natural way; but as most of those who contributed specimens upon that occasion were amateurs who, learning through the English horticultural press of the successful results which rewarded the efforts of growers of the chrysanthemum "at home," as England is always known by us, had imported many fine varieties which had until then been quite unknown in Tasmania, it was seen that a wide and interesting field was open to those who would venture to explore it. The immediate consequence of our first chrysanthemum show was an increased desire upon the part of amateurs to improve their collections and to learn something of the methods which would ensure successful culture. At that time less than 100 varieties had found their way to Tasmania, now there is no colony in Australasia which grows so many. Quickly succeeding the establishment of chrysanthemum shows in Launceston the kindred associations in all the northern provincial towns followed our lead, so that the "queen of autumn flowers" may now be said to have a very firm footing in our island. The affiliation of the Northern Horticultural Society of Tasmania with the National Chrysanthemum Society may be considered as marking a new era in its history, and that its future will be a prosperous and eventful one can scarcely be doubted.

The culture of the Chrysanthemum in Tasmania can scarcely be followed upon the lines which obtain in England. With us pot-grown plants find little favour, except as bush specimens or for decorative purposes; the great interest of our exhibitions always centres around the cut specimens. For this purpose we have found that culture in the open ground gives the most satisfactory results. It may not be altogether uninteresting to learn how Tasmanian growers proceed when raising plants. Many strike the cuttings which are taken from the first young growth which arises from the stools of plants which are left in the ground after they have been cut down, and these, when the certainty of having propagated sufficiently is assured, are then removed and thrown away. Some growers strike their cuttings in small pots, keeping them in a cool, close frame for ten days or a fortnight, while others again plant them straight into the open ground, where they remain until they bloom; but the latter method is not common, although I know it is adopt by one of our most extensive growers, who is a very successful exhibitor. A soon as the cuttings are quite established, at whatever season they are taken, they are generally transplanted to the ground, where they make very rapid growth—so rapid, indeed, that it is always necessary to make successional plantings to insure having certain varieties at exhibition time. The period for the general planting out is the month of October, which is early spring with us in Tasmania; but cuttings which are inserted even in November frequently furnish flowers for the show which takes place in April. When the plants have attained a height of about 10 inches it is usual to top them, and the three branches which are thus produced are, as soon as they are of sufficient height,

tied to separate stakes, the axiliary growths being removed as they appear. Each plant thus produces three large blooms, instead of one, as grown upon the single stem mode, and we have found that the blooms are quite as fine, while the more dwarf growth is better suited for garden culture. The plants do not appear to require nearly so long a period for ripening the wood as seems to be necessary in England, the latest plants being generally quite as mature as those which were put out earlier. The rapidity with which the chrysanthemum grows in our climate in most instances precludes us from taking the crown bud, which develops too quickly to be of any use for exhibition purposes. The greater heat of our late summer has probably something to do with this; therefore it is the custom to select the terminal bud, which gives us far more satisfactory results. Much difficulty was experienced by those who at first adopted the single stem plan of growing, for so many of the varieties grew to so great a height as to render it almost impracticable to give them sufficient support, and to protect them from the high winds which often prevail in our autumn season; so that as it was evident that results quite assatisfactory were obtained from topping once in the early stage, that plan is most generally adopted.

As our climate is very much drier than that of England, it goes without saying that a great deal of labour is necessary as soon as the summer sets in, so that the plants may suffer no check, and it is therefore indispensable to mulch all the ground upon which chrysanthemums are grown very heavily with well-decayed manure before the spring rains have quite ceased; by this means a good stock of moisture is stored up to meet future needs. Then, when all disbudding is over, and the season of bloom is approaching, all those who are growing for exhibition purposes set about giving the plants copious doses of liquid manure; bnt as each grower in our locality seems to have some pet liquid for this purpose, it would be rather difficult to say which is most in demand. Some use chemical manures, others soot water, stable manure liquid, bone dust, or guano liquid.

We have many enemies to contend against during the whole period of the growth of our favourite flower. To begin with, the mildness of our climate permits such midnight marauders as slugs to play deadly havoc among the tender foliage of newly-rooted cuttings, necessitating much watchfulness. Scarcely have these foes left the field than many growers who have plants and cuttings which have been imported from England find that they have imported with them a black fly which haunts the newly-unfolded leaves, and is very difficult to dislodge. Later we have unwelcome visitors in the form of small green worms and caterpillars, which do much harm to the bud shoots; then, when all appears to be smooth sailing, mildew makes its appearance, and sometimes a small green fly follows this; but what is more objectionable than any of these is the sudden damping of the blooms just when success seems most certain. With regard to the latter trouble, however, I have seldom seen it affect the Japanese varieties, and only certain of the incurved, those which generally suffer most being the Empress of India, the Queen family, Alfred Salter, and some others—for, strange to say, many varieties which grow in the same bed, within a few feet of those named, do not suffer at all.

The drawback to the system we pursue of growing exhibition blooms entirely out of doors, is the liability to which they are exposed of being injured by early frosts which occasionally visit us in the autumn, so that it is sometimes necessary to have a kind of elevated frame over which light canvas may be drawn to avert injury to the flowers. In addition to all the best known and esteemed varieties of incurved and Japanese, good collections of reflexed, Anemone flowered, Pompons, and fimbriated varieties may be seen at our exhibitions, but there is no question that Japanese varieties are preferred by the majority of our growers, probably on account of the greater difficulty which exists in producing perfect types of the incurved varieties, as well as the greater adaptability of the former for all decorative purposes. Our exhibitors have yet much to learn from the old country in the matter of staging, arrangement of colours, and other matters which have to be considered, as well as the production of flowers which are fit for exhibition. Exhibitors, too, are not always satisfied with the decision of the judges, who are sometimes not as experienced as could be wished, but this is a difficulty which time will remove, as men of home experience find their way to our shores and introduce some of their ideas among us.

The competition among both professional and amateur chrysanthemum growers is very keen, and the contests are always very close ones, many of the exhibitors travelling as far as from Hobart to Launceston, and *vice versâ*, a distance of 130 miles by train, with their exhibits. Tasmania is destined to occupy a premier position among the Australias with regard to chrysanthemum culture, owing to the great superiority of its climate, the scorching hot winds of summer upon the mainland having a most deleterious effect upon the plants, while the water supply of the colonies adjoining Tasmania is not at that period adequate to the demands made upon it. I feel that it is a matter for congratulation that our society is privileged to be represented among the affiliated societies of the National Chrysanthemum Society upon this most auspicious occasion, although I consider it is to be regretted that a member no better qualified than myself to speak upon chrysanthemum culture should have undertaken the task, but I trust that my endeavours to throw some little light upon matters as they exist at the Antipodes will be received in a spirit of indulgence and toleration of my shortcomings.

I cannot conclude without expressing a deep regret, not only on behalf of the Northern Horticultural Society of Tasmania, but also upon my own, at the untimely decease of the late honorary secretary of the National Chrysanthemum Society, Mr. William Holmes, whom I had the pleasure of meeting, and to whom I am indebted for many acts of kindness and courtesy.

TWO GOOD APPLES.

AT some of the recent exhibitions where large numbers of dishes of apples were staged, no kind was more generally shown than Warner's King, which proves that this variety is becoming, or, what is more proper, has become very popular. The other apple, which also belongs to the culinary class, is Flower of Kent. The admirable examples of the last-named, staged by Mr. Thomas Hall, at Portsmouth, Winchester, and Salisbury, were sufficient to commend the variety to all who saw them. It would not appear that this kind is so extensively grown as it should be, or it would be more frequently seen at exhibitions.

C. W.

RENOVATING ORCHARDS.

By Mr. JOHN WRIGHT.

Read on behalf of the British Fruit Growers' Association, at a meeting of the Falmouth Horticultural Society, November 12, 1890.

(*Concluded from page 758.*)

THE quickest method of storing food in the earth for immediate appropriation by trees is in the form of liquid manure, such as the drainage from stables and manure heaps, or the contents of cesspools—sewage. After much experience I am justified in recommending the application of liquid manure, more particularly that from cesspools, to debilitated fruit trees in the winter under certain prescribed conditions. It may be applied usefully in the summer also if the soil is moist, not on the surface only but three feet or more below it, otherwise a minimum of benefit will accrue from a maximum outlay in material and labour. On this subject I cannot do better than reproduce what I wrote in the *Journal of Horticulture* a little more than a year ago. Those who have read it I ask to read it again and find all the fault they can with it. They had better do this before making full trials of the method indicated, because they will not have such a good chance afterwards. Here is the article that was founded on long practice. The simple plan advocated has since been tried by others and not found wanting.

"Some time ago a correspondent said he failed to see how liquid manure given to fruit trees in the winter could be of any benefit, as the roots were then in a dormant state. In the first place they are not in a dormant state after the leaves fall, though they do not imbibe nutriment from the soil to anything like the same extent as in summer; and in the second place they do not imbibe what they need either in summer or at any other time when the food for which they are hungering and thirsting is not in the soil. That is the condition of thousands of trees in summer and winter. They have been planted for years or generations, and manure may or may not have been placed round their stems from time to time. Be that as it may, the roots have deprived the soil of all that was good for the trees, and gone further and deeper in search of more—seeking, but not finding that which is necessary for their sustenance. They have lived but not prospered, and never can prosper until the impoverished food store (the earth) is replenished—supplied with matter which is essential to their health.

"Unquestionably this may be given with great advantage in summer if obstacles do not forbid its application then, and in no other way can it be so quickly effective as in a liquid state. At no period are the roots of fruit trees of all kinds so active as early in September, and at no period can so much nutriment be imbibed from the soil in a given time when the earth is in a fit state for its reception. It is not in a fit state when it is dry, and I have no hesitation in saying that the best of liquid manure that can be procured does immeasurably less good applied in summer, when the soil, in which the roots are situated or trying to move, is dry, than in winter, when it is moist—not waterlogged, but moist enough for absorption, while at the same time permitting of free percolation, for where water passes through the soil air follows, and there can then be no stagnation. The earth, then, to be in the best condition for the reception of liquid manure, must be moist, yet sufficiently drained naturally or artificially.

"During the summer months the earth may appear moist, and is moist, it may be, to a foot or so in depth, even under and near long planted, large, yet enfeebled trees; but below the moist layer in which there are few or no roots, we find on digging that the earth is as dry as powder, and it is in this dry understratum that the chief of the roots are established. This should be thoroughly moistened with clear water, then, and not till then, following with liquid manure. But it is often most difficult, and it may be impracticable, to make the impoverished soil moist during the summer season of the year, in which the roots of starving trees are established; and beyond question the autumn rains and winter snows do the important work more effectively and cost nothing. Then is the time to empty cesspools and pour the contents into the ground; of course, when the surface is moderately dry. At that season of the year the liquid can be given twice the strength it would be safe to apply it when the roots are in an active state; in fact, it is not easy, I suspect, to give it too strong in winter. Some of the virtues may pass away, but the bulk will be retained by the moist soil, and be imbibed by the roots to the certain benefit of the trees.

"I have used thousands of gallons of the contents of cesspools that could only be emptied in winter, with the most striking benefit to all kinds of fruit trees and bushes which only needed sustenance to render them bearers of excellent fruit; as I gained courage from experience the liquid was less and less diluted, and the stronger it was the more marked was the effect beneficially on the trees. If the soil is moist in summer liquid manure may be given with advantage to fruit trees that obviously need support; but the very strong may need to be somewhat diluted. It is worse than useless applying it to dry soil, as it drains down, leaving little of its virtues behind, and may in passing do injury to some of the roots; but apart from that the practice is wasteful, and therefore should be avoided.

"When travelling in Lincolnshire, in August last year, I had the pleasure of calling on a clergyman, who is also an ardent gardener. I had known the old espalier and other trees in his garden for years. Many of them had the appearance of being worn out, and most persons of an improving turn of mind, with the means of carrying out their ideas, would have destroyed the old trees and planted young. Some were planted, but the old were retained and nourished. I was somewhat astonished to see the change they had undergone since the previous year, thick deep green leaves in place of the pale and thin; stout short-jointed, well-fed wood in place of the weak; large fruit in place of the small, clean and rosy in place of the speckled and sickly hued. This rapid renovation had been effected by liquid manure given strong and plentifully in the winter.

"I had exactly similar experience in years gone by, and in the same village. Whether the vicar came to hear of this I know not, or whether he remembered something he had read on the subject, or whether it was a question of wasting the sewage or not, and so he ventured to try it on the old trees, not minding much if he killed them; I am not able to say, but the fact remains he did pour the strong stuff into the ground, when it was naturally wet in winter and the trees leafless; then when the spring came, and the summer advanced the sturdy shoots and thick dark leaves, the bold buds and good fruit told plainly that the food in solution given in winter when the trees were resting was not lost, but retained and appropriated. In no other way could the enfeebled trees have been improved so quickly, decidedly, and cheaply.

"It is nearly thirty years since some cesspools on the premises of a gentleman could only be emptied in the winter. The contents were applied to old trees in an orchard, completely saturating the ground, and there was no mis-

taking the effect of the application. It was then used in the garden, being given to trees of various kinds near the walls and in the open that appeared to need extra support; also to gooseberries, currants, strawberry beds, and raspberry plantations with the most satisfactory results; indeed, for seven years they had no manure beyond the sewage, and this was only given in winter. The owner of the trees and bushes, and all else who knew them, were satisfied that they became much more healthy and grew far better crops of fruit after being thus treated than they had ever done before, and canker wounds healed freely in some apparently worn-out apple trees that were invigorated in the manner described. To be effectual, the application must be thorough, surface dribblings being of little use."

It may be thought, and is thought by some cultivators, that liquid manure applied in winter passes through the soil into the drains. This is not so when the soil is moist and not too sandy for fruit trees. The liquid is not lost, but filtered, that which is least wanted, then (almost pure water), passing away, that which is most wanted—the virtues of the liquid—being retained for the support of the trees. This anyone could prove by experimenting with a large flower potful of moderately firm moist soil.

In order to aid the penetration of the liquid quite down to the roots of trees holes made with a crowbar are useful, particularly on sloping ground, filling them over and over again. These food receptacles should not be close to the stem only, for the most active feeding roots are at a distance from it about equal to the spread of the branches. The deeper and wider and more numerous these conduits are the better, especially when they are afterwards filled, as they should be, with a rich compost rammed firmly. A mixture of loam, wood ashes, and leaf mould in equal parts, well incorporating with each bushel 3 or 4 lbs. of superphosphate of lime, used in the manner suggested will soon be taken possession of by a mass of fibrous roots, and the trees will be improved accordingly. I have seen some striking results follow that practice in the renovation of both fruit and ornamental trees on grass.

One of the most remarkable instances of improving fruit trees not on grass that has come under my notice was in the garden of Mr. Edmund Tonks, a gentlemen of great scientific attainments and practical skill in Warwickshire. He planted an extensive collection some years ago, but the trees appeared to become old prematurely, growth practically ceased, the stems were as if devoured by canker, and the fruit was worthless. The soil was heavy, and, as was subsequently found out, poor, or in other words, contained little of the manurial essentials for maintaining healthy growth. Having ascertained what the soil lacked, and what apples needed, the necessary ingredients were obtained and applied. These were superphosphate of lime twelve parts (or lbs.), nitrate of potash (saltpetre), ten; chloride of sodium (common salt), four; sulphate of magnesia, two; sulphate of iron, one; and sulphate of lime (gypsum), eight. These were well mixed in the proportions named, and applied to the soil yearly at the rate of a quarter of a pound to the square yard. Improvement was soon manifest, and when I last saw the trees at least 10,000 canker wounds were healed, and not one could be found in which the disease was active, yet nothing had been applied to the branches. In that case canker was the result of starvation, and with proper food the trees were restored to health and usefulness. The above may be said to be a complete manure for apples, but as the majority of soils are not lacking in all the essentials, what may be called simpler applications usually do great good. A mixture of six parts (or pounds) of superphosphate of lime, three of muriate of potash, and two of sulphate of ammonia, applied at the above rate will generally improve enfeebled trees, as also will guano guaranteed to contain not less than 8 per cent. of ammonia, and 20 per cent. of phosphates. All chemical manures used as top-dressings should be applied not later than February; sprinkled on the land in late spring or summer they do little good, as they are apt to remain undissolved for a very long time, and therefore cannot be taken up by the roots. If used in solution they act quickly. For enfeebled fruit trees a pound of guano may be dissolved in 10 gallons of water, or the same quantity of the "simple mixture" above mentioned, either of which, applied in winter, will be bound to do good if it reach the roots. It may be mentioned that the strength named is twice what suffices for general garden crops other than trees. A peck of poultry or pigeon manure dissolved in twenty gallons of water is also excellent for debilitated trees. A farmer of my acquaintance gives a water-cartful of stable drainage to a favourite apple tree every year when it is swelling its blossum buds, and it seldom fails to reward him with £5 or £6 worth of fruit, "leaving a profit," he said, "greater than he could obtain from an acre of wheat." If he applied the liquid earlier it would do just as much good, possibly more, but given much later would be much less effectual. The tree is on grass, and the variety Gascoigne's Scarlet Seedling.

Something must be said on pruning in the renovation of enfeebled orchard trees. The interior of many trees is just a thicket of useless growths, fruit being produced on what is termed the "outside" of the trees only, where the leaves are exposed to the light and air; indeed, it cannot be produced under any other conditions. The aim, then of the improver should be to invigorate those outside growths, which, perhaps, do not extend more than an inch or two a year. They must not be shortened nor materially thinned out, but the pruning must be confined to the removal of the useless shoots and small branches that start from the larger or "arms" of the tree, and push upwards in their endeavour to reach the light. They bear nothing but leaves, and it is not in the power of man to make them do anything else; but what they do is this; they divert the sap from the fruit-bearing parts, and to that extent deprive them of the support they need for making them stronger and more productive. The crowd of growths in the centres of old trees where no sun and little light can reach may be likened to robbers, and should be cleared out. Shortening them will not suffice, but may make matters worse; they should be cut or sawn off close to the large branches from which they spring, and the wounds pared smooth with a sharp instrument. The sap will then flow direct to the fruitful parts, and these will be strengthened accordingly. If the soil is enriched the growths will be still further strengthened, and may be trusted to find themselves room on the outsides of trees; at least when these stand, as they should, distinctly apart from each other.

It will be seen that the method of renovation advocated resolves itself into this—giving the famine-stricken trees the food they so urgently need, and clearing the way for its distribution through the stems to the spur and fruit-bearing parts that are exposed to the direct action of light and air; but in removing the obstructive growths from the interior of trees, what may be termed a small matter of very great importance, must not be overlooked, or the trees will soon be choked worse than ever. In the spring following the pruning, which cannot be done too soon, clusters of young shoots may push from the main stems from which the useless parts have been cut. Obviously if these are allowed to extend they first divert the sap from where it is required for fruit production, and subsequently soon fill up the trees with another horde of robbers. Nothing is more easy than to prevent this, and nothing more certain than that it has not been prevented in the case of thousands of trees, and the pruning has consequently been proclaimed as having done no good. Of course it has not under the circumstances, but that is the direct result of either thoughtlessness or negligence. What ought to be done is this—when the young spring growths referred to are an inch or two long, an active man should rub every one of them out by the socket, going over the tree two or three times if needed. Cutting them off is of no use. The work is quickly done, and is absolutely necessary if the pruning is to be effectual.

Cleansing old and neglected fruit trees is a necessary operation in their regeneration. Not the stems alone, but the branchlets and fruiting spurs may be thickly covered with moss and lichens. The incrustations should be scraped from accessible parts, and then lime-washed, and where the scraping cannot be done, as in the most important parts—among and around the fruiting spurs, these should be thickly dusted with freshly slaked lime on a still day when every tree is dripping with wet, such as after a mist or fog. It is easily and quickly done. Send a man with a scuttle of lime on his arm up a ladder that reaches well above the tree. Let him dash the lime about in all directions, under and over the branches, sparing it not, yet letting every handful "tell," and if he does his work well, the trees when dry will be as white as if covered with hoar frost, and the moss will vanish, leaving the wood perfectly clean. Nor should the lime that falls on the ground be considered as wasted. It will do great good. There can be no really healthy trees without lime in the soil, and there is seldom any in that of old orchards, except on the limestone formation, and often not enough there in the upper layer of soil, for it has either been washed down by the rains or extracted by the trees during their long occupation of the ground. The application of lime in the manner advised is unquestionably highly beneficial to moss-laden fruit trees.

Insects when present must be extirpated. One of the worst of these is the woolly aphis or American blight, which often crowds into every crevice, punctures the bark, and does incalculable injury. It may be destroyed with a solution made by dissolving two or three ounces of soft-soap and a walnut-sized lump of soda in a gallon of boiling water, and while hot stirring in violently half a gill of petroleum, such as is burned in lamps. It should be brushed well into insect-filled crevices, stirring the mixture as the work proceeds, and some may be syringed with advantage all over the trees. Fruit trees syringed every winter with this mixture are usually kept free from moss and insects on the stems, though some may attack the leaves in summer. Pure petroleum has been advised for fruit trees, and though in some cases it may not have done harm, in others it has proved fatal to the trees. It is wasteful and foolish to resort to dangerously strong remedies when weaker and quite safe applications are effectual.

The subject of renovating fruit trees is a great one, and unquestionably important. It cannot be usefully treated in a few words; therefore, at the risk of being tedious, I have felt it undesirable to skim over the surface, and have endeavoured to describe in plain language methods which have proved successful in accomplishing the object in view. But while many old orchards may be, and should be, greatly improved, I am convinced that the fruit of the future that will command attention in our markets will be the produce of vigorous young trees not planted in or on the sites of old plantations either of fruit or of forest frees, but in fertile soil (not in damp valleys), such as is capable of growing first class crops of wheat, clover, and potatos. Let all who have old orchards make the best of them by all means, but also let all who can do so plant young trees.

ADVANTAGES OF TRENCHING.

Your remarkably able leader at page 755, on the autumn and winter preparation of the soil, was well timed, and cannot fail to be of great service to the general body of cultivators. To bring land into a friable and otherwise suitable condition to receive seeds and plants in spring no time ought now to be lost to have it well exposed to the elements, and a free passage for air and moisture secured. This is best obtained by trenching and ridging, and where the soil is of a tenacious character no better system of cultivation can be adopted. Besides the advantages resulting from the action of frost upon the particles of soil, and the chemical agency of the several atmospheric compounds in converting inert and inimical substances into an available plant food, there are other benefits which materially aid the cultivator in bringing the land into its maximum state of fertility; for instance, some portion of the salts which constitute the plant food in the soil, is, in course of time, carried down to the substratum, and placed beyond the reach of the roots. Therefore, deep cultivation is of importance in rendering them available for the support of the plants. Trenching is also one of the best means that can be employed for exterminating slugs and other pests.

Although good results may be expected from deep cultivation, yet the way in which this work is done will, as you so clearly show, have much to do with the success attending the work. It is possible to err in this, as in anything else, through the want of forethought or a familiarity with the details. Errors of judgment or want of knowledge often lead to the expression of prejudiced opinions respecting the advantages and disadvantages of certain operations. The larger portion of the organic constituents of the soil are found within a foot of the surface, and the strata below is chiefly rich in mineral salts, therefore the mineral matter is placed within reach of the roots by trenching. The manure should be kept near the top, and not be put at the bottom of the trench (as I have occasionally seen done), that the subsoil which has been brought to the surface may contain all the essential forms of plant food, and be able to meet the demands of subsequent crops. If an opening two feet wide and two feet deep be therefore taken out, the work can be proceeded with by putting the top spit into the bottom of the trench, and on this a layer of manure or lime, or both if desired, and the bottom spit, or subsoil, be ridged on the top. By this course of procedure a large body of good, friable, well-drained loam, in which deep-rooting plants will luxuriate, will be the result.

Castle Howard, York. J. B. Riddell.

BLOOD AS MANURE FOR VINES.

YOU will confer a great favour upon me by permitting me to state that according to my experience blood is one of the most valuable manures we have. I am especially anxious to refer to the matter, because at the present time it is allowed to run to waste from many slaughter-houses in the United Kingdom, instead of being employed for maintaining the fertility of the land.

As indicating the value of blood as manure when judiciously used, I would say that I have had under my charge during the past eighteen years a large vinery, from which good crops have been obtained during the greater part of that period. Three years ago the condition of the vines clearly indicated to me that the border was becoming exhausted, and I at once took steps to restore them to their accustomed vigour and productiveness. I accordingly gave the border a liberal dressing of manure that had been saturated with blood from the slaughter-house. This was forked into the border to a depth of eighteen inches, and in due course the vines presented such a greatly improved appearance as to show that the application had been beneficial to them. The first summer after the border had received the dressing the vines made a more vigorous growth than for several years previously, and produced a fairly good crop. In the second season they presented a perfectly healthy appearance, the foliage being large, stout, and of a rich deep green hue, and the crop heavy and highly finished. As a further proof of the suitability of blood as a manure for vines, I will briefly give the results from its use in a neighbouring garden. A friend of mine asked me in the month of December of last year to advise him as to the course that should be taken in improving the condition of his vines. On a careful examination I found that they were in an unsatisfactory condition, owing, as I then believed, and as the results proved, to the impoverished state of the border. I advised him to give each vine one pailful of blood from the slaughter-house and fork it into the soil. This he accordingly did, and the vines showed a great improvement during the past summer, both in the growth and in the weight and quality of the crop. The application is to be repeated this season, and I have no doubt that next year the vines will show still further improvement.

For fruit trees also I have in the course of a long practice found blood one of the best manures, and the great body of fruit growers should not continue to persistently ignore its value. It is quite certain that many of the fruit trees which at the present time are considered to be worthless could in two years be restored to a healthy and productive condition by the application of a moderately liberal dressing of this fertilizer. It should be applied as a liquid and be forked into the soil as in the case of the grape vines. As a stimulant for chrysanthemums and roses, I use in a diluted form the liquid which drains from the manure heap, reserving the supplies of blood for the vines and fruit trees.

JOHN JENKINS.

Tenby.

FURTHER NOTES ON LATE CHRYSANTHEMUMS.

By J. KIPLING, Knebworth.

ALTHOUGH there are now a goodly number of chrysanthemums that are naturally so late in flowering that they may be had in bloom at mid-winter without much difficulty, to have them in bloom before or after Christmas depends very much on the time at which the plants are propagated. It may, indeed, be said that early or late propagation is the principal pivot, so to speak, on which the whole system revolves of having them in bloom either in the autumn, at mid-winter, or early in the spring, and, if thought desirable, to girdle the year with their flowers by calling in the aid of the early-flowering summer kinds.

The chrysanthemum as first introduced into this country may have been later in flowering than has of recent years been the case under the ordinary course of culture. It is just possible that during the first half of the century in which it has been cultivated in England, and before the great November shows, necessitating early propagation, were established, the early part of the winter was its proper season of flowering. Whether that was the case or not I know that having them in flower very late, as is now the case, is no newly-found secret, but simply an old practice revived.

To the National Chrysanthemum Society belongs the honour of being the first to encourage and extend the cultivation of plants for late flowering, and so prolong the season of their usefulness. It will, however, be no detraction to say that the society was not the first to initiate the practice of growing chrysanthemums for mid-winter flowers. I had chrysanthemums in bloom until the end of February for several years previous to the society's first mid-winter show. But to go back to a much earlier date still, in fact, to the years 1858-61, the time of my apprenticeship days and of my first acquaintance with these flowers. The locality was in Staffordshire, and there it was no uncommon thing to see the old-fashioned ridge and furrowed roof conservatory under my charge gay with "mums" all through December and January. The bare mention of that old conservatory gay with its chrysanthemums always calls up unpleasant reminiscences. On that ever-to-be-remembered frosty night preceding Christmas Day, 1860, so fatal to vegetation throughout the country, I found it impossible to keep the frost out of the conservatory. It was very sad on the Christmas morning to see after a hard night's work at stoking the greater number of the occupants of the conservatory stiff with frost, and at mid-day to find that all the flowers of the chrysanthemums, which contributed so largely to the display had been completely destroyed.

It is worthy of remark that in the Staffordshire garden the plants were not raised from cuttings, nor, indeed, grown in pots. The old stools were simply divided up every year, after they had been cut down, and the roots trimmed. They were then planted on a north border, this being usually done about the middle of April. The shoots were pinched back a few times during the summer, and in September the roots were once or twice cut with the spade to prepare them for being lifted in October, and placed in tubs. These tubs were from eighteen inches to two feet in diameter, and were used because of their being more suitable than pots for holding the large balls of earth about the roots. When they were put in the tubs they were usually placed in a wooden shed with a glass roof, in which they remained until they had recovered from the check received. During their stay in the shed they received the final staking and tying. From the shed they were taken to the conservatory, this being done some time in November. No thinning out of buds was practised, and as some of these bushes exceeded four feet in diameter they produced immense numbers of flowers.

Concerning the lateness of the period at which these old tub specimens were to be seen in bloom, it might be asked, What were the causes that conduced so much to that end? In answer I should say the late planting out into borders, the autumn lifting, and the placing in tubs. The somewhat cold and late locality may have had a share in retarding them. The varieties, of which there were not more than a dozen, may have been naturally late, but their names I fail to recollect, except that some of them were known as Somebody's Purple and Yellow, and Bronze Red. I can also remember that they included both incurved and reflexed varieties. The form of the flowers was, however, in that locality in those days, of little consequence as compared with obtaining as large a number of blooms as possible.

MUSHROOMS IN SHEDS AND GREENHOUSES.

By C. WARDEN, Clarendon Park, Salisbury.

IT is not all who have a well-constructed house in which to grow mushrooms, nor should anyone who has not such convenience be deterred from attempting to grow them on that account. Many who have such places devote them to other crops, such as seakale and rhubarb, and also chicory, where it is liked, and grow their mushrooms in other places. In all makeshift places it is necessary to have the bed where it is free from drip, that is, if under the stage of a house where plants require frequent waterings, or even where watering is necessary at all. A canvas or some kind of shutter should always be placed over the bed to prevent any drip whatever reaching the materials. As is well known to all gardeners, nothing succeeds under drip, and it would be quite futile to expect a mushroom bed to do so. We grow mushrooms rather largely under stages, but as soon as the beds are made up the precaution is always taken to cover with shutters. Another mistake often made with beds exposed to light, air, and other influences is to leave the surface of the bed uncovered. Mushrooms require a temperature more or less uniform, and as far as practicable, a regular degree of moisture, and this condition can only be ensured by covering the surface of the bed.

As soon as the bed has been covered with a layer of soil, and the heat has subsided sufficiently to admit of its being done, a good layer of mouldy hay is put on the surface, as this effectively excludes the air, and protects the surface from the changes of temperature. In greenhouses a thin coating of hay will be found sufficient, and that need not be very thick, but in sheds and outhouses the covering should be heavier, and if sufficient hay cannot be secured, the stable litter from which the short manure has been taken in the preparation of the beds may be used. In the latter case the layer should be twelve inches in thickness. Care should always be taken to cover the beds at the right time, and that is before much of the heat has gone from them. The covering will maintain a genial warmth, but some judgment is necessary not to apply it too soon. If the manure forming the bed is at all fresh, the temperature will exceed the requirements of the case, but when put on at the right time it is almost invaluable. From what I have seen of beds in unskilful hands, I am satisfied that many of the failures may be attributed to this cause alone. Another general cause of the failure of mushroom beds is their becoming too dry. The beds are frequently made up before the manure has been properly prepared and the fierce heat drives off the moisture, and on its declining leaves the bed a dry mouldy mass. If the spawn does not run the bed is too dry to produce mushrooms; so should this be found the case, the bed must be watered about six weeks after the surface was covered with soil, using a water can with a fine rose or the syringe, as may be the most convenient. The temperature of the water should be about 100 deg., and it will be an advantage if the watering is done through a portion of the covering, and a little more litter then shaken over it. The moisture will gradually pass through to the bed and the damp surroundings will be all that is necessary to produce the mushrooms. In heated houses this watering may be repeated after each gathering of mushrooms, or, say, over a week, but in cold sheds much care is necessary or the bed will become damp and cold.

In gathering the mushrooms always lift the whole clump and take care to remove the hard lump at the base of the stalks, for unless this is cleared out, no other mushrooms will come in the same place. It is also well to fill up the holes made in removing the mushrooms with some fine soil, and after the productiveness of the beds begin to wane, a watering with salt water prepared by dissolving a handful of salt in four gallons of water will afford them material help. But this must not be used if the surface of the bed appears to be too damp already. Salt judiciously applied is now well known to be a great aid in the production of mushrooms. In gathering the mushrooms we always have a pointed stick of sufficient length to reach to the further side of the bed, and with this we turn the hay over carefully, clearing a small portion of the bed at one time and gathering the mushrooms as the turning of the hay proceeds.

There are few people who do not appreciate mushrooms, and I know from experience that when produced under some such conditions as those described above they are in every way superior to those obtained from beds exposed to the influence of a dry atmosphere.

Exhibitions and Meetings.

BIRMINGHAM POTATO EXHIBITION, November 29 to December 4.

The annual competition for the prizes for potatos offered at the Bingley Hall, Birmingham, is regarded with much interest by visitors to the Fat Cattle, Pig, Sheep, and Poultry Show, and on the present occasion a splendid lot of tubers were staged. They were, on the whole, of good table size, clean, and exceedingly uniform, the only drawback being occasional fork marks, which the judges considerately exposed to view. The competition was strong, but the amount of space occupied was full twenty lineal feet less than last year, the number of newer varieties being exceedingly limited. As will be seen below, three noted exhibitors carried off the bulk of the prizes, but it is probable that if the schedule of prizes was so framed that the competitors in the large classes were excluded from the smaller ones, there would be a much keener competition. As it now stands, those competitors who possess an unlimited store of tubers can exhibit in every class and win over the heads of those of restricted resources. Small growers shrink from these open competitions because they feel that they would be over-matched. The collections staged included 3,260 tubers.

For Twelve Varieties Distinct, twelve tubers of each, His Grace the Duke of Portland, Clipstone Park Farm, Mansfield, Notts, was first, with Reading Russet, Sutton's Satisfaction, General Gordon, Vicar of Laleham, Empress of India, The Belle, Sutton's Abundance, Sutton's Seedling, Crimson Beauty, The Daniels, Snowdrop, and Windsor Castle. The second prize was awarded to Mr. J. Hughes, Eydon Hall Gardens, Byfield, Northamptonshire, for Windsor Castle, Adirondack, Pink Perfection (a very fine round), Satisfaction, The Colonel, Purple Perfection, Mr. Bresee, Abundance, Chancellor, Fidler's Reading Giant, Queen of the Valley, Fidler's Prolific, Purple Kidney in the way of Edgcote Purple, Captain, Prize-taker, and Mammoth Pearl. The third prize went to Mr. E. S. Wiles, gardener to R. A. Cartwright, Esq., Edgecote Park, Banbury, who had Abundance, Reading Russet, Purple Perfection, Satisfaction, Pink Perfection, Reading Giant, Edgecote Purple, Chancellor, Snowdrop, Mr. Bresee, Mottled Beauty, and Prolific. In an unplaced set we noted grand forms of The Dean, Schoolmaster, Sutton's 36, and Early Rose.

The Duke of Portland was also first for eight dishes, and had fine examples of Vicar of Laleham, Abundance, King of the Russets, General Gordon, Satisfaction, The Colonel, Edgecote Purple, and Crimson Beauty; Mr. J. Hughes, second, his finest forms being Queen of the Valley, Satisfaction, Mr. Bresee, Pink Perfection, and Reading Giant; Mr. E. S. Wiles, third, with Pink Perfection, Reading Giant, Snowdrop, and Edgecote Purple. There were five unplaced lots, from which choice dishes were selected of Early Vermont, Magnum Bonum, John Standish, White Elephant, Reading Ruby, and Beauty of Hebron. Nine competitors staged six dishes each, the Duke of Portland once again taking the card, staging faultless tubers of White Perfection, Reading Russet, Empress of India, Windsor Castle, and Satisfaction; Mr. J. Hughes, second, his best kidney being Reading Giant, and Purple Perfection as the best form of round; Mr. E. S. Wiles, third, his best dish of kidney being Snowdrop, and Purple Perfection for round. Among the unplaced sets was one "too late for competition," comprising several dishes of exquisite form, but bearing traces of careless lifting.

For four dishes (two white and two coloured), Mr. J. Hughes gained by a point or two the premier award, his most shapely forms being Sutton's Satisfaction, and Pink Perfection; Duke of Portland, second, with fine examples of Satisfaction, The Dean, Empress of India, and Sutton's Seedling; Mr. A. V. Cross, Shutford, Banbury, third, who put up Mr. Bresee, Snowdrop, Sutton's 36, and Vicar of Laleham (a trifle rough).

For four dishes, suitable for field or farm culture, six collections were submitted, Mr. J. Hughes taking the lead with Satisfaction, Abundance, Reading Giant, and Queen of the Valley; Duke of Portland, second, with Beauty of Hebron, Reading Russet, Schoolmaster, and Stourbridge Glory; Mr. E. S. Wiles, third with the Colonel, Reading Ruby, Adirondack, and Beauty of Hebron; in addition Magnum Bonum and Imperator were selected as leading forms in this section.

For two dishes, long or kidney shaped, seven staged, Mr. E. S. Wiles presenting most shapely samples of Edgecote Purple and Snowdrop; Mr. J. Lye, Clyffe Hall, Market Lavington, Wilts, second, with Sutton's Satisfaction and Sutton's Seedling; Mr. J. Hughes, third, with the Colonel and Reading Ruby. The prizes in the corresponding class for rounds were awarded as follows: Mr. J. Hughes, first, for excellent tubers of Sutton's Satisfaction and Purple Perfection; Mr. E. S. Wiles, second, for Satisfaction and Reading Russet; Mr. T. Morgan, Acton Burnell, Salop, third, for Reading Russet and King of the Russets.

For a single dish of kidney varieties, Mr. J. Hughes was first, with Reading Giant; Mr. E. S. Wiles, second, for Sutton's Satisfaction; while for a dish of rounds Mr. J. Hughes led with large smooth tubers of Sutton's Satisfaction; Duke of Portland, second, with General Gordon. For the handsomest dishes Mr. J. Hughes and Mr. E. S. Wiles divided the honours with perfect specimens of Satisfaction. In the single dish class for kidneys were some very handsome forms of Matchless and Victory, and among the rounds the variety known as John Standish arrested attention.

The seedlings not in commerce submitted for honours included Duchess of Fife, a white kidney with bright skin, but rather inclining to a pointed end; a first prize was awarded to Mr. J. Hughes, the second going to Mr. Morgan, for D's Seedling, a large pebble-shaped round. The other forms on view were Golden Drop Seedling, a white kidney, possessing points of promise; and Cross's Seedling, a white round of excellent form, with painted eyes after the style of Lye's Favourite.

Seed firms were well represented at Bingley Hall, especially noticeable being the extensive display of Messrs. Webb and Sons, who had about seven hundred handsome mangolds, swedes, turnips, Kohl rabi; with grasses, seeds, &c., and about forty dishes of potatos; their customers being generally very successful in the competitions for agricultural roots. The English Fruit and Rose Company, Hereford, staged seventy dishes of apples, Peasgood's Nonsuch, Pomme de Niege, Egremont Russet, and Cheshunt Pippin, being especially good. Messrs. Harrison and Son, Leicester, exhibited a collection of potatos, including The Bruce, a very hardy variety, The Bouncer, and Utility, varieties said to be largely grown in Scotland; and Dickson and Co., Chester, also exhibited specimens of grasses in the straw and seed, examples of hardy trees, evergreens, &c., and a fine collection of apples gathered from the young trees in their nurseries.

BEDFORD CHRYSANTHEMUM SOCIETY, November 19 and 20.

This society's annual exhibition was held in the Corn Exchange, Bedford, on the above dates, and was much in advance of any previous show in the town, and may be described as bright, varied, and attractive. Although the primary object of the society is to encourage the culture of chrysanthemums, its exhibitions are made somewhat more varied and attractive than are the majority of chrysanthemum shows. This is done by associating with it exhibitions of cage birds, fruit, and vegetables. Our notes must be confined to the chrysanthemums, fruit, and vegetables.

Groups are always a leading feature at Bedford, and as a rule are well done, especially in the open class. For the best and most tastefully arranged group, not to occupy more than fifty square feet, Mr. J. Pestall, nurseryman, Bedford, was first, the plants being very dwarf, the flowers fresh and bright, and of a fair size and quality, the base of the group being tastefully finished with a fringe of ferns in pots. Mr. J. C. Sheppard, nurseryman and florist, came in second with a similar group, but the flowers were not of the same size and quality as those in the first prize group. In the gardeners' and amateurs' classes, the leading prize takers in each of the groups were: Mr. R. Day, gardener to the Mayor of Bedford, Mr. Hawkins, and the Rev. H. L. Pocock, who had fairly good groups.

Cut Blooms were, as usual, admirably shown, and the competition in the several classes created much interest, Mr. J. Kipling, Knebworth Gardens, Herts, carried off first honours in the classes for twenty-four Japanese, twenty-four incurved, and nine blooms of any variety not Japanese or incurved. The best blooms among his Japanese were Ralph Brocklebank and Meg Merrilies, which were fully ten inches across with well filled centres, unusual with those varieties this season. The second and third prizes in these classes were awarded to Mr. H. Garratt, gardener to R. C. Holston, Esq., and Mr. J. Anning, gardener to J. C. Brown, Digswell House, Welwyn, respectively, who had good stands of blooms. In the open amateurs' classes for twelve blooms, Mr. T. Mayes, Kettering, took first in each class with capital blooms, Mr. W. G. P. Clarke, Hitchin, running a close second. In the classes open only to residents in the county of Bedford, for twelve blooms the leading prize takers were Mr. R. Day, Mr. H. Garratt, Mr. Cooke, Apsley Gnise; and Mr. G. R. Allis, Old Warden Park.

Fruit and Vegetables are always shown well at Bedford. Apples were especially bright and highly coloured samples, and vegetables very shapely, clean, and of excellent quallty, roots particularly so. There were many excellent dishes of both dessert and culinary apples, Mr. H. Landers, Mr. G. R. Allis, and Mr. Day taking the lion's share of honours in these classes. Particularly noticeable were the examples of dessert apple King of the Pippins, from Mr. Landers, of Southill Park, they were more like models in wax than natural specimens, so perfect were they in shape and of such exquisite colour, in this latter respect surpassing anything that was to be seen among the many dishes exhibited at the Aquarium show. Pears were a rather scanty exhibit calling for little comment. Grapes were not numerously shown, but were of good quality, Mr. Allis taking first prize with two very good bunches of Alicante, highly coloured and carrying a deep bloom; Mr. Landers following closely with good bunches of the same variety.

The collections of vegetables were very good, but we have seen them of a higher quality at Bedford. A very pleasing and commendable feature at this society's show is the encouragement and prominence given to the cottagers' productions. One long table was entirely filled with their exhibits, principally vegetables, and the quality of these was little, if anything, inferior to similar exhibits of the gentlemen's gardeners.

NEW CHRYSANTHEMUMS AT CASTLE HILL NURSERIES.

A visit to an establishment like that belonging to Mr. Owen at Maidenhead in the early part of November is sure to be interesting to any one who is constantly on the look-out for anything new in either section. Mr. Owen has been lately for some time busy with seed growing and saving with a view to raise new chrysanthemums without the trouble and expense involved in importing them from Japan, America, or France. If, by intercrossing well-known and proved varieties here, seed can be saved, a distinct gain will be obtained. Mr. Owen has erected a new span roofed house, which has been designed with a view to the plants enjoying all the light possible. Special arrangements have also been made for heating this structure in a manner that will best suit the purpose for which it was erected. At the time of my visit some hundreds of seedlings raised on the place were on trial; some were very promising, others needed further testing. With reference to this point, it may be stated that Mr. Owen thoroughly tests all the kinds before letting the public have them. This is an important matter, for many sorts have been introduced to commerce that have failed to come up to the expectations.

In the raising of seedlings special attention is being paid to the habit of growth, which is most important. Varieties with fine flowers and a dwarf habit of growth will be a boon undoubtedly to all cultivators, especially those who are limited in space. The extreme height which some varieties reach before developing their blooms do more towards making the present general system of cultivation unpopular than anything else. It is a well known fact that some varieties cannot be made to produce fully-developed blooms on dwarf plants. Mr. Owen has done well to choose such a robust dwarf variety as Avalanche, for instance, for a seed bearer, and such a distinct variety as Edwin Molyneux for transmitting colour. It is curious to note the distinctive characteristics of some of the seedlings in the matter of growth and the colour of some of the flowers. The following are some of the most noteworthy seedlings raised at Castle Hill.

Mrs. Schwabe, dwarf habit, stout, though not growing more than 3 feet high in a natural manner. The colour delicate pink, shaded with salmon, Japanese reflexed.

W. Lane has extremely deep built flowers of a pleasing salmon red with yellowish centre; a seedling direct from Avalanche. Japanese.

Duchess of Westminster is a charming Japanese anemone, and may best be described as an improved Duchess of Edinburgh, a well-known old favourite in this section. The colour is white, tinted with rose in the guard florets, the disc crimson, tipped yellow; one of Mr. Owen's seedlings.

Other new and promising Japanese kinds from various sources were:—

Mrs. F. Spaulding, yellow, bronze striped heavily, a good variety of the incurved section of this family.

Esmeralda, similar to Mrs. A. Carnegie, but much improved in habit of growth.

Tarantula, in colour reminding one of The Daimio, which is rose-pink in colour, a large flowered variety.

Alberic Lumsden, crimson amaranth, very pleasing in colour, a splendid decorative variety.

Madam Prunac, deep lilac, tipped white.

Charley Maskel, golden orange, having all the character of M. Burnet, from which it is a sport, a most promising variety.

Mr. A. H. Neve previously described, blush, changing to silvery white.

Aida, in the way of Criterion, the points of the florets gold tipped.

Madame F. Minstral, a French incurved variety with flowers similar in colour to those of Prince Alfred; promising. E. MOLYNEUX.

Correspondence.

POTATOS AND POTATO CULTURE.

EVERY one who had the pleasure of knowing the late Mr. Shirley Hibberd will, I am sure, greatly regret his death. No matter what the question was, provided it was for the welfare of the community, it was sure to receive his support. His services were especially valuable in connection with the International exhibitions of potatos, which did so much in promoting the introduction of improved varieties, and this appears to be a fitting opportunity for acknowledging them. It also appears to be a suitable time for endeavouring to create more interest in potatos and potato culture than is now the case.

I do not think that upon any other question has interest become so dormant as that of potato growing. Yet what subject can be so important to the people of this country? The consumption of potatos in this country holds a position second only to that of corn, the demand in London alone being a daily consumption of 1,000 tons. Yet but little has of late years been done to encourage the introduction of new and thoroughly good varieties. In fact since the holding of the International potato exhibition in 1887, it has been a difficult matter to bring this potato question before the public, in any practicable form. Even when as at the late chrysanthemum show at the Royal Aquarium, the potatos are staged in large quantities and tastefully arranged, they are nearly, if not quite, ignored by the press.

I trust, however, that as such unsatisfactory reports of the potato crop are being received from Ireland, some effort will be made to resuscitate the interest in potato culture. I am of opinion that if new varieties of potatos were properly taken up by an influential and national committee it would be the means to some great extent of preventing similar calamities in Ireland. Undoubtedly if the Irish peasantry had grown more recent and better varieties than those kinds which they have planted year after year, there would not have been such a serious failure. However good a variety may be it is a well-known fact that in twelve or fourteen years it will have run out, and may with advantage have substituted for it a more recent introduction. I would, in conclusion, express a hope that my letter, at this particular time, may lead to some steps being taken in this matter. C. FIDLER.

Reading.

AMERICAN NOTES.

INCREASED VALUE OF CALIFORNIAN FRUIT.

IN a San Francisco dispatch to *The Tribune* it is stated that although this is the best year ever known in California for producers of fruit, the fruit-packers will suffer heavily, because of their contracts to deliver dried and canned fruits for about one-half the ruling rates. Early in the season, when reports came from the east of the total failure of fruit, they discredited those concerning the Delaware peach crop, and made contracts on the usual terms for the delivery of fruit this autumn. The result is that they are now paying ten cents a pound for prunes which they have agreed to deliver at five cents. The same rates hold good in regard to peaches, pears, and other fruits. One large packing firm will lose 50,000 dollars on prunes alone, while several smaller ones will probably go under, as they will be unable to stand the losses. It is a great year, however, for fruit-growers, as prices are about double what they usually are and the crop is large. Even grapes, which have been a drug on the market for several years, bring high prices. Ordinary Zinfandel wine grapes fetch 20 dollars a ton, and large quantities not used for wine have been dried. These will be introduced this winter at the east for stewing and as a substitute for currants.

A NEW DOGWOOD.

A very puzzling Dogwood has been known for some time to be growing in the region of the Great Lakes. Occasional specimens received were referred to Cornus stolonifera, but not without contradicting some of its most essential characters. In an early day it had been collected by Bourgeau in the valley of Lake Winnipeg and along the Saskatchewan, and much later by Dawson, in the same region. It is also to be found among Garber's collections from Presque Isle. Macoun collected it at Point Pelee and Lake Nipigon, as well as in the Cypress Hills of the North-west Territory.

In 1886, however, during a botanical survey of northern Minnesota, abundant material in fine condition was secured by Professor L. H. Bailey, and distributed by him as C. stolonifera, to which species Dr. Gray had referred it. Professor Bailey was well acquainted with this perplexing form about his early home in southern Michigan, and was never satisfied that it could be really C. stolonifera. The Minnesota material was collected along the north shore of Lake Superior, at Vermilion Lake, and at Hunter's Island, upon the British border. In a critical study of all the North American species of Cornus it became apparent that this perplexing form represented a distinct species, which was very naturally dedicated to Professor Bailey. Its range, as at present understood, is about the Great Lakes, especially Lakes Michigan and Superior, and extending northward and north-westward into Canada. Its occurrence in the mountains of Wyoming, near Fort Bridger, suggests a possible southern extension in the mountain region. The species can be distinguished from C. stolonifera by its erect habit, being not at all stoloniferous so far as known, by its much duller and browner bark, its pearly white fruit, with a large, flattened, square-shouldered stone, and by the white woolliness of the lower leaf-surfaces. It grows over the sand dunes about the lakes, "often in the loosest, shifting white sands," as Professor Bailey writes, and flowers continuously all summer, from June to September. As a handsome, long-blooming shrub, adapted to the sandiest soil, Cornus Baileyi well deserves cultivation.

CLIMBING FUMITORY.

The interesting *Adlumia cirrhosa*, known by the common name of Climbing Fumitory, is, writes a correspondent of the *Garden and Forest* hardy, admirable for covering bowers, trellises, as, catching with its slender young leaf-stalks upon everything it can fasten to, it soon covers a shrub or trellis with its delicate foliage. It is sometimes called Alleghany Vine, and erroneously Mountain Fringe, as it is found in wet woods and delights in shade and moisture, although it will grow in open places. I find it most useful when treated as an annual, as it has no appearance of a vine or tendeney to climb during its first year, while the thrice-pinnate leaves and delicate leaflets have the appearance of a maidenhair fern, although of a lighter colour. It is of rapid growth, and most useful for decoration in the place of these ferns when they cannot be had. It lasts longer in a cut state than the fern. Early in the second season it starts its climbing growth, with little to remind one of its appearance the first year. It is then of little use for cutting, and where plants are required for this purpose it will be necessary to sow the seed early every year and thin out or transplant the seedlings, giving each plant room in which to develop.

THE GRAPE FERN.

The common grape fern, *Botrychichium Virginicum* may, writes Mr. Herford in *Garden and Forest*, be found in almost any rich woods of New England. About half way up its stem the plant divides into two segments. One, a sterile frond, is sessile, somewhat triangular in outline, of a thin and delicate texture and three or four times divided. The other, which is the fertile portion, is long stalked, and is a close, narrow panicle or frond two or three inches long by an inch or so wide. When this fertile portion has just matured it makes a pretty plant. The two parts, though quite unlike, are both very handsome. But the fertile portion is of short duration. It soon sheds its spores and withers, and even the sterile frond, though lasting usually some time after the fertile one has decayed, is of much shorter duration than that of most ferns, for by the last of August it has usually disappeared. It is an easy fern to grow in any ordinary rich soil in the shade, and while it lasts is one of the handsomest.

Replies to Queries.

Protecting Chrysanthemums in Open Borders.—Novice: The chrysanthemums may be protected from severe frosts during the winter by placing a layer of coal ashes or cocoanut-fibre refuse over the stools. Chrysanthemums as a rule suffer more from spring frosts than from severe weather during the winter, the young growths being frequently cut back to the ground line. The preferable course is to lift the stools and replant them in an unheated frame or in a sheltered position out of doors, where they can be readily protected from frosts after they commence to make new growth. Stools lifted as here advised can be readily divided and planted in the borders in the spring. There is not much difference in the relative hardiness of the varieties.

Chrysanthemums.—F. M., Epsom: The following will form a good selection of eighteen Japanese varieties: Avalanche, Baronne de Prailly, Boule d'Or, Carew Underwood, Comtesse de Beauregard, Criterion, Elaine, Jeanne Delaux, La Triomphante, Madame C. Audiguier, Madame de Sevin, Madame Baco, Madame J. Laing, Mrs. Falconer Jameson, Ralph Brocklebank, Sunflower, Stanstead White. The most suitable incurved varieties for your purpose are Alfred Salter, Empress Eugenie, Empress of India, Golden Empress, Jeanne d'Arc, Lord Alcester, Lady Hardinge, Lord Wolseley, Mr. Brunlees, Miss M. A. Haggas, Mr. Bunn, Mrs. G. Rundle, Mrs. W. Shipman, Princess of Wales, Princess Beatrice, Prince Alfred, Queen of England, Venus.

Tar on Hot-water Pipes.—I can fully sympathise with your correspondent "H. S." in the difficulty in which he is placed by having the hot-water pipes in his planthouse coated with tar. It is, as you observe, necessary to remove the tar from the pipes, for the fumes given off by tar-coated pipes when heated are most destructive in their effects upon plant life. I would advise "H. S." to try a strong solution of potash for the removal of the tar, and if the work is well done he will probably be successful. If not, it will be necessary to remove the plants from the structure, and then make the pipes as hot as possible, and then scrape the tar from the pipes with an old knife. Afterwards the pipes should receive a good coat of Brunswick black paint.

Glencairn, co. Dublin. JOHN MURPHY.

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CUT FLOWERS.

Abutilons ...per doz. bun.	2s. 0d.	to	4s. 0d.
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Tuberoses, per doz. blms.	0s. 4d.	,,	0s. 6d.
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Violets, Parme, per bun.	2s. 6d.	,,	3s. 6d.
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Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises Morn.	Moon. Sets After.
1890			H. M.	H. M.	H. M.	H. M.	H. M.
14	S	**3rd Sunday in Advent.**	8 0	5 6	3 49	10 35	6 9
15	M	Izaak Walton died, 1683.	8 1	4 37	3 49	11 19	7 30
16	Tu	General Sir W. E. Baker died, 1881.	8 2	4 7	3 49	11 52	8 56
17	W	Oxford Michaelmas Term ends.	8 3	3 38	3 49	After.	10 21
18	Th	☽ First Quarter.	8 4	3 8	3 50	0 34	11 44
19	F	Cambridge Michaelmas Term ends.	8 5	2 39	3 50	0 51	Morn.
20	S	Lord Macaulay died, 1859.	8 5	2 9	3 50	1 8	1 1

High Water at London Bridge. Noon.	After.	Liverpool Dock. Morn	After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower,	Day of Yr.
H. M.	H. M.	H. M.	H. M.	DEG.		1890
3 1	3 24	0 4	0 26	40·6	Oncidium incurvum ..... Mexico.	348
3 46	4 10	0 49	1 11	40.5	Oncidium oblongatum ..... Guatemala.	349
4 34	4 59	1 35	1 59	40·4	Oncidium unguiculatum ..... Guatemala.	350
5 25	5 52	2 24	2 50	40·2	Lycaste Skinneri ..... Guatemala.	351
6 21	6 50	3 17	3 46	40·0	Lycaste Skinneri alba ..... Guatemala.	352
7 21	7 53	4 15	4 46	39.8	Lycaste Skinneri rosea ..... Guatemala.	353
8 25	8 58	5 13	5 50	39.7	Lycaste Skinneri superba ..... Guatemala.	354

PORTSMOUTH FLORICULTURAL SOCIETY SHOWS, 1891. The SUMMER SHOW will be held in VICTORIA PARK on JULY 8th, 9th, and 10th; the Chrysanthemum Show in the Drill Hall, November 4th, 5th, and 6th.

Persons wishing to offer special prizes or to advertise in schedule, should send at once to F. POWER, Hon. Secretary, 26, Queen Street, Portsea

Auction Sales for the Ensuing Week.

TUESDAY, DEC. 16.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Lilium auratum, &c.

TUESDAY, DEC. 16.—Messrs. Protheroe and Morris, at the Pedigree Rose Nursery, Shepperton; Seedling Roses, New Roses, &c.

WEDNESDAY, DEC. 17.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Bulbs, and Plants, &c.

WEDNESDAY, DEC. 17.—Messrs. Protheroe and Morris, at Twickenham; Plants, Lilies, Iris, and other Stock, Glass Erections, &c. (Two days.)

THURSDAY, DEC. 18.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Dutch Bulbs.

FRIDAY, DEC. 19.—Messrs. Protheroe and Morris, at their Central Sale Rooms, 67 and 68, Cheapside; Orchids.

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THE GARDEN ORACLE FOR 1891

Will be published in the usual form at 1s., and will be as heretofore, a complete review of horticulture and floriculture in the past year, and a guide for cultivators, exhibitors, and purchasers of plants, flowers, fruits, &c., in the year that is before us. This is the oldest horticultural almanac extant, and as it contains the latest information on new varieties, forthcoming exhibitions, and undertakings of various kinds in prospect, it cannot be published so soon as the general run of almanacs, that are chiefly made up by hasty compiling. The Oracle now preparing will be rich in reports, announcements, and selections, all condensed into the smallest possible space, and arranged for handy reference. The Oracle is a business almanac and diary, in addition to its special floricultural features. Published at the GARDENERS' MAGAZINE Office, 4, Ave Maria Lane, London, E.C.

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The Gardeners' Magazine.

SATURDAY, DECEMBER 13, 1890.

ASPARAGUS CULTURE IN FRANCE is carried on with so much success that the French growers are able not only to liberally supply the Parisian and other of their markets, but to send to this country in the course of the season large quantities of produce of so high a degree of excellence as to command a price considerably in advance of that obtainable for the best samples of home growth. Some of the French asparagus that reaches Covent Garden is unquestionably inferior, and unsuitable for a first-class table; but it is the exception rather than the rule, and the inferiority is usually due more to indifferent packing or delays in transit than to want of skill on the part of the grower. Stating the case generally, the asparagus sent to this country arrives in a condition that compels admiration, whatever may be the views on the question of blanching, for the cultural skill that has been brought to bear upon it and the care evinced in the packing. There is much difference of opinion in this country as to the relative values of green and white asparagus, and at the present time there is a preponderance of opinion in favour of that which has been produced under the influence of light and air. It is simply a question of taste, and it may be stated that blanched asparagus, although lacking the full flavour characteristic of that which is of a deep green colour, is by no means worthless, as has so frequently been represented by those opposed to innovations in practice of all descriptions. In following a course of procedure in the culture of this, as of other vegetables, the private grower must of necessity be guided by the taste of himself or his employer, as the case may be. The grower for market, on the other hand, should consider what description of produce will sell the most readily, but whether he always does so is extremely doubtful. In the case under consideration we see a brisk demand in our markets for asparagus that has undergone a considerable amount of blanching, and we know also that it is chiefly met by supplies derived from the other side of the Channel.

It matters not what may be the opinion of the cultivator as to the advisability or otherwise of blanching asparagus, there is much in the practice that obtains in Argenteuil and other districts where the vegetable is extensively grown that should have attention. Much has already been done to indicate the chief points of difference between the French and English systems, with the result that there has of late years been a material improvement in the practice which obtains on this side of the Channel. More still remains to be accomplished in this direction, and we are induced to return to the subject now for the purpose of referring to an important communication upon this subject to an American contemporary from the pen of M. Henri Vilmorin, whose knowledge of the French methods of procedure in vegetable culture is unsurpassed. In commencing to speak of the details, M. Vilmorin is careful to direct attention to the fact that no esculent will yield a better return for the skill and attention brought to bear upon it than asparagus, and also that both the quality and the market value increases, to a certain extent, in proportion to the size and appearance of the individual heads. The writer does not proceed far before showing conclusively that the superiority of the French asparagus to much of that produced in English gardens is not due to the growers enjoying natural advantages, but to their having adopted a better practice. The thorough preparation of the soil by moderately deep stirring and liberal manuring is insisted upon, and it is declared that any soil, not a stiff adhesive clay, or pure chalk, may, by draining, trenching, and manuring, be rendered in every way suitable for asparagus. Instead of being recommended to trench the ground to a depth of two feet or thirty inches, as advised in some books regarded as authoritative, we are told that is not necessary to break up the soil to a depth exceeding eighteen inches. The autumn or early part of the winter is taken advantage of for the preparation of the quarters, and as the digging proceeds a liberal dressing of manure is incorporated with the staple. For ordinary soils manure from the stables is preferred, but where the staple is light that from the cow byre is used.

In the matter of space, the French practice differs widely from our own. Here it is a general rule to allow eighteen inches between the rows, and twelve inches between the plants in the rows. In France they are far more liberal, and M. Vilmorin tells us that the plants are not in any case arranged at a less distance than two feet each way. When exhibition specimens are required, a space ranging from three to four feet is allowed each way between the stools. It may be thought that putting the plants at these distances would involve a considerable loss of space, but it is not so. When they have sufficient space for their full development and are in all other respects well managed, the crowns produce a forest of stout shoots that would greatly surprise those whose experience had been limited to beds arranged in accordance with the teaching of the books. The bed is marked out sometimes during March, and the position of each crown is indicated by a small stack. At each position a small conical heap of earth is formed and the plants, those one or two years old being preferred, are placed upon the mounds thus formed with their roots regularly arranged. This practice is by no means new to this country, but is seldom adopted, and its superiority is so great as compared with plant-

ing in trenches, that it may well have special attention directed to it. The roots, as the crowns are placed in position are carefully covered, and the spaces between the mounds is filled with friable soil, sufficient being added to make the surface of the beds level.

The course taken by the French grower in the autumn of the year is very different from that followed in this country. Instead of heaping manure over the beds when the stems are cut down, he removes the greater portion of the soil from about the crowns to thoroughly expose the roots to the action of the frost. They remain partly uncovered until spring, when a liberal dressing of short manure is applied, and the soil removed in the autumn is returned to its place. In subsequent years the practice differs but little from that in the first year, excepting than in the third and following springs a mound of earth is formed over each crown to blanch the shoots as they rise. If white asparagus is not desired, the mounds of earth may be dispensed with and the shoots be allowed to push through the soil and attain the rich purplish green colour indicative of a full flavour. Much care is, M. Vilmorin states, taken in gathering the shoots, and they are now broken off close to the crown instead of being cut with a knife, for not only was it found that the rotting of a portion of the stem left in the ground was in many instances injurious to the crowns, but that many of the young shoots were injured by the point of the knife.

This, briefly stated, is the practice adopted by the most successful of the French cultivators, and it will be seen that it is equally adapted to the conditions that obtain in this country, and may be readily carried out both in private and market gardens.

Kingston Chrysanthemum Society will hold its exhibition, November 10 and 11, 1891.

Northampton Chrysanthemum Society's exhibition will be held November 11 and 12, 1891.

Birmingham Chrysanthemum Show will be held November 11 and 12, 1891.

Mr. F. E. Weiss, B.Sc., has been elected to the Quain Studentship in botany, at the University College, London.

Utrecht Flower Show will be held from April 23 to 26, when a series of liberal prizes will be offered for competition.

Dr. H. Mayr, for some years professor of forestry in the Tokio University, will return to Europe early in the year to occupy an important position in the forest administration of Bavaria.

A Portrait of the late Mr. James Backhouse, who was not less well known as a botanist than as a commercial horticulturist, is given in the number of the *Journal of Botany* for the current month.

Popularity of Chrysanthemum Exhibitions was exemplified in a remarkable manner at Edinburgh and Brighton during the past season. At the show held in Edinburgh under the auspices of the Scottish Horticultural Association, the receipts were £1,190 7s. 8d., and the expenditure £1,062 1s. 6d., leaving a balance of about £130 to be added to the substantial surplus from the centenary exhibition of last year. At Brighton the results were equally satisfactory, for the takings at the doors during the two days the exhibition was open, amounted to £324, the number of those who paid for admission being 9,494. As stated in our report, the number of visitors to the exhibition held at Hull exceeded that of any previous year.

Seed Potatos Supply (Ireland) Bill was introduced to the se of Lords on Monday by Lord Cadogan, who said that its object to enable the poorer occupiers in various districts in Ireland to obtain seed potatos at a reasonable price. The provisions of the Bill were very similar to those of the Seed Supply Act of 1880. The general object of the measure was to secure that there should be a supply of seed potatos brought to the doors of the poorer occupiers in those districts where, at present, it would be very difficult to obtain it. The occupiers would obtain that supply at cost price; they would have two years' credit, during which time they would make payment to the Board of Guardians for the potatos.

Manchester Field Naturalists' Society appointed some time since a special committee to consider the best means of reducing, in some degree, the injurious effects of the atmosphere of Manchester and Salford on animal and plant life. The committee has presented its report to the society, and recommended that as the information as to the exact amount and nature of the abnormal constituents of the atmosphere is extremely meagre, systematic and complete analysis of the air should be made. For this purpose observations should, the committee suggests, be made on the composition of the air at as many typical centres as possible, and be continued over at least a year. The experiments will be conducted so as to afford definite information on the composition of the air in densely populated districts, as compared with that in thinly populated and suburban districts; the relation between atmospheric impurity and prevalent sickness and mortality; the amount and distribution of those impurities which are known to be specially prejudicial to plant life; the extent to which smoke and noxious gases are due to dwelling houses and to factories; the nature of fog, and the character of the air during the prevalence of fog. It is further proposed that the committee in charge of the experiments shall, as far as possible, co-operate with the sub-committee of the Royal Horticultural Society appointed to investigate the London atmosphere.

ON "DAMPING" IN CHRYSANTHEMUMS.

I awaited this week's issue of the Magazine expecting some reply to Mr. Briscoe Ironside's interesting and instructive paper on "Experiments in Chrysanthemum Culture," as interesting a communication as has reached the subscribers to the Gardeners' Magazine for a long time. The particular paragraph I wish to notice is on the subject of "damping." Mr. Briscoe Ironside says: "Damping is generally confined to blooms on plants grown for size on plants which have lost a great deal of their foliage from a too early ripening. I am inclined to think that overfeeding has little or nothing to do with damping, inasmuch as I have experienced from overfeeding exactly the opposite result, viz., the bud displaying a dry rot, and refusing to develop at all." This statement, leaving for the present its discussion in detail, leads me to bring before you and the many chrysanthemum lovers (I will not say fanciers) and growers represented amongst your readers the subject so important to every grower of damping in chrysanthemums. Let me say, at the outset, I only refer to big blooms, and the big bloom method, as I am not aware of true damping occurring in decorative plants. It is quite time we numerous chrysanthemum growers and lovers came to an unanimous decision on this question of damping, and also as regards its prevention. Is such the case?

Mr. Briscoe Ironside: Damping is due to checked transpiration and early ripening. Over-feeding has little or nothing to do with it.

Mr. Tunnington: Gases carried into the air at the time of fogs the principal cause of flowers damping.

He also remarks on the inadvisability of too early wood ripening, but not in connection with damping.

Mr. Molyneux: Over-feeding in the plants is the principal cause of the trouble. While wood and foliage are being made it is all right; when that growth ceases a breakdown occurs in the system of the plants, and they fail to produce what is required of them.

Mr. C. Gibson: Early buds the most subject to continued foggy weather and damp before housing. Too much artificial manure. A low night temperature with damp, followed by sunny days. Special varieties have a special tendency.

Mr. J. C. Clarke: The excessive use of stimulants to obtain monster flowers. Years ago damping in the early part of the season was unknown; it only occurred from natural decay.

Many of your readers will here, doubtless, recall the first Mr. Salter's experiences—one of the "early fathers"—and the experiences of the grower who used a wonderful blood manure with such disastrous results. Many more authorities could be adduced, these will be sufficient for my purpose. It will be noticed that with the exception of Mr. Briscoe Ironside, and perhaps Mr. Tunnington, too, all are agreed as regards the over-use of *artificial* manures. Early ripening (so-called over-ripening of wood), damp atmosphere and fogs. I maintain that this term "damping" is applied to three separate conditions in chrysanthemums, and that the symptoms of these are distinct: in the cases of early damping and decay, in point of time, in the cases of over-feeding, in phenomena presented.

In damping from damp, wet, and fog, the *lower* florets decay quickly (as Mr. Gibson says). I have in my mind a bloom of Gloriosum which was housed under a "drip." We found the lower florets one day decaying at the points, all round the flower. I had the plant removed at once to a dry spot in the house, and we put on a little more fire heat (the bloom at this time was only half expanded) and the remaining petals eventually developed a flower six inches across, although it was useless for show purposes owing to the damaged outer florets. I submit we have an instance of disease dependent on local causes; remove the causes you remove the diseases. "Damping" from decay (only) begins in much the same way, except, of course, gradual spreading and destruction follows.

How different are the symptoms and consequences of damping from over-feeding. There is no better description than Mr. Molyneux, in his now well-known work (p. 77). The bloom, a promising one, is three parts expanded; several brown specks suddenly appear. These spots increase in size, holes appear in the petals, and in a few days the whole flower is spoilt. I regret to say I watched for days all these symptoms in blooms of Fair Maid of Guernsey and Mrs. J. Wright, and where can you see them better developed than in a white variety? This is the damping which takes place where "water" could not possibly touch the flowers, and the air at the same time was kept in a dry state by fire-heat (Molyneux). Is there any remedy for this variety—developing with spots, not laterally? Examine the authorities, and you will find various references to ventilation and increased fire-heat, but I have not heard any satisfactory results following. The fact is the mischief is done, the individual plant is diseased, gorged, glutted, over-fed. It has now not the active period of growth it had to use up this. Extra wood and foliage is not being made now (Molyneux), and "a break-down occurs." My own experience this season has been instructive—I venture to think, useful. One morning in October my gardener came to me with a rueful countenance—"Macaulay's damping again, sir" (it had damped last year with three equally promising buds, to our disgust). I went down to the house—so it was. We did not trouble much about this variety, as the buds being very closely packed, we consider it as an especially susceptible one. When it came to "spots" (Molyneux) on three splendid blooms of "Sunflower," we felt it was time to act, and accordingly made a careful review of the season's culture. Last season—soot water, diluted cow and horse-stable drainings, with a little blood occasionally, guano, sulphate of ammonia, though as we considered carefully used, gave us many ruined blooms. Accordingly, this year we resolved on diluted cow and horse-stable drainings, and nothing else—natural manures. There is little doubt these were given too strongly, and early in the season we found we were losing many blooms as stated. What was the remedy to be? Of course, a good purge suggested itself to me at once, and at once a

good purge the plants had; they each had a thorough douche well through the pots again and again of plain water. The house was carefully dried, and nothing but plain water given to any of the plants afterwards. We were not troubled with any "damping" after, and developed flowers of Avalanche, 6½ by 5½ inches deep, and Etoile de Lyon, 13 inches across. The behaviour of the two plants grown of Sunflower was worthy of special notice, while we lost every bloom in the earlier one. I may here pause to remark, I especially noticed the bent mid-rib of the leaves which Mr. Ironside dwells on as a sign of over-feeding. The later one furnished us with three good blooms, one of which eventually got into a first prize set of Japs. Finer and more magnificent foliage I never saw on the plant that damped; we had done that part well. I may add Empress of India, Mdlle. Lacroix, and Lady Hardinge were all among the varieties that did well after the "purge."

Let us hear the conclusion of the whole matter. Damping is of three kinds, as met with in pure country air (I have no experience of fogs charged with carbon and deleterious gases): 1. From damp, cold, wet, and from bad ventilation; curable. 2. From decay; natural death. 3. From overfeeding, and with too early ripening of the wood; this may be called "glut." Overfeeding may be produced as well by "natural" as artificial manures; prevention is better than cure here. A bending in the midrib in leaves may be looked on as a suspicious sign. Leaves should always be carefully watched. Too early ripening must be avoided of the wood. "Washing out" with water may effect good.

In conclusion, "collective investigation," as it is called, has done much, through the members of the British Medical Association, in eliciting unknown facts respecting human diseases. Cards are distributed containing a set of questions bearing on observations to be made, to those willing to make them. These are returned with the answers, when these answers are collectively classified. I would suggest this method for any doubtful points in connection with chrysanthemum culture, and shall be happy to go into further details respecting it at any future time. Francis Mead, M.B.

Warre House, Bishop's Lydeard.

Op. Cit.: Molyneux, "Chrysanthemums and their Culture," 1886; Briscoe Ironside, "Magazine," November 29, 1890; Clarke, J. C., "Magazine," November 8, 1890; Gibson, C., "Magazine," November 22, 1890; Tunnington, W., R. Owen's Catalogue, 1890.

THE FLORIST'S TULIP.

By J. Douglas, Great Gearies, Ilford.

It was a new experience to me when visiting some relatives at Kelso to find that the tulip fancy had taken deep root there in the heart of a young florist, Mr. Harry Renton Mein, of the firm of Messrs. Stuart and Mein. A good start was made some three years ago. One of the old Lancashire florists, Mr. Barber, who cultivated the best strains of the florist's tulip, wished to dispose of his entire collection. Mr. Mein getting knowledge of this, negotiated for their purchase, and bought the whole with the boxes, iron, and framework for covering, &c. By this transaction the firm became possessed of one of the finest collections of rectified tulips in England. I well remember the late Mr. Charles Turner, of Slough, telling me he had hoped against hope that the tulip would once again take its position in the flower garden, but he was disappointed; and rather than throw his old favourite varieties into mixture he gave them to me, and I have grown a selection of them ever since. We may venture to hope that the turn of the tide has come, and that a demand for florist's tulips will arise, such as the trade may find it difficult to meet. A London seed firm is also growing a collection of the finest prize stocks of tulips so that when the demand comes, there will at least be a chance of its being met.

The growers in the Midlands have also good stocks in hand of the old fine varieties and strains; and some more ardent spirits continue to raise seedlings. Mr. Horner has been quite as successful in raising seedling tulips as he has been with the auricula, but unfortunately the National Tulip Exhibition is generally held too late in the season for him, so that he cannot show them. I heard a rather amusing account of a collection of tulips when I was in the north. The Rev. W. B., a great tulip fancier, cultivated a collection at S., and at his death his successor in the ministry happened to be a pig fancier rather than a gardener, and used up the collection of tulips to feed his pigs; even this was better than throwing them upon the rubbish heap, as some of us have had to do when our collections became unmanageable. Many interesting and some amusing anecdotes are told of the tulip in the early days of its culture. Addison, in a letter dated "From my own apartment, August 30th, 1760," gives a very humorous account of a visit he accidentally paid to a tulip fancier's garden, part of which may be well worth quoting. He says, "I was very much pleased and astonished at the glorious show of these gay vegetables, that arose in great profusion on all the banks about us. Sometimes I considered them with the eye of an ordinary spectator, as so many beautiful objects varnished over with a natural gloss, and stained with such a variety of colours as are not to be equalled in any artificial dyes and tinctures. Sometimes I considered every leaf as an elaborate piece of tissue, in which the threads and fibres were woven together into different configurations, which give a different colouring to the light as it glanced on the several parts of the surface. Sometimes I considered the whole bed of tulips, according to the notion of the greatest mathematician and philosopher that ever lived, as a multitude of optic instruments designed for separating light into all those various colours of which it is composed.

"I was awakened out of these my philosophical speculations by observing the company often seemed to laugh at me. I accidentally praised a tulip as one of the finest I ever saw, upon which they told me it was a common fool's coat. Upon that I praised a second which was but another sort of fool's coat. I had the same fate with two or three more, for which reason I desired the owner of the garden to let me know which were the finest of the flowers, for that I was so unskilled in the art, that I thought the most beautiful were the most valuable, and that those which had the gayest colours were the most esteemed. The gentleman smiled at my ignorance. He seemed a very plain honest man, and a person of good sense, had not his head been touched with that distemper which Hippocrates calls tulipomania, inasmuch that he would talk very rationally on any subject in the world but a tulip. He told me that he valued the bed of flowers which lay before us, and was not above twenty yards in length and two in breadth, more than he would the best hundred of acres of land in England; and added, that it would have been worth twice the money it is, if a foolish cook maid of his had not almost ruined him last winter, by mistaking a handful of tulip roots for a heap of onions, 'and by that means,' says he, 'made me a dish of porridge that cost me above a thousand pounds sterling.' He then showed me what he thought were the finest of his tulips, which I found received all their value from their rarity and oddness, and put me in mind of your great fortunes, which are not always the greatest beauties."

The tulip was almost idolized in Addison's time, and later; the result being a reaction the other way; this of course may only be what one would naturally expect from the value of the tulip being placed so much higher than it was really worth. When the tulip is placed before the public in finest form, in these later days, let us hope it may be appraised at its true value. An old author somewhere says, "the tulip asketh a rich soil and the careful hand of the gardener," but on this point there has ever been divisions of opinion amongst gardeners. Mr. Groom, of Clapham Rise, a well known commercial grower forty years ago used to starve his flowers into purity of the cup—that is, the base of the flower. As late as the year 1854 he published a catalogue of tulips, single bulbs of such varieties as Duchess of Cambridge, Princess Mary of Cambridge, and Miss Eliza Seymour, being charged 100 guineas for a single bulb; others were as high as 50, 20, and 10 guineas. But Mr. Groom died, and his tulips were sold, as they stood in the rows in 1855, by Messrs. Protheroe and Morris. The best bed was sold in lots of one row each, the highest lot fetching 60s. only for the seven roots. Mr. Groom's system of mixing a large proportion of river sand with the soil of his tulip bed, and using but little manure, would result in the production of small, neat flowers; and doubtless they would be well marked. Sandy soil seems to suit tulips well, but they appear to form the best bulbs with a clayey subsoil. They do well with us in our garden at Great Gearies, where the subsoil is a sort of brick earth, but I always plant the bulbs themselves in light, sandy soil, and some sharp sand is placed around the roots. We are not sparing of manure, for I do not find that a liberal treatment causes the cup of the flowers to become impure. The only thing we have to do is to be careful that manure does not come into immediate contact with the roots.

We simply trench the ground two feet deep, place one good layer of manure in the bottom of the trench, over this a spit of soil, with the loose earth also thrown over; then we place another layer of decayed manure, and clear out the trench over it. In some soils it may not be possible to dig or trench so deep, and in that case one must be satisfied with less, but there certainly ought to be about fifteen inches of soil. Gardeners may be trusted to use their own judgment in the preparation of the soil, and would dig out any heavy clay or gravel subsoil and replace it with better material. Soil that has been well worked for years, and cropped with vegetables, is the best for tulips.

The old-fashioned system of planting tulips is still the best; plant them in beds four feet wide, and seven rows in a bed. Some varieties grow much taller than others, and the experienced cultivator arranges his rows according to the height he expects them to grow, the tallest plants in the centre, and these are termed fourth row flowers: the outer row of the bed is termed the first row. The colours have also to be tastefully arranged; there are three distinct colours of various shades, and two classes of flowers, the feathered and flamed. The feathered and flamed bizarres are yellow; the ground colour feathered and flamed with marone or reddish-marone. The byblœmens have a purplish bluish or blackish purple on a white ground. Roses are feathered or flamed rose or scarlet on a pure white ground. The planting should be done as soon as the bulbs are seen to swell at the base. I planted ours out this year about the 25th of October; if they had been left until the second week in November it would have been too late. No fixed time can be given for planting; I consider it is too late when the small rootlets appear. In wet cold districts it may be necessary to protect the beds from winter rains; but I do not find this is necessary near London. We do not give any protection until the flowers are showing colour. We have generally some frame lights to spare about the middle of April; these are raised above the beds on posts and rails, forming an effectual protection from rain, and affording light to the plants, which the heavy canvas shading of long ago did not. The lights can be covered during hot sunshine, and scrim canvas may also be nailed round the sides. If it is thought well to remove the lights altogether it can be done in a few minutes, and they can be stacked up at the end of the bed.

It is a good plan, in fact it may be said to be a necessary part of the culture of the tulip, to place a layer of decayed manure on the surface of the bed, and it is safest to do this in the winter as a very slight dressing keeps out frosts. If the manure is not used until the tulips are well up some care is necessary in working it in amongst the leaves, as they are very brittle and snap in two with an awkward touch of the hand.

A better plan than the glass lights, and one that is not so expensive in the long run as the old-fashioned heavy timber frame-work

with its all too thick canvas covering, pulleys and cords, is to build a light glass house over the beds. Of course only a very ardent fancier would think of doing this, but some of them have done it, and it is an admirable arrangement. The house can be used for other purposes in the summer and autumn; and, for one thing, is well adapted to ripen peaches and nectarines upon pot trees. As soon as the leaves become yellow the bulbs must be dug up and stored again for the winter.

HOW TO IMPROVE AUTUMN EXHIBITIONS.

By J. HUDSON, Gunnersbury House, Acton.

THE chrysanthemum shows being now over, a review of the arrangements and various methods adopted may be of interest to our readers. Having been at nine shows in the course of three weeks, I have been able to compare one with another to some advantage. Setting aside for a moment the remarks I shall have to make upon the great improvement in cut blooms, I will dwell more particularly upon the general effect of an exhibition on the whole. Without doubt the greatest improvement in the chrysanthemum shows during the past few years has been in the groups arranged for effect. These constitute one of the most important features in these autumnal gatherings of floricultural and horticultural produce.

In spite of the progress thus far made in the adoption of a dwarfer style of growth of plants for groups, there is still room for much improvement in the general details. I have noticed at the majority of shows this season, that there was a lack of finish in many of the groups. This is brought about by various causes, and generally mars the otherwise good effect of a group. In one instance a group of well grown plants, carrying fine flowers, was disfigured by the use of deal sticks of extra size as supports. Each plant had one or more stakes, and the supports were most conspicuous and presented an objectionable appearance. The remedy in such a case I need not mention to practical growers, who are also close observers. Another fault in this and other groups at several shows, has been that of placing the outer plants upon pots to attain to a desired, but mistaken height. If pots are of service in raising some of the inner plants, they are a most decided eyesore when seen so conspicuously in the front and at the sides. The possession of dwarf plants is in itself an advantage rather than otherwise, and should be made the most of in each case. Another failing I have noticed, is that old-fashioned idea of aiming at effect by excessive crowding of the plants. In some instances is this done to such an extent as to permit the blooms of the Japanese varieties to touch each other. This spoils the beauty of any group; it produces a mass of colour but nothing else meritorious. Again a great mistake is made by an ineffective mixture of colours. The colour effect has often been sacrificed to secure uniformity, which in itself is an evil that so many exhibitors find it very hard to avoid. It is far better to depend for the general effect upon a few select and decided colours than to aim at great variety. It does not matter if half a-dozen more of one sort are used to gain this end. In one group I was particularly struck with the fine effect achieved by the use of several beautifully-flowered examples of Sunflower. Val d'Andorre was also used with good taste in the same arrangement, so was Avalanche. In that particular case the points gained in comparison with opposing exhibitors placed this group in advance of one with splendid flowers.

Some growers made that serious error of staging their plants with the individual blooms all tied erect in a stiff and formal manner. By all means do that which is necessary to secure safe transit, but dispense with this formality when arranging the groups. In contrast to this I was pleased to see in one first prize group a tasteful arrangement having in the centre of Madame Clemence Audiguier with fine blooms, no supports to the flowers being used, thus they looked quite natural hanging forward, being seen to the best advantage. In [illegible]y of instances I have been particularly struck with the [illegible]e of dwarf plants as a finish to the outer margin of groups. [illegible]ering that these are easily obtainable by taking late cuttings in June, the wonder is that they are not provided more generally. A few plants of the decided colours would in this way be a most marked advantage. The tasteful and judicious finish of a group is a great point to aim at, and is always bound to carry with it a considerable amount of favour in comparison with others not so well done, even when the latter may on the whole gain in point of quality. For beauty of finish and arrangement of colours with an absence of rigid formality in outline, no groups of chrysanthemums can approach those to be seen every year at the Brighton exhibition. In these respects the metropolitan displays are behind the times by a general consensus of opinion. Given groups of chrysanthemums with the addition of foliage plants for imparting effect in toning down the colours, and for adding a general lightness and beauty to the arrangement, the palm, so far as I have seen, must decidedly be given to the groups at the Hull show. In fact I have never seen a combination such as that to which the twenty guinea challenge cup and valuable money prize were awarded at the late show in Hull surpassed or even equalled at any previous exhibition. The choice coloured foliage plants harmonized so well with the chrysanthemums, whilst those with green foliage were employed with good effect in this particular instance. Other groups at the same show were also arranged with good taste, but for lightness and graceful finish did not compare with this particular one.

In the form of arrangement the plan usually adopted is a semi-circle; this for sake of convenience is a good idea, but instead of making the outline a true half-circle, I think when there is room, a point in effect may be gained by restricting the semi-circular outline, and form, instead, two smaller segments of circles as a wing on each side. When there is plenty of room to spare, circular groups make a fine feature, at the same time testing the abilities of those who arrange them in an effective manner. Such an instance as this was that to be seen at the York show recently; the first and second prize groups were conspicuous objects from all points in the large exhibition building. A limit is sometimes placed upon the numbers of plants permitted in a group. When this is the case a greater test is given to the exhibitor's powers, and good culture has a better chance of winning. In all cases I consider a marginal finish should be permitted; what an improvement, for instance, would a few adiantums and pteris make to group around the base; a few variegated aspidistras or the Eulalia Japonica variegata would also have a telling effect. Many a fine group of chrysanthemums is greatly marred for want of something to hide the pots and bare stems which are often so conspicuous in the front. Green moss, when it can be conveniently obtained, is of great service in hiding the pots, and helps too in toning down any excess of colour. Many mistakes are made in commencing to arrange the back too high, especially if the plants are not well clothed with foliage. When the usual uniformity of outline is broken up by raising some conspicuous or decided colour well above the rest—as is done at Brighton—then there is an advantage in beginning to build the group proportionately high. Pompons may fairly claim a class to themselves. Arranged with an undergrowth of maidenhair or other light fern they produce a beautiful effect. They are also very frequently overlooked for the front of large groups, where well grown dwarf plants would tell well.

PERNETTYAS FOR COOL CONSERVATORIES.

By G. WYTHES, Syon.

PERNETTYAS were shown in admirable condition at the recent meetings of the R.H.S. and the N.C.S. by one of our leading nurserymen, the plants being in small pots, and literally covered with their attractive fruit or berries. I have grown the pernettyas for years, and for cool house decoration they are most valuable. They remain in good condition for six months, and after that length of service it is necessary to remove the berries to allow of new growth being made. Being quite hardy, it is best to grow them under cool treatment, for if placed in a warm dry house, the berries shrivel, and much of their beauty is lost. They do splendidly in the north, and in different parts of Scotland and Ireland they bear immense quantities of berries when planted in suitable places, and they succeed admirably in shallow soils or on rockwork. Therefore they do not require much pot room.

There are many charming varieties, but for house decoration I consider Lilacinas, Elegans, Alba, Rosea, Purpurea, Macrocarpa, Atro purpurea, and Rosea macrocarpa to be the best. These varieties give a wide range of colours, from pure white to dark purple. From long experience I have found it is not desirable to allow the berries to remain too many months, and would advise their removal early in April. The plants should then be placed in cold frames, and encouraged to grow freely, for if allowed to remain in berry until June there will be a very light crop next autumn, as they will not have time to complete their growth and produce fruit by the autumn. Some think they cannot grow them, but rely upon imported plants, but that is a mistake. They may be planted out early or be plunged in their pots as most convenient. They may also be divided at that season if becoming too large, using peat to which plenty of coarse sand has been added. Plenty of moisture is required, and if allowed to become too dry when indoors the berries drop and shrivel. They often suffer from dryness at the root, and it is a point of some interest that when grown in their native habitat they do best where the dense tops completely shade the soil.

They are of easy growth if not forced in any way, and may be readily propagated by layers and suckers. Frequently when planted out the side shoots produce roots, and will soon make plants if pegged down and covered with suitable sandy soil. They can also be readily raised from the seeds provided the berries have been well matured. The seeds should be sown in a sandy compost in a cold frame or under a hand-glass, and the seeds be kept thoroughly moist. If the seeds are buried in damp soil or sand for a few days before sowing, the soft pulp with which they are enclosed can be more readily removed. When the seedlings appear they should, if crowded, be thinned out; but the best plan is to sow thinly, and allow the seedlings to remain undisturbed until of a suitable size for shifting into other quarters. When the have done service indoors no time should be lost in starting them into new growth, and if at all leggy they should be cut back. Place in a cold frame for a short time close to the glass, and when they have started into growth transfer them to their summer quarters. If planted out, a light peaty soil should be provided for them, and a depression left round each one to facilitate the application of water. An open piece of ground should be given them, fully exposed and not too dry. If plunged in pots, coal ashes is the most suitable. Grown in this manner they usually produce a profusion of berries.

SALVIA SPLENDENS BRUANTI.

THIS salvia can be seen in excellent condition in the greenhouses at Norman Court, where the plants appear to great advantage. Their light and elegant bright scarlet flowers present a pleasing contrast to the white chrysanthemums. The plants which occupy eight-inch pots were raised from cuttings struck in the spring and planted out during the summer months. They were lifted early in the autumn, and put into their flowering-pots. This salvia deserves to be more widely grown than it is, as it is excellent for conservatory adornment. Probably the greatest drawback to this salvia is the flowers do not stand long when cut and placed in water. C. W.

NEW CHRYSANTHEMUMS.

By EDWIN MOLYNEUX.

DURING the holding of the chrysanthemum exhibitions which are now so numerous, those interested in the subject are generally on the look out for new varieties. At the end of the show season the notes are collected, and a list is made of the varieties it is intended to cultivate or to recommend to others. This is considered one of the regular duties almost of a chrysanthemum cultivator, and with the object of assisting those who have not had the opportunity to examine the new varieties for themselves, I have put my notes into shape for the benefit of the readers of the GARDENERS' MAGAZINE, of which there are a vast number who consider the paper a necessary adjunct to the stock of a chrysanthemum cultivator.

For some years past I have made a practice of taking notes and describing the colours quite in my own way, as I seldom can find the great variation which some sorts are supposed to possess by the introducers. As a rule, the varieties which I recommend succeed in pleasing the greater proportion of cultivators, and, knowing this, I shall endeavour to follow lines similar to those of previous years.

INCURVED sorts are so seldom introduced as compared with the more easily raised Japanese that any addition to that section is, if deserving in the smallest degree, quickly snapped up and made the most of. Unfortunately, seed is not produced so freely from this family as it is from the Japanese section. In consequence the list of incurved varieties receives but slight additions annually, and a deserving novelty is certain to command attention. Although there has not been publicly seen a variety quite distinct in colour and character from some of those which have stood the test for over forty years, a few additions have been made which will in time add materially to the success on the exhibition stage of those who grow them. Taking the incurved section first, as being the most desirable, I fail to find one variety which is a decided advance on the finest of the established kinds. Indeed, the season of 1890 will be remembered as being remarkable in this respect. Not a single variety of high class character has been shown, although several useful kinds have received mention. Amongst the latter are the following three varieties from Mrs. Owen :—

Camille Flammerion, which in style of flower very much resembles Venus, except that the florets are broader and deeper in colour.

Madame F. Minstral.—This was referred to in a previous note, and therefore it is not necessary to again describe it.

Madame Gayral is a medium-sized, neat flower, very pleasing in colour, being white, heavily tipped with lilac.

Robert Cannell is new in colour in this section, being a chestnut red, the red being very bright. If the centre comes up as well as the outer part of the flower and of a depth consistent with the diameter, we shall indeed have a novelty of sterling worth.

Ethel Addison, although not quite new, has not been much seen. I saw a very neat, if rather small, bloom of it at the Torquay show. As there staged it will make a very good front-row bloom. The colour is rosy lilac; the florets are narrow, quite blunt at the tips. This variety should be developed from late crown or terminal buds. From the ordinary crown bud the florets do not incurve neatly.

Mr. H. J. Jones, Ryecroft Nursery, Hither Green, has a very promising batch of incurved kinds upon trial, and from those I saw there will doubtless be some well worth perpetuating. From what I learn, some very interesting sports from the "Queen" family may be looked for next year. Several sports have been fixed during the season just over. Queen of England has sported to a pure white, but this of course is only a counterpart of Empress of India, itself a sport from the Queen, but the peculiarity of this last sport is that each floret has a distinct narrow stripe of pink down each petal, more defined of course in young flowers. If this proves constant, a decided novelty in the incurved section will have been raised. It will be interesting to know what such a variety should be named. Again, Lord Alcester has produced a mauve sport with blooms of the same size and build as those of the type. The "Princess" family has also given several sports. Miss M. A. Haggas has produced a plant with blooms the exact colour of Mrs. Coleman. Princess of Wales has also developed blooms half yellow and half creamy-white, which is a freak undoubtedly, as in the case of Novelty, producing blooms one half of which was white, and the other half lilac colour.

Mrs. Coleman, sent out last year, has improved considerably, and is likely, now that growers understand its cultivation, to take quite a leading position among the incurved varieties. When in proper character, the colour is very pleasing, and quite unique. The colour is a bronze-amber, marked with deeper stripes on each floret, and gold-shaded centre. If the buds are "taken" too early, the blooms are pale in the bronze suffusion, and too much like Miss Haggas to be shown together with safety, but where the buds are selected at the right time, it is a splendid acquisition in any stand, no matter how small.

John Doughty has proved much superior to Bronze Queen of England, and exactly like Mr. R. Mudie. Cultivators would do well to discard two names; and reserve the best stock, which is undoubtedly the first or last-named. It is certain that not more than one of the three can be admitted in a stand of distinct varieties.

The same remarks apply equally well to Golden Queen of England, Emily Dale, John Lambert, and Emily Dale Improved. In this case there is room for one name only. Cultivators may adopt that which pleases them best, although it would be better if all could be of one accord in this detail, and accept the name given in the National Chrysanthemum Society's catalogue.

JAPANESE varieties contribute most liberally to the list of novelties. What with seedlings and sports, there seems to be no difficulty in producing a considerable number annually. Several of those named last season as likely to turn out satisfactorily have proved themselves worthy of the notice, especially

W. W. Coles, which at Hull was awarded premier honours in the Japanese section, no small feat for a variety comparatively unknown a year since, and especially when we learn that over 3,000 blooms of all sorts were staged. One great feature of this variety is its dwarf habit of growth. Splendid blooms can be cut from plants, three and four four feet high inclusive of the pot. The flower is just what will please the majority of connoisseurs in its formation. The florets are neither coarsely broad nor "skimpy" thin, and they droop gracefully at the points. The centre is well filled up, and the colour is quite unique in its way—bright terra cotta, each floret margined with pale gold; truly a grand variety.

Mr. A. A. Neve is another largely shown this season. It is a full flower, florets flat and rather above medium width, the colour silvery blush.

Puritan is another of last year's varieties that have proved satisfactory.

The following new Japanese varieties I can highly recommend to all who are anxious to keep their collections in the foremost rank. Exhibitors know well that to be behind in the matter of new kinds of sterling merit is a grave mistake.

W. H. Lincoln is of American origin and belongs to the type now known as incurved Japanese. It is best described as an improved Grandiflorum as it resembles that variety in every way, except that the colour is a soft yellow, instead of a full yellow as in the case of Grandiflorum. The growth is all that could be desired, being dwarf, plants not more than three feet high carrying handsome blooms.

Anna Hartshorn is another American variety, belonging to the same class as the one above mentioned. The colour is waxy white, the centre of the flower is of a greenish shade while developing, the florets are fairly broad, and incurve regularly at the tips. This variety should be in every collection, supplying, as it will, the place of Mrs. Cannell, which is not a good "doer," although fine blooms have been seen this season.

Madame Mezard belongs to the Etoile de Lyon style of flower, although possibly not so large. The florets are broad and flat, blush white in colour.

Archiviste Blancard belongs to the class of "peculiars," the florets being tubular, widening considerably towards the points, and terminating with a claw, resembling the disc florets of an Anemone Japanese; the florets also show an inclination to incurve in the centre.

Charley Maskell is a golden orange sport from M. Burnet, retaining the character of that variety in every way except colour.

Coronet is another of last season's introductions from America. The colour is a rich golden orange, with an occasional bronze stripe. The tips of the florets curl slightly; the centre is full. A large bold flower, well worthy of the attention of cultivators.

Mrs. W. A. Harris is a soft blush, deepening towards the centre as it develops; the florets are narrow. A grand variety in every respect.

Danae.—Bronze amber, large; the florets twisted, long, and bold.

Maribol is most variable in its development; some of the florets are forked, others smooth, the colour pink or pale rose.

Mrs. J. C. Price.—The florets incurve when opening, afterwards they are quite flat. The colour is a Thunberg yellow.

Holborn Beauty reminds one of Bend Or in the formation and composition of its florets, which are much twisted. The colour is buff. This variety makes a capital specimen.

Arthur Wood is one of Mr. Cannell's seedlings, resembling Criterion very much in formation. Orange-red, tipped with gold; a full close flower.

M. Leo Delibes.—Rose-magenta, the blooms resembling those of Mrs. F. Jameson in build.

Lilian Bird.—This variety stands quite alone in the character of its flowers. The florets are extremely narrow, long, and tubular, the tips turn slightly upwards. In colour it is soft pink or deep blush. Altogether, it is a decided novelty. From Mr. Owen.

M. E. A. Carriere was seen once or twice last season, and should receive extended cultivation during the coming season. The creamy blush tint of colouring is very pleasing. The flower is bold, having a full centre, the florets curling over very gracefully.

R. C. Kingston.—I noted last year as a promising seedling from Mr. Cannell, and I now see that it also received a certificate at the N.C.S. meeting the other week. Chestnut crimson flushed with purple.

REFLEXED varieties of improved form and colour are introduced in very small numbers; two only of merit have come under my notice during the last season. These are :—

Fred Hart.—A large, full flower, of capital form, the petals overlaying each other thoroughly, a true characteristic of varieties in this section. The descriptions generally contained in catalogues is rose-peach. I think the colour more inclined to dark magenta; when unfolding the points of the florets are tipped white.

James Carter.—A distinct variety, the blooms bronze-amber, and of medium size; very full and neat in appearance.

ANEMONE varieties do not increase readily.

E. C. Jukes is by far the best of this season's novelties; the guard petals are purple magenta, the centre gold, the form quite of the best.

W. G. Drover is a self colour; purple crimson, disc bold, being quite full, one of the chief points in any variety of this section.

Ruche Toulousaine has again been shown in good condition, but does not appear to be well enough known; the colour is lilac-rose tipped white.

JAPANESE ANEMONE section is increased only by two varieties that I know of.

Dame Blanche.—The guard florets in this are narrow but even, the centre full and high; the colour is the faintest of blush on a white ground.

Mrs. J. N. Gerard.—This variety combines what some sorts lack, namely, full guard florets and disc; the colour is rosy lilac.

The only new POMPON variety I know is

Marian, which is certain to become a great favourite for decoration when grown in a mass, but useless for exhibition in the present manner of staging these kinds; the colour is a pleasing apricot, or intense orange, reminding one of the flowers of Buddlea globosa.

ANEMONE POMPON section includes one variety only which has come under my notice, and that is

Emily Rowbotham, which is a white sport from Marie Stuart, itself one of the best in the section.

SINGLE varieties receive several additions annually. They appear to be growing in public favour. The best of this year are

Miss A. H. Bates.—Pure white. This variety has an extra row of florets, making it really more of a semi-double than a pure single.

Gold and *Silver Star* form a pair of good varieties in this section; the former is a capital colour, intense yellow, of large size; the latter is of the purest white, and for cutting purposes especially will be found of immense service.

Bessie Conway.—White ground, heavily striped with purple-lilac; of large size.

Charming.—Intense yellow, cup shaped, and good.

Elegant —Bronze yellow, the florets thinly disposed, which gives a lightness to the flower.

The first-named and the last three were well shown by Mr. J. Agate, Havant, who raised them as seedlings, and who appears to be paying much attention to single varieties, knowing well their great worth as decorative subjects.

SCRAPING AND DRESSING VINES.

By W. IGGULDEN, Marston House, Frome.

IN spite of the repeated remarks condemnatory of the practice of scraping vine rods preparatory to dressing or painting them with some vile compound there are hundreds of gardeners who still persist in following this time-honoured, though most unwise, custom. That they do so from the best of motives I readily admit, but let me once more impress on them the wisdom of and necessity for discontinuing a most harmful practice in favour of something far more rational, and equally efficacious as far as cleanliness is concerned. Undoubtedly insects, notably mealy bug, thrips, and red spider in many cases anticipate the fall of the leaf, and secrete themselves in the bark and crevices, generally on the rods, natural instinct guiding them in this proceeding. In order to get rid of these most objectionable insects, and thereby prevent the vines being overrun by their progeny next season it was at one time—and by some still is—considered the correct thing to scape the rods and spurs to such an extent as to quite clear them of all loose bark, and, in many instances, some of the wood has been removed with the bark. Then followed a dressing of a very strong mixture, in which clay, soot, sulphur, Gishurst compound, or other strong insecticides entered largely. Doubtless this may be the means of destroying many insects and, probably, germs of disease, especially mildew, but a perfect remedy it never was, while the great harm it has done, and is still doing cannot be correctly estimated. Stripped of their clothing in the shape of a good thickness of porous, moisture-holding bark, the wood is much exposed to all vicissitudes of temperature, and is particularly liable to injury from direct sunshine. The effect is most striking. From the day a rod is thoroughly skinned it never makes h further progress, and at twenty years of age, rods thus treated less in circumference than are five-year-old canes treated more nally. Old and much bared rods appear to gradually become smaller instead of constantly increasing in size, and the consequence of this contraction and most faulty circulation of sap is shanking of the berries and badly coloured crops of grapes. It may be urged in extenuation of the hard-skinning practice that the old bark has no direct connection with the live wood underneath, but it is Nature's covering, and as much needed by the vines as a beast's natural covering of hair or wool.

Instead, therefore, of skinning the rods as a preliminary to cleaning, everything should be done to preserve the bark as long as it will hold together. There is just as much likelihood of getting rid of insects by its retention as there is by its removal, always supposing a fair amount of pains be expended in well scrubbing the rods and other measures of cleanliness. Of the various remedies for destroying insects, none, in my estimation, approach hot water, this being alike the safest, cheapest, and most easily applied. To be thoroughly effective, it should be not merely comfortably hot, but almost unbearably so, or say heated up to 130 deg. A lump of soft soap about the size of a hen's egg for every gallon of hot soft water will improve its destroying power, the rods and spurs being well scrubbed with it, fresh supplies of hot water being obtained at frequent intervals. It is doubtful if anything else is needed, but those at all nervous about the result may follow with one of their usual mixtures, though I would draw the line at petroleum or paraffin in any form. For mealy bug a dressing of gas tar and clay, in equal proportions, mixed to the consistency of paint and applied with rather stiff brushes is to be recommended. At one time we were under the necessity of storing and raising a considerable number of bedding plants in the vineries, and after clearing the vines we found them on taking charge badly infested by mealy bug. A stock of the latter must have been introduced by the pot plants. Where labour is scarce or insufficient, as in our case, it is no easy matter to clear a place, and especially old houses, of mealy bug. but by annually scrubbing with hot water and dressing the rods with the gas tar mixture few insects are to be found on them in the growing season. No matter how carefully the rods may be scrubbed or how strong the dressing applied may be, a few of the pests will survive, but if their progeny is closely looked after and killed during the summer a clean bill of health might be declared in the autumn.

For a cleansing process to be thorough the woodwork and glass ought to be thoroughly scrubbed and washed, as the case may be, with hot water, and the walls whitewashed, newly-slaked lime being used. Then should follow the dressing of the rods and a clearance of a loose surface soil and rubbish from the house or border. Mildew has been unusually prevalent during the past season, and more than ordinary pains should be taken to prevent its becoming established in the house. Next to the phylloxera, mildew is most to be dreaded in a vinery, and, if preventive measures are not adopted, much harm to the vines may result. All the cleaning and dressing just detailed would do much towards destroying the germs, and sulphur might also be freely mixed with any compound used for painting the rods. What, however, I believe to be the most effective are sulphur fumes. These can be had quite strong enough by coating either the hot-water pipes or flues with flowers of sulphur, mixed to the thickness of paint, either with milk or linseed oil. Mixing with water does not answer satisfactorily. The house or houses to be then shut up closely, and the pipes or flues made as hot as possible for a few hours. In bad cases this may be repeated for two or three days, and this ought to destroy, not only mildew germs, but also red spider, if there is any in the house.

CHRYSANTHEMUM ECHOES.

THERE has for many years been some uncertainty about the name of the first person in the Channel Islands who raised new seedling chrysanthemums. The oldest inhabitant, a useful and important personage on matters of interest in many other ways than flowers, has been appealed to, but the information given has hitherto been vague and scarcely satisfactory beyond the statement that by trade the individual who enjoys the distinction of being first in the field in chrysanthemum raising was a baker. At one time his name was given as Webb, at another Budd, but both of these were given with reserve.

MY Jersey correspondent, referred to last week, writes as follows:—"This reminds me that I intended sending you a line to state that after several years research we have at last found out the name of the baker who raised the first seedlings." It appears that an old man has been discovered who was in the employment of the Jersey amateur, and he says: "Nearly sixty years ago I was apprenticed to Mr. Slater, No. 58, King Street. He grew hundreds of chrysanthemums, and saved the seeds by training plants against the wall at the back of the ovens, the new sorts he sold to an English nurseryman; he was a clever old fellow and particularly fond of gardening." From this my correspondent adds, I presume he must have been the amateur from whom Mr. Chandler bought his seedlings, as I never heard of anyone else raising seedlings here at that time. Future historians of the chrysanthemum will therefore no doubt duly note that "Slater" must be accepted as the most authentic name of the hitherto unknown celebrity in seedling raising.

IT is interesting to watch the gradual development of chrysanthemum cultivation, and although slow in some parts of the Continent, it is quite certain to extend wheresoever once attempted. In this column a year or two back mention was made of a chrysanthemum exhibition being held in Geneva, and on the 15th, 16th, and 17th November last the attempt was repeated. A report of the show has not yet come to hand, but the Horticultural Society of Geneva evidently made up their minds to do a great thing for a fortnight previous to the show they issued their monthly bulletin in the form of a special illustrated chrysanthemum number. An opportunity may occur later of noticing its contents.

THE Paris Show is said to have been more largely attended both by amateurs and professionals than on previous occasions. A writer in the *Revue Horticole* says two facts of importance have been made manifest by the show. Firstly, the great disappointment felt by those who have grown Mrs. Alpheus Hardy, concerning which the American press first, and the European press next, made so much ado that it is prudent to distrust such big advertisement as it received. The flower, he adds, is not so large, and has not the ostrich-like appearance with which it was credited, nor is the plant so hardy as was alleged. Poor Mrs. Alpheus Hardy! Even the gallant Gaul is compelled to speak the truth about you. The same causes are no doubt at work with the French stock as with ours. Excessive propagation in heat has given the variety a weak, sickly constitution that several generations of plants under cool treatment will perhaps put right. Secondly, the appearance of new American varieties in the French collections. The French writer on this point says: "These plants are generally later with us. . . . but are, on the other hand, of a size almost unknown among the French varieties, and for form are quite distinctive. It can easily be foreseen that henceforth they will cause great changes in our collections, and will play a part in future seedlings. There is not the least improbability on the latter score, for all the principal French raisers have been busily laying in a stock, not only of the new American, but also of the most recent Japanese sorts.

ACCORDING to the French taste the best twenty new varieties of 1890 are as follows:—1st., American: Mrs Langtry, Mr. E. W. Clarke, Mr. Levi P. Morton, Mr. Isaac Price, Mr. Orchard (*sic*), Mountain of Snow; 2nd., English: Stanstead Surprise, Stanstead White, Eynsford White, Putney George, Alice Bird, Admiral Sir T. Symonds; 3rd.,

French: Cléopatre, Madame Eugénie Multon, Madame Eugène Puvrez, M. Leon Say, Lumière Electrique, Madame Bruant, Madame E. Bergman, and Madame Anaïs de Reydellet. Compilers of audits may find the above useful for purposes of comparisons.

The Centenary Show at the Aquarium taught several lessons, but none more striking than the ridiculous attempts at staging huge Japanese blooms on boards originally intended for cut chrysanthemums of one third the size. It must not be forgotten that our ordinary show boards are made on a pattern suitable for such blooms as our fathers and grandfathers were capable of growing many years ago. In those days holes six inches apart allowed ample space for each bloom to stand out by itself and be independently examined by the visitor from all points of view. After the introduction of the Japs no alteration was made, at any rate officially, and as the method of cultivation steadily tended to increase the size of the Japs year by year one would have thought that in order to exhibit such flowers to the best advantage the holes in the show boards would have been made wider and still wider apart. To see six or twelve cut blooms of a large Japanese flower like Etoile de Lyon, Stanstead White, or some of the long, straggly petalled varieties, interlacing and crushing into one another on a regulation show board, is a sight that to the official eye ought to suggest immediate alteration. Some of the splendid blooms staged in this way seemed almost to cry out in agony at the excruciating way they were jammed together. There should be no option in this matter but an official decision.

An American correspondent sends me the *San Francisco Chronicle* containing an account of the California State Floral Society's Exhibition of Chrysanthemums on the 6th ult. Three new varieties are figured, President Arthur, The Unknown, and California. Our American friends seem to vie with one another in the accessories to their shows, and Japanese native decoration seems to be quite the rage. The article in the *San Francisco Chronicle* says: The ceiling of the room is adorned with enormous Japanese umbrellas and festoons of a pink Oriental fabric. Along the left hand wall is a raised framework like an extended desk covered with green moss and stuck full of a bewildering array of cut flowers. This latter part of the arrangement appears to be a borrowed idea from the French, and is one which will never find favour in England.

It may not be generally known that it is through a firm in San Francisco that most of the plants from Japan are imported into the States, and thence to England. Therefore, it may be of service just to quote the names of some of the principal novelties at the "Frisco" show. Besides those mentioned in the foregoing paragraph, special notice was taken of Tiburcio Parrott, described as an outcurved variety; Bride of Venice, mauve and white incurved; Mrs. Copeland, a ragged mass, like a mop, white on one edge, pink and yellow streaked on the other; exhibited by a native Japanese living at Oakland. He has the reputation of rearing the finest chrysanthemums in the world. His present exhibit included 165 varieties, every one of which was a paragon. White Elkshorn, Royal Pheasant, and Mrs. Bowen were also varieties much admired. C. Harman Payne.

STRAWBERRY FORCING.

By H. W. Ward, Longford Castle.

This is a good time to examine the earliest layered plants of Noble and Vicomtesse Hericarte de Thury strawberries, and to select for forcing good batches, those with the plumpest crowns having the preference. Take the plants selected to the potting-shed, see that the hole in the bottom of each pot is clear, in order to ensure a free passage for water; then remove any dead or decaying leaves and a little of the surface soil. This having been done, top-dress with a mixture of pulverized horse droppings and loam, leaving a space of one inch from the top of the rim in each pot for the reception of water. The pot should then be plunged in a bed of new leaves, and within a few inches of the glass, in a pit from which frost can be excluded. When plunged they should be watered sufficiently to settle the new soil, after which further applications will probably not be required more than once or twice before the flower trusses appear. These will be visible in a few weeks if the plants have been well grown, and the pit is kept close. On the appearance of the trusses the pots should be removed from the plunge bed, washed, and placed on shelves near the glass in the forcing-house.

For the purpose of securing a regular supply of ripe strawberries from the time the first dish is sent to table until the fruits are ready for gathering from the out-door beds, towards the middle or end of June it will be necessary to start a batch of plants in the manner indicated above, at intervals of a week or ten days. By so doing there will always be a regular succession of plants in the proper stages of growth to fill the shelves as they are vacated by plants from which the crop has been gathered.

Temperature.

In the forcing of fruits, as well as in the cultivation of plants and vegetables, it is necessary that the cultivator should first consider the most favourable conditions under which the finest examples are naturally produced out of doors. He should, for example, take note of the maximum and minimum temperatures prevailing during the various stages of growth. These temperatures should be the guide, varying them a little if needful, to suit the other occupants of the house. Thus a night temperature of from 45 deg. to 50 deg. when the plants are in flower, with an increase of ten degrees during the day with fire heat will be ample. A further increase of five or ten degrees with sun-heat may be allowed. During the interval between the setting and the ripening of the fruit the night temperature should be gradually increased to 60 deg., or higher if necessary, with a corresponding rise in the temperature by sun-heat.

Cropping.

Until the middle of March the flowers, as they expand, should have a camel's hair brush or some other light substance passed over them, about mid-day, when they are dry being the best time to assist in the work of fertilization. But with the opening of spring and an increase of light and sunshine, the brush can safely be dispensed with, as a good set can then be obtained without its aid. The hand passed gently over the blossoms, which will then be plentiful and strong, or a gentle spray from the syringe will be sufficient to distribute the pollen. The fruit being set, select ten or twelve of the best berries, which should be of uniform size, so that they may all swell and ripen together. When the fruit is gathered, remove the plants to a hardening-off pit or house, if they are required for the formation of beds in the open. Having selected the specified number of the best berries, a few more or less according to the strength of the individual plants, remove forthwith the superfluous flowers. All trusses that appear between this and the ripening of the crop, should be pinched out as they make their appearance, so as to concentrate all the strength of the plants on the swelling and ripening of the fruits.

Atmospheric Moisture and Ventilation.

In the matter of distributing moisture in forcing-houses and the opening and closing of the ventilators no hard-and-fast line should be observed, as such details must be regulated in accordance with the character of the weather, temperature of the house, and the stage of growth which the occupants of the house have reached. However, we may say that strawberry plants started under the influence of fire-heat will require to be syringed once or twice on most days until they come into flower, with a view to maintaining a moderate degree of humidity about them, and to keep the plants free from the attacks of red-spider. When in flower a rather dry and buoyant atmosphere should be maintained until the fruit is set. Then the syringe should again be brought into use, using it, however, sparingly and with judgment during dull weather. From the middle of March and onward those swelling their fruits should be heavily syringed overhead when the ventilators are closed, or bright days. Should the ventilators of the house in which strawberries are being forced fit closely, it will be advisable to leave a little air on at night when the plants are in flower, and again when the fruit is approaching maturity, and, weather permitting, to ventilate freely during the day.

Watering.

More strawberry plants are killed through indiscriminate watering at the roots than from any other cause. Therefore give no slight surface watering, but a thorough soaking of the soil when water is required. From the time the plants produce their flower stems until the fruit begins to change colour they should have some fertilizing agent applied in a liquid state alternately with clean tepid water. Guano, dissolved in water at the rate of 3 lbs. to ten gallons of water, is a safe and stimulating fertilizer; care, however, should be taken in watering not to pour it indiscriminately over the fruits and crowns. The same remark applies to the use of liquid manure. I have known instances of serious injury to plants result from the careless application of liquid fertilizers. The attacks of red-spider and greenfly should be guarded against. A vigorous and well-directed use of the syringe and clean water should keep both in check. However, as regards green-fly it will be advisable to fumigate lightly a couple of evenings in succession just before the flowers open, and again after they have set. This will rid the foliage of the pest should the syringe fail to dislodge them.

Varieties.

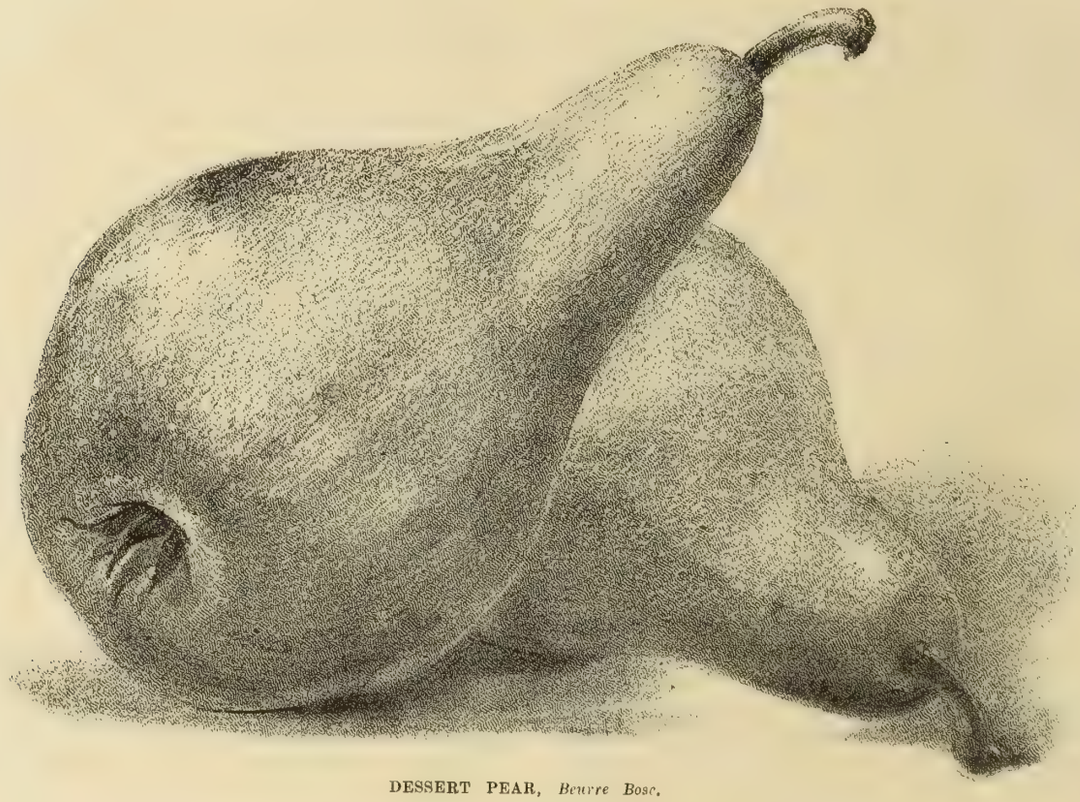
La Grosse Sucrée, Keen's Seedling, President, and Sir Joseph Paxton will make a good succession to Noble and Vicomtesse Hericarte de Thury, the several varieties ripening in the order in which the names are given.

INTERESTING TO AMATEURS.

The exhibitor who gained the Centenary bronze medal of the N.C.S. offered at the Taunton Chrysanthemum Show in November, is an amateur who grows chrysanthemums for a hobby. A money prize and the medal were offered for the best group of chrysanthemums arranged for effect in a space ten feet by four feet. In competition for the prize and medal were two nurserymen and one gentleman's gardener in addition to the amateur referred to. I record this instance of successful exhibiting on the part of an amateur, because it plainly shows what this class of cultivators can do if they enter heartily into the work. The important feature of the winning group, was the superior manner in which it was arranged. There were larger flowers in most of the other groups, but the arrangements in these were wanting in effectiveness. This should be of some interest to amateur growers, as it shows them that they must know how to arrange the groups as well as how to grow the plants. It is only proper I should say that the exhibitor in question has a very suitable house in which to grow his chrysanthemums, but to indicate what care he bestows on them, I may mention that a few days before the show I called upon him, when I found many of his plants standing in a light airy shed for the purpose of retarding the flowers. Some of them had stood in the shed for a fortnight before I saw them, yet they were in such good condition as to add considerably to the attractive character of his arrangement. J. C. Clarke.

DESSERT PEAR, BEURRE BOSC.

THE influence exercised by the exhibitions of fruit and other products of the garden upon the popularity of varieties in their respective classes is very clearly indicated by this excellent pear. For a long period it was one of the most popular of the dessert kinds attaining maturity during October and November, and there were but few collections of any considerable extent in which it was not included. But of late years there has been a material decline in its popularity, with the result that it is now much less extensively planted than was the case from ten to twenty years since. This change in opinion may, in a large measure, be attributed to the fact that it has, to a considerable extent, been replaced on the exhibition table by varieties having fruit larger in size and more attractive in appearance. The fruits of Beurre Bosc, or Beurre Rose as it is frequently designated, are decidedly handsome, as so well shown in the accompanying illustration, but they do not appear to advantage in comparison with the large shapely fruits of Pitmaston Duchess, Doyenne du Comice, and a few other kinds. Consequently exhibitors seldom include it in competitive collections at the public exhibitions, a fact much to be regretted because of the great value of the variety to those who grow pears simply for the dessert. The two varieties mentioned with others bearing fruit of the largest size are of a high degree of excellence, but it is essential the general body of cultivators should not grow them to the exclusion of other kinds equally meritorious.



DESSERT PEAR, *Beurre Bosc.*

Under favourable conditions this variety is decidedly vigorous in growth, and in warm situations it is admirably adapted for standard culture. In Kent it is rather largely grown in standard form for the production of fruit for the supply of the metropolitan and other markets, and there can be no doubt as to its adaptability for orchard culture in other of the southern and some of the western counties. It may also be successfully cultivated as a diffuse bush in the garden in districts favourable to the production of first-class pears. In the midland and northern counties it requires a wall, and both on southern and western aspects it does remarkably well. In several gardens in Yorkshire we have seen it bearing heavy crops. The fruit is rather above medium size and distinctly pyriform; the skin is pale yel ow, almost wholly covered with thin cinnamon coloured russet; the flesh is yellowish white, and on moderately warm, well-drained soils it is buttery, rich, and juicy, with a pleasing aroma. On cold soils the fruits lose much of their richness, and sometimes are decidedly second-rate. The period of ripening, as in the case of many other varieties, is materially influenced by the district and by the season, and in some years fruit may be had in good condition in December, but, generally speaking, it is in perfection during October and the month following.

Beurre Bosc was long considered to be one of the many good pears raised by Van Mons, but according to the "Fruit Manual" it was found as a wilding at Apremont, in the Haute Saone, and was named in honour of M. Bosc, director of the Jardin des Plantes at Paris.

GRAPE, GROS COLMAR.

THIS fine grape has a bad character for not colouring well, which it hardly deserves, for when judiciously cropped it will colour as well as any other kind. This has been abundantly proved this year by Mr. Warden, the gardener at Clarendon Park, near Salisbury. When I visited him early in October he had this grape in splendid condition; the bunches were not so large as I had seen in other places during my holiday, but they were of good size, while the berries were exceptionally fine, and as black in colour as the best Hamburgh I have seen during the season. After seeing so many fine samples of this grape at different places, none of which were so well coloured as the Clarendon Park crop, I naturally became interested in the matter, and examined the vines carefully, and asked so many questions regarding the system of management, that I am afraid Mr. Warden must have thought me rather troublesome. If so, I hope he will forgive me, my excuse being a good one. I had found a cultivator who could take a fair crop of grapes from the vines and colour them properly. It was, therefore, only a matter of business with me to find out how it was done. This I was not long in doing, as my guide unhesitatingly answered my inquiries. In the course of conversation, I learnt that when the vines were judiciously cropped the berries always coloured well. It is, however, Mr. Warden's opinion that this grape requires special treatment, and to have the lateral growth so reduced as to allow plenty of light to reach the bunches as they began to colour. To secure an abundance of light, the foliage is cut away so that the sun shines directly upon the bunches. I could see plainly that this had been done, and the excellent colour and finish proved that the views held by this cultivator are correct. I must ask the reader not to lay down the paper under the impression that the crop the vines were carrying was a light one, or the bunches small in size, because in every respect the produce left nothing to be desired. A fair average crop of grapes that are well coloured is of more value in a private garden than a larger bulk indifferently finished.

In one respect it is a misfortune that this grape is such a prodigious cropper, because there is such a temptation to leave more bunches than the vines can finish properly. However, that is no excuse for indifferently coloured berries. This case indicates that to secure well-coloured samples it is necessary to take only a fair average crop, and to thin out the leaves, that the bunches may be more fully exposed to the influence of sunlight. I would like to add a few words with reference to the number of bunches each vine should be allowed to carry the crop. To be brief, the grower should take notice of the size of the bunches that are to be left, as it is the weight of fruit, and not the number of bunches, that should be the guide in the matter of cropping. A rod twelve feet long may be allowed to mature from 18 lbs. to 24 lbs. of grapes, which may be expected to colour properly provided the vines are in a vigorous state of health. J. C. C.

LONG-TAILED LADY'S SLIPPER,

Cypripedium caudatum.

By far the most important of the comparatively small group of South American lady slippers is Cypripedium caudatum, which has from the first been regarded with much favour by the general body of orchidists. Distinct in character and elegant in habit, it is one of the most effective in specimen form, and there is not perhaps one of the lady's slippers that can for a moment be compared with it in its adaptability for the embellishment of indoor apartments on special occasions. It is not only interesting as representing a quite distinct type, but as one of the parents of some of the finest of the hybrid lady's slippers it has special claims for consideration.

The long-tailed lady's slipper was first discovered rather more than one hundred years ago by Ruiz and Pavon, two Spanish botanists who explored the Huanuco and other districts in Chili and Peru during



LONG-TAILED LADY'S SLIPPER, *Cypripedium caudatum* (Flowers green, purple, and yellow).

1788 and the following year. It was from herbarium specimens that had been collected by these botanists that the species was described by Dr. Lindley in his "Genera and Species of Orchidaceous Plants." In 1842 the species was again found by Hartweg "in," according to "Paxton's Flower Garden," "wet marshy places near the hamlet of Nanegal, in the province of Quito; but he did not send it home." It was not untill 1847 that it was introduced to European collections by William Lobb, who found it in the same district as that in which it was first discovered by the two Spanish botanists mentioned. Subsequently it was found in the same district by Davis, and on the Andes of Ecuador by Pearce, at an elevation of between 5,000 and 6,000 feet. Two years after the species had been sent home by Lobb a plant bloomed at Ealing Park, then so famous for its collections of plants. From Messrs. Veitch's excellent "Manual of Orchidaceous Plants," we learn that "in the Muna locality C. caudatum grows chiefly on rocks in decayed vegetable matter, sometimes under brushwood, sometimes fully exposed."

There are three distinct forms of the long-tailed lady's slipper, and these are C. caudatum Lindeni, which has flowers similar in size to those of the type, but with a ribbon like a pendulous labellum, bearing a strong resemblance to the petals. C. caudatum Wallisi, which differs chiefly in having flowers rather smaller and paler in colour than those of the type, and C. caudatum Warscewiczi, better known perhaps as C. caudatum roseum. The flowers are similar in size to those of the species, but the sepals are of a more decided yellow hue, and the base of the petals are suffused with purple. It is a point of some importance that while the species and the two other forms grow on the ground, Warscewicz's variety is found exclusively on the tops of the highest trees. As showing how valuable C. candatum has been to the hybridists, it may be mentioned that it was one of the parents of C. Dominianum, C. grande, C. Schroderæ, a trio of lady's slippers of great beauty.

With reference to the cultural details of C. caudatum and its several varieties it is not necessary to say much. They require a place in the East Indian house, and enjoy liberal supplies of moisture at the roots and a rather humid atmosphere during the season of growth. They all thrive in a mixture of fibrous peat, sphagnum moss, charcoal, and sand with liberal drainage. Both the species and its varieties are the most effective in the orchid house when grown in specimen form to the size represented in the accompanying figure, but for indoor decoration, plants in five or six-inch pots, with one or two growths are the most useful.

Bedford Park Natural History and Gardening Society held its monthly meeting on the 6th inst., when a highly interesting lecture was given by Mr. Yorke Powell on the "Folk-lore of the Holly, Ivy, and Mistletoe." The lecture was illustrated by an impor ant collection of hollies contributed by Messrs. William Paul and Son, of Waltham Cross. The collection consisted of forty distinct kinds, and the relative values of the several varieties for the embellishme t of the garden were referred to by Mr. George Gordon, who also pointed out the conditions under which the holly can be grown with the most success.

RENEWING AN OLD VINE BORDER.

AT different periods various ways of growing grapes have been adopted with varying success; but whatever course has been taken in dealing with that portion of the vine above ground, neither art nor energy has succeeded in producing good crops unless the roots have had the advantage of well drained soil, containing all the constituents of plant food in a suitably prepared form. During the past week I have been taking out a vine border made some thirty or forty years ago, and the work has not been without interest. The ideas entertained at that period of what a border for vines should be, can be gathered from the character of the soil that was employed in its formation, its depth and drainage provided. The surface soil for a foot in depth was rich in humus, no doubt the result of frequent top-dressings with natural manure. Then came a layer eighteen inches in thickness, of an impervious yellow loam, and below this was a thin stratum of lime resting upon six inches of yellow soil, little removed from clay. Underneath this was a layer of coal ashes, four inches deep, resting upon a foot of stones forming the drainage.

From this description it will be seen that the depth of soil was over three feet with sixteen inches of drainage. Now I imagine few of the present grape growers would make such a border for vines, knowing, as they do, that soil of an impervious nature, imperfectly drained, is difficult to manage. They will know also that when the border is not carefully supplied with water, an inferior crop of grapes indicating a strong tendency to shank results. The placing of the lime at the bottom of this body of soil is at variance with modern practice, and of comparatively little service to the vines, except in the form of drainage. Repeated waterings would have the effect of carrying the dissolved particles still further from the roots. Although the sixteen inches of drainage was more than ample for a vine border, yet the ashes which formed the top layer were liable to become choked by the loam which rested upon it, and thereby a passage for water rendered almost impossible.

In order to remedy these evils I purpose taking out the ashes, and then putting sufficient stones on the existing drainage to fill the space to within two and a-half feet of the ground line. I shall have those for the top layer broken to about the size of those used on roads. On the drainage thus formed I shall place turves, with the grass side downwards, and fill up the remaining space with good fibrous yellow loam, quicklime, lime rubbish, soot, ash from the burnt refuse heap, and bones, the latter in a form in which they can be readily dissolved. The loam will be chopped up roughly, and the other constituents of the compost will be well mixed with it. That this mixture, with occasional waterings with liquid manure, will prove a suitable medium for the roots of vines, and enable the canes to produce good crops is the opinion of

J. B. R.

APPLES FOR AMATEURS.

By J. C. CLARKE.

IT is a pity amateurs and others who have limited space and a suitable soil for fruit trees on stocks known to have a dwarfing character, do not more generally plant them. All classes of cultivators continue to plant the pear on the pear stock, and the apple on the crab, as if no other stocks were available. They either do not know anything about changing these stocks for others more suitable, or they purposely ignore them to their own loss. I am not going so far as to say that the quince and the paradise stocks are suitable for trees to be grown on all kinds of soil, because they are not. In a fairly heavy and retentive staple, the quince stock is quite at home, and will with a moderate amount of care sustain a tree if grown in the form of bush, pyramid, or cordon for many years. The paradise is similar in character, but the roots do not require quite so much moisture. It should be borne in mind by those who have a limited area for fruit culture that the forms of trees mentioned do not require much room, and that they come into bearing in a year or two. In proof of this it may be mentioned that last January I planted a two year old tree on the paradise of that large and handsome apple Lord Grosvenor, and in the course of the season it produced sufficient apples to pay for the tree. A tree of that valuable pear Marie Louise d'Uccle on the quince planted the year before, and not more than three feet high at the present time, bore an excellent crop. These are rather exceptional cases, but they are referred to for the purpose of showing the utility of the dwarfing stocks in promoting early fruitfulness. These stocks are not suitable for dry or poor ground, or for gardens where there is no chance of the trees receiving the assistance of manure at least once in two years. To maintain the fertility of the soil it is necessary to place a layer of manure on the surface immediately over the roots. Assisted in this way it is surprising what large and handsome fruits the trees produce.

If the soil of the garden is too poor and light for these stocks, the owners of small gardens need not despair of obtaining a crop of fruit, as by judicious management it can be had by using the ordinary stocks, especially in the case of apples. The pear crop under any circumstances, is more uncertain, but apple trees on the crab stock, and trained in the form of spreading bushes or cordons, can be made annually productive by judicious root-pruning, or while young by lifting and replanting. Either form of root disturbance, according to the character of the growth of individual trees, is sufficient to check excessive growth and promote fruitfulness.

From any one tree of the description I am advocating, the cultivator must not expect a large quantity of fruit, but it will be in proportion to the space occupied. I know enough of the wants of amateurs to understand that they will obtain as much satisfaction from dwarf fertile trees that can be easily managed as from larger examples that are practically beyond their control. It would occupy much space to enter into all the details of management of these dwarf trees. It must therefore suffice to say that there are hundreds of small gardens in the country in which apples might be grown where at the present time not a tree is to be found. My trees on the paradise stock are planted five feet apart in a line near to a prominent walk, and, although they were only planted two years, when they were one year from the graft, they are now neat little bushes, and many of them gave me a nice few large fruits this year. Bush or pyramid trees on the crab stock may be planted six feet apart, if kept root-pruned. There are many sorts of apples suitable for this form of tree. Of the culinary varieties, my favourites are Lord Derby, Ecklinville Seedling, Lane's Prince Albert, Hawthornden, Rymer, Herefordshire Beefing, Nelson's Glory, Keswick Codling, Cellini, Lemon Pippin, and Beauty of Kent. Dessert sorts that can be specially recommended include Cox's Orange Pippin, Claygate Pearmain, King of the Pippins, Margil, Astrachan, Scarlet Nonpareil, Royal Russet, and Ribston Pippin.

PREPARATION OF THE SOIL.

THE remarks in your leader on page 755 are quite opportune and exactly meet such cases as my own, and I doubt not many others. Here we have to deal with a soil which is decidedly unsuitable for vegetation in any form when it has not been properly prepared by autumn or winter cultivation. But under judicious management the same soil will, in a short space of time, be suitable for growing almost any kind of vegetables and the majority of trees and shrubs, excepting, of course, such as are known for their dislike to lime, such for example as rhododendrons and some kinds of conifers, notably Abies Douglassi. The soil here is not actually clay, neither is it what may be termed a chalk soil, although the substratum at variable depths of from two feet to six feet is chalk. The soil is found most suitable for vegetable life. From one foot to two feet deep, it is of medium texture, and thickly mixed with it are flint stones. Underneath the subsoil is cold, heavy, and retentive.

In breaking up a new piece of ground for vegetables or shrubs our plan is exactly what you describe. The top spit is kept on the surface, the bottom of the trench is broken up to a depth of twelve inches, on this a thick layer of long litter is placed. We find this litter of much greater advantage than short dung, such as that from the cow houses. Manure of the latter description has a strong tendency to bind the soil together, and assist in retaining the moisture during the winter. But by the employment of long manure from the stables the soil is kept open, thus permitting the water to percolate freely and the air to pass freely through the mass.

In trenching in this manner it is necessary to have three trenches open at the same time. The surface is left as rough as possible, the work being carried on at this time of the year as far as is consistent with the proper performance of other operations. As early in February as possible a four-inch layer of a mixture consisting of vegetable refuse, wood ashes, decomposed hotbed manure, and old potting soil is spread over the surface of the newly-trenched land. On the first opportunity when the soil is fairly dry on the surface the whole is turned over with long four-pronged forks, the compost dug in and all lumps from the bottom of the trench thrown up on the top, where they lay to be pulverised by the frosts and rain during the next month or six weeks.

Should a piece of ground which has been so dealt with be intended for potatos the following season the soil is again dug over as the planting proceeds, but no manure is added. A light sprinkling of leaf soil, if available, is placed under the sets, as it has been found the very beneficial. By this method of management it will be seen that soil is thoroughly broken up three times during the winter and spring. If possible, the same plot of ground is, the next autumn, prepared in the same way for another crop, and a dressing of lime is given with the refuse soil on the surface. We find that the lime renders the soil readily workable if put on and dug in when the surface is fairly dry. It is a serious mistake in the working of such soils as this to tread upon it when in a wet state, whether to dig it or otherwise. There is a season for working such land, and only at that time can it be prepared in a satisfactory manner. Spades are utterly useless, on account of the number of stones which the implement comes in contact with. Moreover, the soil is so adhesive at all times that a spade would require far too much cleaning to be of any service. Besides it cannot be so easily broken up in a thorough manner with a spade as with a fork. We remove a quantity of stones every year, but the constant digging and trenching bring them nearer to the surface. In no other manner that I know can soil of this description be managed to produce the same results. The use of heavy retentive manures and the practice of treading on the soil when wet must be avoided, otherwise all labour expended will be practically lost.

Land treated in the manner here indicated is better without fresh manure when to be devoted to root crops, such as carrots and beet. The former has a tendency to split towards the autumn, if the summer has been wet, when encouraged to make a strong growth by the land being enriched by heavy dressings of fresh manure. The coating of vegetable refuse on the surface is sufficient for such crops as here named. Beet in a strong soil requires very little stimulant to induce it to produce roots of a size consistent with high quality. The difficulty here is to prevent the roots attaining to an excessive size, very late sowing being the best preventive. There is some risk in sowing late, for if the summer is dry the roots do not become large enough.

E. MOLYNEUX.

TUBEROUS BEGONIAS IN THE FLOWER GARDEN.

As the begonias become better known and more plentiful they will assuredly take the place of the zonal pelargoniums in the flower garden, and rightly so, for looking at the cost of the latter the begonias have a great advantage. They are also more brilliant and last considerably longer in bloom, therefore at this date the opportunity should be taken of obtaining a packet of seed from a trustworthy source for the purpose of making a start in raising a stock of strong plants. A much easier method is to purchase the tubers early in the season and start them into growth. No doubt better plants can be obtained and the colours can be had separately, but the question of colour is of but little consequence, as a bed of mixed begonias presents a charming appearance. During the past season I had them both in mixture and in distinct colours, and had a preference for the former.

I have raised nice plants from seed sown towards the end of January, and those with limited room at this date should defer the sowing until early in the year, as once the plants are up they should be kept steadily growing. First prick off the seedlings into other pans, then afterwards transfer them to sixty pots and harden off for planting out. The seeds are best sown where they can have a little bottom heat. When the seedlings are well up a warm shelf close to the glass suits them. The old tubers occasion very little trouble, as they do not require much heat to start them. We keep them through the winter in boxes in which they are placed in cocoanut-fibre, as soon as the tops are dried. They will only require water once during the winter if in a dry place, but if possible a temperature between 45 deg. and 50 deg. will be best. Tubers should not be allowed to shrivel, or they suffer from dry rot, but it is better if they can be kept without being watered. The tubers are started into growth early in April by placing the boxes in a frame close to the glass, and supplying occasionally with tepid water. They are not potted up in any way, but allowed to root into the fibre, with which a small quantity of peat siftings is mixed, and when sufficient top growth has been secured, they are hardened off for planting.

By starting them in a cold frame a strong growth is secured, and the plants may be bedded out earlier than when heat has been used to start them into growth. I found our plants withstood several degrees of frost at the end of May. When planted out they started quickly into growth and were objects of great beauty for months. Begonias require abundance of moisture, and as they root chiefly near the surface, they are liable to suffer from periods of dry weather, unless they receive careful attention. I found them much benefited when liquid manure was given them, and both the liquid and the water should be applied directly to the roots, not over the tops as it disfigures the bloom. They require lifting before very severe frosts are experienced, because of the risk of the tubers being injured. They are easily raised from seed, readily grown, and also take up little room when at rest. The colours of their flowers are so varied that they should become popular as bedding plants in the place of pelargoniums, which involve considerable labour and take up much room during the winter.

G. Wythes.

WIND-PROOF TREES.

There is no form of tree perhaps that is absolutely proof against damage by strong gales of wind, but there are some more liable to injury than others. If I were asked to name the deciduous tree most likely to suffer from the effects of a strong wind I should at once mention the English elm. I am convinced that it is the most unsuitable tree of any to plant in positions much exposed. Amongst coniferous trees the Cedar of Lebanon, and Pinus insignis suffer more from violent gales than others. The first mentioned is no doubt the most liable to injury in this respect, but the pinus is sometimes so terribly disfigured that I would not plant it except in the most sheltered positions. It is important also to state that trees which suffer from the effects of rough winds are equally liable to be injured by a heavy snow storm. These facts ought to be of some interest at the present time, when so many readers of the Gardeners' Magazine are engaged in planting. It is certainly not pleasant to find, after much patient waiting, for a tree to attain to a specimen size, that a gale of wind or a heavy fall of snow has disfigured it. But this is what must be expected by those who plant the two last-named trees in exposed situations. Of the coniferous trees there is not one that stands wind and snow better than the Wellingtonia. It may become browned when occupying a position where exposed to the full blast of a south-west wind, but its peculiar habit renders it almost proof against both wind and snow. This is more than I can say for any other conifer. The nearest approach to the Wellingtonia, in the capacity for resisting wind is the Spruce in its several forms. Until the trees attain a large size they are not often injured from either wind or snow.

The best wind-proof evergreen tree that attains to moderate proportions is perhaps the Evergreen oak, which is seldom injured either by wind or snow. It is, unfortunately, slow in growth, but what is lost in that respect is gained by its endurance. Amongst deciduous trees I need hardly say that the old English oak is unsurpassed as a wind-proof tree. The Scarlet maple is the next best, while the ash must not be despised. In a suitable soil the beech seldom suffers to any considerable extent. For planting in positions where few other things will grow owing to the influence of the wind, the thorns are unsurpassed. These may want a little nursing at first; once they are established in the soil they will defy both wind and snow. For a group of trees of moderate proportions the thorns are of much value. Especially desirable are the Single Scarlet, Double Pink, and the Single White.

J. M.

FORCING LILY OF THE VALLEY.

By C. Warden, Clarendon Park.

In many establishments this ever-welcome lily is in constant demand for a very long season, and many are the means adopted for nursing it. With all the aids of modern appliances there is nothing to surpass a well-made dung bed for bringing on successional batches from November onwards until February, after which time they will succeed in any structure in which a moderately humid atmosphere and sufficient heat are maintained.

Considerable care should be taken in preparing the manure to form a hotbed in which to start the crowns, and it will be better if about half the bulk is composed of leaves, as beds made of leaves and stable litter in equal quantities keep their heat for a much longer period than do those formed wholly with manure from the stable. What is equally important the heat is not so violent. It is very essential in this case that the whole mass be turned over several times, and be allowed about a week between each turning, so that the heat and moisture may be uniform throughout. In forming the bed for this purpose, and at this season of the year, it should be made a good thickness, as shallow beds soon lose their heat. A one-light frame will be sufficiently large for an ordinary supply of plants, so that the bed need not be very large, but it should always extend two feet on all sides beyond the box. This will admit of extra linings being added whenever they become necessary.

The bed having been made ready and the box placed upon it, the crowns may be set in the frame, but not plunged, unless there is no fear of the bed becoming too hot. In the latter case, they would be better plunged to about half the depth of their pots. In any case, they should be covered to a depth of about two inches with cocoanut fibre refuse, and the light be put on and covered with mats to exclude the light, as the crowns start so much better in darkness at this season than when exposed to light. If there is any danger of the bed becoming very hot, care should be be taken to allow a little ventilation at the back of the frame that the steam arising may escape. A bed made up in this manner will be available for starting several batches, as it may be partly filled the first time, and another batch introduced a week or eight days later. After the first crowns have been removed, the third batch may be introduced, after which it is most probable the bed will require renewing. This can be done by simply turning it over and adding at the same time a little fresh manure.

The proper time to remove them from the frame is when they have grown about two inches in height and are showing their flower sprays. These should only be allowed to just peep out of the points of the crowns before they have the advantage of light, for when they are kept in the dark after this stage they soon become drawn and are of little value. Stems that have become too much elongated do not make good sprays. In removing lilies of the valley from the hotbed to the pit or house in which they are to bloom, allow the fibre or whatever material has been used for covering the crowns to remain until they are put into their new quarters. With this precaution they feel the shift but very little, and this latter plan is of some consideration if it happens to be frosty weather when the operation is being carried out. These lilies require more water at the root while in the humid hotbed than many would suppose, and it is probable that many failures may be traced to insufficient moisture.

I have generally found that they come into bloom much better when not placed in an excessively high temperature after being removed from the hotbed. A temperature ranging from 55 deg. to 65 deg. will suit them very well, but of course they will be longer in coming into flower. They should not be allowed to suffer from an insufficiency of water from the time they are started until they have done flowering, and not even then. Very early forced crowns are not of much value afterwards, but those brought on later are very useful for planting out.

WILTON HOUSE GARDENS, NEAR SALISBURY.

To those who are interested in horticultural matters, a walk through the pleasure grounds and gardens of Wilton House is a rich treat. The pleasant position of the residence, and the well timbered park and grounds very favourably impress the visitor. Fortunately perhaps for England the country is rich in such imposing domains, but it is not always—as in this instance—that visitors are admitted. The grounds of Wilton House, however, are open to the public one day in each week during the summer months, and as may be imagined, the residents in the district are not slow to take advantage of the opportunity thus afforded. In some places the visitors abuse the privilege given them, by destroying the trees or plucking the flowers, but as I heard no complaint from Mr. Challis, the head gardener, I presume that the people of Salisbury know how to behave themselves under such circumstances. As I visited Wilton House gardens chiefly for the purpose of seeing the departments devoted to fruit and plant culture I shall not now refer to the many beautiful features in the pleasure grounds.

As might be expected fruit growing both under glass and in the open is conducted on a large scale. About 3,000 strawberry plants are prepared in pots for forcing. When one sees how the preparatory part of the management is conducted, surprise is no longer felt that the fruit produced is far above the average in quality. For the earliest crop, Princess Frederick William is the favourite, and for the main crop Auguste Nicaise is largely cultivated. All the plants are grown in 5½ and 6 inch pots, and at the time of my visit most of the stock was standing on boards to prevent the worms entering the pots. It was not, however, difficult to see that the boards had another important use, and that is assisting the ripening of the crowns. It is not often that we see such well-developed foliage on plants in such small pots, nor such prominent crowns. It is evident that the runners were secured and potted early, and that they had since received skilful management.

The peach houses are an interesting feature, especially that in which here is a perfectly healthy tree nearly one hundred years old. The con-

dition of the tree shows very plainly the value of the extension system of training, for had the branches been restricted to a small area it would have long since been exhausted. The structure devoted to early peaches is an interesting one, as all the trees bear evidence of skilful cultivation. I spent some time in the vineries, of which there are several, as it was interesting to hear Mr. Challis describe the means he adopted for the extermination of the phylloxera which attacked some of the vines several years ago, but to that matter I cannot now refer. The favourite sorts appear to be Muscat of Alexandria, Mrs. Pince, Lady Downes, and Black Hamburgh; but the house that interested me most was one in which Mrs. Pince was trained over the roof and the Alicante on the back wall. Except at Sherborne Castle I do not remember ever having seen Mrs. Pince managed so well; the crop was very regular, and the bunches even in size, the majority of them weighing quite three pounds each, which is exceptional for such a large crop. The colour of the berries was remarkably good, and quite equal to the best samples I have yet seen. The crop of Alicante on the back wall of this structure deserves more than a passing notice, as I have seen many attempt to furnish the back walls of lean-to vineries with vines, but I have not known the plan succeed after the front vines have covered the roof. I must, however, remark here that the Black Hamburgh is the sort usually selected for that purpose, but I am convinced that Alicante is far the best variety for growing in such a position. The bunches were not so large as when the vines are trained under the roof, but all were of a useful size, and the berries well coloured. Some of my friends tell me that I am wrong when I tell them that the Alicante is the easiest of all grapes to manage. I, however, think that the condition of the crop to which I have referred proves that I am right.

The Muscat of Alexandria is a favourite at Wilton. I saw it in two or three different houses, and in one instance the bunches and berries were of noble proportions. The whole of the crops in the different vineries are, however, of a uniform excellence, as might be expected from such a veteran at the business as Mr. Challis.

Pines are still grown here but the number is limited, in consequence of the space previously occupied by them being now devoted to flowering plants. This brings me to a very important part in the management of these gardens. It is some years since I saw such a fine collection of useful decorative plants, orchids occupying a considerable area. The reader must not expect to read of huge specimens of the most expensive kinds, because such would not be of much service for the purpose for which they are grown at Wilton. The aim and object of orchid culture here is to secure examples that at certain seasons of the year may be employed for the decoration of the rooms of the mansion. There are many people who would think it wrong to use an orchid of any kind in the way I have indicated. But if the right sorts are selected, and these grown under cool treatment, they will endure change without injury. Roses in pots are grown in large numbers for forcing, a spacious house being set apart for them. It would perhaps be useful to give a few of the cultural details as worked out here, but I must pass on to a reference to the great space of glass devoted to violets for flowering through the winter. Long ranges of span-roof pits heated with hot water pipes were being filled on the day of my visit, which was made early in October; large numbers were also growing in five-inch pots, and it is seldom such strong plants are met with. VISITOR.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

GREENHOUSE PLANTS in bloom comprise Acacia platyptera, Azaleas, Camellias, Correa cardinalis, C. delicata, Epacris carminata, E. Lady Alice Peel, E. Lord Palmerston, E. picturata, Erica colorans, E. hybrida, E. hyemalis, and Primula sinensis in variety. Solanum capsicastrum, and S. hybridum compactum are also now in perfection.

THE HOUSE.

THE berried solanums will now be found of immense value for indoor decorations, their brilliant vermilion berries producing a bright effect, and presenting a pleasing contrast to the other subjects. As the fires are now burning in all directions, plants employed in the embellishment of indoor apartments will require a little extra attention to keep their leaves free from dust. Such things as palms, dracænas, and indiarubber plants should have their leaves sponged with tepid water at least once a week, as the moistening of the foliage in this way will be highly beneficial to the health of the plants, apart from the good done by the removal of the accumulated dust.

CONSERVATORY AND GREENHOUSE.

CHRYSANTHEMUMS may be disposed of very easily by setting aside in a cool greenhouse one or two store pots of each variety it is intended to propagate, and destroying all the rest. This is a capital way of wintering a large number in a small space. Good stools in eight-inch pots will furnish a large number of cuttings when required. People who have no glass can pack the roots close together under a wall or fence, where some dry straw can be thrown over them during severe frost.

GARDENIAS are so highly appreciated by all classes that they well deserve all the attention requisite to have them in perfection. G. radicans is a well-known and very favourite greenhouse shrub, and it has scarcely a compeer in fragrance or beauty; in its native country, too, it is very highly prized. The Japanese, as Thunberg relates, form hedges of it, and ornament their houses and the walks of the gardens with it and other species of Gardenia. This is one of the very limited class of plants suitable for window culture, and there are only three of this genus which bear the character sufficiently to warrant their being employed for that purpose; these are G. radicans, G. Thunbergi, and G. Rothmania; the remaining species are all properly stove plants.

FORCING AND FRUIT HOUSE.

ASPARAGUS, SEAKALE, AND RHUBARB will now be coming in plentifully from the forcing beds. If these beds are allowed to get too dry the produce will be neither good nor plentiful. But they may be moist on the surface, and yet dry at the roots of the plants; therefore ascertain by stirring the soil with a trowel in the middle of the bed, and if dry give a good soaking with tepid water. Make up fresh beds for successive supplies. In ordering in roots for forcing, take care either to plant immediately on receiving them, or keep the roots moist with moss, or mould, or they will be much injured by the action of the atmosphere.

FLOWER GARDEN AND PLEASURE GROUNDS.

RHODODENDRONS that have been many years planted require a little refreshing at the root, and this is the best time to do it. A mixture of rotten cow-dung and leaf-mould is an excellent surfacing material, or two or three inches of rotten cow-dung only will do: nothing stronger must be used. This work may be done during frost better than while the ground is wet.

ROSES requiring protection, and hitherto neglected, must have attention at once, as we are now approaching the season of real winter. Plantations of roses should now be mulched with half-rotten dung, the looseness of which will protect the roots from frost, and the drench of rain and snow will carry much of its goodness into the ground. Roses to be planted should be got in if there is a chance of fair weather, as, if neglected now, it will be better to defer planting till the end of February. All newly-planted standards are to be securely staked. In damp soil iron rods are the best stakes, as they do not encourage mildew in the soil, as wooden ones do.

TENDER PLANTS in the open ground, such as Fuchsias, Erythrinas, Bouvardias, Oxalis, Alstrœmerias, Japan Lilies, Watsonias, and other rather delicate bulbs in the peat bed, must have some protection, such as coal-ashes piled in the form of a cone over their roots, or heaps of moss put over, and kept from blowing away by means of hoops of willow rods.

ROUTINE WORK.—Every cultivator should secure now a good supply of turf from a loamy pasture, and of bog peat, or silky yellow loam in which the common brake grows plentifully. These should be stacked up in high ridges like walls, so that the frost will penetrate the whole mass, and the grass will rot quickly. Manure roughly spread among choice shrubs will assist in protecting their roots from frost. In spring the manure can be levelled, and all rough stuff raked off. This is a good time to make banks and rockeries, as during frost the wheeling can be done without harm to the walks.

FRUIT GARDEN AND ORCHARD.

FRUIT TREES of all kinds, both in fruit garden, orchard, and orchard house, should now be pruned and painted. For the latter purpose a mixture of lime, soot, and clay, to the consistence of paint, will answer well; or use Gishurst compound according to the directions which accompany it.

KITCHEN GARDEN AND FRAME GROUND.

OUTDOOR WORK must be regulated by the weather. When the ground is not fit to be trodden on get together all the clippings of hedges, prunings of trees, &c., for charring, and keep the produce under cover to use as needful; it is a most valuable top-dressing for peas and other early crops, both to stimulate growth and prevent attacks of slugs. During frost wheel out dung, ready to dig in at the first opportunity.

VILLA FARM.

PULLETS commencing to lay must be fed liberally, for eggs are now worth money, and the laying birds must be encouraged by abundant supplies of nourishing food. Indian corn and oats with green vegetables will be the most suitable for the birds here referred to, which must also have access to lime rubbish or calcined oyster-shells broken to powder. A little animal food will be serviceable just now for birds in close confinement, but the quantity must not be excessive, or it will do more harm than good. It is worth remembering by those who may be anxious to bring off early broods of chickens that to obtain broody hens in January or February the pullets now laying must have a liberal supply of food of a slightly stimulating character. The young cockerels reserved for breeding must not be allowed to fall away, or the cold will nip them up and render them practically worthless. The general stock must be well cared for, and every effort made to provide the birds with warm and otherwise comfortable sleeping quarters, more particularly to keep the roof in thorough repair, for if the perches and floor become saturated with moisture after every shower they will make but indifferent progress, even if they do not suffer from disease. The floor of the yard ought also to be seen to, and any considerable hollows filled up, so that no pools of water may remain standing for any length of time.

MATABELE AND MASHONA LANDS.—At a recent meeting of the Royal Geographical Society, Mr. E. A. Maund read an interesting paper on Matabele and Mashona lands. Mr. Maund, who was on the staff of Sir Charles Warren in South Africa in 1885, was sent on a mission to Lo Bengula, the Metabele chief, and succeeded in bringing him to look with friendly eyes on the British. Before Mr. Maund left Metabeleland this year Lo Bengula had sanctioned the construction of a road by the British South Africa Company to Mount Hampden, and, in the opinion of the reader of the paper, a new history of civilisation will begin with the last decade of this century in a famous forgotten land. The region has been long fabled as the seat of an ancient splendour and magnificence; as the site from which "They fetched gold four hundred talents to King Solomon," which Milton "thought Ophir," and where Moorish tradition supposed Sheba's queen ruled in luxury. This unknown interior was long erroneously thought to be fever-stricken and uncolonisable, a delusion which better acquaintance has dispelled. Although the route from Capetown is at least 1,500 miles, Pongwe Bay, on the east coast, is scarcely more than 250 miles from the mines, ninety miles of which can be done by water. Matabele and Mashona lands practically lie between 16 deg. and 22 deg. S. lat., and 27 deg. to 23 deg. E. long., and are certainly the most promising countries for colonisation in South Africa. Compared with the country south of it, Matabeleland is like Canaan after the wilderness. Lying high, generally healthy, and very rich in minerals—gold, copper, and iron having been extensively worked by the ancients with their rude appliances—its numerous rivers are either running or have plenty of water in them. The soil is rich and admirably adapted for corn, cattle thrive, and there is an abundance of grass and wood. White children can be reared in the country, which is a *sine qua non* if it is to be successfully colonised by white men; and, above all, it is sparsely populated, about 150,000. The country about to be opened up for colonisation is an extensive plateau, on the water-parting between the Zambesi and the Crocodile rivers. There are no mountain peaks. To the east the slope of the land is abrupt and the country broken, many of the hills isolated and very conspicuous; while to the north-west it falls in gentle undulations. The plateau is furrowed by many considerable rivers and their numerous tributaries. The climate in these highlands, which vary from 3,000 to 5,000 feet above sea-level, is far more healthy than the now well-colonised sea-board of South Africa. The seasons are well marked and the rainfall good. For eight months—from April to November—the air is particularly dry and salubrious, and compares well with the Free State.

Exhibitions and Meetings.

ROYAL HORTICULTURAL SOCIETY, DECEMBER 9.

FLORAL COMMITTEE.

PRESENT: William Marshall, Esq., in the chair; Rev. H. H. D'Ombrain, and Messrs. B. Wynne, H. Herbst, R. Dean, T. Baines, H. B. May, F. Ross, W. C. Leach, C. Jeffries, H. Cannell, C. Noble, G. Paul, E. Mawley, H. Turner, and W. H. Williams.

The contributions to the meeting of the committee on Tuesday were comparatively few in number, the most important being the zonal pelargoniums and the double primulas, which presented a bright appearance.

The Chairman, before the commencement of the routine business, referred, in feeling terms, to the loss the committee had sustained by the death of Mr. Shirley Hibberd, who, at the time of his death, occupied the position of vice-chairman. He proposed the following resolution: "That this meeting of the Floral Committee, which has so greatly benefited by the labours of the late Mr. Shirley Hibberd, desires to place on record its deep sense of the loss it has sustained, and of the gratitude and respect it feels towards the memory of the late Mr. Hibberd."

Mr. H. J. Veitch seconded the resolution, which, on being put from the chair, was unanimously passed.

Mr. H. B. May, Edmonton, exhibited a large collection of double primulas, and was awarded the silver Banksian medal. The plants were all admirably grown and splendidly flowered, and were interesting as showing the success with which the double primulas are grown for market. Messrs. H. Cannell and Sons, Swanley, exhibited an extensive collection of single zonals, which produced a brilliant effect. Conspicuous in the collection was Souvenir de Mirande, a distinct variety, the flowers of average size, and of a brilliant scarlet hue with white centre; and F. V. Noulens, a beautiful variety, in the same way as the first-named, but rather brighter in colour. Messrs. Cannell, who were awarded the silver Flora medal, also had a large gathering of the most elegant and attractively-coloured plumes of Celosia pyramidalis. Messrs. James and Son, Farnham Royal, Slough, sent two cyclamens remarkable for the high colour of the flowers. P. Crowley, Esq., Waddon House, Croydon, sent branches of the common aucuba to show the injury done to vegetation by the severe frost experienced during the night of November 28. Mr. A. Waterer, Knap Hill, exhibited a fine form of Picea pungens, for which he was granted a certificate of the first class.

ORCHID COMMITTEE.

Present: Harry J. Veitch, Esq., in the chair; Dr. Masters, and Messrs. J. O'Brien, De B. Crawshay, H. M. Pollett, H. Ballantine, C. Pilcher, J. Dominy, E. Hill, J. Douglas, L. Castle, and S. Courtauld.

Orchids were contributed in considerable numbers, and included several beautiful hybrids. Messrs. F. Sander and Co., St. Albans, submitted several hybrid lady's slippers, two of which obtained recognition. Hybrid lady's slippers were also exhibted by Messrs. J. Veitch and Sons, especially noteworthy among them being Cypripedium Niobe, a very distinct and extremely beautiful form. Mr. G. N. Pepper, Milford Hall, Salisbury, staged a large, finely flowered specimen of Lælia anceps, for which he was awarded a cultural commendation. Mr. Dennison, gardener to T. A. Gledstanes, Esq., Manor Farm, Gunnersbury, exhibited a good expample of Cælogyne barbata, bearing seven racemes, and from Mr. Walters, Hampstead, came the highly-coloured Oncidium Forbesi.

FRUIT COMMITTEE.

Present: R. D. Blackmore, Esq., in the chair; and Messrs. J. Lee, P. Crowley, H. Weir, C. Ross, J. Willard, W. Dunning, W. Warren, J. Wright, T. J. Saltmarsh, A. H. Pearson, G. Wythes, H. Baldwin, S. Ford, J. Smith, F. Q. Lane, T. F. Rivers, and J. Cheal.

The contributions to the meeting were more numerous than usual, and included several objects of much interest. Mr. G. Hazell, The Rosery, West Worthing, exhibited twelve baskets of excellent grapes, and was awarded the bronze Banksian medal. The principal varieties in the collection were Muscat of Alexandria, Gros Colmar and Alicante, all of which were seen at their best. Mr. Deverill, Banbury, sent well-grown bulbs of Anglo-Spanish and other onions, and Mr. Ross, Welford Park, Newbury, submitted two well ripened smooth Cayenne pines weighing 7 lbs. 12 ozs., and 6 lbs. 4 ozs. respectively. The Liverpool Horticultural Company, Garston, exhibited a seedling grape described as having been raised from a cross between the Black Hamburgh and Gros Colmar. It most closely resembled the last-named variety, but the bunches shown were hardly in condition to properly estimate its merits. Messrs. Saltmarsh and Son, Chelmsford, exhibited under the name of Chelmsford Wonder a culinary apple of much promise. Apples were also shown by other exhibitors. Messrs. Beach and Co., exhibited a collection of preserved fruits.

NOVELTIES.

First-class certificates were granted as under:

To Messrs. F. Sander and Co. for

Cypripedium Pollettianum.—An extremely beautiful hybrid obtained from a cross between C. calophyllum and C. œnanthum superbum. The growth is robust and the flowers are of large size, the dorsal sepal purplish rose with white margin and marked with marone spots, the petals purplish, rather green at the base, and marked with marone spots, the labellum rich bronzy purple.

To Mr. H. A. Tracey, Amyand Road, Twickenham, for

Cymbidium Traceyanum.—A distinct and handsome form, somewhat similar in habit to C. giganteum, but perfectly distinct; the growth is vigorous and the flowers are produced on stout spikes upwards of three feet in length; the flowers are of large size, the sepals lanceolate, bright yellow, marked with crimson lines; the labellum broad, revolute, and marked with crimson lines on a sulphur-yellow ground.

To Mr. T. Statten, Stand Hall, Whitefield, Manchester, for

Lælia Goldeiana.—An extremely beautiful species, somewhat similar in character to L. autumnalis. The flowers are borne on tall slender spikes, and are of comparatively large size, the sepals and petals are warm rose, the labellum pale rose marked with a large amethyst purple blotch.

To Mr. T. Osborn, The Grange, Teddington, for

Cypripedium Osborni.—A distinct hybrid resulting from a cross between C. Harrisianum and C. Spicerianum; the flowers large, the dorsal sepal white, tinted rose, and with a purple line extending up the centre from the base to the apex, the petals bronzy purple, and the labellum deep rich marone purple.

To Mr. A. Waterer, Knap Hill, for

Picea pungens argentea.—A distinct variety of this handsome species, with foliage of a bright silvery glaucous hue.

To Mr. T. Myles, Appley Towers, Isle of Wight, for

Grape Lady Hutt.—A distinct and valuable white variety: the bunches are long and tapering, the berries round, rather large, and of a rich amber colour, the flesh firm, rich, and luscious.

Awards of Merit were made as under:—

To Mr. T. Statter for

Lælia Tresederiana.—A charming hybrid between L. crispa and Cattleya Loddigesi. The growth is dwarf and the flowers of small size, the sepals and petals blush white, the labellum white, marked with deep purple on the lower lobe.

To Messrs. F. Sander and Co., for

Cypripedium Maynardi—A handsome hybrid obtained from a cross between C. purpuratum and C. Spicerianum. The flowers are of a medium size, the dorsal sepal blush white with rose purple line up the centre; the petals green suffused purple, the labellum marone purple.

Cattleya C'Brienana.—A beautiful species of dwarf growth, and bearing small flowers. The sepals and petals mauve pink, the labellum creamy white, suffused pale pink.

A tree pruner exhibited by Messrs. Copping and Son was commended.

NATIONAL ROSE SOCIETY, ANNUAL MEETING, DECEMBER 9.

The annual meeting of the National Rose Society was held at the Horticultural Club, Victoria Street, on Tuesday afternoon, and there was a large muster of members, under the presidency of Dr. Hogg. Mr. E. Mawley, co-honorary secretary, having read the notice convening the meeting, it was unanimously resolved that the minutes of the last annual meeting be taken as read. The Chairman then nominated Mr. Jefferies and Mr. J. Bateman as scrutineers for conducting the ballot for officers and members of committee, and these gentlemen having expressed their willingness to act, he called upon Mr. Mawley to read the annual report, which was as follows:—

During the past year the Society has been enabled, thanks in a great measure to the liberal donations of some of its members, to inaugurate a special exhibition of tea roses. This, the first show of the kind, was held at Westminster early in the season, in conjunction with the Royal Horticultural Society, and was generally acknowledged to be the finest display of this refined and popular class of roses ever seen in London. At the metropolitan exhibition, which was again held at the Crystal Palace, roses were more numerously shown than in any year since 1885. There were fewer exceptionally fine blooms than on some previous occasions, but the average size and quality of the flowers staged were remarkably good. In one respect this show stands out as unique, in that nearly the whole of the blooms retained their freshness throughout the entire day. At this exhibition the Society's new Challenge Trophy for tea and noisette roses was for the first time competed for. The Birmingham show also proved a great success, being the largest and finest the Society has yet held in the provinces. In many of the classes the competition was singularly keen.

The first supplement to the catalogue of exhibition and garden roses being out of print, an entirely new edition was prepared and issued to members early in the summer. This supplement contains select lists and descriptions of those varieties which have been introduced since the original catalogue appeared in 1884. Copies of the Royal Horticultural Society's Report on the National Rose Conference held at Chiswick in 1889, were also distributed.

The Committee wish again to direct the attention of their affiliated, and also of other rose societies, to the question of rose show fixtures. In some few cases during the past season the clashing of dates may possibly have been unavoidable, but in others, it might no doubt have easily been prevented. If only all the rose societies in the same neighbourhood would communicate with each other early in the year, and come to some mutual arrangement, much of the present suicidal clashing of fixtures would, in the opinion of the committee, entirely disappear. They would also point out that there is generally such a run on certain particular days that some of the best dates are often altogether overlooked.

There are at the present time 479 members on the Society's books, while the number of affiliated societies is now 31. Both these numbers are higher than in any previous year.

During the last year the Society has experienced several severe losses amongst its members, two of its vice-presidents, Mr. James McIntosh, who has from its very beginning been its most liberal supporter, and Mr. Shirley Hibberd, who, by his pen and active co-operation, has done much to further its interest; while in the Countess of Rosebery the Society loses one of its recently appointed vice-patronesses.

FINANCIAL STATEMENT.—Considering the extra expenses incurred in holding a third show, in printing the new supplement to the catalogue, and in supplying members with reports of the Rose Conference, the financial position of the Society must be regarded as very satisfactory. The total expenditure was £692 15s. 7d. while the receipts, including the balance from last year, amounted to £738 10s. 3d., thus leaving £45 14s. 8d. to be carried forward to 1891.

ARRANGEMENTS FOR 1891.—The Committee have entered into the following arrangements for the coming year, which they trust will meet with the approval of the members generally. An early show of tea roses will be again held at Westminster, in conjunction with the Royal Horticultural Society, on Tuesday, June 23rd; the metropolitan exhibition at the Crystal Palace, on Saturday, July 4th; and the provincial show at Hereford, on Thursday, July 16. Although the idea of establishing a National Rose Society originated at Hereford fifteen years ago, this will be the first time that the Society has ever held a show there.

MEMBERS' PRIVILEGES.—Subscribers of £1 will, as usual, be entitled to two private view tickets to the Society's exhibitions at the Crystal Palace and Hereford, and four transferable tickets admitting at the same time as the general public; while subscribers of 10s. are entitled to one private view and two transferable tickets. Each member will also be entitled to a ticket of admission to the early exhibition of tea roses. New members will receive a copy of the Society's illustrated catalogue of exhibition and garden roses, together with one of the new supplement. Members alone are allowed to compete at the Society's exhibitions.

In conclusion, the Committee desire to express their best thanks to their Local Secretaries, also to those who, by gifts of special prizes, or in other

ways, have contributed to maintain the Society in its present satisfactory position.

Mr. George Paul said he was glad to see the reference to the rose show fixtures, and he hoped that by arranging a meeting of the representatives of the affiliated societies or some other meetings, it would be possible to prevent the clashing of dates to the extent that had been the case in previous years. He considered it a great pity that the shows should be crowded into a week or ten days, as was now done. By the general substitution of the brier for the manetti as a stock for roses the season had been greatly prolonged over which roses could be had in perfection.

The Rev. H. H. D'Ombrain said he quite agreed with Mr. Paul as to the importance of avoiding as far as was possible the clashing of the dates of exhibitions, but up to the present the efforts made to prevent it had more or less failed.

Mr. J. D. Pawle in the absence of the treasurer, Mr. T. B. Haywood, read the following financial statement:—

RECEIPTS.	£	s.	d.
Balance at Bankers, December 1, 1889	84	5	3
Subscriptions	344	16	0
Donations	5	0	0
Affiliation Fees, and for Medals from Affiliated Societies	78	8	0
From Crystal Palace Company	105	0	0
From Birmingham Horticultural Society	80	0	0
Special Prizes	40	11	0
	£738	0	3

EXPENDITURE.	£	s.	d.
Printing, Stationery, and Advertizing	48	9	0
Postage, Telegrams, and Sundry Expenses	28	9	1
Secretary's Travelling Expenses to Arrange Shows ..	6	12	6
Expenses Drill Hall Show	2	5	0
,, Crystal Palace Rose Show	8	6	6
,, Birmingham Show	7	16	6
R.H.S. Rose Conference Reports..	22	10	0
Medals	15	3	6
,, for Affiliated Societies	63	3	6
Prizes Drill Hall Show	31	10	0
,, Crystal Palace Show	283	5	0
,, Birmingham Show..	148	5	0
Assistant Secretary and Accountant	20	0	0
Balance at Bankers	45	4	8
	£738	0	3

To Balance, December 1, 1890 £36 8s.

THOMAS BURT HAYWOOD, Hon. Treasurer.

Audited with Vouchers and found correct—
J. D. PAWLE
F. T. WOLLASTON } Hon. Auditors.

The Chairman then formally moved the adoption of the report and balance sheet, and the motion having been seconded by the Rev. A. Foster-Melliar, and submitted to the meeting, was unanimously adopted.

The kindness of the Horticultural Club in allowing the Society the use of their rooms for the committee and other meetings was duly acknowledged and on the motion of Mr. Knight a vote of thanks was unanimously passed to the officers for their services during the past year, special reference being made to the admirable manner in which the Rev. H. H. D'Ombrain and Mr. E. Mawley, the co-honorary secretaries, and Mr. Haywood, the treasurer, had performed their respective duties.

Rev J. H Pemberton next moved that rule 7 should be so altered as to enable the General Committee to meet twice annually instead of three times as is now the case. The alteration was duly made, and the committee will now meet in January to elect the Executive Committee and prepare the schedule for the year, and in November to make the necessary arrangements for the general meeting.

The question of bracketing certain roses that were considered to be too much alike for exhibition purposes was considered, and it was resolved that the following roses be added to those already bracketed:—

{ Alfred Colomb
{ Marshal P. Wilder
{ Wilhelm Koelle

{ Duc de Rohan
{ Mrs. Jowitt

{ Grand Mogul
{ Jean Soupert

{ Lady M. Fitzwilliam
{ Lady Alice

{ Madame A. Lavallée
{ Marie Baumann

It was further decided that the following note be added to regulation 6, which, it may be added, deals with synonymous roses: In bracketing roses together foliage and habit of growth are not taken into consideration.

In the course of the discussion upon this matter, it was pointed out that although some of the varieties bracketed were perfectly distinct in habit and foliage, the blooms were so much alike that it was practically impossible to distinguish them, and one of the speakers stated that the blooms staged under the name of Wilhelm Koelle were almost invariably cut from the trees of Alfred Colomb.

Mr. George Paul next directed attention to the rule relating to the dressing of roses, and, as in his opinion, the addition made last year had proved inoperative, he moved that it be omitted. He said that he had the strongest possible objection to the dressing of the blooms, but he considered that unless the regulation could be enforced, it would be better to omit it. Some members on the other hand thought that the addition to regulations had been useful in restricting the practice of dressing, and in the result it was decided to allow it to stand.

The scrutineers then reported as the result of the ballot that the following officers and members of committee had been unanimously elected: *President*: The Dean of Rochester. *Vice-Presidents*: His Grace the Duke of Portland, Sir Joseph R. Bailey, Bart., M.P., Mr. Michael Biddulph, M.P., Mr. J. Rankin, M.P., the Mayor of Hereford, Mr. R. N. G. Baker, the Rev. J. M. Fuller, Mr. T. B. Haywood, Dr. Robert Hogg and Dr. Masters. *Hon. Treasurer*: Mr. Thomas B Haywood. *Hon. Secretaries*: The Rev. H. Honywood D'Ombrain and Mr. Edward Mawley. *General Committee*: Mr. F. Cant, Mr. H. Appleby, Mr. J. Bateman, the Rev. H. A. Berners, Mr. R. Bloxam, Mr. Boyes, Mr. G. Bunyard, the Rev. F. R. Burnside, Mr. J. Burrell, Mr. B. R. Cant, the Rev. A. Cheales, Captain Christy, Mr. W. F. Cooling, Mr. G. Dickson, the Rev. A. Foster-Melliar, Mr. W. H. Fowler, the Rev. F. H. Gall, Mr. T. W. Girdlestone, Mr. C. F. Grahame, Mr. W. J. Grant, Mr. R. Harkness, Mr. C. F. Hore, Mr. W. J. Jefferies, Mr. R. L. Knight, Mr. E. B. Lindsell, the Rev. F. Page-Roberts, Mr. G. Paul, Mr. J. D. Pawle, the Rev. J. H. Pemberton, Mr. A. Prince, Mr. D. Prior, Mr. W. Rumsey, Mr. A. Slaughter, Mr. A. Turner, Mr. H. Wallis, Mr. R. E. West, Mr. E. Wilkins, the Rev. W. Wilks, Mr. W. H. Williams, Mr. F. T. Wollaston. *Hon. Auditors*: Mr. J. D. Pawle and Mr. F. T. Wollaston.

After a brief discussion as to the place of holding the provincial show in 1892, the proceedings terminated with the customary vote of thanks to the chairman.

NATIONAL CHRYSANTHEMUM SOCIETY,

FLORAL COMMITTEE, DECEMBER 10.

Some remarkably good flowers were staged notwithstanding the lateness of the season, and the frosty and foggy character of the weather. Mr. E. Sanderson presided, and there was a good attendance.

Mr. R. Owen, Castle Hill Nursery, Maidenhead, brought a number of new varieties, mainly English, raised the seedlings, and first class certificates of merit were awarded to *Kioto*, a bright yellow incurved Japanese, with very broad petals, very promising; and single Japanese *Rudbeckia*, the blooms rather large, with broad ribbon-like florets of a bright magenta colour; a very fine addition to this section. A commendation was awarded for *J. P. Kendal*, a fine incurved Japanese, silvery amaranth and silvery buff reverse. Mr. Owen also had incurved Japanese Mr. D. D. L. Farson, deep pink and white, a promising variety, especially considering the plant was not received from America until July; Peter Blair, Japanese, orange cerise, deepening to red, a large flower, but having the fault of showing a prominent green eye; Mrs. J. H. May, a promising silvery pink incurved Japanese, the committee wished to see again; Gaspard Rozain, also an incurved Japanese, in the style of W. G. Drover, colour rosy pink with silvery reverse; and Japanese E. G. Hill, cerise and gold, like C. Orchard.

Mr. John Aplin, The Gardens, Hasfield Court, Gloucester, sent three very fine and well incurved blooms of Mrs. Alpheus Hardy; and also of Mrs. E. W. Clarke, a large and striking bright rosy claret coloured incurved Japanese, awarded a first class certificate of merit on the last occasion. A cultural commendation was awarded Mr. S. Gledhill, florist, Pilgrim Cottage, Dewsbury Moor, who sent Japanese Lion Trache, undoubtedly a very fine variety, but not shown in good condition, colour rose and white; the committee wished to see it again.

Mr. C. E. Shea, Foot's Cray, Kent, sent a bloom of W. G. Drover, which had assumed a character differing from its usual form, that the sender thought he had secured a distinct sport. It was stated that in the case of flowers produced from the last bud, and the plants well grown, they are always fine in character and somewhat distinct in build from the earlier blossoms. Mr. Frank Weeden, florist, Hillingdon, Uxbridge, sent blooms of William Weeden, a deep bright orange red sport from Mons. Lemoine, apparently a good decorative variety; the committee desired to see a plant of it. Mr. H. J. Jones, Ryecroft Lane Nursery, Lewisham, had incurved Hermes, deep lilac pink with silvery reverse; small, neat, in the way of Venus, but longer in the petal.

THE LATE MR. SHIRLEY HIBBERD.

On Tuesday afternoon a meeting was held in the Council Room of the Royal Horticultural Society, 117, Victoria Street, S.W., to consider the question of raising a memorial to the memory of the late Mr. Shirley Hibberd. The chair was occupied by Sir Trevor Lawrence, Bart., M.P., and the attendance was very large.

The proceedings having been briefly opened by the chairman, the Rev. W. Wilks read the requisition asking the Council to call the meeting and letters that had been received from Sir James Whitehead, Mr. T. B. Haywood, Mr. N. N. Sherwood, Mr. Sydney Courtauld, Mr. A. Dean, and others, regretting their inability to be present, and expressing their sympathy with the object for which the meeting was held.

The Chairman said that although he had not had the advantage of knowing Mr. Hibberd so long or so intimately as had many of those present, he had been sufficiently acquainted with him to know that he had, during his life, done yeoman service in the cause of horticulture. He also knew that Mr. Hibberd had rendered services of the utmost value to the Royal Horticultural Society, and the object of the meeting had his fullest sympathy.

Dr. Masters said that before he spoke to the resolution that had been placed in his hands, he desired to thank the Council of the Royal Horticultural Society for having so readily responded to the wishes of those who had signed the requisition. They looked upon the society as the exponent of popular horticulture, and it was therefore desirable it should take the lead in matters directly concerning horticulturists. With reference to the object for which the meeting was being held, he did not propose to say much. The large attendance was a sufficient indication that there was a general desire to honour the memory of Mr. Hibberd, They all knew that he had devoted his life to horticulture, and that he was ever ready to assist in movements that were likely to prove beneficial to horticulturists. After alluding to the various suggestions as to the form the memorial should take, he moved: "That in the opinion of this meeting it is desirable to establish a memorial commemorative of the disinterested labours of the late Mr. Shirley Hibberd, and as affording some expression of our gratitude to him and of our respect for his memory."

Rev. H. H. D'Ombrain seconded the motion, and in doing so paid a graceful tribute to Mr. Hibberd's memory.

It was further resolved that a committee should be formed to consider the question and report to a future meeting. The Rev. W. Wilks, Mr. George Paul, Mr. J. Douglas, Dr. Masters, Mr. W. H. Collingridge, Mr. W. Marshall, and Mr. R. Dean were nominated members of the committee, the first three as representing the Council.

A subscription list was opened in the room, and a considerable sum was promised. The proceedings terminated with the customary vote of thanks to the chairman.

LIST OF SEEDS AND PLANTS offered in exchange to botanical gardens by the authorities of the Musée d'Histoire Naturelle, Paris, has been received from Professor Cornu. It is necessary that those who require copies of the list should apply for them before the end of the year.

SPIRÆA JAPONICA.

This useful and easily-grown spiræa is cultivated largely and systematically in many gardens for the embellishment not only of the conservatory and greenhouse, but also for rooms, &c., for which it is eminently fitted. We annually obtain the most satisfactory results from home-grown crowns.

The production of good crowns is not by any means difficult. From April to July, as the plants have done flowering, they are, while thoroughly moist at the roots, divided into suitable sizes, and planted out of doors in a border having a south or west aspect. They are arranged in rows from fifteen to eighteen inches apart, according to the size of crown desired, and at the same distance from plant to plant in the rows. The soil is made moderately firm about the roots in planting. They are then given a liberal watering to settle the soil about the roots, and a surface-dressing of short dung is placed between the rows to the thickness of about two inches. This will maintain a uniform moisture about the roots during the summer months. The subsequent attention necessary is to keep them free from weeds, and well supplied with water at the roots during periods of dry weather.

The batch of spiræas planted in 1889 are now fit for lifting preparatory to their being forced. The most suitable sized pots are those five and six inches in diameter, but a few ten-inch pots may be used, these being for large specimens. Use a compost consisting of three parts light loam, and one each of leaf-mould and pulverized horse-droppings, or manure from a spent mushroom-bed. Press the soil firm with the potting-stick, and then water and stand the pots on coal-ashes in a cold pit, from which they can be taken to the forcing-house as required.

In the meantime it would be well to put a small portion of the crowns into the mushroom-house for early flowering, and as soon as they have started into growth gradually inure to light, and eventually remove to the forcing-house or pit. Put them on a shelf or in some position near the glass to insure a sturdy growth. In the absence of the mushroom-house accommodation, they might be pushed on by placing an inverted flower-pot over each crown. When thus covered, they will push into growth more quickly and regularly than would otherwise be the case. Frequent applications of weak tepid liquid manure should be made from the time they have started into growth until their flower-spikes are fully developed. On reaching the latter stage, clear water only should be given. H. W. W.

Notes of Observation.

SALVIA PITCHERI.

Among autumn-blooming plants, there are very few bearing blue flowers, consequently this salvia will be found most useful where a variety in the greenhouse is of importance. The growth is very light, and the flowers of a pleasing blue, and are produced in profusion. I saw it in excellent condition at Norman Court a few days since.

C. W.

LIBONIA FLORIBUNDA.

In one of the greenhouses at Norman Court, the seat of W. Baring, Esq., I saw a few days ago a very fine lot of plants of Libonia floribunda. Although an old inhabitant of our gardens, it is seldom seen in such good condition as on this occasion, and Mr. McFarlane is to be congratulated on the success he has achieved in its cultivation. When seen in the fine condition, as on this occasion, it must rank as one of the most useful greenhouse plants flowering in winter. The treatment here given is of the simplest kind. After flowering they are cut down to within an inch or so of the soil, and are kept in a genial temperature until they have started into growth again. They are then repotted and placed in a frame, where they remain the whole of the summer. On all favourable occasions during the growing season the lights are drawn off, but are generally put on during the night. That this treatment suits them is proved by the free growth, abundant and healthy foliage, and the mass of flowers and buds the plants are now carrying. These examples present a striking contrast to the starvelings often met with under the system of outdoor culture, which obtains favour with some, and they present a still greater contrast to the long jointed examples obtained as the result of having been kept in close pits and houses during the growing season. By cutting the plants down at two or three different times they may be had in bloom during a period extending over several months.

C. Warden.

SPIRALS.

No vegetable of recent introduction has given greater satisfaction than has Stachys tuberifera. A good cook will use the tubers in various ways, and what is more, they make a delicate dish that is generally appreciated. Since we introduced this vegetable to our garden there is very little demand for salsify and scorzonera, and, the supplies being available for several months, we find it very useful. The roots are fit to dig at the end of September, and if taken up and stored, or clamped on the north side of a wall, they may be kept in good condition until the end of March. The culture of the spirals is of the simplest kind. Any open situation where the soil is fairly workable will suit the crop. When planted in stiff clay, though the plant may thrive well enough, it entails considerable trouble in lifting the tubers. Considerable washing will also be required to make them very clean and of a pearly white colour. In planting we simply draw drills on a piece of well-prepared ground, about fifteen inches apart and one inch deep, and in this the sets are laid about nine inches to one foot apart, and covered over the same as for seeds. No further attention is required other than keeping the ground free from weeds. In lifting take care to remove all the tubers, as every one will grow, and thus give some trouble cleaning the ground another year. C. Warden.

Correspondence.

DATES OF CHRYSANTHEMUM SHOWS.

With commendable discretion I notice that the committee of the N.C.S., and the Kingston Chrysanthemum Society have already fixed the date of their exhibitions for the year 1891, both to take place on Tuesday and Wednesday, November 10 and 11. If other of the leading societies were to follow this example there would not be so much clashing of dates as there is at present, as the smaller societies in the respective districts would have an opportunity of knowing at an early period what dates had been chosen, and make their arrangements accordingly. Some persons think that the two societies just named make a mistake in selecting the same dates year after year. My opinion is that one exhibition is not in the least affected by the other. Both committees choose dates most suitable for their own purposes, and so far the arrangement could not answer better than it has hitherto done. Each society appears to have its own exhibitors if I may put it in that manner, and judging from the quality of each show held during the past season it would be difficult to improve, as it was generally admitted that both societies had better general exhibitions than in any previous year. As regards the number of competitors at Kingston I must say that I do not know where the committee would accommodate the exhibits were they to increase to any material extent. The Drill Hall appeared to be filled to its utmost capacity, without unduly crowding the plants and blooms. Because of the Kingston committee not having unlimited space at command they are prevented from extending their prize schedule by adding new classes. By selecting dates thus early, the provincial societies have an opportunity of steering clear of the fixtures named. The Birmingham Chrysanthemum Society advanced the date of its exhibition one week earlier this year than has been its wont, and encouraged by the splendid display, the committee have selected the corresponding dates for the exhibition in 1891. There appears to be a general tendency for the chrysanthemum to bloom in advance of the time at which it used to be in perfection a few years since. Whether this change is due to an alteration in the system of cultivation seasons or not, I cannot say, but certainly now-a-days, those shows which are held before the middle of November are generally the finest, excepting of course those in the North of England.

Another point committees would do well to bear in mind, is the early issue of their prize schedules. There is no reason why this should not be carried out at once by societies so well provided for financially, that it is not necessary to wait until the executive know how the subscriptions are coming in, or are likely to do so before they can make up their classes, and allot the amounts of prizes. Intending exhibitors have under such circumstances a better opportunity of preparing for certain classes, and considerably less reason to complain of the late issue of schedules. It is not unusual for schedules of prizes to be issued two months before the date of the show. If competitors are not prepared to exhibit in certain classes, no blame can be attached to them under such management. Therefore I would urge committees to push forward their arrangements with all possible dispatch, consistent of course with discretion.

E. Molyneux.

FRUIT GROWING FOR PROFIT.

Some of the remarks of Mr. J. C. Clarke upon this sulject in your last issue are very much to the purpose, and none more so than his reference to the difficulties which small growers, especially in rural and remote districts, experience in finding a profitable market for their fruit. It is of no use whatever, as your correspondent rightly says, to make the attempt to extend the area of land devoted to fruit, or to improve that already occupied by fruit trees, unless the small grower is placed in a position to obtain a fair share of the returns. Existing agencies utterly fail to secure this result, and I am confident that the collection and expenditure of large sums of money for the purpose of holding shows, however beneficial to existing fruit gardens of wealthy exhibitors, and the leading fruit nurserymen, will entirely fail to secure the object really desired until the market difficulty shall have been first satisfactorily settled. Whether this is to be achieved by co-operation, official salesmen, or otherwise, cannot be decided off-hand, but I can conceive no object more worthy of a special conference under the auspices of the Fruiterers' Company, or the Fruit Growers' Association, than this of the better disposal of the produce of the orchard.

As a landlord in both Essex and Berkshire, I am not only willing, but most anxious to encourage tenants to undertake the culture of fruit as an addition to the ordinary products of the farm, but the answer is invariably the same—there is no certainty of obtaining a fair share of the returns for the outlay of capital and time.

Until this is remedied the collection and the expenditure of the £20.000 proposed to be raised for further shows will but lead to the same result as that achieved by the recent Guildhall show—so far as the cottagers' and tenant-farmers' classes were concerned—utter failure and waste of money.

The Elms, Foots Cray, Kent. C. E. Shea.

Artificial Egg-hatching in Egypt.—The United States Consul-Genera in Egypt, in a report recently published, describes the system of hatching eggs by artificial heat pursued in that country from time immemorial, and still in active operation. One establishment visited by the Consul-General was wholly constructed of sun-dried bricks, mortar, and earth. It was 70 feet long, 60 feet wide, and 16 feet high, and was provided with twelve compartments or incubators, each capable of hatching 7,500 eggs, or altogether 90,000 at one time, The season begins in March and lasts until May, and three batches of eggs are hatched in this time, each taking an average of three weeks. The fourth week is given to removing the chickens and preparing the incubators for a new batch of eggs. The number of eggs treated at this establishment in a single season was therefore 270,000, from which 234,000 chickens are usually obtained. The percentage of chickens would be greater, but that the eggs are in some instances procured from long distances and in large quantities, and are, therefore, liable to damage. The price of eggs is 2½d. per dozen, and chickens just issued from the shell are sold at 7½d. per dozen. The loss of chickens after incubation is comparatively small. The whole staff of the place is a man and a boy, who keep up the fires to a temperature of not less than 98 deg, F., arrange the eggs, move them four or five times in the twenty-four hours, look after the chickens, and hand them over to the buyers. The number of chickens hatched in this manner throughout Egypt is estimated at 75,000,000, and would, under ordinary circumstances, require 1,500,000 mothers.

PLANT DISEASES.

By Professor JAMES ELLIS HUMPHREY,
Massachusetts Horticultural Society.

IN dealing with the subject of plant diseases, I propose to consider chiefly its theoretical, scientific side, touching but briefly on the practical questions of preventing and combating the diseases produced by the organisms under consideration. The chief interest of the practical man—the horticulturist or farmer—is to learn how to stop, or, better still, how to prevent the ravages of the increasing number of parasitic organisms which attack the plants under his care and often so sadly reduce their yield even where they do not utterly destroy them. And the greater part of the studies of these parasites which are carried on have this practical end in view. But it must be remembered, and this point cannot be emphasized too strongly, that direct experiments in prevention or cure, without a sound and thorough knowledge of the nature of the trouble, are merely leaps in the dark, with as little chance of success as the random treatment of a human disease whose etiology is not yet a matter of scientific knowledge. In other words, the theoretical must, as a rule, precede the practical and serve as a basis, if it is to be effective and truly practical. Furthermore, investigations of this character take time—almost unlimited time. Nature does not give up her secrets on demand but only as the reward of cool, quiet, patient application. It is only fair, then, to ask those who are at least no more anxious for results than we who are plodding away at these problems, and who have less at stake than we, to be also patient. The work is progressing slowly, but all the more surely, for the real workers as yet are few. Far better, however, that there should be still fewer and of the real sort, than any more of that sort who proclaim a "new discovery" for every month and make the name of "Scientist" a reproach.

But the men who furnish the moral support and, directly or indirectly, the money which gives to us modest and "scientific fellows" the equipments and opportunities we must have to produce results, are just waking to the importance and significance of the thorough scientific study of those pests whose inroads on their profits are yearly greater. They begin to realise that it is economy to spend thousands to secure the saving of tens and hundreds of thousands, and that even pure science may not be such a totally utopian thing after all. And just here lies the real hope for the future. The investigator must feel that he has the financial and moral support of those in whose interest he is working, and to retain these he must produce substantial results. But to produce results which shall stand the test of practice requires sound and thorough training, and this will be demanded in an increasing degree as our knowledge increases and the relations of science and practice become more harmonious. Thus we may hope that by a process of progressive development, with the survival of the fittest only, sensational science will finally be unknown except from the records of the past.

In selecting a subject for this address, it has seemed to me better, and probably more profitable, to choose a quite restricted field which I can hope to cover in some detail, rather than to attempt to string together a few facts gathered in a necessarily very superficial survey of a larger one. This moderately detailed examination of a single small corner of the whole great field of plant diseases will also, I believe, give a truer idea of its extent and of the need of further exploration, than any general outline sketch of the whole could do. The word "mildew" is used very loosely, to designate either of several appearances or effects due to widely different causes.

But as our knowledge of the various parasitic diseases of plants, and popular interest in them have increased, botanists, yielding to the demand of vernaculent equivalents for the technical names of the various groups under which the parasites are classed, have pretty generally adopted this word as the English name of one or two groups. If we accept the authority of the United States Department of Agriculture, we shall apply the term to two groups, botanically quite distinct, and shall distinguish the two by prefixing descriptive adjectives. The Reports of the Department speak of the downy mildews and the powdery mildews. Tho structure and effects of the organisms composing these two groups are very different, and it would be impossible to discuss them together. I shall, therefore, confine myself to that group to which the term mildews is by some restricted—the downy mildews. This group, known to botanists as the *Peronosporæ*, is a rather small and very important one, and the life history of its members is much more completely known and understood than is the case with most of the vegetable parasites. For this result we are indebted chiefly to the model researches of the great German master and pioneer in this work, De Bary, whose untimely death has left a conspicuous vacancy in the ranks of the workers.

The members of the *Peronosporæ* may be regarded, for our purposes, as separable into two smaller groups, or genera, known by the names *Peronospora* and *Cystopus*. Those included in the latter genus differ in several important particulars from the members of the former, and are often denominated the *White Rusts*. They do not then, concern us at present, and may be ignored. We thus restrict the term mildew to those parasites included in the genus *Peronospora*, which we may now proceed to discuss.

And just here, allow me a parenthesis. The accurate statement of scientific facts or conclusions requires the use of scientific language. The vocabulary of any science includes familiar words used in a technical sense, and specially coined words. For these technical terms science has no apologies to offer; their use is the inevitable condition of accurate thought or statement, and whoever would become intelligently familiar with scientific methods or conclusions must be prepared to accept and adopt them. They give to thought and statement a definiteness most attractive to the precise mind, if it is the dread of the slipshod thinker. The layman may justly ask that these terms be clearly and thoroughly explained when they are first used, but the botanist may as justly feel free to use them after they have been so explained. Their seeming difficulty is only in their unfamiliarity, which is soon overcome.

The word plant calls to the mind of the average hearer the idea of a living organism growing in the earth, in which it is held and from which it draws water by means of *roots*, and having a *stem* above ground, on which are borne *leaves*. But this idea is an incomplete one; because probably a half of all known plants do not answer to this description at all. Most of the so-called higher plants, it is true, are composed of these fundamental organs—root, stem, and leaf—each of which has its special functions, and they may be designated Stem-Plants. Contrasted with them, however, is an immense number of so-called *lower* plants in which there is comparatively little differentiation into special organs, and therefore little division of labour. In these simpler plants, the whole plant-body is known as a thallus and they may be termed Thallus Plants. Typical examples are the "rock weeds" and "sea mosses" of our coast. Again, greenness of colour is commonly associated with the idea of a plant; but this too is not a constant character. It is true some parts of the typical plant contain a green pigment which gives them their colour; and it is this substance, called leaf-green or *chlorophyll*, which gives to green plants their power of preparing the complex organic compounds which serve as their food-material. from inorganic constituents taken from the air and soil. But cases are familiar of stem-plants which are without chlorophyll. Such, for instance, are our common Indian Pipe and Dodder, which must live on food-material elaborated by other plants. It is, however, among the thallus-plants that cases of the absence of chlorophyll become numerous, and there, indeed, they include a majority of the species. These simple plants, without distinction of root, stem, and leaf, and whose tissues contain no chlorophyll, are known collectively as Fungi. They vary greatly in size, structure, and development, but they agree in these two particulars. Whence comes the food-supply of these plants unable to provide their own?

The dodder, as is well known, twines about the stem of some green plant, and sends into its tissues absorbing organs, which abstract its nourishing juices for the support of the dodder. Here we have a typical example of the relations between the *parasite* which thrives at the expense of its *host*, which is greatly weakened or finally killed. The Indian pipe, on the other hand, probably draws its nourishment chiefly from the humus in which it grows, which is composed of decayed plant remains and contains more organic matter still directly available. This plant is a type of those called saprophytic. On the same basis of division the fungi fall into two classes—those which live at the expense of other living organisms, the parasites, and those which live on the remains of dead organisms, the saprophytes. The latter consequently cannot cause diseases, and may be passed over with the remark that the best known saprophytic fungi are the toadstools.

The attacks of a parasite on its host-plant cause a weakening of its vitality, often produce also an abnormal stimulation which results in the development of monstrous or distorted organs, and frequently, finally lead to its death. The parasitic fungi, then, are those which cause diseases of plants, and which have especial economic interest; and among them are included the organisms which cause diseases variously known as rots, moulds and mildews, namely the members of the genus Peronospora, the mildews in the restricted sense in which I have used the word. The mildews are parasites chiefly of herbaceous plants, though they sometimes live on the herbaceous parts of the woody plants, and appear to the naked eye as whitish, grey, or brown, downy or felted growths on the under surfaces of leaves and sometimes on stems. Those parts of the plant which are most directly affected are usually of a yellow or brownish colour, and this discoloration often appears before the fungus itself is evident, affording to the practised eye the first indication of the disease. As we trace the life history of the mildew, it will perhaps be an aid in presenting the subject, if we select a typical example and follow its individual development. A good type for this purpose is one of the most troublesome members of the group—the mildew of the grape vine. The white dusty patches produced on the lower sides of the leaves and the corresponding discolorations of their upper sides, are only too familiar to every owner of grape vines. They appear most commonly in midsummer, and the discolorations usually give the first warning of the presence of the disease. If, at this time, a thin section be cut through the thickness of the leaf, the vegetative organs of the fungus will be found pushing their way among the more or less closely packed cells of which the leaf is composed.

This vegetative body or thallus of the fungus consists of fine, colorless, branched threads occupying the spaces between the cells and at intervals sending globular absorbing organs into the cell-interiors. By means of these absorbing organs the food-materials prepared in the cells of the leaf are appropriated by the fungus, to the direct injury of the grape vine. The growth of the fungus, thus bountifully supplied with food ready prepared, is naturally rapid and luxuriant.

The cells near the under surface of the leaf are quite loosely arranged, leaving considerable air spaces which communicate with the outer air through special openings, or breathing-pores. As the fungus develops, the ends of numerous threads emerge either singly or in tufts, through these pores, standing vertically to the under surface of the leaf. Toward their ends, these threads branch freely into a tree-like form, the tip of each branch being drawn to a point. At each tip now appears a swelling which enlarges till the whole structure has the aspect of a tiny tree, with a fruit at the end of each twig. When fully formed these bodies, which are pear-shaped, are readily detached and great numbers of them are carried away in tiny clouds of dust by light winds. Each of them is now an independent cell, consisting of a mass of living matter surrounded by a delicate membrane, and about the one-thousandth of an inch in length. It is natural to suppose that they serve to reproduce the fungus, and investigation justifies the supposition. They may be known by a term commonly applied to nearly all the reproductive bodies of those plants which do not produce flowers, namely, spores. The term is a very general one and includes structures of the greatest diversity, which, however, perform for their respective parent plants the same office which is performed for the flowering plants by seeds, although no spore is the exact equivalent of a seed. The spores in question are known as the summer spores of the mildew. When they are sown in water at a warm temperature remarkable changes occur in a few hours. First, the living matter in a spore became divided into several masses, which escape through an opening in the membrane at one end of the spore. Each of these masses is furnished with two hair-like lashes, by whose vibration it is propelled rapidly through the water. From their remarkable activity, which recalls that of animals, these bodies are called zoöspores. After a short time their motion ceases, the threads disappear, and the mass germinates by producing a tube from its side. If this germination occurs on the surface of a grape leaf, the tube pushes through a breathing-pore or bores through the surface cells to the interior of the leaf, where it produces the characteristic absorbing organs of the fungus, and a new parasite is established. If the germination takes place elsewhere than on a grape leaf, the tube soon ceases to grow and then dies. If, on the other hand, one of the spores fails to find the moisture and warmth necessary to its further development it soon dies.

We may notice here two points of general application. The species of parasitic fungi are limited, as a rule, each to a single or to a few closely related species of higher plants as hosts, and are incapable of development on others. The closely restricted conditions of successful germination of the spores of a fungus, demand that to secure the perpetuation of the species a vast number of spores shall be produced, that the enormous waste may not be fatal. As the parasite becomes mature the leaf becomes drier and more shrunken, and the fungus begins to provide for tiding over the approaching season of conditions unfavorable for growth. This is accomplished by the formation of winter spores, in whose production a true sexuality is shown. They differ from the

summer spores in having very thick walls and in germinating only after a period of rest, and are produced from the threads of the fungus within the leaf. The end of a fungus-thread swells up into a rounded body containing a large amount of living matter, which becomes aggregated into a dense globular mass. The end of another branch becomes irregularly swollen, though of a much smaller size, and is closely applied to the surface of the larger swelling. A passage is now formed by which the living matter of the smaller branch passes over and fuses with that of the larger. After this act of impregnation the blended mass contained in the larger branch develops a thick dense wall about itself, and assumes the character of a mature winter spore. In this condition it can successfully survive extreme and long continued cold or drought, and can, on the recurrence of favorable conditions, germinate and infect fresh grape leaves. The fungus so produced develops summer spores, which may infest surrounding vines at a rapid rate, and form winter spores towards the end of the season.

This is the story of the grape vine mildew. Leaves which are attacked rapidly wither, lose their power of providing food material for the plant, and at length fall off. Thus deprived of its proper food supply, the plant is seriously weakened, and while it may produce new leaves these may in their turn be attacked. But even if they do not suffer, the suspension of normal activity for a considerable period during the growing season is a check from which the vine cannot wholly recover, and those which have been seriously infested are always less mature when growth ceases, and so less able to withstand the severity of the following winter. Besides this, the fruit stems, and even the berries themselves, may be attacked, and the crop thus greatly reduced or even practically destroyed. This fungus is a native of America and was introduced with American vines into European vineyards about 1877. There it has spread very rapidly and has proved far more fatal in its effects on many of the delicate European varieties than on our own species, which may, perhaps, be supposed to have become somewhat inured to its attacks by generations of exposure and selective survival.

Another of the mildews equally destructive with that of the vine, and so equally important in an economic point of view, is that which causes the so-called rot and blight of the potato plant. The threads of this fungus penetrate the stems, leaves, and tubers of the host, causing the rotting of the tubers and, in severe cases, the complete collapse and death of stems and leaves. A casual glance does not detect the disease until it has far developed; but careful examination during its early stages will show the usual discolorations of the leaves at the points where, on their under surfaces, are found the downy tufts of branching threads which bear the summer spores. The manner in which these spores are borne differs slightly from that characteristic of the other mildews, but the difference is not important for our present purpose.

Wherever the fatal fungus threads penetrate, the invaded tissue dies, and under favorable conditions their progress throughout the plant is very rapid. A few days of warm and moist weather at the right time may suffice to convert an apparently flourishing field into a mass of fallen, decaying, blackened stalks. The summer spores not only infest the leaves of fresh plants, but their germinating tubes, produced in the soil, penetrate young tubers which lie near the surface. Old tubers are protected by the cork-layer constituting the so-called "skin," Unlike the mildew of the vine, that of the potato is not known to form winter spores, but is perpetuated by the vegetative threads which hibernate in the tubers and resume active growth upon the development of new stems from them. Where the tubers are stored in a warm place, considerable rotting may occur during the winter, from the growth of the fungus in them; and sound tubers may even become infected from the diseased ones.

Perhaps next of the mildews in economic importance may be mentioned that which attacks lettuce, especially under glass. This fungus also appears in white downy or felted masses on the under side of the leaf, which becomes first yellow and then dead and brown. It produces both summer and winter spores in essentially the same manner as does the grape mildew, but each summer spore produces a single tube directly, instead of several mobile bodies each of which may subsequently produce a tube. With reference to the germination of the summer spores, therefore the grape mildew and lettuce mildew may stand as types of two different modes. It is evident that those mildews whose spores produce several zoöspores from each, which can give rise to as many new plants, have, at least theoretically, an advantage over those whose spores can produce but one new plant each; for the number of possible new parasites from a given number of spores is about eight times larger in the former than in the latter case, since eight is commonly the number of zoöspores formed from the contents of a single summer spore.

The lettuce mildew is found also on several plants closely related to the lettuce, including thistles, chicory, and the wild lettuce. This may serve to call attention to the fact that some of our commonest weeds, are, so to speak, own cousins of valuable garden plants, and many cases might be cited where the same parasite attacks both. Another case within our present group is that of the cabbage mildew, which is not, however, very destructive to that crop, but attacks far more frequently and more fatally the shepherd's purse, peppergrass, and other weeds of the mustard family to which also the cabbage belongs. The life-history and effect on the host-plant of this mildew agree in general with those of others of the group, and further detail is unnecessary.

Several other species of mildew-fungi attack cultivated plants in Europe and may be expected in this country. Of these the onion-rot or mildew has been observed in the United States, but has not to my knowledge become epidemic, at least in our own state. Others which, so far as I know, have not yet been found with us, are the mildews of spinach, of beets, of poppies, and of rose leaves, though there is no theoretical reason why they may not be introduced at any time.

We come now to the practical problem of combating these diseases, and are in a position intelligently to attempt its solution. Against the species which produce winter spores in the leaves, an obvious precaution is to thoroughly collect, remove, and destroy all the fallen leaves which may contain these spores. In the case of the potato rot, whose threads winter over in the tubers, great care should be taken to plant only sound tubers. And here it may be remarked that slightly infected tubers often show almost no trace of their infection and would be regarded, on ordinary inspection, as sound. On the other hand, in a season unfavorable to the development of the parasite, badly infected tubers may fail to communicate the disease to the plants grown from them. But our chief object must be to prevent the development and dissemination of the summer spores; or, failing in that, to prevent their germination and penetration into the tissues of healthy plants. We must remember first of all that warmth and moisture are essential to the germination of these spores. In cases, then, where these conditions can be controlled, as in culture under glass, anything like an epidemic of mildew need never be feared. And intelligent market gardeners no longer do fear the mildewing of lettuce in glass houses, because they have learned how to check it promptly. But in out-door culture these meteorological conditions are only to a very limited degree controllable. It is certain that the injury caused by mildews in a dry season is insignificant by comparison with the loss in a wet season, and it has been found in the case of the grape vines that leaves protected from dew are much more rarely attacked than those exposed. This result would be expected on theoretical grounds, since the spores cannot germinate on a dry leaf.

During the past few years numerous experiments have been made in Europe and America in applying to grape vines various substances which may act as fungicides, preventing the growth of the parasite without injury to the leaves of the vine. It is sufficient to say here that a considerable degree of success has attended the use of some of the applications. The most generally useful preparation seems to be that known as the "Bordeaux mixture," which consists of sulphate of copper, quicklime, and water, in definite proportions. This is sprayed over the plants thoroughly and when it has dried there remains a compound adhering to the leaves which does them no harm, but is promptly fatal to fungus-spores falling on it. This mixture ought to be equally efficacious in the relative diseases we have discussed.

A comparative study of the behaviour of different varieties of grapes, potatos, &c., towards their respective parasites is important. So far as such studies have been made, they indicate a much greater susceptibility or predisposition to disease on the part of some than of other varieties. In the case of potatos, the thick-skinned, dark varieties resist the rot much more successfully than the light thin-skinned ones, some of which seem to offer a peculiarly favourable field for its development.

Finally, it is a cardinal principle in dealing with any disease, that a thoroughly healthy organism has the best possible chance of remaining so. Just as a sound, vigorous, well-fed man will expose himself where any other, weakened in any respect, would contract disease at once, so a plant with well-developed organs of assimilation and supplied with an abundance of the crude material of food will often resist the attacks of parasites, or will have no trouble in providing sufficient food for itself and for them beside. In this lack of rational feeding, in respect to both quality and quantity, lies, I believe, the secret of much disease and susceptibility to disease in both animals and plants.

Replies to Queries.

Seedling Chrysanthemum.—R. Clive, Bryndenver: Your seedling chrysanthemum is bright and pleasing, and may prove useful for decorative purposes. It well deserves further trial.

Horticultural Societies.—F. V.: A list of horticultural societies is given in the "Horticultural Directory," which may be obtained through any bookseller.

Decorative Chrysanthemums.—I shall be glad of a list of twenty-four Japanese chrysanthemums suitable for the table, not necessarily those varieties that require special skill in cultivation and to have their buds thinned out.—A. T. C.

[The following varieties are all admirably adapted for the supply of flowers for indoor decorations, and for the embellishment of the conservatory. Album fimbriatum, Avalanche, Baronne de Prailly, Brise du Matin, Coquette de Castile, Elaine, Feu de Bengale, James Salter, Lady Selborne, L'Or du Rhin, Martha Hardinge, Madame C. Desgranges, Mdlle. Lacroix, Mons. Bernard, Mons. H. Jacotot, Mons. W. Holmes, Mrs. Hawkins, Mrs. Stevens, O. J. Quintus, President Hyde, Princess Blanche, Sunflower, Tokio, Val d'Andorre].

Holly.—S. M. C.: The tree appears to be wanting in vigour, and it would undoubtedly be greatly benefited by the application of a moderate dressing of partly decayed farm-yard or stable manure. It may have suffered from an increase of shade during the past few years.

Names of Fruits.—H. D., Ipswich: The pear is Beurre d'Aremberg.—G. B.: 1, Vineuse; 2, Emilie d' Heyst; 3, Olivier des Serres; 4, Durondeau.—W. S.: 1, Madame Millet; 2, Thompson's.—T. Brown: 1, Wyken Pippin; 2, Beauty of Kent; 3, Dumelow's Seedling; 4, Reinette du Canada; 5, Claygate Pearmain.—J. W.: Hughes Golden Pippin.

Unhealthy Grape Vines.—J. S.: The vines are badly infested with scale, and a special effort should be made during the season of rest to free the canes from the pest. When the vines have been pruned, wash and dress them in accordance with the directions given by Mr. Iggulden on another page. The laterals should be carefully gathered up as the work of pruning proceeds and be immediately burnt.

Shrubs for Forcing.—W.B.: The most useful of the hardy shrubs for forcing are the lilacs, azaleas, rhododendrons, double flowering plum, and deutzias. It is essential that those selected for forcing be well set with flower buds, and it is an advantage if they are well established in the pots in which they are to bloom. It is important in forcing hardy shrubs to start them slowly at first and to assist them with over-head syringings.

Vacciniums.—T. Smith: The plant of which you send a spray is the Pennsylvanian Blueberry (*Vaccinium pennsylvanicum*), and it is not only perfectly hardy in this country, but is vigorous in growth when planted in a moist peat bed. The High Blueberry (*V. corymbosum*), is much superior to the first-named, and during the latter part of the autumn the leaves are so richly coloured that a large clump produces a brilliant effect. Equally desirable for the rich colouring of the foliage is the Carolina Blueberry (*V. hirsutum*), which retains its leaves until the winter.

Names of Plants.—A. V. M.: 1, Adiantum chiliense; 2, Lastrea fragrans; 3, Onychium Japonicum; 4, Adiantum decorum; 5, Microlepia hirta; 6, not in fruit.—H. K. M.: The material in which the specimens were packed was too moist, and in consequence they became so discoloured that it was not possible to name them. If you will send other specimens we shall have much pleasure in naming them.—A. S. B.: It is impossible to name the plants without flowers, and if you send specimens when they are in bloom we will do our best to assist you.—J. Pamplin, Bocking Bridge: The two chrysanthemum blooms are not sufficiently developed to admit of identification. The ferns are 3, Polypodium dryopteris; 4, Polypodium aureum.—W. H. B.: 1, Retinospora plumosa; 2, R. squarrosa; 3, Cupressus Lawsoniana erecta viridis; 4, Cotoneaster Simonsi; 5, Picea Nordmanniana; 6, Pinus nobilis.

Seedling Fuchsias.—G. F. : Accept our best thanks and the assurance that your wishes were complied with.

Repotting Lilies.—Amateur, Horsham : Lilium auratum and L. speciosum should be repotted annually, and the best time for performing the operation is immediately the stems have died down. They commence to make new roots as soon as the stems have perished, and therefore when the bulbs are allowed to remain undisturbed for any considerable period after the stems are dead it is difficult to repot them without more or less injury to the roots. The greater portion of the old soil should be removed when the bulbs are repotted, but the young roots must be carefully guarded against injury.

Vallotas.—R. W. : In common with other bulbous plants Vallota purpurea requires a thorough season of rest, but the plants ought not to be kept so dry as to cause the leaves to shrivel. Very little moisture will suffice to keep the leaves plump, and usually it is not necessary to water vallotas between October and February. Those requiring an extension of space for the roots should be repotted before they commence to make new growth, and care taken to avoid injury to the roots. The offsets should be taken off at the same time, but it is not advisable to remove the whole of them as their slender leaves contribute materially to the effectiveness of the specimens when in bloom.

Unhealthy Heath.—Novice writes : I have a heath which is in a very unsatisfactory condition. I thought the ball was dry so I gave it a thorough soaking, but that did not appear to make any improvement in the condition of the plant. After the soaking I feared that it might be injured by having the soil in a water-logged condition about the roots. To avoid this I again kept the plant dry, but this has apparently not done much good. I should therefore be very pleased if you or any of your readers could inform me whether there is any prospect of the heath being restored to health. If there is, what am I to do to bring about the desired result?

[The information given by our correspondent is not sufficient to enable us to say what has been the cause of the unsatisfactory condition of the specimen, but it is probable that it suffered from dryness at the roots early in the autumn. When heaths have been subjected to drought for any considerable period, it is an extremely difficult matter to restore them to health. All that can now be done is to place the plant in a light and airy position in the greenhouse, and to maintain the soil in a moderately moist condition].

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REPORTS ON THE FLOWERS OF THE YEAR.

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SELECTIONS of PLANTS and FLOWERS, FRUIT, and VEGETABLES for 1891, &c.

The GARDEN ORACLE is both a Guide to the Garden, a Book of Reference for the Florist and the Fruitist, and a Business Man's Almanack. It will be found to contain in the most convenient form all such scientific information, corrected to date, as will entitle it to a place on the Library Table, the Counting House Desk, and the handy shelf of the suburban and country household.

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THE GARDENER'S MAGAZINE
CHRISTMAS NUMBER

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Noon.	London Bridge. After.	Liverpool Dock. Morn.	Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
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22	M	Archbishop of Canterbury born, 1811.	8 6	1 9	3 51	1 44	3 41	10 41	11 13	7 34	8 6	39·0	Cattleya Trianæ ..... Brazil.	356
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PORTSMOUTH FLORICULTURAL SOCIETY SHOWS, 1891.
The Summer Show will be held in Victoria Park on July 8th, 9th, and 10th; the Chrysanthemum Show in the Drill Hall, November 4th, 5th, and 6th.
Persons wishing to offer special prizes or to advertise in schedule, should send at once to F. Power, Hon. Secretary, 26, Queen Street, Portsea

The Gardeners' Magazine.

SATURDAY, DECEMBER 20, 1890.

THE Garden at Christmas is especially interesting, apart from its pleasant associations, for the admirable illustration it affords of the great change that has come over the English taste of late years. At one time regarded by the great outside world with interest at this season chiefly as the source of the supplies of elegant wreaths of ivy and glistening sprays of holly for the adornment of the house, the garden has now taken a much higher position in relation to the Christmas and New Year's festivities. It has now to supply, in addition to an abundance of fruits and vegetables, large quantities of plants and flowers for indoor decorations, with the result that its products are more fully utilised in contributing to the health and happiness of the community than at any previous period in the history of the country. The change in taste during the past thirty years has not only been great, but it has been in the highest degree beneficial, and those who have had in any way a share in bringing it about have good cause for satisfaction. The more prominent part taken by fruits and flowers on festive occasions is unquestionably due, to a large extent, to the great improvement that has been effected in horticultural appliances and garden practice, and the consequent reduction in the cost of production. The enormous development of the cultivation of fruit and flowers under glass for market may be mentioned as an excellent example of the great demand that now exists for these things at this, as at other, seasons of the year. The industry, long of considerable importance, has, within a comparatively short period, increased to such an immense extent that large areas covered with glass are to be met with in nearly the whole of the metropolitan districts. It is not, however, necessary to go to the commercial horticulturists for examples, as they are plentiful in private gardens, which, regarded as a whole, now have a very different aspect to that which they presented from a quarter of a century to thirty years since. Plant houses that were then dull and unattractive are now gay with colour, and vineries that contained, perhaps, a few bunches, the remnant of a crop from which the table had been supplied during the autumn, are so well furnished with grapes, as to clearly indicate that there will be no break in the supply until the spring months.

In the plant houses we have for many years had plentiful supplies of cyclamens and primulas during the Christmas season, but the cultivation of these flowers has very largely increased, as the result on the one hand of the more improved methods of culture having become better known, and on the other, of the improvement that has been effected in the quality and colour of the flowers. Those whose experience in the garden extends over from twenty-five to thirty years will not require to be reminded that the colours afforded by the Chinese primula at that time were very few, or that the flowers were small and indifferent in quality. Now there is a wide range of colour extending from pure white to rich purple in one direction and to brilliant crimson in another. Concurrently with the increase in the shades of colour, there has been a remarkable improvement in the size and form of the flowers, thus materially enhancing their value for decorative purposes. Not less important has been the improvement in the Persian cyclamen, which is of the highest degree of utility for decorations of all description, and so greatly appreciated that tens of thousands of plants are grown in the neighbourhood of the metropolis for the supply of Covent Garden and other markets. The value of the brilliantly coloured zonal pelargoniums for winter decorations was practically unrecognized a quarter of a century ago, and now they are largely grown for that purpose, both in private and market gardens. When once their utility was placed beyond a doubt they were quickly taken in hand for the production of flowers during the winter, when their brilliant hues are specially appreciated. A still greater gain has been the remarkable development of the culture of the chrysanthemum, specially for the production of late flowers. For many years chrysanthemums were generally considered to be suitable only for the embellishment of the conservatory and greenhouse during November, but they have become a prime necessity for the supply of flowers during the Christmas festivities. As indicating their popularity at mid-winter, attention may well be directed, not only to the groups that are to be seen in conservatories in private gardens, but to the immense areas devoted to them under glass by the growers for market. In some of the establishments such popular varieties as Princess of Teck, Princess Blanche, Ceres, and M. Lemoine, are grown in such immense quantities as to surprise those who have not previously had an opportunity of becoming acquainted with the extent of the operations of the larger growers.

In turning to the fruit houses and the fruit room we find that much has been done to increase the fruit supply during the winter, and also that there is still room for improvement. The extent to which the production of winter grapes has been increased is simply marvellous, and the paper dealing with the subject on another page of the present issue is of special interest at the present time. The finest of the grapes that may be had in perfection throughout the winter are by no means new, but cultivators were slow to recognize the fact that there is no more difficulty in supplying the table with grapes at Christmas than in August and September. Accordingly the season during which they could be had extended in the majority of gardens from the beginning of July to the end of November. The systematic production of late grapes for market is a practically new industry, and as recent as fifteen years since grapes were so scarce in February that some good examples of Lady Downes which came under our notice were eagerly purchased by a fruiterer in Covent Garden at the rate of fifteen shillings per pound. For some years subsequently well finished clusters of that luscious grape the Muscat of Alexandria realized at Christmas prices nearly as high. The maintenance of these prices would undoubtedly have been an advantage to those

engaged in the industry, but hardly to the extent that some growers supposed. We would remind our friends that these prices were, to some extent, prohibitive, and that their maintenance would have so far restricted the consumption of grapes as to have prevented their having a place on some thousands of tables to which they are now regularly supplied. It was, of course, not possible that relatively high prices should be maintained for any considerable period, and that which happened was in exact accordance with what would have been expected by those who had some knowledge of the principles of economic science. The large profits that were being made induced others to engage in the industry, with the result that for a time the supply outstripped the demand, and brought the prices down to a very low level. The point touched a few years since was, indeed, so low, as shown by our reports, that the prices could hardly have been remunerative. During the past two or three years there has been a recovery in prices—a fact which should afford satisfaction to others besides those actually engaged in the production of grapes, for it is not to the ultimate advantage of any one that the profits of an industry should be insufficient to yield an adequate return for the capital invested, and the skill and attention necessary to carry it on. We know what happened in the case of the commercial culture of the pine apple. The large importations of pines from the Azores so reduced the prices as to render it impossible for the growers for market to continue their culture otherwise than at a loss, and they accordingly abandoned them. This in itself was not, perhaps, a matter of much consequence, but the large importations from the Azores made pines so common as to bring about a change in the fashion as affecting the dessert, and to cause their exclusion from the table of many of the upper classes. In consequence pine culture in private gardens was greatly restricted, and although there has been some extension of late it has not been to any material extent, more particularly in the production of fruit for use during the winter.

This year the fruit-room is less satisfactorily furnished than could be desired, owing chiefly to the weather during the spring being so unfavourable both for apples and pears. But the season is not in many instances wholly to blame for the smallness of the quantities of apples and pears spread over the shelves. This is in some degree due to the fact that too much space is usually devoted to the early kinds. It is known that Lord Suffield apple and Williams's Bon Chretien pear, and other kinds ripening at the end of the summer and early in the autumn, are good croppers, and commence to yield a satisfactory return within a short time of their becoming established. They are therefore planted extensively, and in some instances to the exclusion of other kinds equal in productiveness and quality, but ripening at mid-winter, or it may be in the spring. In the selection of both apples and pears, sufficient attention is not given to the season in which they are available for the table, and in many cases varieties ripening from the beginning of September to the end of November have undue predominance. The results are more or less waste in the autumn, and indifferent supplies during the winter and spring. Referring specially to the choice late dessert pears, the trees should, when grown against walls, have the protection of canvas or some other suitable material when in bloom, as the fruit is so valuable as to afford an ample return for any attention that may be necessary to ensure a good crop.

If there be small supplies of hardy fruits there is no scarcity of vegetables in either private or market gardens. Potatos, as we well know, suffered severely in many parts of Ireland from the ravages of disease, but happily the losses were not quite so heavy as was at one time feared. In Scotland and England the disease did but little harm, and the supplies are abundant and of good quality. Inferior samples are plentiful in the market, but this inferiority is chiefly due to the practice which obtains in some districts of leaving the crop, in the ground until within a short time of their being marketed. Green vegetables have, in consequence of the wintry weather that has prevailed for some time past, not been particularly plentiful in the markets, but there is an abundance on all sides. The summer was indeed especially favourable to all kinds, for the cool, moist weather experienced during the early part of the summer was of material assistance in enabling the plants to become established quickly, and the subsequent atmospheric conditions were of material assistance in so hardening the tissues that they have not been seriously injured by frost. It is just now interesting to note in walking through the markets how largely Brussels sprouts have taken the place of the savoy, which, as one result of the change in public taste, is rapidly declining in favour amongst all classes.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY held its annual meeting at Dowell's Rooms, Edinburgh, a few days since, when a highly satisfactory statement was presented to its members. The receipts were £1,310 15s. 6d., and the expenditure £1,154 16s. 10½d., leaving a balance of £155 18s. 7½d. to be carried to the reserve fund, which now amounts to £1,242 6s. 6d.

PRESTON EXHIBITION OF SPRING FLOWERS will be held March 18 and 19.

GARDENERS' ROYAL BENEVOLENT INSTITUTION will hold its fifty-second annual meeting on January 15, 1891, at three p.m., at Simpson's, and the annual friendly dinner will be held at the same place on the same evening at six p.m. Both Baron Schroder will preside at the meeting, and U. N. Sherwood, Esq., will take the chair at the dinner. The executive of the institution has recently made a purchase of £300 Consols, making a total of £25,000 invested.

ORCHID ALMANACK for 1891, presented with the current issue, contains the dates of all the more important horticultural exhibitions and meetings for the year that had been arranged at the time of going to press. The orchids of which portraits are given are Cattleya Trianæ, Cypripedium œnanthum, Dendrobium Ainsworthi roseum, Odontoglossum Alexandræ, and Oncidium concolor, all of which are so well known and highly appreciated as to render description unnecessary.

BANKSIAN ROSE IN FRUIT was contributed to the December meeting of the Scientific Committee of R. H. S. The fruit was described as having been obtained by cross-fertilization by another species. The carpels were developed, but not the hypanthus (the "hip"), so that the same condition was found as in the carpels of Potentilla or Geum. The Banksian rose has not been previously known to fruit in this country, and the specimen exhibited created considerable interest among the scientists present.

MCDOUGALL'S SELF ACTING TOBACCO PAPER, which has already occasioned considerable inquiry, appears to be specially deserving attention as an efficient agent for the destruction of plant pests without the trouble and inconvenience involved in the use of ordinary tobacco paper. The sheets consist of specially-prepared cellulose, highly charged with nicotine of standard strength, and when ignited they smoulder slowly until wholly consumed without further attention. It is not, therefore, necessary when using them to remain in the structure, as is necessary when tobacco paper is the fumigating agent.

CHISWICK GARDENS ASSOCIATION has had placed at its disposal by Mrs. Lee the sum of £15 10s., to be distributed in prizes for essays on horticultural subjects. The executive committee has decided to have three classes, in two of which the competitors are to select the subjects of the essays themselves, and in the other it will be "Horticulture, Its Influence on the Masses." The competition in this last class is to take place in the Council room of R. H. S., at Chiswick, on the evenings of February 20 and 21, 1891. The other essays are to be delivered to the secretary, Mr. J. Barry, R. H. S. Gardens, Chiswick, not later than March 1, 1891.

HORTICULTURAL CLUB.—There was a large attendance of members and their friends on Tuesday evening at their rooms, Hotel Warden, Victoria Street, Westminster. The chair was occupied by Mr. John Lee, and amongst those present were the Rev. W. Willes, Rev. F. R. Burnside, Rev. F. H. Gall, and Messrs. T. W. Girdlestone, H. J. Pearson, A. H. Pearson, G. Mount, Bloxam, Wallis, Jefferies, H. Turner-Lindsell, G. Paul, G. Paul, jun., T. Francis Rivers, and W. W. Williams. In the evening a discussion took place on the subject of rose stocks. It was opened by Mr. T. W. Girdlestone, who gave a most interesting account of some experiments he had made, and believed that the polyantha would become one of the most useful stocks of the future. An interesting discussion took place, in which Messrs. Rivers, G. Paul, and many of the members took part, and a pleasant and profitable evening was concluded with a vote of thanks to Mr. Girdlestone for his excellent lecture.

PROPOSED MEMORIAL TO THE LATE MR. HIBBERD has given rise to a considerable diversity of opinion as to the form the memorial should take. In an article on "Memorials" the *Journal of Horticulture* refers to the proposed memorial to Mr. Hibberd as follows: "Active, industrious, ever ready to help in any good cause, something should be done, and will be done, apart from his own works, to keep them in remembrance; and so far as we can ascertain, after taking some pains to test current opinion, this is overwhelmingly in favour of a portrait to be placed with those of Lindley, Veitch, Rivers, and others in the Lindley library. Recognising to the full Hibberd's services in horticulture, he cannot, under the most generous estimate, be regarded as a greater man than they. One of those portraits was obtained by subscriptions among the Council of the Royal Horticultural Society; and the other (Mr. Rivers) by general offerings of those who had pleasure in sending them when they learned of the project in view. The cost of the portrait was, we think, about £40 or £50, and the surplus, which was similar in amount, was given to the Gardeners' Royal Benevolent Institution. Will not something of the same kind meet every reasonable claim that can be advanced for our late friend? But as our charitable institutions are not weak and ill-supported at the present time, could not the surplus be given to his child? This would be the most graceful of all tributes to his memory, and one which would touch him the most deeply if he could know it was done. It was with feelings of gladness that all who attended the meeting last week heard this child was provided for, but the provision cannot be so great that an addition would be a superfluity; and as coming from her father's friends it would be to her something very near akin to a father's love, and in time so felt—a token that he was loved in life by those who knew him best, and in this meet form remembered. For perpetuating Mr. Hibberd's memory in some such manner as suggested his friends, high and low, rich and poor, would, we believe, give their offerings gladly, and much more willingly than towards raising a large fund for sending young gardeners abroad for completing their education, or disbursing among professional lecturers at home on scientific subjects connected with horticulture."

WINTER GRAPES.

By W. Iggulden, Marston House, Frome.

THERE are no signs of any diminution in the popularity of grapes, but on the contrary, they are still most highly esteemed by all classes, no other fruit rivalling them, nor ever will do. They are with us in smaller or greater quantities all the year round, and in this respect, again, are preeminent. In the sick room they may be said to be absolutely indispensable, and most probably have saved the lives of thousands of persons, rich and poor, for the latter are not always forgotten—to use a scriptural phrase—by very many owners of vineries, as hundreds of gardeners could testify at the present moment. Even if they cannot be credited with life-saving powers, it is yet indisputable that a few grapes have served to quench the thirst and soothe the pain and sufferings of innumerable invalids nearing their end, and to what better purpose could they possibly be applied at this festive, present giving time of the year?

Before I pass on to other portions of my subject, it will not be out of place to mention that very rich grapes are not the best for an invalid. Of the Muscat of Alexandria and Mrs. Pince's Muscat, they soon tire, but the case is very different with Gros Guillaume, Gros Colmar, Golden Queen, and West St. Peter's. The last named is considered the invalid's grape *par excellence*, and it certainly is a most pleasing and refreshing grape, which might with advantage be more often grown, but of which I have no personal experience.

From July to October inclusive, grapes are most abundant, this being when varieties that may be said to ripen early with or without the aid of fire heat, and do not keep well, are at their best. Among these, unfortunately, must be included such superior varieties as Black Hamburgh and Madresfield Court, the serviceable Foster's Seedling, and Buckland Sweetwater also failing to keep well. Nor can Gros Maroc and Alnwick Seedling be rightly termed winter grapes, as they do not keep well, shrivelling taking place in October and the early part of November. Luckily these showy, easily-grown varieties can well be dispensed with, there being other sorts quite as attractive in appearance and much superior in point of quality.

If asked to name the most popular of all winter grapes, I would unhesitatingly plump in favour of Gros Colmar, my decision not being merely guided by my own experience, but largely influenced by facts that have been brought under my notice in different parts of the country. This grape was raised nobody knows where. It was first introduced into this country by Mr. Rivers from Angers, but was not sufficiently appreciated to warrant its retention. To the late Mr. Standish, however, belongs the honour of first bringing it more prominently before the public, this being about twenty years ago; but so slow was the progress it made in the estimation of private gardeners that it is doubtful if it would have ever become popular had not its merits as a market grape become evident to Mr. W. Thomson, and others. Originally named Grosse Kölner, it became, in course of time, Gros Colmar or Gros Colman, the latter being the name most generally given, and under which it is now grown in nearly every late vinery in the country. At the outset much fault was found with its quality, a peculiar ivy-like taste being apparent, especially if eaten much before midwinter. Either this prejudice has been overcome. or else good cultivation has improved the quality, as on all sides much praise is bestowed upon Gros Colmar, not only for its imposing appearance, but also for its agreeable flavour. It is no unusual occurrence for the majority of the berries to measure one and a-quarter inches in circumference, and when these are well coloured, as they easily can be, and the bunches weigh from three pounds to four pounds in weight a very handsome dish is formed, such as most people are proud to see on their dining-table. The Gros Colmar is at its best in March and April, and can easily be kept till that time, but from October onwards the berries are very solid and fairly juicy, while the skins are never tough. It requires a rather long period of growth, and if it fails to colour properly this is either due to an undue hastening of the ripening period, or from overcropping, Its proper place, therefore, is not with the Muscat of Alexandria, though the two look remarkably well together on the dining table, but either in a separate compartment, or else with other late black grapes.

As a market grape Gros Colmar has no equal, not even excepting Muscat of Alexandria. It is by far the heaviest cropping of all late varieties, the weight taken from rods of Black Alicante or Lady Downes, of the same age and length as Gros Colmar, all growing side by side, being fully doubled by the latter. Even if not well coloured this large berried variety will sell readily and at better prices than Black Alicante, many tons probably being sent to the principal markets in this country for the Christmas festival, it being the growers own fault if they take less than 4s. per pound. Good modern tomato growing is supposed to pay better than anything for markets, but I have it on the best of authority, and could produce figures to prove that Gros Colmar grape pays far better than tomatos or any other fruit. It will, whatever may be said to the contrary, gradually oust all other black grapes out of the markets in the winter, and is doing much the same thing in private gardens. A short time ago we were promised a white Gros Colmar, but from what I have seen of this novelty it has nothing in common with the black form and is of no practical value.

Many of my readers probably will be of opinion that the place of honour ought to have been given the Muscat of Alexandria, but this is not everybody's grape, and extensively as it is grown, really first class examples of it are nearly as scarce as ever. Well grown, no other white variety approaches it, either in point of appearance, or for richness of flavour, and for what may be termed satisfying properties it has no equal. When, however, it comes to paying 6d. per berry for the best samples, and this happens frequently when fancy prices, or say 12s and upwards per pound is paid for them during the winter, it is not surprising that the demand for the best samples should be limited. Let it not be thought, however, that growers are paid highly remunerative prices for this grape, as it is only the very best samples nowadays, that realise upwards of 4s. per pound at midwinter and later. Ten years ago a neighbour used to get from 6s. to 8s. per pound for his surplus bunches, but there was only a limited demand for such fine produce, and latterly the prices have fallen at least three shillings per pound. It costs much in the shape of fuel to ripen muscats properly; they also require very liberal treatment at the roots, and must not be very heavily cropped. Those who can grow them well might make the attempt on a fairly large scale with advantage, but it is not from a market grower's point of view that pre-eminence should be given the Muscat of Alexandria. As a rule, it is accorded a separate house, and rightly so, as it requires more fire-heat to bring it to perfection than is good for or needed by any other sort. I am also of opinion that even the vines, to produce the late or winter supplies, ought to be started not later than the first week in March, late ripening being the most probable cause of shrivelling, an evil very prevalent this season. With us it succeeds admirably in an early mixed house, but fails somewhat in a house of late mixed varieties. The early ripened bunches, or those fit for use in August, keep well to Christmas. Not unfrequently well ripened bunches keep plump and good in the grape room till April, but there is bound to be considerable waste attending the late keeping. Nothing authentic is known of the origin of this popular grape, nor even when it was introduced into this country from the Continent. It is largely grown in Spain and elsewhere for drying purposes, the muscatel raisins which play so conspicuous a part in the dessert on innumerable tables this Christmastide being, in many cases, dried bunches of the Muscat under notice. Some of the heaviest bunches of this Muscat I have ever seen were grown by Mr. Taylor, at Bath, this season. Several of them weighed not far short of eight pounds, and were well finished. Bowood and Tynninghame Muscats are simply synonyms of the Muscat of Alexandria, and there is a form that passes for the latter, equalling, and occasionally surpassing it in appearance, but which is really devoid of muscat flavour. It is occasionally to be met with at the Midland shows, but plants or cuttings of it cannot be had. Canon Hall Muscat, said to be a seedling from the Muscat of Alexandria, has very much larger and rounder berries, but, unfortunately, is a very bad setter, and rarely grown in consequence. I have known it to set fairly well over the hot-water pipes in the Muscat house at Elvaston Castle, and a similar position should be assigned it by those who may feel disposed to give the Canon Hall Muscat another trial.

The Black Alicante is both a showy and easily grown late keeping grape, and is very generally grown. It is supposed to be of Spanish origin, but beyond this it has no history. Some forms of it are thought to be better than others, but this is mere fancy, as I never could find any difference, say in Meredith's Alicante, obtained almost directly from the Garston Vineyard while Mr Meredith was still there, and the ordinary stock previously cultivated. Only a moderate amount of fire-heat need be expended on this variety, and if the house in which it is grown is freely ventilated during the ripening period it colours splendidly in spite of being heavily cropped perhaps. It has a somewhat tough skin, and sometimes the quality is very second-rate, but it is a very serviceable grape and keeps well in a cool room till April. By some it is considered the best market variety that can be extensively grown for affording winter supplies, but, as before pointed out, it must go down before Gros Colmar. Better, however, grow this at from 2s. 6d. to 3s. per pound than the Black Hamburgh and other early varieties with which the market is so glutted in the summer, that it is not always possible to obtain even 1s. per pound.

It is largely owing to the Channel Islands growers that such immense quantities of summer grapes are thrown on the markets, and for a short time only will the growers on this side of the Channel be safe from similar inundations of late grapes. I repeat for a short time only, as the more shrewd men among the Channel Islanders are changing their varieties as rapidly as possible, Alicante and Gros Colmar being largely grafted or inarched on the Hamburgh and other stocks. How they managed to procure the fresh varieties must remain a mystery, very stringent laws prohibiting the introduction of vines or grafts, presumably owing to a dread of the phylloxera. In their endeavours to progress in spite of uncalled for protective measures the Channel Islanders merit our sympathy, especially when it is borne in mind that they claim, and rightly so, to be of the same nationality as the rest of us—a fact too often overlooked.

Lady Downe's Seedling, though perhaps scarcely so popular as the Alicante, is yet of greater value to the private gardener, and those among growers for the market who succeed in doing it well, have good reason to be satisfied with the prices realised, no other variety, if we except the but little grown Mrs. Pince's Muscat, keeping so late. It was raised by Mr. Foster, gardener to Viscount Downe, about the year 1835, and was said to be, in common with Foster's Seedling, a popular white grape, the result of a cross between Black Morocco and the common Sweetwater. Under ordinarily good treatment it produces rather small bunches very freely, the berries attaining a good size and colour well. Duly cut, bottled, and stored in a cool dry room, this variety keeps plump and good till May, or till the earliest forced grapes are becoming plentiful. It is, however, of excellent quality any time duringthe winter, the berries being crisp, solid, and pleasant in flavour.

Mrs. Pince's Black Muscat, raised in, and sent out from, the

Exeter nurseries, about a quarter of a century ago, has from first to last been a most disappointing variety. No fault can be found with its constitution or free bearing habit, and if it could only be induced to set and colour well, it would be simply invaluable as a high-class, late, winter grape. Far more, however, fail than succeed with it, and it is only in a limited number of places that it is now grown. Occasionally very handsome bunches are to be seen Mr. Pragnell, at Sherborne Castle, being particularly successful with the variety. It keeps remarkably well, and any time during the winter the berries are found to be very crisp, solid, and of a decided muscat flavour.

Mrs. Pearson and Golden Queen are not very extensively grown for winter use, yet they are most excellent keepers. They were raised about twenty years ago by the late Mr. Pearson, and were selected from a remarkable batch of seedlings obtained by crossing Alicante with Ferdinand de Lesseps. I saw many of these seedlings when they were first fruited, among them being one with berries partly black and partly yellow, which, it is almost needless to add, was an interesting yet valueless freak of Nature. Mrs. Pearson many succeeded in growing to perfection, but it is only lately that its long-keeping property has been discovered. It forms a handsome, well-shouldered bunch; the berries are quite round, and of an amber-green colour, while there is just a suspicion of muscat in the flavour. A distinct characteristic of this variety is its strong aroma, this being inherited from one of its parents, Ferdinand de Lesseps, which in its turn was raised from the little Strawberry grape. Golden Queen possesses much the strongest constitution of the two, and is very productive, but it is not often seen of a clear amber colour, muddiness being the general failing. In my opinion it requires more heat than it often receives. The berries are large, oval shaped, and crackling, and there is a trace of muscat flavour. If it could only be coloured better Golden Queen would be invaluable as a substitute for Muscat of Alexandria.

Those who delight in sensational bunches ought to cultivate the Gros Guillaume, or Barbarossa as it is sometimes erroneously termed. Originally introduced from the Continent nearly fifty years ago, it is only of late years that it has gained ground in the estimation of private gardeners. Market growers "would not look at it," or, in other words, they well know it would not pay to grow for the markets, large loose bunches being of little marketable value. To Mr. Roberts, of Charleville Forest, Ireland, belongs the credit of producing the heaviest known bunch; this weighed upwards of twenty-three pounds, and was forwarded to Sandringham as a present to the Prince of Wales. This, as it happens, is far above the average, the common run of bunches ranging from ten pounds down to four pounds in weight. The bunches are naturally loose in character, and look best suspended. Well grown, the berries are large, round, well coloured, and of good quality, especially towards mid-winter. White Tokay also produces extra large clusters, and at its best is not to be despised as a winter grape. White Nice, another but little grown variety, also produces very large bunches.

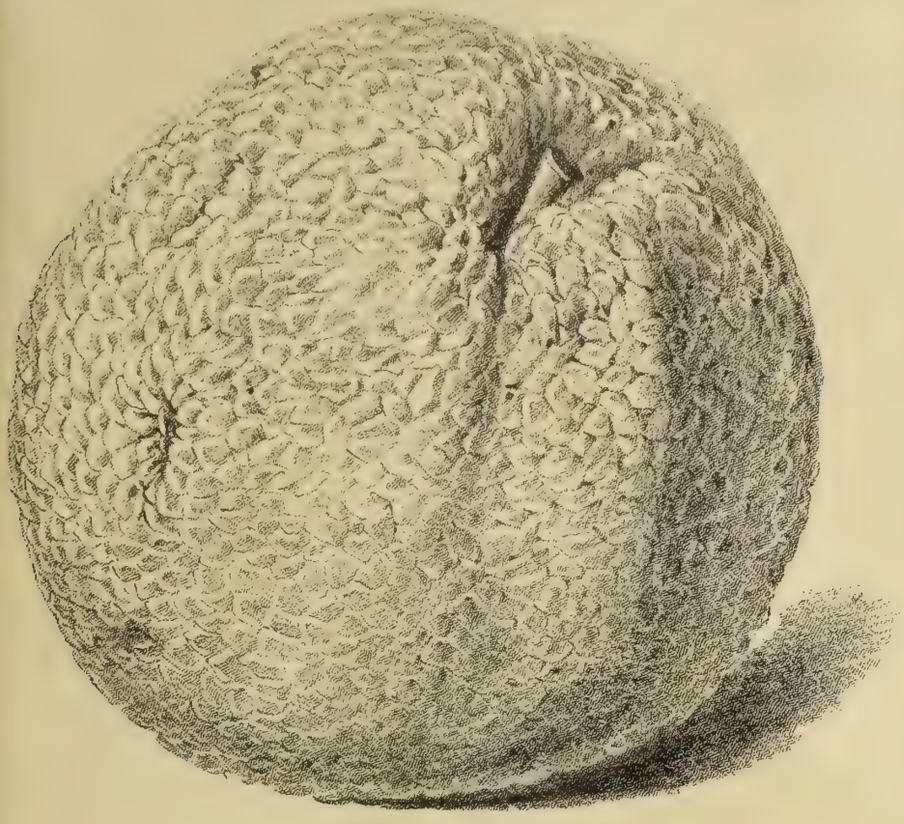


FOLIAGE OF OSAGE ORANGE.

THE OSAGE ORANGE.

Maclura aurantiaca.

THE Osage Orange is not an orange at all, although to outward appearance the fruit looks like one. There are many kinds of oranges, almost as many as of apples, and some of them are very good eating,



FRUIT OF OSAGE ORANGE.

some are not so, whilst others are only pleasing to look at and to smell. A good orange is the most delightful fruit in the world, and the traveller-naturalist, Wallace, after having tasted all the choicest fruits of tropical and of temperate climes, declares that this is so, and I for one agree with him.

The orange was an apple once upon a time. Theophrastus called it the Persian apple. Solomon no doubt had it in his mind when he said that "A word fitly spoken is like apples of gold in pictures of silver," the silver being the snowy flowers which, as everyone knows, blossom forth when the fruit of the previous crop is ripening. Some commentators declare that the apple which tempted Eve was an orange. At any rate, it could not have the crab-apple, which had not then the beautiful children known to us. Finally, the word orange is from the Persian *narenj*, with the *n* dropped, which, in its turn, is said to have come from the Latin *aurum*, gold; Golden Apple, *Citrus aurantium*.

Thus far in regard to oranges generally, which we may at any rate consider a word in season.

The Osage Orange is a kind of glorified mulberry, or a northern representative of the tropical Bread Fruit and Jack Fruit; it is also a relation of the fig. These, again, are all botanical cousins of the despised wayside nettle. This, let me say, is not a Christmas story, though it looks like one! The nettle order, *Urticaceæ*, is a very large and heterogeneous one, or it could not include such extremes as the nettle and the "Jack" (*Artocarpus*), whose fruit is a huge mass of edible custard-like pulp, and weighs as much as sixty pounds.

The fruit of the Osage Orange is only a "Dead Sea Fruit;" as food neither man nor beast will touch it, excepting, perhaps, pigs. Lindley states that the Red Indians used its yellow slimy pulp to smear their faces when going to war, and this is the only "economic property" recorded of it.

The Osage Orange, *Maclura aurantiaca*, bow-wood, or yellow-wood, is a native of Arkansas and other regions west of the Mississippi. It was first introduced into St. Louis from the country of the Osage Indians, and from thence into England in 1818. It is said to grow equally well in wet, or dry soil, varying in height according to conditions. The largest examples reach a height of sixty feet, are round and full-headed, not unlike a hawthorn when leafless, and sending up suckers freely. The branches are exceedingly tough, even when young and green, whilst the mature wood is as close-grained and elastic as to be preferred before all others by the Indians to make their bows with. The leaves are about as large as those of the common orange, shining yellowish green, and deciduous. At the base of every leaf there is a sharp thorn, and this character, together with the toughness of the wood and its hawthorn-like habit, has led to its general use in the Southern States as a fence plant. The male and female flowers are upon separate plants, so that to obtain fruit both sexes must be represented, and in close proximity to each other.

In favourable climates the tree produces enormous crops of yellow fruit, and is, therefore, as ornamental as the orange proper. In the south of France and Italy it fruits abundantly. It is also cultivated at the Cape, and I have never seen an object more strikingly beautiful than some fine trees covered with large well-coloured fruits in the gardens there.

To sum up the virtues of the Osage Orange, we have, first, a highly ornamental fruit, but of no value otherwise except to fighting Red Indians; a handsome, quick-growing, accommodating tree with bright green foliage; an excellent fence plant; a first-rate wood for the cabinet-makers, its grain being close, its texture elastic, its colour saffron-yellow, and its durability equal to that of the oak.

In England the tree grows freely out of doors, but does not often fruit. At Kew there is a group of handsome young specimens of it near King William's Temple in the Arboretum, their height being about twenty feet. According to Loudon, when first introduced, and for many years afterwards, the Maclura was planted against walls, its hardiness here being not then suspected.

Some samples of the fruit were exhibited by Mr. William Soper at the meeting of the Royal Horticultural Society held on September 9, when they created much interest. W.

SUGAR LOAF CABBAGE.

EVER since I was engaged as a boy in taking vegetables to the kitchen, I can remember the sugar-loaf cabbage, as it was a great favourite with the cook, who would always have it throughout the autumn and during the winter for as long a period as it could be had. The repeated inquiries that were then made for this cabbage made an impression on my mind which has not been erased. As I grew into manhood and changed to other places, I lost sight of this cabbage, but as soon as I took upon myself the responsibility of a garden, I very quickly renewed my acquaintance with it. That is now many years since, and I have it still and intend to continue to grow it for autumn and early winter supplies. There is no other variety to surpass it for productiveness and flavour. It has been tested on my employer's table, with the Chou de Burghley, the London Colewort,



SECTION OF FRUIT OF OSAGE ORANGE.

and other sorts, but my old friend carries the palm, and my employer will have no other kind. He says its flavour is mild and buttery, and so tender as to almost equal asparagus.

J. M.

FLOWERS AMID THE SNOW.

In Search of Plants in the High Alps.



SWITZERLAND, with its snow capped mountains, its ice-bound passes, and rich verdant meadows, is fully entitled to the honour of being called "the home of alpine flowers." The indescribable beauty and variety of its flora, and the varied geological formations met with in each district increases its interest to all lovers of these beautiful alpine gems.

To visit Switzerland and be permitted to see the large and intensely brilliant sheets of alpine flowers at home is a sight never to be forgotten. To see plants which, under cultivation at home we are taxed to our utmost to keep alive, growing in the greatest luxuriance and profusion on the barest and bleakest of mountain sides, is a great gain to the cultivator. Our experience is but faintly pourtrayed in the following notes, which, to save the reader a tedious railway journey, we have commenced at Lucerne.

Alighting from the train at Lucerne, we at once made our way to the steamer which plies between this place and Fluelen, nearly twenty-three miles distant. The Lake of Lucerne is bounded by the four forest cantons, and from the grandeur and magnificence of its rich and varied scenery is unsurpassed in Switzerland, perhaps in Europe, and cannot fail to impress one however familiar he may be with our wildest native scenery. Soon after leaving Lucerne, with its towers and battlements, the far famed Rigi in all its grandeur is seen on the left, while the dark ridges of hoary headed Pilatus rise abruptly on the right. Clouds almost invariably rest on its highest peaks, the serrated ridges and gloomy sides giving a chill to the otherwise sunny verdant landscape.

The Wetterhorn, the Monch, and the Jungfrau, with her dazzling shroud of perpetual snow, become visible as the steamer proceeds; Weggis, Vitsnau, Beckenreid, and Brennen, quiet peaceful looking villages nestle close to the water edge, and are slowly passed, until we finally arrive at Fluelen.

The starting point of the mountain railway, from Vitsnau to the Rigi, is close to the quay, where stood one of the queerest looking top-heavy engines we had ever seen. It suggested a huge bottle, and it would not have been difficult for the driver to have stood on his coal box and looked down the funnel. When seen mounting a slope, however, the fitness of its peculiar construction was at once made apparent, and it was very interesting to watch this diminutive train skirting the precipitous slopes of the Dorsen, now lost in a tunnel, now appearing from behind a huge rock, and anon crossing deep gorges by spider-web looking bridges in its circuitous course to the Rigi. The journey from Fluelen to Goshenen by train was one of the most uncomfortable we ever experienced. The background of the valley here was formed by the pyramidal Bristenstock on the left, while to the right the bold precipices of Gitschen and Brockli were grand and awe-inspiring. Above the village of Amsteg the dreary windgall tunnel is passed, and again by two tunnels through the steep Bristenstock sides, at times much exposed to avalanches, we were able to do a little botanizing as the train slowly winded its way up the mountain sides.

Sambucus racemosus was everywhere abundant, and laden with its brilliant orange-red berries, it was one of the most attractive plants we saw here. Whenever the dripping rocks afforded a foothold for vegetation, Sedums, Sempervivums, Saxifragas, Veronicas, &c., draped their sides. The drive from Goshenen to Hospenthal, was full of interest to the lover of hardy plants. Progress was slow so that we were able to examine the flora that skirted the road as we passed along. Saxifraga Cotyledon, and what we took to be S. Hostii, filled the crevices of the sloping rocks; the feathery flower heads in their abundance and beauty presenting a picture, such English growers of alpine plants must look upon with envy and despair. The excitement and interest of the journey increased until the grand climax was reached on our coming unexpectedly to the Devil's Bridge, situated in the midst of the most sternly magnificent rocky scenery in the whole pass. The furious Reuss here rushes down into a narrow gorge 100 feet below, forming a grand cascade. The rush of air is so great as to often deprive the unwary traveller of his head gear, so violent and sudden are the gusts from the narrow pass above. Through a tunnel called the Hole of Uri or Urner lock we emerged into the wide peaceful valley of Urseren, with its well watered pastures and rich cultivated land.

Andermatt is next reached, the chief village in the valley, and here the tourist may branch off for the Oberalp, rich in rare alpines, and beautiful scenery. The meadows about Hospenthal were still bearing their first display of flowers, and one could see for miles the beautiful and brilliant colours of the alpine flowers. Grasses as a rule were poorly represented, their places being usurped by Blue Bells, Polygonums, Phyteumas, Geraniums, &c., &c. A form of Polygonum Bistorta, remarkable for the fine deep rich rose colour of its flowers, was one of the most effective plants about here. Campanula rhomboidalis of which there were several varieties was very fine indeed. What struck one most, even at this low elevation, was the intensely brilliant colours of these alpine flowers, always more vivid than we ever see them under cultivation.

The St. Gothard pass is a very easy one to ascend. It winds through a bare and cheerless valley almost destitute of interest until the summit is reached. Here the cold granite ridges of the central chain, overlooked by the snow capped peaks behind, with peaceful lakes at their feet form a grandly impressive picture. Long before we sighted Mont Prosa we were floundering amongst the snow, some parts of the road near the summit being still covered, while on either side the snow slopes were within a few minutes' walk. Primula viscosa, with the brightest of purple flowers nestles in the crevices of the dripping rocks, and seemed to enjoy it, while amongst the melting snow, the alpine Soldanella was growing in great abundance. Here we saw Gentiana lutea, only one plant as yet showing flower. Veratrum album was abundant, with its stately flower stems, and in some parts forming the entire herbage. Silene acaulis was scarce, some of the tufts, however, were a foot across, covered with pretty pink flowers, and invariably on dry exposed rocks. On the low east walls by the roadside, the parsley fern had taken entire possession, its crowns just sheltered by the overhanging ledges. Saxifraga stellaris occurred occasionally on the walls, but was more plentiful and luxuriant by the little streams and waterfalls, where under the dense spray it fills the crevices, and was prettily in flower. Viola biflora is one of the commonest plants on this pass, in shady as well as exposed situations, in the latter dwarfer and flowering more profusely; the walls near the waterfalls were lined with this plant, its charming bright yellow flowers being very effective. At the base of the low rocks where the snow was melting, Hutchinsia alpina, the rare Astrantia minor, and Chrysanthemun alpinum were well represented, the latter forming large masses covered with handsome white flowers. Silene alpestris was common everywhere, becoming dwarfer and more succulent as we neared the summit; Bellidiastrum Micheli was in as great abundance as our native daisy in our own meadows, and would make a very effective plant for damp shady spots on the rockery. Homogyne alpina, with its quaint brown flower heads, was also very common. A very charming effect was produced with the alpine Marsh Marigold Ranunculus acontifolius, and Saxifraga aizoides, clothing the margins of the lower streams, while the alpine trefoil, Empetrum nigrum, and Azalea procumbens formed a turf surrounding one of the lakes.

Here one may perceive the many dangers to which travellers are exposed on this pass during winter and spring. Many of the snow-drifts close to the road could not have been less than ten or fifteen feet deep. Avalanches are frequent on the other side, the disastrous effects of a recent one being still visible. Mont Prosa, which we ascended, and from which a beautiful view of the valley on the Airola side is obtained, is a fine hunting ground for the plant collector, large patches of the Sulphur anemone, Geum montanum, and Gentiana lutea being in full flower, while higher up a most interesting series of Gentiana acaulis, Potentillas, Myosotis (several species), Sempervivums, Sedums, and Androsaces, were some of the most interesting of the many plants found here.

The walk to the Furka from Hospenthal was like being in a dream, the brilliant meadows and lofty mountains forming a picture such as only Nature can make, with her exquisite harmony and perfect blending of colour. Winding up a verdant valley we were soon within sight of the Tiefen Glacier, between the Galenstock and the Gletschhorn. A steep climb and the Furka is reached, from which one obtains a fine view of the distant Bernese Alps. The weather here was not so favourable, and in a dense cloud of mist we began to ascend the Furkahorn. The road, though apparently of recent make, was in a dreadful state, the result of the spring storms. At many places it was blocked by huge boulders, only waiting the melting of the snow to renew their headlong career to the bottom. In getting round these obstructions the deep drifts were by no means agreeable, and were only made tolerable, as each were passed, by the disclosure of a further display of rare alpines: Lloydia serotina, Soldanella minima, S. pusilla, and a hybrid, Erigeron uniflorus, Saxifraga oppositifolia, S. exarata, and S. Seguieri, the charming Viola calcarata, with its handsome deep blue flowers, Arabis alpina, and A. brassicæformis, Androsace obtusifolia, Gentiana verna, G. acaulis, and G. bavarica, all blended in

the most perfect way, giving an effect altogether beyond the possibility of reproduction in our rock-gardens at home.

By an easy walk we gain the Rhone glacier, and gradually descending by a zig-zag path we arrive at a point whence a splendid view of its fantastic masses of ice is afforded. The flora is very rich around here, Anthericum liliago and St. Bruno's lily being fairly abundant. Primulas line the crevices of the rocks everywhere, while Dronicum glaciale and Senecio Doronicum form lovely patches on the wet banks close by. The greatest attraction, however, was Campanula thrysoidea, which formed a large colony on a slope between the glacier and the Furka. The dense uninterrupted spikes of soft yellow flowers of this plant were very attractive, whilst the growth generally was more luxuriant than we have ever seen it in cultivation. The following day found us again in search of this beautiful campanula, which we succeeded in finding after facing a blinding snowstorm of an hour's duration. Fresh snow had fallen all round in the morning, and the steep slopes had now become almost too slippery to be climbed; with the aid, however, of a stout alpenstock, and a considerable outlay of perseverance, we ultimately gained our prize, and ascending still higher finally reached the carriage road. On our way down we came across a colony of Pinguicula alpina, in large groups at the base of moist rocks, Phyteuma hemisphericum, and P. spicatum, Lilium Martagon. Achillea macrophylla, Anemone vernalis, Veronica saxatilis, Crepis aurea, and Pinguicula grandiflora were also collected.

In descending the slope of the Langisgrat towards Gletsch we had the pleasure of actually witnessing a small avalanche. We were busy amongst the gentians, lilies, and alpine roses which abound here, when we were startled by a loud crash, so sudden and unexpected as to cause a stampede. Finding, however, that only a portion, and not the whole glacier had escaped its moorings, we stopped, and turning round were just in time to see a grand icefall. Huge blocks, weighing many tons, came crashing down with a deafening noise like the roar of a hundred cannons, louder and louder as the masses were broken up by the obstructions in their rapid descent.

The Alpine Rose (Rhododendron ferrugineum) covers the slopes with a verdure as dense as that of the heather on our native heaths, and very effective it is, with its bunches of deep rose flowers, and rusty brown leaves. From the old bed a good view is had of the glacier, which here resembles a huge frozen waterfall. It has receded much of late years, leaving a lovely Alpine garden in its place. Along the moraine the flora is becoming much the same as in the valley below. Linaria alpina, Silene acaulis, Artemisia glacialis, and Saxifraga oppositifolia are being gradually pushed on to the slopes around; Silene acaulis is only found in abundance near the glacier; and here also Epilobium Fleischeri is very plentiful. Between the plants from the high elevations brought down by the glacier, and the sub-alpine flora, a struggle for the mastery is now going on, and of course the more robust sub-alpine flora must eventually win.

The Rhone valley, from Gletsch to Brieg, is one of great beauty and serenity. Campanula patula, Jasione montana, Veronica spicata, Echinops sphærocephalus, Polemonium cœruleum, Mentha candicans, &c., were plentiful, the last-named lining the roads. From Brieg a fine view is obtained of the Belalp, the snow-covered Wasserhorn, and the great Aletsch Glacier. Here we begin the ascent of the Simplon, one of the finest passes in Switzerland. To make our walk more interesting, we left the carriage road and took the course of the irrigating channel which is carried about midway between the road and the bottom of the valley. The dangers and risks of crossing the faces of immense precipices on improvised bridges formed of fallen tree trunks is, however, fully rewarded by a much richer flora, the interest never flagging for want of fresh finds. Berisal is next reached, and is a good centre from which many delightful excursions may be made. Mulgedium Plumieri, Campanula glomerata, and many rare and beautiful alpines are found here. In the ascent to the Hospice a fine view of the Aletsch Horn and Bernese Alps is had; the road winds up through dense pine woods, through openings in which now and then beautiful views are presented. Arriving at the Schallbett gallery, a tunnel hewn through solid rock, where begins the most dangerous part of the pass during the period of storms and avalanches, we gain the Wasser gallery, over which a stream is precipitated from the Kaltwasser Glacier above, and of which a fine view is obtained through a side opening. Two other galleries, and then the Hospice, the highest point on the pass, is reached, and near to which we found the rare Hieracium alpicola, H. glaciale, and others; Polygala chamæbuxus, Saponaria ocymoides, Dianthus sylvestris, Dryas octopetala, Oxytropis campestris, Gentiana tenella, Arenaria laricifolia, and a host of others. On the way to Simplon village, Rhododendron hirsutum, Arabis cœrulea, Ononis rotundifolia, and a very bright-flowered form of Sempervivum arachnoideum were found.

As we descended the Gorge of Gondo, one of the grandest in the Swiss Alps, the mountains seemed to narrow and deepen at every step until the fearful precipices actually overhung the road, which is squeezed in between them on the one hand, and the wild torrent on the other. At the farther end of the Gallery of Gondo, a huge mass of rock pierced by a tunnel 245 yards long, the Alpienbach forms a gigantic waterfall crossed by a slender bridge; the fine Bodmer Glacier being visible beyond the ravine. Allium carinatum, Lactuca perennis, Pleurospermum austriacum, and the rare Streptopus amplexifolius were found here, while higher up Asplenium septentrionale, the curious Campanula excisa, Dianthus atrorubens, &c., were met with in abundance.

Instead of returning to Brieg, we resolved to cross to Saas by the Zweischbergen pass, 10,735 feet high. We began the ascent from Simplon village, and soon had a splendid view of the Fletschhorn with its glistening snowy peaks. Our first find of any importance was Primula longiflora, Pyrolo media, and uniflora. Passing over two large snow slopes we were soon among the rare alpines. Edelweiss was everywhere in the greatest abundance, and from what we saw of the depredations of the cowherds, we would suggest that the notices issued by the Alpine Club, and posted up in every hotel, should be printed in French instead of English, and liberally distributed among the peasants. These cowherds daily pull large bunches of the Edelweiss in the hope of a tourist passing their way, throwing away the drooping bunch of yesterday for a fresh one to day, so that all round these summer chalets this plant has become obliterated. We were soon in the home of Eritrichium nanum, that most beautiful of all the Forget-me nots, Androsace glacialis, Ranunculus glaciale, Campanula cenisia, Arnica montana, Artemisia nana, Gentiana bavarica, and many other beautiful and rare alpines. Rounding what appeared to be lateral moraine, we were brought face to face with the great snow-bound ice fields, our spirits sinking as we saw the guide overhauling the ropes. Now began the hardest part of the task, a long climb of nearly four hours over deep snow, in which we frequently sank to our knees and occasionally to the waist. A bleak dreary pass, destitute of animal or vegetable life, and relieved here and there only with bare weather-beaten rocks. We had only one easy crevasse to get over, and after a tedious and trying climb we gained the summit of the Zweischbergen pass. Here we were rewarded with a curiousform of Saxifraga oppositifolia, Artemisia mutellina, Valeriana celtica, and V. saliunca, and a bell flower, probably a form of Campanula cenisia.

We now began the descent, the first part of which over the hard glistening snow we accomplished at express speed. On leaving the snow, which was not more than a half a-mile on this side, the ground was brilliant with Senecio uniflorus, and S. incanus, Aretia vitalliana, with its bright yellow flowers, Eritrichium nanum, Artemisia mutellina, Euphrasias, Androsace carnea, and A. obtusifolia, Aster alpinus. The icy cold streams were everywhere lined with Ranunculus glacialis, and other rare alpines, altogether this was the richest flora we saw in Switzerland. It was now becoming dusk, and after a long and dreary descent, we at length reached Saas-in-Grund. Near to the hotel Edelweiss is fairly abundant, Daphne Laureola rather rare amongst the loose stones on the mountain sides. On the slopes on the other side of the valley, many fine orchids and numerous ferns abounded, while Gentiana asclepiadea and Astrantia minor filled the shady copses.

By an easy grade we reached Saas Fee, which is a centre for many interesting excursions. Here we were again in the home of perpetual snow, the upper end of the valley being closed in with snow-covered mountains and immense glaciers. The Fee Glacier was the only one met with that had increased much of late years. Its progress, apparently rapid, is very suggestive of an immense steam plough, tearing up the ground, uprooting trees, and moving large boulders as it goes along. Close to this glacier Geum reptans, Hieracium alpicola Phyteuma pauciflorum, Gentiana brachyphylla, Teucrium montanum, Aquilegia alpina, Ranunculus baldensis, and Campanula barbata, and forms of C. pusilla were among the plants found, while on the closely-shorn pastures Colchicum alpinum was in full flower.

A charming walk on the mule track from Saas to Stalden, and thence by train to Sierre, where Salvia sclarea, Chlora perfoliata, and Campanula bononiensis were among the most interesting finds. The road from Sierre to St. Luc, in the Val d'Anniviers, winds up a fertile and beautifully-wooded valley rich in the rarer alpines and ferns. Among the most notable of our finds here were Artemisia valesiaca, a pretty shrubby species, Potentilla alba, Asplenium germanicum, &c. From Sierre we took train to London *via* Neuchatel and Delamont, and thus ended the most interesting and pleasant holiday it has been our lot to enjoy.

We had the good fortune to accompany the Director of the Royal Gardens, to whose wide experience and critical knowledge of the Swiss flora we were much indebted during the trip. D. DEWAR.

Kew.

CHRYSANTHEMUMS AT CHISWICK.

THE large illustration which forms part of the present issue gives an excellent idea of the attractiveness of the chrysanthemum exhibition in the large conservatory in the gardens of the Royal Horticultural Society at Chiswick. It is interesting also as showing what a beautiful effect may be produced by comparatively simple materials. The plants, although representing high-class cultural skill, had not received that special attention considered by so many cultivators essential to success. They had been grown with but little stopping or disbudding, and, as the illustration shows, each example produced a considerable number of blooms, and these were of excellent quality. All sections were represented in the collection, and it will be seen that the single varieties were not only included but were sufficiently plentiful to make a distinct impression, and to fully assert their claims for consideration.

In referring to the beautiful exhibition which Mr. Barron provided for the Fellows of the Society, the fact must not be overlooked that it was in the Chiswick gardens that some of the earliest exhibitions of these flowers were held in this country. It was also in these gardens that a considerable number of the varieties first introduced to England found a home; and it is not less worthy of being mentioned that it was from Chiswick many of the earlier introductions were distributed to cultivators in the United Kingdom. The first exhibitions were widely different from that which we have now the opportunity of illustrating; but there is indisputable evidence that in the earlier displays we should have found not only types bearing a distinct relation to the incurved and reflexed varieties of the present day, but also of the Japanese varieties, some of them having flowers that differed but little in character from those of varieties belonging to the Japanese section that have been introduced within a comparatively recent period.

TWO-EDGED VESTAL ORCHID.

Lælia anceps.

THE magnificent specimen of the Two-edged Vestal Orchid (*Lælia anceps*) exhibited by Mr. Pepper, of Milford Hall, Salisbury, at the meeting of the Royal Horticultural Society on the 9th inst. contributed in no small degree to the attractiveness of the bright display of orchids then produced, and at the same time served to remind us of the usefulness of this beautiful species. The specimen, although not so large as that which for some years occupied a prominent position in the collection of the late Mr. Day, at Tottenham, and a few others that can be called to mind, was of considerable size, and had about thirty spikes, the great crowd of highly-coloured flowers producing a rich effect. No member of the genus has enjoyed a greater degree of popularity than has this species, for from the date of its introduction, nearly sixty years ago, it has been held in high estimation by the general body of orchidists. It is not surprising this should have been the case, for it is one of the easiest of the Mexican orchids to have in perfection, the flowers are exceedingly handsome, and produced during the dullest season of the year, they are especially welcome. The species is also highly interesting as the parent of a large number of forms which are remarkable for their beauty and the wide range of colour they give. At least sixteen varieties have been considered sufficiently distinct to receive names, and although there is not much difference between certain of them, they are, with but few exceptions, so meritorious as to create much interest when well-developed specimens come into the market.

It is a matter of some interest that Lælia anceps was introduced to English collections in 1834 by Messrs. Loddiges, of Hackney, and created so much interest that it was figured in the *Bot. Reg.* (1835, t. 1751), *Mag. Bot.* (1838, iv. p. 73), and *Bot. Mag.* (1841, t. 3804.) Subsequently it was introduced by Messrs. Hugh Low and Co., of Upper Clapton, the principal importations coming from Cordoba and Orizaba, where it was then very plentiful. In its native habitat this lælia is almost invariably found on the margin of the forests. Usually it is on the branches of trees, but sometimes it is found growing on the rocks in a thin layer of moss and partly decayed leaves. But whether attached to the trees or to the rocks the plants occupy positions more or less exposed to the full sun. From May to October the plants are subjected to heavy rains at night and drying winds and brilliant sunlight during the day, and under these conditions they make a vigorous growth and bloom profusely, coming into flower during the last-named month, or in November when the rainy season is at an end. It is therefore evident that when the plants are making their growth they should have a light position near the glass, and receive liberal supplies of water at the roots. Occasionally complaints are made of this lælia not flowering so freely as could be desired, but in the majority of instances there has not been any difficulty in assigning the cause to excessive shade. The foliage of plants under cultivation must be screened from brilliant sunlight during the spring and summer months, but the lightest shade will suffice to prevent its being injured.

The varieties of this lælia may be divided into two groups, one comprising those having flowers with white sepals and petals, and the others with flowers of which all the parts are more or less coloured. If we refer first to a few of the most important of the coloured forms precedence must be given to L. anceps Barkeriana, a highly coloured form introduced by Messrs. Low in 1837. This differs from the type in the flowers having narrower petals and labellum, and in the colour being much richer. Although it has been so long in cultivation it is comparatively rare, and at the sale of the late Mr. Percival's collection, in 1886, a well-developed specimen realized thirty guineas. L. anceps Hilliana is somewhat variable in colour, the sepals and petals being white, occasionally lightly suffused with bright rose, and the labellum is marked with amethyst, yellow, and red-purple. L. anceps Percivaliana is one of the most exquisitely beautiful of the varieties forming the coloured group. The flowers are rather above the average in size, the sepals and petals pale rose shading to white, and the labellum is exquisitely coloured purple and yellow. The high appreciation in which this form is held is indicated by the fact that when Mr. Percival's collection passed under the hammer (February 2, 1886) a specimen with one hundred pseudo-bulbs was sold for one hundred guineas, and a smaller example for forty-seven guineas. L. anceps rosea is pleasing rather than important; the flowers are of medium size, with pale rose sepals and petals, and the labellum marked at the margin with bright rose. L. anceps Schroderæ, a remarkably beautiful variety, the flowers above the average in size, and the sepals and petals rose-pink, the petals tipped with purple, the labellum purple, marone, and orange.

Especially worthy of note amongst the white varieties is L. anceps Dawsoni, which flowered for the first time in 1867 in the late Mr.



LÆLIA ANCEPS VESTALIS (flowers white, with purple markings on the labellum).

Dawson's collection at Meadow Bank, and in the year following in Mr. Wright's collection at Gravelly Hill, Birmingham. The flowers are much larger than are those of the type, the sepals and petals are pure white, the latter being of great breadth, and the side lobes of the labellum are white, marked with purple lines, and the lower lobe is rich purple. At the sale of Mr. Dawson's collection a specimen realized forty-six guineas, and a plant in Mr. Percival's collection was sold for seventeen guineas. Other good forms in the group are L. anceps Sanderiana, one of the most recent of the white forms, very similar in colour to Dawson's variety, but the flowers are of normal size. L. anceps Williamsi has flowers of large size and pure white, excepting a yellow blotch and a few purple lines on the labellum. L. anceps vestalis is one of the most beautiful of the series, the flowers are of large size and pure white, with purple markings on the side lobes of the labellum. L. anceps Schroderi also has very large, finely formed flowers. As in the case of the variety immediately preceding it, the flowers are white, with purple markings on the side lobes of the labellum, which is of exceptional size. G.



LÆLIA ANCEPS SCHRÖDERI (Flowers white, marked with purple on the labellum).

THE TREE CARNATION AT CHRISTMAS.

By J. Douglas, Great Gearies.

Those unacquainted with the inner life of the carnation, and who only know the sweet flower as an article of merchandise in a florists' shop, might surmise that a new type had arisen, a rival of the Christmas tree, with woody stems and branches, furnished with a profusion of carnations at Christmastide, a consummation not yet fulfilled but devoutly to be wished for. "The fashionable world" and "the general public" are of one mind in their incessant demand for carnations. It is not enough that the supply be kept up in July, when nature gives us of her abundance—not hands full, but arms full—of "the fairest flowers o' the season, our carnations and streaked gillyflowers," as Perdita tells us. We must have them at Christmas, as well as at midsummer: and our British gardeners equal to any task that may be imposed upon them, produce for the purpose the tree carnation.

A member of the Carnation Society, who has mastered the initial difficulty of producing a plentiful supply of flowers in summer, wishes to go a step further, and asks how he can have carnations at Christmas? Grow tree or perpetual-flowering carnations, I tell him. Then there is the constant demand for "Malmaisons" and more "Malmaisons." A dealer in florists' flowers asked me if I had any carnation "Malmaison" to spare. "No; I did not grow that variety now; threw it away years ago. It is a dreadful pod-burster." "I know," was the answer. "We also threw away a whole houseful of it on one occasion. Now we cannot get enough of it for our customers." And so the fashions change in flowers, as in Christmas customs. What is the origin of the carnation Souvenir de la Malmaison? Is it in remembrance of the Empress Josephine, Napoleon the First's unfortunate spouse? She was an admirer of carnations, and grew a fine collection, including yellow picotees, in her garden at Malmaison. Bonpland, the botanist, was her gardener. One of our queens—Queen Charlotte and the Princesses are said to have cultivated carnations and picotees to perfection at Frogmore. They had a collection which also comprised yellow picotees "which were obtained principally from Germany, and were the delight of all who saw them." The first Duchess of Marlborough was intensely in love with the carnation we are told, and cultivated a large collection in pots. William Cobbett, too, the famous politician, who started life as a boy scaring crows, but who was returned for Oldham in the first reformed Parliament, and wrote much sense and some nonsense, but who loved his country, and painted in delightful language the scenery of his native land was fond of these flowers. The work he accomplished was Herculean; but he found time to cultivate the carnation, and wrote thus pleasantly of his favourite flower: "Some persons may think that flowers are things of no use, that they are nonsensical things; the same may be, and perhaps with more reason, said of pictures. An Italian, while he gives his fortune for a picture, will laugh to scorn an Hollander, who leaves a tulip root as a fortune to his son. For my part, as a thing to keep and not to sell, as a thing the possession of which is to give me pleasure, I hesitate not a moment to prefer the plant of a fine carnation to a gold watch set with diamonds."

So we read that the carnation was a favourite flower in the end of the last as it is in the end of the present century. But those ardent admirers and cultivators of the carnation were satisfied with it in summer. They did not dream of carnations at Christmas. Well, how are we to obtain them? I will answer in few words. Begin now to get cuttings. We have made a start as I write these lines. Some of the plants have just passed out of bloom, and are freely making young growths. Cut these off close below a pair of leaves. We have a

forcing house, where the temperature is at present from 45 deg. to 50 deg. as a minimum. In a corner of the pit a few barrow-loads of fermenting material is placed, enough to make a nice bottom heat of 85 deg. to 90 deg. The cuttings are planted in pots or pans of small size, and these are plunged to the rims in this hotbed. A few squares of glass are laid over the cuttings to prevent their drooping. The glass rests on the labels just above the cuttings; it must not touch them. Continue to take cuttings until March, as this will give a succession of plants. As the cuttings form roots they must be taken out of the warm material and be placed on a shelf near the glass, but not for long. Let each rooted cutting be planted in a small flower-pot to begin a separate existence on its own account. Being at this time confined in a house where air is not admitted freely, greenfly will most likely appear. I find fumigation with tobacco smoke is the best thing to destroy them, but if there are but few plants, the pest may be removed with a small brush, or they may be dusted with tobacco powder; any way, get rid of the pests, for the plants will do no good unless they are kept clean.

Carnations do not like a close, warm atmosphere at any time, and the sooner they can be removed to a house where air is admitted freely the better. Replant them in larger pots as they require it, and by the end of May the plants will succeed much better in an open position out of doors than they will do anywhere else. The carnation likes the free air of heaven above and around it, and, I may add, under it, for the plants always do best when the drainage is thorough, the compost open and porous. By spreading the time of propagation over a period of three months in the winter and early spring we obtain a stock of plants of various sizes which will continue to produce flowers from October until carnations can be obtained in the open garden again. Twenty years ago I had about twenty-four plants of the perpetual-flowering carnations, and with that small number we never were once without a carnation flower from October until July again. I do not say that we cut flowers every day, but we had them in the house, and many beautiful flowers were cut as they were required.

The potting soil should be rather lighter than that used for the summer flowering varieties; a little brown fibrous light peat added is excellent. Say loam four parts, peat one part, leaf-mould one part, sand one part, decayed stable manure one part. In this they grow vigorously, producing capital flowers. During the short days and long nights before and after Christmas, let the plants be as close as possible to a light roof, and the minimum temperature about 50 deg. to 55 deg. Fahr.; the atmosphere of the house should not be too dry, but it is better to err on the side of over-dryness than that it should be too moist. The flowers open best in a dryish, buoyant atmosphere, and the petals of some of the white and blush varieties sparkle in the sunlight.

Some of the old varieties are so well known that one need scarcely mention them; La Belle is a good white variety. Juliette and Mrs. Llewellyn are both bright rose; Miss Jolliffe is a fine pale pink; Worthington Smith is a fine scarlet, and Mrs. Keen crimson, both rather tall growing varieties. Of new sorts this year, or rather of recent date, which I have seen in flower, the best are Winter Cheer, a fine dwarf scarlet flowered variety; Baroness Alice de Rothschild and Le Centenaire, both scarlet; plants dwarf, flowers freely produced, and of good form; Irma, bright rose, flowers well formed; Victoria, a pinky-blush, flowers of good form, freely produced on dwarf plants; Isabella Mingat, white, lightly barred with purplish flakes and lines; La Fontaine, lemon yellow, scarlet flake; Miss Moore, very free, and dwarf, flowers white, like Mdlle. Carle, and equal at least to that fine variety.

Purity, pure white, and floriferous is very promising in this section.

FLOWERS FOR WINTER DECORATIONS.

By G. WYTHES, Syon.

WHAT rapid strides the florists and gardeners of the present day have made in the growth of many suitable plants for winter decorations, as compared with what was done twenty or thirty years ago! Not half the flowers were then grown that are now cultivated, and not half the kinds suitable for Christmas decorations that we have were available. The increasing demand for useful decorative plants and cut flowers is a healthy sign of the times, and one the gardener should do his best to meet, even under adverse circumstances, as it should be his object to give his employer pleasure at this dull period of the year. There are now such large numbers of plants suitable for winter decorations, and when writing of suitable plants I do not mean choice orchids or expensive stove plants requiring much heat and care, but plants within the reach of most persons with a moderate-sized garden. Many will ask, How are we to find room for these? The answer is not difficult to give. The enthusiastic cultivator can do a great deal in the summer with frames. The greatest difficulty is in the autumn, but this may often be surmounted by growing suitable subjects, only discarding those of but little use for decorations. Of course, there will be a pressure on the space at that time, but as the early chrysanthemums are past their best they will give room for later flowering plants.

As so well known, the chrysanthemum is invaluable, and by growing suitable kinds we can have blooms to the end of January. With only ordinary means nice blooms can be had at Christmas by only a slight protection from frost; and what is more charming than a vase filled with white chrysanthemums and trusses of crimson flowers of Henry Jacoby pelargonium? No difficulty need be experienced in obtaining this combination, as with a few plants left over at bedding time of the variety mentioned and shifted into five-inch pots, a good supply of bloom may be had through December and January. Pelargoniums are invaluable for autumn and winter decoration, as they are easily grown and give a good return. Although not so lasting as many flowers, they can be kept in good condition for a considerable time if when cut the blooms have a little gum dropped into the centre. Some attempt to bloom the zonals both during the summer and winter, but for flowers of good substance the plants require special treatment to ensure their growth being firm, which is so essential to the abundant production of flowers. Large trusses with a good length of stem, may easily be had by growing the plants in a temperature of 50 deg. and keeping them close to the glass. Those who have seen the splendid blooms contributed to the London exhibitions in mid-winter will see how suitable the zonals are for effective decoration.

The cyclamen, so well cultivated by market growers, who make a speciality of this flower, can be had in perfection now by those who are prepared to devote time and patience to the details. Many persons think it is the soil, and no doubt soil is one of the chief points, but I do not think the soil is so often at fault as is said to be the case. Growing worthless old corms year after year is the principal cause of indifferent results. The best and largest blooms are obtained from plants about sixteen months from the seed pot. I prefer to sow the seed when home-grown as soon as ripe, that is, in July or early in August. To obtain good well-bloomed plants they should not have a check from the time of sowing, but be kept close to the glass in an intermediate house when in active growth. Sow in small pots or pans, a few seeds in each, as when sown thickly the tender roots are injured at the commencement, and the plants seldom grow vigorously for some time afterwards.

Cinerarias are also charming for winter decorations, but to have them in perfection at Christmas the seed must be sown early. No difficulty will be experienced in growing cinerarias, as the less artificial heat they have the better, and they may be kept in a frame till about six weeks before being required for bloom and then removed to a warmer structure. The single and double primulas are invaluable for flowering in winter; they are readily grown and therefore very few words will suffice in speaking of them. The double Alba plena is still the best and most useful to cut from, as the flowers last better in water than do those of the other varieties. This useful old variety is readily propagated by division or cuttings in April or May. The useful Sparmanum Africana, when propagated in the spring and grown freely during the summer, blooms freely in the winter. It may be grown in the open during the summer months, like chrysanthemums, and when housed will give a liberal supply of bloom. Frequent stopping and abundant watering are necessary during the season of growth.

The abutilons grown in the same way are invaluable; Boule de Neige, A. Darwinii superbum, and A. tesselatum are grand really for winter decoration. Begonias are most useful, and at this date are a mass of bloom. One of the best is John Heal, being very free in blooming, and having richly coloured flowers. Adonis is also useful in the winter. Hybrida multiflora, Insignis Knowsleyana, Ruckeri sanguinea, Socotrana, Semperflorens, Fuchsioides, and Nitida are also useful and easily grown. They should be kept in the frames till October, when a warm greenhouse suits them.

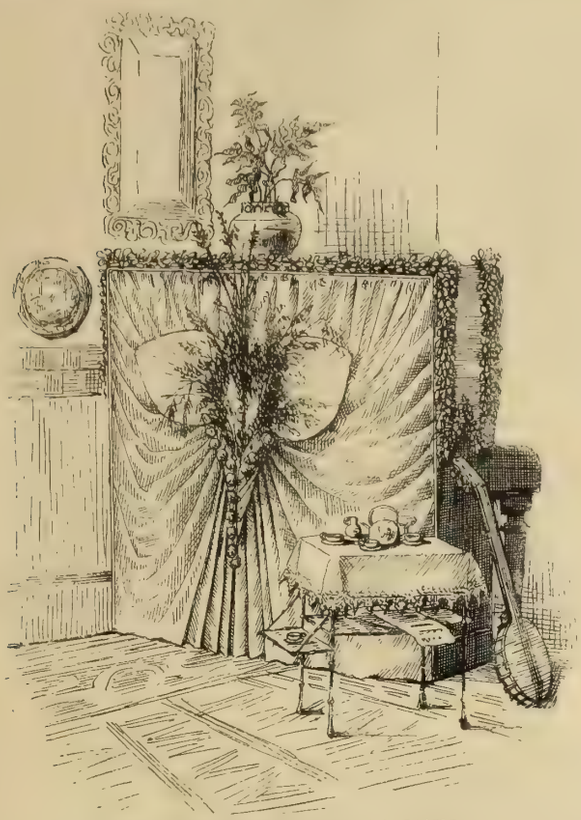
Bouvardias are certainly unsurpassed for either decorations or for the supply of flowers, and when only limited means are at disposal they should be grown in preference to begonias. They can be planted out in summer and be lifted in autumn, thus giving little trouble. They bloom profusely for a long time when well supplied with liquid manure and placed in an intermediate house. When practicable two batches of bouvardias should be grown to form a long succession. A subject not nearly so much grown as it deserves for autumn and winter blooming is Schizostylis coccinea, which bears long spikes of scarlet-coloured flowers, and only requires a little warmth to have it in bloom. It requires a partial rest in the early summer, but not thoroughly drying off like many bulbs; it also does well when planted in a warm border and lifted in the autumn and potted up. It is charming for winter decorations and is easily grown. The spikes of bright red blooms are most effective in vases.

The hellebores are specially useful at this season, and may be bloomed with little trouble if specially grown into good crowns for blooming indoors, or by placing a light or frame over established clumps. Callas are beautiful for decorative purposes and give little trouble in their growth. For church decoration at Christmas they are invaluable. Very useful also for winter is Jasminum grandiflorum, its pure white blooms being much admired.

Of forced plants there are none better than azaleas of the Amœna and Carmichael types, while of the Indian section Deutsche Perle, Fielder's White, and Indica alba are the best, and force readily. Bulbs also in variety may be had by early potting, such as Roman hyacinths in abundance, and early tulips and narcissi; there are also plenty of bulbs of other kinds, but I do not advise their culture for blooming at this date, and they are much better a little later. With such things as spiræas, deutzias, staphyleas, and the occupants of the plant stove, a large selection can be made; but in many cases the flowers developed under the influence of a high temperature are not long lasting, therefore I do not devote much space to their culture for using largely at this season. It is well known that there is nothing brighter in winter than the poinsettia, but if grown in a strong heat the bracts droop and are useless. Plants also flag when used if they have not been hardened by having been placed in a lower temperature. Epiphyllums are useful, and last well when taken into a drier and cooler house when in bloom.

HINTS ON CHRISTMAS DECORATIONS.

To get something new, something inexpensive, and at the same time pretty, is becoming each year a more and more difficult matter to accomplish; but now that art muslins and soft silks are so cheap, it



CHRISTMAS DECORATION OF PIANO.

is wonderful how much may be done with an outlay of a few shillings. I remember seeing a room completely transmogrified one Christmas, and the cost was, considering the result, ridiculously small; it was rather a bare room, possessing very little furniture, and that was of a somewhat stiff pattern, and a lack of pictures and bric-a-brac added somewhat to the barrenness. The mistress had borne this because she had not the requisite funds to alter it as she thought. Until a friend came to stay with her last Christmas nothing was done, but then a change was wrought. The piano was the first thing attacked. Pretty electric blue surah silk was obtained; the widths were run together, to form two long curtains and one short one. The latter was gathered on to the top of the piano back, in the middle, and the other two long ones on each side of it. But while the middle one hung straight down, the side ones were gathered on to the sides of the piano, then drawn up to the middle, where the fastening was hidden under a pocket of a palm leaf filled with grasses, and having two palm leaf fans on either side. Another long width of the silk was converted into a piano cover, and bordered with leaves, and finally a fern in a pot surmounted the whole, and prevented the cover slipping about.

A somewhat stiff old-fashioned corner cupboard next came under supervision. Firstly, it had a thick holly wreath arranged all round it, and hanging down in a point in front. At the corners bunches of grasses were tied on with bright Tartan ribbon, and an old Maltese fern bottle was also filled with those African grasses and set up on the top. The lady of the house declared her china teapots and vases never looked so well as they did within their bower of green, and she was quite eager to attack the opposite corner, and see what could be made of that. It needed more elaborate fitting up, but, after due consideration, it was decided to make it into a cosy corner, its proximity to the fire suggesting the idea. A wooden seat was fixed up—that had to be done by the carpenter; then both the ladies busied themselves in covering a flat cushion with pretty-coloured sateen, which harmonized with the electric blue of the piano. This was laid on the seat, and a stuffed back was fastened to the wall, from which plain drawn sateen was taken up to a holly-wreathed shelf above. A valance fell from the seat to the floor, and made a lovely "hidy hole" for wool baskets and work-boxes. As finishing touches, a companion pocket to that on the piano, filled with grasses, was affixed in the corner below the shelf, and an old Japanese jar, with ivy sprays and dried ferns, set up above it on the shelf, which was also decorated with pretty little odds and ends of china and some good water-colours.

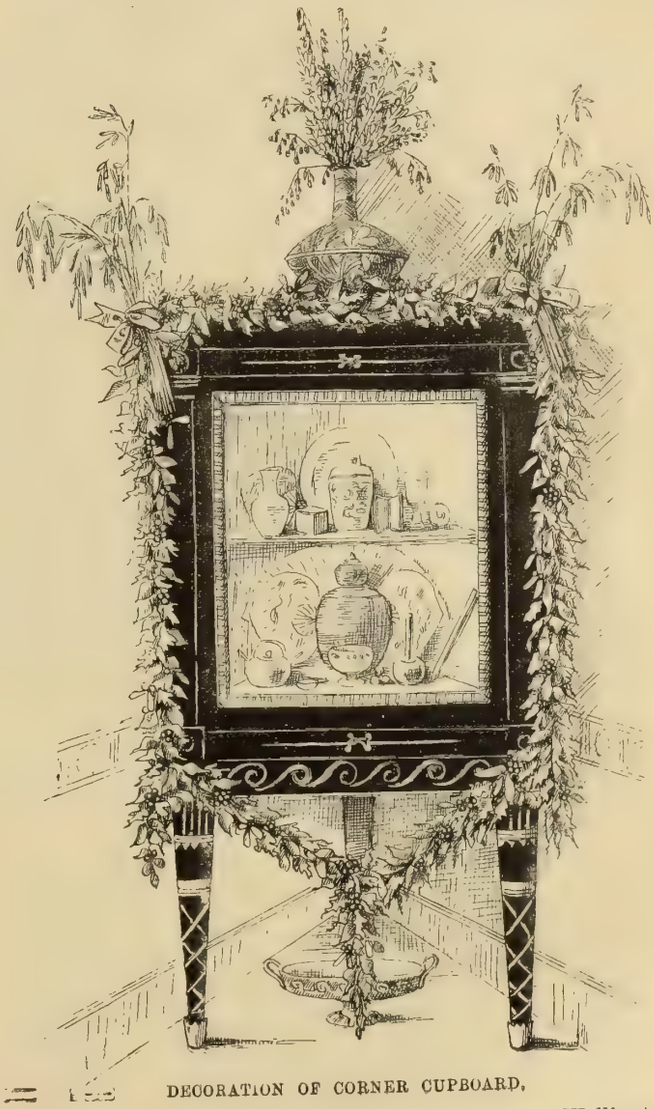
The overmantel then demanded attention; so much draping near it made it look bare and cold, and as it was a very plain affair in itself, it needed more care and time bestowed upon it. Some more sateen to match the corner was procured and made into long curtains, with their ends fringed with ball fringe, and these were fastened high up in the middle of the overmantel with a bunch of grasses and split palms, and then taken in graceful festoons to the corners, whence they at first fell straight down to the floor; that, however, did not look well, so a thick rope of holly was made, and fastened to the grasses. In the centre it festooned with the sateen, and was looped high up at the corners with more grasses, ivy, and teazels; then two shorter wreaths were twisted round the curtains, holding them close to the wall, and allowing the ends to fall in graceful folds to the floor. The room looked clothed and finished, and cosier than it had ever done. The fourth corner was so close to the door that it would only admit of an old sabot filled with ivy sprays, grasses, and pampas grass being hung in it, and the whole place, which before had had a freezing effect on conversation from its cold, bare appearance, was transformed into one in which every chair said "Sit upon me," and the very walls themselves suggested talk, and what a room always should be, not too grand to be used, not too much draped to be muffled, but comfortable and homelike where guests feel at ease, and where "the feast of reason and the flow of soul" may be easily carried on.

V.

WIND-PROOF TREES.

My experience with wind-proof trees differs very considerably from that recorded by "J. M." on page 797, and especially in regard to Pinus insignis, which seems to withstand the strongest south-westerly gales with impunity. This, "J. M." would be bound to admit if he could see a specimen of this tree on the lawn at Rooksbury Park, not far from where I write. This tree was planted by the present owner twenty-two years since, and now reaches a height of fifty feet, and is as perfect in form and colour as it possibly could be. The position is considerably elevated, and the tree in question is situated on the side of the hill, quite exposed to the full force of wind. In the same part are to be seen magnificent specimens of the English elm, which do not appear to be injured by the wind. To see these fine trees in the autumn, when the leaves assume, quite suddenly as it were, the golden colour characteristic of the English elm, is a sight to admire and remember when making future planting.

In a valley close by here, which is thoroughly wind-swept, there are some especially healthy specimens of the pine above mentioned which



DECORATION OF CORNER CUPBOARD.

have not been injured by the wind. In the case of the Wellingtonia, we have here two trees standing quite alone in the park, which is 395 feet above sea level. Every year these trees are rendered quite brown on the south-west side by the force of the wind, but they lose this objectionable colour in the following season. Most certainly I should not advise the planting of this tree in wind-exposed situations. Some specimens in the valley previously named have scarcely a

healthy branch on the south-western side owing to the injury received from the wind from that quarter. Without a doubt, the best wind-resisting evergreen of the fir tribe is the Austrian pine, which appears to be unaffected in the fullest exposures. The Scotch fir is a capital tree to plant in an exposed site. There is something peculiarly interesting and pleasing to the lover of trees in the glaucous tint displayed by this pine when seen growing either singly or in a mass. The delicious perfume emitted from a plantation of this fir is not the least interesting point. It will grow with equal rapidity on a chalk bank in a mass of clay and stones and in sandy loam.

With regard to the evergreen oak, I quite agree with "J. M." in all he says respecting this tree. Here and in this neighbourhood there are some specimens which have a good appearance at all times. It may not be generally known that this tree, even when of large size, will stand pruning with impunity, and be improved thereby in appearance. If the outside of the tree has become somewhat thin in appearance, and the straggling outer branches are cut back from two or three feet before the sap rises in the early spring, the tree will be thickly furnished with young deep green shoots. Here in our soil, which is retentive and heavy, freely mixed with flint stones and overlaying chalk at variable depths, beech and limes are the best trees we have. Planted in open positions they grow freely, and retain their shape unaffected by wind.

Horse chestnut makes a splendid park tree, even in exposed situations; the only thing to be dreaded is a severe gale from the south-west in the spring, when the flower spikes are in process of development. But as this is very seldom experienced, this tree is well worth planting where trees with large foliage are admired. During September this tree is not damaged to any serious extent, the leaves may be a bit "whipped" and torn into shreds on the side where caught by the wind, but it is seldom that a branch is broken off. The Norway maple is excellent for planting in any position where there is a good depth of soil; the beauty of the foliage early in the autumn is much appreciated. The growth withstands the force of the wind very well. The worst of all deciduous trees for an exposed position is the tulip tree. The wood appears to be very brittle. We have a specimen sixty feet high, and of fine proportions, the growth being luxuriant. Every autumn we lose some branches by the south-westerly gales, in spite of the tree standing in a partly sheltered situation, behind other trees.

E. MOLYNEUX.

Swanmore Park.

PROPAGATION OF LATE CHRYSANTHEMUMS.

By J. KIPLING, Knebworth.

IN a previous paper I have said that one of the principal factors in the cultivation of late chrysanthemums, and one that must be studied by those who require late flowers, is the time at which the cuttings are struck. At first sight it might be naturally inferred by those who have little experience in the growing of plants for late flowering that the later the season at which the cuttings are struck, the later would be the time at which the plants would be in bloom, and to a certain extent this would be true. There is, however, a limit to the time in which a stock for late blooming can be advantageously propagated. The reason for this I will endeavour to show presently.

Of the very many operations which engage the gardener's attention during the course of the year, none, perhaps, calls for so much careful watchfulness from him as the propagation of plants. Not so much as regards the successful striking of the cuttings, as studying the various dates on which the cuttings should be inserted, that the plants may be in flower at certain set times, according to requirements. Certainly none has given me so much fascinating pleasure and so much interest in anticipating the results as a series of experiments I carried out last year in the propagation of chrysanthemums for very late flowering. Beginning with the first week in March, I had batches of cuttings put in in the first week of every month up to August, of the following varieties: Mrs. C. Carey, Ceres, W. G. Drover, Ethel, Yellow Ethel, Grandiflorum, Meg Merrilies, and its two sports, Ralph Brocklebank and Countess of Lytton, Kæmpfer, Etoile du Midi, Duchess of Albany, Boule d'Or, Golden Gem, and Boule de Neige. The cuttings were placed under hand-lights in a cold frame, and each batch was carefully potted off as soon as struck, and shifted on again when ready for that operation. All the plants as regards shade from midday sun were placed in the same position while making their principal growth, and up to the time of being housed late in October. The plants of each batch were pinched back once, beyond this they were all allowed to grow away naturally.

The time of flowering of each set of plants, and the quantity of flowers on each, were duly and carefully noted, the results arising proving very interesting and instructive. As regards the time of flowering and the quantity of blooms produced there was very little difference observable between those propagated in March and those raised in April, the time of flowering of each lot being about the same, namely, from the beginning to the middle of December, and most of them continued in bloom until the end of January, some being later. The batches raised in May and June were just a month behind the above in opening their flowers. In fact, they did not commence to bloom till January 8, and had the assistance of a warm temperature to hasten them a little, while a few of them left in a cool peach house did not open their flowers till the middle of February. The plants forming the May and June batches were not so large, nor did they bloom so freely as did those struck in March and April.

The batches propagated in July and August had not much time in which to make their growth, and in consequence such very late varieties as Ceres, Mrs. C. Carey, Boule d'Or, W. G. Drover, Grandiflorum, and one or two others, failed to bloom, the buds being mostly blind—a proof of their having been propagated too late. I ought, however, to exempt from this category of failures the two late varieties, Golden Gem and Boule de Neige. A few trial pots were filled with cuttings at the latest date, in August. Four cuttings were inserted in forty-eight pots, but they were not potted off when struck. The pots were placed in a cold pit at the end of October, and from that structure were moved into a warmer house about the middle of February, where they made steady growth and bloomed in the latter end of March, each plant bearing one fair-sized flower. It is worthy of remark that the cuttings were taken from the tops of shoots of plants that had been propagated in April, and were of some four months' growth. From this fact it is reasonable to infer that the flower buds were in process of formation when the tops of the shoots were taken off.

The fact of these two varieties being propagated at so late a period and flowering in March and April, is suggestive of what might be done in producing a good display of chrysanthemums in early spring. Golden Gem is a most useful variety, if not the best all-round chrysanthemum we have, either for pots or cut flowers. The unfixed and sportive character of the colour of its flowers renders them especially useful for various decorations. Some are wholly of a bronzy orange red, others a bronzy red with delicate apricot centre, and others again wholly of a golden yellow, shading off to a pale lemon colour. Both in daylight and under the influence of artificial light they are always pleasing and effective. Up to the present time I have dealt with the very late kinds only, but my experiments embraced a goodly number of mid-season varieties, such as Fair Maid of Guernsey, Val d'Andorre, Roseum Superbum, Mons. Hubert, Comtesse de Beauregard, Cry Kang, Mons. Astorg, Mr. H. Cannell, Mrs. H. Cannell, Mdlle. Cabrol, of the Japs, most of the single kinds, and Snowdrop, Madame Sentir, Rose Marguerite, and Miss Margaret. Pompons propagated in May and June, bloomed very freely and made an excellent display through December and into the new year. With these varieties alone propagated at the dates named, I find no difficulty in having plenty of flowers at Christmas tide. Several newer varieties, which we have on trial this season for the first time, are likely to prove very useful as late bloomers, among them being Sunbeam, Cythere, Goldfinder, and J. W. Clarke. These are only just showing their buds.

EARLY POTATOS IN PITS AND FRAMES.

UNLESS the pits are heated by hot-water or a flue there is nothing gained, but in severe winters much labour lost, by beginning the forcing of potatos before the middle of January. With an unlimited supply of fresh manure and much labour, it may be possible to begin earlier and to keep the frost out of the frames, but the results will not be commensurate with the labour devoted to the crop. For this reason I do not advise anyone to plant potatos in frames before the time I have stated. It will be necessary to begin preparing the fermenting materials before, that everything may be in readiness at the proper moment. Early potatos cannot be had without bottom heat to assist them at first, and where leaves and stable manure are available the latter should be taken in hand first, and turned over twice before the leaves are mixed with it. After the heap has remained a week undisturbed, the whole mass will be in a proper condition for the formation of a hotbed. In a week after the bed has been made the heat ought to be steady enough to admit of the potatos being planted. A bed of soil four inches in thickness must be placed on the manure two days before the planting is done. I have a well-grounded objection to placing a greater depth of soil in the frames than I have suggested, because it keeps down the heat that is required for starting the sets. I lay the sets on the surface in lines eighteen inches apart, and at a distance of twelve inches between the sets. They are then pressed down into the bed, and a handful of fine soil used to cover them. As soon as the sets have sprouted, and the growths are about four inches high, another layer of soil of the same thickness as the first is put on. This is spread evenly over the bed, and its application is equivalent to an earthing up.

Nothing more is required excepting to ventilate the frame freely in mild weather, always admitting air at the front and not at the back. The object of ventilating in this way is to prevent the escape of the warm air, the crop requiring all the heat it can have for swelling up the tubers. Do not take off the lights altogether. The air is too cold throughout the month of April to allow of the potatos being uncovered without injury. External coverings cannot be dispensed with until the middle of May. No matter how soft and balmy the air may be in the evening, lay over the lights mats or other suitable coverings sufficiently thick to exclude a sharp frost. The stronger the bottom heat and the lighter the soil used the more water will the plants require. In a general way three waterings are sufficient for each crop. Sets planted on a warm hot bed in the middle of January should produce potatos fit for table by the third week in April. The best kidney variety to plant thus early is the Old Ashleaf, and the best round is Sharp's Victor.

J. M.

PELARGONIUM, MRS. STRUTT.

THOSE who want an especially free blooming variety of the zonal pelargoniums having flowers of a pale pink colour for the winter cannot do better than grow the above-named variety. In an ordinary greenhouse where the temperature does not fall below 40 deg., plants will flower profusely during the present month if they have had a little preparation. This consists in striking the cuttings early in February, shifting them on into five-inch pots, allowing them to make a steady growth under glass until the end of May, when they should have an open position out of doors. They should be regularly supplied with water, and receive an occasional top dressing of Standen's manure, which should be sprinkled on the surface of the soil and watered in. I find this manure the best of any for zonals that are intended to blossom during the winter months.

E. M.

AUBERGINES.

The aubergines, or egg plants, as they are more familiarly designated, afford an interesting example of the great difference between the English and French taste. In France they have long been cultivated for the table, and the large supplies in the Paris markets during the summer and the early part of the autumn are a sufficient indication that there is a brisk demand for their fruits. The English cultivators, on the other hand, regard them more as objects for the embellishment of the conservatory than for the supply of the table, and in comparatively few gardens only are they systematically grown for culinary purposes. The aubergines have long had a place in English gardens, for under the name of Mad or Raging Apples they were grown by Gerarde in his garden in High Holborn. Not only did Gerarde cultivate them himself, but he tells us that a worshipful merchant, Mr. Harvey, achieved so much success in their cultivation in his garden in Lime Street as to obtain fruits of the size of a goose egg. From this it would appear that but little improvement has been effected during the past three hundred years either in the size of the fruit or the system of culture.

There is one point in which the practice of the present day should differ from that recommended by Gerarde. He advises us to sow the seed in April, but that is too late to allow the plants sufficient time to produce a full crop. It is much better to make the sowing in January, or at the latest in February. The French market gardeners sow in December, and it is reasonable to infer that there is some advantage in commencing in that month. The seed should be sown in shallow pans or pots, filled with a light and rich mixture such as would be provided for tomatos or cucumbers. When sown, place in a pit or other structure in which a temperature between 65 deg. and 70 deg. is maintained. As soon as the seedlings make their appearance, remove them to a position near the glass, as it is important they should not become drawn at any stage of their growth. Before they become overcrowded they should be potted off, and the course taken should be regulated by the space at command. If the room available in the structure will permit, pot them singly in small sixties; otherwise use three-inch pots, and put two or three in each. When the latter course is adopted it is important to pot them off singly before they become potbound, as they cannot be then separated without receiving a check. It will also be advisable to put them into three-inch pots. Whether potted off singly when removed from the seed pots or not, they must be shifted on as more root space becomes necessary, until they reach eight-inch pots, in which they should be fruited. Usually two shifts will suffice, the first being into pots six inches in diameter, and the second into those in which they are to be fruited, each repotting to be done when the plants are well rooted, and before they become potbound. For each shift a substantial compost will be required, and the best mixture that could be used is one consisting of turfy loam six parts, and old hotbed manure and leaf-mould one part each.

Throughout the spring months they require a rather brisk temperature and a position near the glass, where they can enjoy a free circulation of air. Unless the temperature is high enough to allow the syringe being freely used, and the ventilation comparatively free they will be seriously injured by red spider, to the attacks of which they are especially susceptible. Until they reach the pots in which they are to fruit, clear water will suffice, but as soon as they have well filled these with roots, they may be assisted with liquid manure of a moderate degree of strength. They will require stopping once or twice, the first to be done by nipping out the point of the main stem when between six and eight inches in height. During the summer a position in a light and airy house or pit will be the most suitable for them.

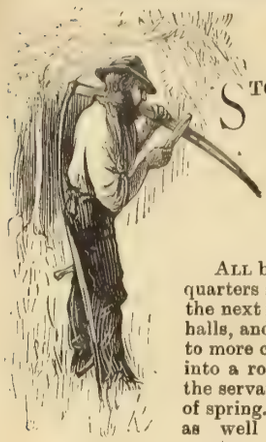


SCARLET FRUITED AUBERGINE.

The varieties available for cultivation are comparatively few in number, and the best of these to grow for the table are the Large Purple and the Large White, the first-named being in some respects preferable. The Scarlet-fruited, of which a figure is here given, is very different in character from the other two varieties named, and is best adapted for decorative purposes. The fruits are roundish, much flattened, and distinctly corrugated, the colour bright vermilion scarlet. It is exceedingly free in fruiting, and well-grown examples are remarkably effective when the fruits take on their brilliant colouring.

There are various ways of cooking aubergines, and the most simple is to fry them. The fruits are sliced and sprinkled with bread crumbs, salt, and pepper, and then dropped into boiling oil or fried with butter. They may, if preferred, be simply scored and have the incisions filled with good olive oil, and then sprinkled with bread crumbs previously seasoned with pepper and salt. When so prepared, they should be fried in oil and served with parsley, or, if preferred, with chervil. A favourite way of cooking aubergines in France is to remove the seeds, replace with forcemeat, and bake in an oven with plenty of butter. ☞

House, Garden, and Villa Farm.



PLANTS IN FLOWER.

STOVE Plants in bloom include:—Amaryllis, Begonia Saundersiana, B. hybrida multiflora, Bouvardia Hog arth, B. longiflora, Centradenia rosea, Epiphyllum truncatum, Heterocentrum roseum, Justicia speciosa, Poinsettia pulcherrima, Rogiera gratissima, Thyrsacanthus rutilans, Vriesia brachystachys, V. speciosa.

THE HOUSE.

ALL birds that have been until this time in their usual quarters should be made safe against extreme cold during the next few weeks. Cage birds that are kept in entrance halls, and on staircases and the like, should be removed to more comfortable localities. Parrots should be taken into a roomy kitchen, and there remain to chatter with the servants until the growing daylight tells of the return of spring. This plan will answer perfectly, for the bustle, as well as the warmth, is good for these sociable creatures, and the halls and staircases are too dull and too cold at this time of year. All window plants are exposed to risk of injury now, and those of any value should be removed to a cool plant house or shed, as a frost severe enough to freeze the roots will simply kill them root and branch. But where their roots are in a body of soil, or the pots are packed in some protective material, they may survive a sharp frost, and thus the trouble of removing them may be avoided. It is very important now to see that all stores of roots and fruits are safe, for frost is destructive to nearly all such things, and particularly to potatos. All these things should be dark and dry and cool, but perfectly safe against the slightest freezing.

CONSERVATORY AND GREENHOUSE.

BEDDING PLANTS should be looked over occasionally, and the pits and frames emptied and filled again to clear away all dead leaves and ensure a good airing. Amateurs have many losses through lack of attention to this work, and mildew makes havoc unseen while there appears to be nothing the matter. Short of actual frost, the more air the better, and if water is wanted give a good soaking on a fine morning when the barometer is high and steady, so that the balls may become a little dry again before the change of weather to wet or frost.

CAMELLIAS coming into bloom to be assisted by sprinkling the borders, paths, and pipes occasionally, to allow a diffusion of vapour. There is no class of plants that more enjoy atmospheric moisture, but as the blooms expand they require a drier and cooler air.

CINERARIAS throwing up their flower-stems to be put in an intermediate house for early flowers. The most backward to be repotted at once, so as to make fine specimens for a very late bloom. Keep the stock clean, use sulphur where mildew occurs, and fumigate for green fly. Give particular care now to specimens for exhibitions; remove small shoots, and peg down those that are best placed to produce a round and solid head of bloom.

CONSERVATORY.—Let nothing suffer now for want of fire-heat. Forced bulbs will require warm positions, but heaths, epacrises, and other hard-wooded plants ought to be at the cool end. Keep the atmosphere pretty dry, to prolong the bloom of camellias, azaleas, &c. Average temperature 45 deg. by night, and 55 deg. to 65 deg. by day.

PELARGONIUMS to be kept as much as possible without fire, but to dry the house it may be useful occasionally. The fancies need warmth the most. Specimens may be tied out, and late-struck plants be shifted on. Give water with caution, more especially to zonals required for summer flowering.

VERMIN.—Now that gardeners have a little breathing time, is a good opportunity for cleaning frames, lights, and the under sides of stages, and other places where vermin harbour. In the stove there is often great need of such work when there is no time to do it.

FORCING AND FRUIT HOUSES.

ASPARAGUS.—See that the soil of the forcing beds is sufficiently moist. A heat of 55 deg. to 60 deg. will be sufficient, but it must not decline below 55 deg. Straw hurdles are of great service to prevent a cooling of the bed during severe frost and north-east winds.

CUCUMBERS.—Bearing plants will require occasional supplies of liquid manure, and as much light as possible to keep them in health. Remove male blossoms as fast as they appear. Keep the atmosphere moist; temperature, 60 deg. by night, 70 deg. to 75 deg. by day, 80 deg. with sunshine. Sow singly in pots for succession plants.

FLOWER GARDEN AND PLEASURE GROUNDS.

AURICULAS.—Remove the old decayed leaves, but in doing so be careful not to injure the plants. The soil must never be dust-dry, let the weather be ever so severe. We mention this because during hard weather good collections are occasionally ruined, the growers forgetting how hardy the plant is, and how much its constitution is injured by drought. But beware of damp, and during frost avoid watering until a favourable change occurs, if possible.

CARNATIONS AND PICOTEES require plenty of air and very moderate watering, and to be kept clean.

EVERGREEN SHRUBS planted now must be heavily mulched with manure to keep frost from their roots.

KITCHEN GARDEN AND FRAME GROUND.

ARTICHOKES must be well protected during severe weather, for they are not quite hardy, and if not already done in accordance with advice previously given they should have litter heaped about the crowns.

ASPARAGUS beds, if still undressed, should be heavily manured, but they should not be dug. Be content to lay the manure on, and the rains will wash the goodness down to the roots in due time. In gardens near the coast, seaweed is the best of manure for asparagus.

VILLA FARM.

THE work on the villa farm should comprise, first of all, the breaking up of any stubbles that as yet remain untouched, and if this is well done and soon done, there may be got ready in time a seed bed for beans and mangolds. The retention of stubble for any length of time is most injurious, for in the hollow straws in the autumn many destructive flies and beetles lay their eggs, and the land becomes filled with larvæ, and the birds have no chance to feast upon them while it lies undisturbed by the plough. Liming and mucking are the two great tasks now, and when the ground is hard carting can be carried on with advantage. It is generally held that leaving manure in heaps for a length of time is a wasteful practice, and we believe that when dung is once put upon land the sooner it is ploughed in the better, for if the air does not rob it much the rain is bound to do so, and a lot of soluble salts must be carried away by the gutter and drain pipes.

Replies to Queries.

Cyperus.—Subscriber: Your plant is Cyperus alternifolius, and requires the temperature of a stove for its successful cultivation.

Trees Injured by Rabbits.—W. S. writes: Can any of the readers of the GARDENERS' MAGAZINE recommend me any readily-prepared composition for applying to forest trees to prevent their being "barked" by rabbits? I shall be greatly obliged for any information that can be given me.

Apple Golden Spire.—T. Thomas: You will be able to obtain trees of the Golden Spire apple of any of the nurserymen who advertise in these pages. They are obtainable at the ordinary rates, and, therefore, are not expensive. Your best plan will be to write for catalogues, which will give you the prices of the several forms of trees.

Ipomœa Leari.—J. W.: The plant is evidently in a very unsatisfactory condition at the roots, but it is somewhat difficult to assign a cause without further information. It is probable that the soil has become sour in consequence of imperfect drainage. The best course will be to repot it some time in January or early in February, and, in performing the operation, to remove the greater portion of the old soil from about the roots. At the same time, roots that are dead or in a state of decay should be carefully cut away.

Chrysanthemums.—Angle: The varieties mentioned in the catalogue of the National Chrysanthemum Society as requiring high culture should be more severely disbudded than would be advisable in the case of the majority of the varieties in the respective section. They also require more liberal supplies of liquid manure or artificial fertilizers. The artificials you mention should be used somewhat sparingly as top dressings when the flower-buds are in process of development. Two applications in the course of the season will be sufficient, and enough of the two manures in mixture should be applied to just cover the surface of soil. We shall be glad to render you further assistance should you require it.

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Horse-radish .....per bun.	2s. 0d.	,,	3s. 0d.
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Victorias .....per ton	60s.	,,	75s.

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The Gardeners' Magazine.

TWOPENCE,
EVERY SATURDAY.



The Gardeners' Magazine Almanack, 1891.

JANUARY.

1	Th	*Circumcision*
2	F	Calcutta captured, 1757
3	S	
4	S	
5	M	Duke of York died, 1727
6	Tu	*Epiphany*
7	W	} Nat. Chrysanthemum
8	Th	} Exhibition
9	F	Fire Insurance due
10	S	
11	S	1st Sun. after Epiphany
12	M	[N. Rose S. Com.
13	Tu	R.H.S. Committees
14	W	Oxford Lent Term begins
15	Th	Gard. Roy. Benv. Inst
16	F	[Ann. Meet.
17	S	
18	S	2nd Sun. after Epiphany
19	M	
20	Tu	*Fabian*
21	W	*Agnes*
22	Th	*St. Vincent*
23	F	
24	S	
25	S	3rd Sun. after Epiphany
26	M	
27	Tu	
28	W	
29	Th	
30	F	
31	S	

FEBRUARY.

1	S	
2	M	*Purification of Virg. Mary*
3	Tu	*Blasius*
4	W	
5	Th	Victoria Cross instituted,
6	F	[1856
7	S	[Sunday
8	S	Quinquagesima Shrove
9	M	[at 3 N.RoseS.Com. Meet.
10	Tu	R. H. S. Com. Ann. Meet.
11	W	*Ash Wednesday*
12	Th	
13	F	
14	S	*St. Valentine.*
15	S	Quadragesima 1st Sun.
16	M	[in Lent
17	Tu	
18	W	
19	Th	
20	F	
21	S	
22	S	2nd Sun. in Lent
23	M	
24	Tu	*St. Matthias*
25	W	
26	Th	
27	F	
28	S	

MARCH

1	S	*St. David*
2	M	*Chad, Bishop*
3	Tu	
4	W	
5	Th	
6	F	
7	S	*Perpetua*
8	S	4th Sunday in Lent
9	M	[Com.
10	Tu	R. H. S. Com. N. Rose S.
11	W	Income Tax imposed, 1812
12	Th	*Gregory, Bishop & Martyr*
13	F	
14	S	
15	S	5th Sunday in Lent
16	M	
17	Tu	*St. Patrick*
18	W	R. Botanic S. Spring Ex.
19	Th	
20	F	[Term ends
21	S	*St. Benedict* – Oxford Lent
22	S	Palm Sunday
23	M	
24	Tu	R.H.S. Committees
25	W	*Annunciation*—Lady Day
26	Th	Cambridge Lent Term ends
27	F	*Good Friday*
28	S	
29	S	Easter Sunday
30	M	
31	Tu	

APRIL.

1	W	Ox. Easter Term begins
2	Th	
3	F	*Richard, Bishop*
4	S	*St. Ambrose*
5	S	Low Sunday
6	M	Old Lady Day
7	Tu	Easter Law Sittings begin
8	W	
9	Th	Fire Insurance due
10	F	
11	S	
12	S	2nd Sun. after Easter
13	M	
14	Tu	R. H. S. Com. N. Rose S.
15	W	[Com.
16	Th	
17	F	Camb. East. Term begins
18	S	
19	S	3rd Sun. after Easter
20	M	
21	Tu	R.H.S.Com. Auricula Ex.
22	W	R. Botanic S. Spring Ex.
23	Th	*St. George*
24	F	
25	S	*St. Mark*
26	S	4th Sunday after Easter
27	M	
28	Tu	
29	W	
30	Th	Lond. University fndd. '27

MAY.

1	F	
2	S	*St. James*
3	S	Rogation Sunday
4	M	
5	Tu	
6	W	
7	Th	*Ascension—Holy Thurs.*
8	F	Half-Quarter Day
9	S	
10	S	Sunday after Ascension
11	M	[Com.
12	Tu	R. H. S. Com. N. Rose S.
13	W	R. Botanic S. Summer Ex.
14	Th	[Sittings end
15	F	Oxf. Estr. Term & Estr. Law
16	S	Oxford Trinity Term bgns.
17	S	*Pentecost* Whit Sunday
18	M	
19	Tu	*Dunstan, Archbishop*
20	W	
21	Th	
22	F	Length of day, 15h 50m
23	S	[Victoria born, 1819
24	S	Trinity Sunday—Queen
25	M	[Sittings begin
26	Tu	*St. Augustin*—Trinity Law
27	W	R.H.S. Temple Ex. 27, 28
28	Th	*Corpus Christi*
29	F	
30	S	
31	S	1st Sunday after Trinity

JUNE.

1	M	*Nicomede*
2	Tu	
3	W	
4	Th	
5	F	*Boniface, Bishop*
6	S	
7	S	2nd Sun. after Trinity
8	M	
9	Tu	R. H. S. Com. N. Rose S.
10	W	[Com.
11	Th	*St. Barnabas*
12	F	
13	S	
14	S	3rd Sun. after Trinity
15	M	
16	Tu	
17	W	R. Botanic S. Summer
18	Th	[Ex.
19	F	
20	S	Ascen. of Q. Victoria, 1837
21	S	*Proclamation* –4th Sun.
22	M	[after Trinity
23	Tu	R.H.S.Com. Tea Rose Ex.
24	W	*St John Baptist*—Midsum-
25	Th	[mer Day
26	F	
27	S	
28	S	5th Sun. after Trinity
29	M	*St. Peter*
30	Tu	

JULY.

1	W	
2	Th	
3	F	[Palace.
4	S	N. Rose S. Ex. Crystal
5	S	6th Sun. after Trinity
6	M	[& Fruits, 7 & 8
7	Tu	R.H.S. Con. Hdy. Flowers
8	W	R Botanic S. Even. Fete-
9	Th	[Portsmouth Ex. 8, 9, 10
10	F	[9 Fire Insurance due
11	S	
12	S	7th Sun. after Trinity
13	M	
14	Tu	
15	W	*St. Swithin*
16	Th	N. Rose S. Ex. Hereford
17	F	
18	S	
19	S	8th Sun. after Trinity
20	M	[Ex.
21	Tu	R.H.S. Com. Carnation
22	W	*St. Mary Magdalene*
23	Th	
24	F	
25	S	*St. James*
26	S	9th Sun. after Trinity
27	M	
28	Tu	
29	W	
30	Th	
31	F	Length of day, 15h 23m

AUGUST.

1	S	*Lammas Day*
2	S	10th Sun. after Trinity
3	M	Bank of Eng fnded. 1732
4	Tu	
5	W	
6	Th	
7	F	*Name of Jesus*
8	S	
9	S	11th Sun. after Trinity
10	M	R.B.S. Ann. Meet. at 1
11	Tu	R.H.S Committees
12	W	Trinity Law Sittings end
13	Th	*Old Lammas Day*
14	F	
15	S	
16	S	12th Sun. after Trinity
17	M	
18	Tu	
19	W	
20	Th	
21	F	
22	S	
23	S	13th Sun. after Trinity
24	M	*St. Bartholomew*
25	Tu	R.H.S. Committees
26	W	
27	Th	
28	F	*St. Augustine*
29	S	*St. John Baptist beheaded*
30	S	14th Sun. after Trinity
31	M	

SEPTEMBER.

1	Tu	*St. Giles*

OCTOBER.

1	Th	Cam. Mic. Term begins
2	F	

NOVEMBER.

1	S	*All Saints' Day*
2	M	

DECEMBER.

1	Tu	Princess of Wales b. 1844
2	W	



1	Tu		
2	W		
3	Th		
4	F		
5	S		
6	S	15th Sun. after Trinity	
7	M		
8	Tu	R.H.S. Committees	
9	W	} Nat. Chrysanthemum	
10	Th	} Exhibition	
11	F		
12	S		
13	S	16th Sun. after Trinity	
14	M		
15	Tu		
16	W		
17	Th	*Lambert, Bishop*	
18	F		
19	S		
20	S	17th Sun. after Trinity	
21	M	*St. Matthew*	
22	Tu	R.H.S. Committees	
23	W		
24	Th		
25	F		
26	S		
27	S	18th Sun. after Trinity	
28	M	[Day	
29	Tu	*St. Michael*—Michaelmas	
30	W	*St. Jerome*	

1	Th		
2	F		
3	S		
4	S	19th Sun. after Trinity	
5	M		
6	Tu	R.H.S. Conf. Conifers &	
7	W	[Perennials, 6 & 7	
8	Th		
9	F	*St. Denys*	
10	S	Oxfrd. Mchmas. Trm. bgns	
11	S	20th Sun. after Trinity	
12	M		
13	Tu	N. Rose S. Committee	
14	W		
15	Th		
16	F		
17	S		
18	S	21st Sun. after Trinity	
19	M		
20	Tu		
21	W		
22	Th		
23	F		
24	S	Mich. Law Sittings begin	
25	S	22nd Sun. after Trinity	
26	M		
27	Tu	R.H.S. Committees	
28	W	*St. Simon and St. Jude*	
29	Th		
30	F		
31	S	*All Hallows' Eve*	

1	S		
2	M		
3	Tu		
4	W	Portsmouth Chrys. Ex.	
5	Th	[4, 5, 6	
6	F	*Leonard, Confessor*	
7	S		
8	S	24th Sun. after Trinity	
9	M	[Nat. Chrys. Ex. 10, 11, 12	
10	Tu	R.H.S. Com. N.R.S. Com.	
11	W	Birmingham Nrtumpton.	
12	Th	[and Croydon Chrysan-	
13	F	[themum Ex. 11 & 12	
14	S		
15	S	25th Sun. after Trinity	
16	M		
17	Tu	*Hugh, Bishop of Lincoln*	
18	W		
19	Th		
20	F	*Edmund, King & Martyr*	
21	S		
22	S	26th Sun. after Trinity	
23	M	*St. Clement*	
24	Tu		
25	W	*St. Catherine*	
26	Th		
27	F		
28	S		
29	S	1st Sun. in Advent	
30	M	*St. Andrew*	

1	Tu		
2	W		
3	Th		
4	F		
5	S		
6	S	2nd Sun. in Advent	
7	M		
8	Tu	R. H. S. Com.—N. Rose S.	
9	W	[Annual Meet at 3	
10	Th	Royal Academy fndd., 1768	
11	F		
12	S		
13	S	3rd Sun. in Advent	
14	M		
15	Tu		
16	W	*O Sapientia*	
17	Th	Oxford Mich. Term ends	
18	F		
19	S	Camb. Mich. Term ends	
20	S	4th Sun. in Advent	
21	M	*St. Thomas*—Michaelmas	
22	Tu	[Law Sittings end	
23	W		
24	Th		
25	F	Christmas Day	
26	S	*St. Stephen*	
27	S	*St. John*	
28	M	*Innocents' Day*	
29	Tu	W. E. Gladstone b. 1809	
30	W		
31	Th	*St. Silvester*	

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THE DEAD LEAVES STREW THE FOREST WALK·
AND WITHER'D ARE THE PALE WILD FLOWERS
THE FROST HANGS BLACKENING ON THE STALK,
THE DEWDROPS FALL IN FROZEN SHOWERS;
GONE ARE THE SPRING'S GREEN SPROUTING BOWERS
GONE, SUMMER'S RICH AND MANTLING VINES;
AND AUTUMN, WITH HER YELLOW HOURS,
ON HILL AND PLAIN NO LONGER SHINES. —*Barnard.*

TIM BOBBIN AND THE LANCASHIRE DIALECT.

BY THE LATE SHIRLEY HIBBERD.



OF all the local dialects of England, that of Lancashire appears to claim and obtain pre-eminence, both for distinctness of character, and the quaint "mother wit" by which it is best known. In a philological study, what is called the "Scotch dialect" has the highest scientific value; indeed, we have pointed out in a paper published a few years since that the so-called "Scotch" is a beautiful archaic forming true English, and comes near to the speech that King Alfred spoke and wrote. Our Lancashire lingo has no such claims as that, but it is a racy form of speech, often shaping itself to tender utterances of deep emotion, but exhibiting its best qualities in broad humour, and the species of wit that is called "canny."

Generally speaking, in Lancashire *o* takes the place of *a*, hence *hort* is the equivalent of *heart*, and *far* is said in place of *for*. The combination *al* is usually broad as *aulus* for *always*, and *k* often usurps the place of *g*, making a *thing* into *think*, and a *wing* into a *wink*. The continuation of vowels give a special flavour to the speech, as *heause* for *house*, *meause* for *mouse*. The running of many words into one is rather a vulgarism than a necessary part of the dialect; it is certainly very different to any peculiar sound for accents. For *I wish you would*, the Lancashire peasant says *I wou did du* and for *what am I to do*, he says *wot arm t'doo*.

It is about fifty-five years since the writer of this first became dictinctly impressed with the importance of dialects in literature, and it happened in this wise. Passing up Holborn he saw at the point where Museum Street, Drury Lane, Holborn and Broad Street meet, and nearly opposite the spot where once stood Mr. Waite's seed stores, a penny exhibition of wax-works. At the doorway, partly leaning against the barrel-organ, employed to "play the people in" was an effigy of a bacon-faced grinning yokel, with a stout staff over one shoulder, on which was suspended a large bundle in a red handkerchief. In front of this bold figure was a placard describing the chawbacon as TIM BOBBIN, THE LANCASHIRE POET. It was not for me to denounce the libel, for this was my first acquaintance with Tim Bobbin, of whom I there and then desired to learn more particulars. Time reveals many things that revive past events, and now in my library I find a considerable quantity of Tim Bobbin, and one thing I can say at once, that he was no such raw, grinning dunderhead as the showman represented him, using for the purpose probably a figure that had done duty as Napoleon, Lord Byron, Tom Spring, Greenacre, and dozens of other notables, for each of whom it would speak with equal faithfulness.

One of my Tim Bobbin's treasures is an artistic thing that I can recommend to collectors of caricatures and the like; it is, in fact, suitable to rank with Gilray, though I do not claim for it equality of rank. It is a thin folio, containing a series of humorous drawings, and it bears for title, "Human Passions Delineated in above 120 figures, droll, satyrical, and humorous: designed in the Hogarthian style," &c., &c. We are to understand the author to be Timothy Bobbin, but the name is, in part, concealed by a trick in the drawing. It is added that "the Author, near Rochdale," will be happy to receive orders for such delineations as are herein presented.

These caricatures are rough, and often out of drawing, and too often vulgar, but, happily, not seriously objectionable on other grounds, although two or three of the designs I would like to annihilate for their obvious naughtiness. They overflow with humour; they are often boisterously funny, and they display a capability of exaggerating human ugliness that I am inclined to pronounce unique. The drawing of teeth has inspired Tim with some extravagant and most amusing fancies; now we see the tooth tugged out with a string, the operator pressing his foot against the chin of the victim to secure a pull and keep him at a proper distance; again we see the tooth drawn with a pair of smith's pincers; and again with a pair of fire-tongs. Drunken louts, well-fed priests, grinding excisemen, cheating pedlars, and parsons that thrive while soldiers starve, are severally served up in striking characters, and the fun is emphasized by means of verses that pass for "poetry."

It will thus be seen that Tim Bobbin was artist and poet combined; and turning to a little heap of volumes we shall have no difficulty in finding samples of his style and the story of his life. A very little of his style will suffice, for, to be truthful, we think his verses the poorest of the poor, and cannot but wonder how they should acquire their immense popularity, for Tim Bobbin is most famous amongst famous writers in local dialects.

Tim Bobbin's proper name was John Collier. His father was a clergyman of the Established Church, and he (Tim) was born at Urston, in the township of Flixton, 1708. At an early age John Collier was apprenticed to a Dutch loom-weaver; but he soon grew sick of the occupation, and having persuaded his master to liberate him, he started schoolmaster, travelling from town to town, as was customary with schoolmasters at that time, to teach by day or night, as the children might be spared from their employment, and taking his risk of obtaining comfortable quarters, or of a bed in a straw-barn, with a bowl of porridge and a herring for his day's diet. The boy schoolmaster managed to live in this way until he met with the Rev. Mr. Pearson, who had a school at Milnrow, near Rochdale, to whom he became assistant, Mr. Pearson dividing with him the forty pounds a-year the school produced; this fixed salary of twenty pounds a-year being by Tim regarded as a substantial advance in prosperity. Mr. Pearson's health failing, Mr. Collier acquired complete command, and the whole salary of forty pounds, deeming himself now a *rich man*. He now enlarged his sphere of operations by teaching music, his own taste that way inclining to the hautboy and the flute. The practice of instrumental music obtained much encouragement in the church at that time, the village band being quite as important as any other feature of the service and not unseldom monopolizing attention to the disadvantage of the preaching. From the "Life of the Author, by Richard Townley, Esq.," prefixed to the edition of the "Miscellaneous Works of Tim Bobbin, Esq.," 1806, we learn that "he drew landscapes in good taste, understanding the rules of perspective, and attempted some heads in profile with very decent success; but it did not hit his humour, for I have heard him say, when urged to go on in that line, that drawing heads and faces was as dry and insipid as leading a life without frolic and fun, unless he was allowed to *steal in* some leers of comic humour, or to give it a good dash of the caricature. Very early in life he discovered some poetic talents, or rather an easy habit for humorous rhymes, by several anonymous squibs he sent about in ridicule of some notoriously absurd or very eccentric characters; these were fathered upon him very justly, which created him some enemies, but more friends." This characterization appears to be thoroughly just; the talents of Tim were better displayed by the pencil than by the pen, but with neither instrument did he rise to any high pitch of excellence, and his literary humour is scarcely bright enough to shine if shuffled out of the dialect and put in another form to accommodate the world at large.

Mr. Collier married, and raised a family, and stuck to his schooling, squibbing, and flute blowing in the way of a good citizen, but for a time his pencil brought him money and fame beyond all other employments. He sold his pictures at inns, where their humour was better appreciated than in manor houses and parsonages. As for the dialect, he made a study of it, and therefore, although we do not rate his literary work highly, it has a value in its way, and is rich in archaisms, and will often be of service in suggesting the meanings of obsolete words. His most important work, that on the "Lancashire Dialect," as displayed in the adventures of a Lancashire clown, which had a considerable sale, was so shamefully pirated that the author secured but a small share of the profits for himself. Plate 40 in this series of caricatures shows a lot of stout pirates at work, while poor Tim creeps up the stairs weeping, and looks shrunk from starvation.

Mr. Collier appears only once to have mistaken his vocation, for he was prevailed on to accept a tempting offer of a position in a house of business, for which he soon discovered himself to be totally unfit. He soon returned to his school, a sadder and a wiser man, preferring freedom and fun with poverty, to restraint, confinement, and propriety with a competency. He died peaceably, and in full possession of his mental faculties, "at near eighty years of age," leaving three sons and two daughters. The sons had been trained as artists, but fol-



lowed different branches with varying fortunes, and having always agreeable remembrances of their father's merry spirit and love of personal freedom.

Amongst the works of Tim Bobbin may be mentioned in addition to the "Human Passions," the "Shude Hill Fight" 1757, "The Cobler's Dialogue" the "Tawk O'Seawth Lankeshur." On the table as I write are three small volumes. One has been quoted from above for particulars of his life, as given by Richard Townley, 1806. A second is entitled "Dialect of South Lancashire; or Tim Bobbin's Tummus and Meary," edited by Samuel Barnford, 1850. This contains an interesting introduction in which are many curious particulars of the domestic habits of the working classes in Lancashire a hundred and fifty years ago. The third is entitled "Tim Bobbin's Lancashire Dialect, and Poems. Plates by G. Cruikshank." Published by Hodgson, 10, Cloth Fair, London, 1833. The plates are veritable "George," six in number. The best of them is the scene representing the quack doctor at the fair, a capital bit of pictorial fun. In the illustration of the Dragon, Cruikshank is less happy than the unknown artist whose plate we have copied, for herein the Dragon makes a fine figure, whereas our dear George missed the mark by making too good a picture for the Dragon to show himself advantageously.

"The Flying Dragon and the Man of Heaton" is by common consent of all the editors, regarded as Tim's best work. It is not good enough to justify reproduction, but some passages shall be given as properly illustrative of this notice. Happily an explanatory introduction will not be needed.

THE FLYING DRAGON AND THE MAN OF HEATON.

What Man alive tho' e'er so wise,
With Spaniel's Nose, and Eagle's Eyes,
Can tell this hour, what th' next will fling us,
Or whether joy, or sorrow bring us;
That no dispute there needs of this,
The Man of Heaton witness is;
A man he was and very stout,
But whether quite so wise, some doubt,
And as my muse dare not decide
The following facts must be our guide.
So leaving him in doubtful mood,
Let's hint at one more understood.
Our other Hero, for we've two,
Hight Mynheer Skyppo Vandaloo,
Was late arriv'd from that fam'd City,
Half French, half English—ah, what pity!
Where Courtiers, Pensioners, and placemen,
By frequent In's and Out's, disgrace men,
Where doughty Squires to Knights are vamp'd;
Where half-thick Lords to Earls are stamp'd,
Where all the arts of Jockey-ship
Are us'd, as at the Turf and Whip;
Where one throws out his dearest brother
And Statesmen Jostle one another;
Who lay their megrim brains together
To make our feet find their own Leather;
* * * *
This man I say was just come down,
From that French-pig-tail foppiest Town,
As gay as Daw, in borrowed Plumes,
And all the airs of Fop assumes.
* * * *
His Nag high-mettl'd shin'd like Raven,
Both Sire and Dam, of blood in Craven;
Away he flew. Now boisterous Boreas,
Vex'd to see Man so vainly glorious,
Resolv'd this Champion's pride to humble,
And make his furious Courser stumble;
But finding soon this Scheme to fail,
He aimed his force at the Pig-tail,
And whisk'd it round both back and shoulder,
Still he rode on—and still look'd bolder!
Boreas chagrin'd and gall'd with pain,
At Ear-locks blew, with might and main,
Not dreaming of their b'ing alloy'd,
And to the Tail so closely ty'd.
All Skyppo's head attire so gay,
The blast had nearly blow away,
When Fortune, raising ruffl'd hand,
Kept Wig and Beaver on their stand;
But Pig-tail with the Ear-locks new,
Away with Boreas waving flew,
Our Hero spruce ne'er miss'd the Toy,
But rode for Sunderland with Joy.
* * * *
But who comes next! The Man of Heaton,
Whose very name old time hath eaten:
For Authors in this point do vary;
Some call him Roaf, some Will, some Harry,
But I incline for private reason
To call him Oamfrey, at this season;
And sometimes Noamp, perhaps may fit,
As suits my Rhime, or helps my wit.
* * * *
A truly Knob-stick fill'd his hand
And thought no power cou'd him withstand.
When lo! his lifted Eyes assail
A long, black thing; with wings and tail
The Wings quick moving with the wind:
The Tail in curls, turn'd up behind:
So Oamfrey stops his sauntering course,
And unto musing had resourse.
Then scamp'd his Knob-stick on the ground,
And crying in amaze profound,
I'th neme o' Jesus, say whot 'art;
That two black tungs fto meawth com dart?
Whooas twisted Body's like the Hurn
O' that fem'd beeost the Unicorn!
I say, whot art? Ith' neme of God!
My stick shall—howd—I've heard a rod
Of Willow, will demolish soon
The direst Snake below the moon.
With that stout Noamp his Thwittle drew,
And on the edge three times he blew;
Then from the Hedge, he in a crack,
Brings a tough Willow with him back;
But whilst the leaves he from it strips,
Across the Lane, the Dragon skips!
Quoth he . . . I see theaw'rt marching off,
Boh howd o bit . . .; this Willow tough
Shall, if strength fail not, stop thy flight;

So strikes the Pig-tail with his might,
And cry's out boh— ! then quick returns ;
Then gives a stroke—then backward runs :
The monstrous Animal up flew,
And Oamfrey starting, quick withdrew :
His Eyes oth'stare ; his face grew pale ;
With open mouth he view'd the Tail,
Which briskly wanton'd in the wind ;
Then swore . . . It's of the Dragon-kind !
On deep reflection he grew tardy,
And thought it sin to be fool-hardy.
If I con seve meh sell, qwoth he,
Whot's Flying-Dragon's unto me ?
There con no wisdom be I trow
In feighting things we dunnaw know.
For should it chonce fly e meh fece
I'm deeo'd os Tripe . . . without God's Grece
So Oamfrey he the Wand threw down ;
Took up his Stick, and march'd for Town.
Two Roods he had not gone before,
A blast of wind the monster bore,
Within two Yards of Oamfrey's Stick,
Which vex'd our Hero to the quick.
Quo Noamp, be this I plenely see
It mun be oather thee, or me :
And sin tis so, I'll never run,
Boh kill, or dee before eh done.



OAMFREY AND THE DRAGON.

Then in a Passion from his hand
He threw his Stick and fetch'd the Wand ;
And poor Pig-tail with Courage fresh,
And all his might began to thresh ;
But still the Dragon kept the Field,
Cock'd up his tail, and scorn'd to yield.

This furious Combat by report,
Did last till Oamfrey's Stick grew short,
And a cessation, as Fame reckons,
Continued, till he got fresh weapons.
* * * *
Now while this third great Duel lasted,
Fierce Oamfrey's strength was almost wasted.
The Dragon too, now wanting breath,
Had symptoms of approaching death ;
And ev'ry Member seem'd to fail ;
He hardly stirring Wing or tail ;
For Boreas likewise tir'd at length
Had quite exhausted all his strength,
And all was hush . . . so Fortune gave
The Field, and Battle to the brave !
And Pig-tail lies as still as Stone,
As tho' to live, it ne'er had known
And thus the Dragon here was slain,
Whilst Oamfrey lives, to Fight again.
* * * *
With this intent his ample Foot,
Held down the Pig-tail, whilst he put
His stick within the grizzled Hair,
And thus before him did it bear.

Ten Furlongs he'd triumphing past,
But met no mortal man or beast ;
When lo ! he met with Heart full gleesome,
The Rev'rend Rector, stil'd of Heysham.
The Parson star'd whilst Oamfrey held
The Dragon, which he'd lately kill'd :
And after clearing up his Weasand,
He query'd thus, to know the reason.

Why Oamfrey, man ? What have you got
Upon your stick ? That I know not.
Where did you find the Tawdry Thing ?
Tawdry ! quo Noamp ! Why't has a sing.
A sting, Man ! nay, no more than you :
Byth' Mass good Parson that's naw true ;
Look at its Tungs ; its Sting's ith Tele.
Or else I'm sure my senses fail.
True ; quoth his Rev'rence, that may be ;
And in that point we both agree :
But if my eyes, like thine, don't fail
It is, tho' large, a French pig-tail.
A Pigtele Pars'n ! that's good fun :
No moor thin Bacco-pipe's a Gun :
Why, 'twas alive ten minutes since,
An that I'll swear, be King or Prince ;
Nay, more thin that, it flew abeawt,
An that no Swine-tele, or his Sneawt,
Cou'd ever doo, sin Noah's flood :
An this I will maintene for good.

The Rector laugh'd, and Noamp look'd sour,
For to convince he wanted pow'r :
Nor could Noamp to his thoughts give vent,
As anger cork'd up argument.
* * * *
His Rev'rence then his wig took off,
And Noamp began to hem and cough ;
His doubts he found to disappear,
And that he'd got wrong sow by th' ear :
For as the Parson was adjusting,
Things grew the more and more disgusting,
But when he put oe'r all his Wig ;
"The D—l ta' yer Tele o' Pig !
"What sense is there e Tele so black,
"That's teed both Heeod, an rows o'th Back :
"If they'd ha Things weh netur jump,
"The Tele shou'd awlus ston o'th Rump ;
"That Fok moot know sytch foolish Brat
"For Munkey greyt, or Meawntin' Cat
"Boh Gawbies neaw gin Kers'n nemes,
"To things, naw hardly fit for flames."
So Oamfrey grumbling budg'd away,
But neither bade good Night, or Day.

The Rector laugh'd, and laugh'd again
At Oamfrey's notions thro' the scene,
And took the Pig-tail with him home,
For sport to friends in Time to come,
And keeps it to this very day
At Heysham, as my Authors say.



ONE CHRISTMAS MORNING.

BY GEO. MANVILLE FENN.



I.—Off Trevene.

"YOU'RE a fool, Brace. Bah! What were you people thinking of. This is about the place, isn't it?"

"No. More to the west. Pull man, pull, or the current will take us right in among the rocks."

"Good job, too," said Wrigley Jeanes, a little deformed fellow of about six or seven and twenty, as he tugged at his oar in the good-sized boat he and his companion had rowed half a-mile out from Trevene Harbour, where the pilchard luggers lay dimly seen through the December mist.

"Why a good job, too?" said Brace Lockwood, with a pleasant smile on his sun and sea tanned features as he sat there, big, athletic, and strong, rowing easily with one hand, while his little eerie dwarfish companion drew his head lower than usual down between his bony shoulders, and worked hard with two.

"Why a good job? Because if we get in there, up we shall go on a wave, and then down we shall go bump on to one of those sharp rocks; there will be a hole in the bottom of the boat, the water will fill her, and, instead of our fishing for conger, the great slimy beasts will fish for us, and we shall be dragged down below there, wedged in some crevice, and feed the beggars fat till our bones are all clean and white and ——"

"If you don't stop that, you miserable little croaker, I'll pitch you overboard."

"No, you will not, big, ugly Brace, because that would be murder."

"No, it would not, because I should fish you out again with the boat-hook—fool as I am."

"Yes, fool as you are," said the little fellow, with a sneering laugh. "Better go to the bottom together, and then I should make room for another man, for I'm no use; and as for you, with your stupid name, which your fools of people ought to be hung for having called you, there would be rest for you, and you wouldn't be always gnawing your heart for the love of Alice Grey—I mean pretty little soft, silky Dorothea Maine, who is only laughing at you, and coaxing on Mr. Dandy Yachtsman, Frank Roby, with his grand London ways."

"Be quiet."

"Shan't! You're big and strong, and good-looking."

"No, I'm not."

"Don't contradict, or I'll chop you over the head with the oar. I say you are, and if you've all those advantages, surely I may enjoy my tongue."

"It's a sharp one, goodness knows, and grows sharper. Pull! I'm going to drop anchor directly. I say, if I was as good at chaffing as you are, I might go on at you about your name—Wrigley, and say something about the eels."

"Why, you've said it, you brute. Wish I hadn't come out with you."

"No, you don't, Wrig. I say, how bilious you are this morning."

Splash!

A little anchor was dropped over the bows, the rope ran out many fathoms, and the boat swung round and became stationary about fifty yards in the lee of a rock which towered up a hundred and fifty feet sheer from the sea, which was dotted with jagged masses of granite. Many of these barely showed above the rushing current coming in swiftly from the Atlantic, and, calm as the morning was, heaving up against the great rocky buttress about which the grey gulls floated, and falling back in foam.

"I think we shall get some fish this morning," said Brace, as he laid in the oars neatly and opened a locker to get out the lines.

"Hang the fish! I say it's going to be very cold."

"Nonsense! The sun will come out soon. Wonderfully mild for the time of year. Have a storm after it though, safe."

"I'm going to have a pipe," said the little hunchback, whose dress showed that he was in a prosperous condition of life, as he took out a morocco case and, from its red velvet resting-place, drew forth a very handsome gold-mounted meerschaum, which he proceeded to fill.

"Put that away, man, and bait a hook."

"Do it yourself, bully Brace; I don't want to catch conger; I came out to amuse myself, and I'm going to do it by sitting here smoking, and talking to you for your good about little Dory Maine."

"Let the lady's name alone, please," said Brace, rather gruffly.

The little deformity's face puckered up into a grin, and he laughed silently.

"I thought I should draw the tough old badger. I shall call her Dory if I like. We're the best of friends, and, I say Bracy, what do you think of me proposing to mamma. Widow, still young and pleasant-looking, clever, ladylike, and just suit me. She wouldn't look for beauty in a husband now, and wouldn't find it if she did. Let's see. I've about five hundred a-year, and she has somewhere about the same. Why shouldn't she marry a nice little Punch like I am?"

"Wrigley, old fellow," said the young man quietly, as he dropped in a baited hook and the heavy lead over the side, letting the line run through his fingers as he turned his dark grey eyes to his companion, "if any one heard you now ——"

"Besides the gulls and shags."

"He would think you a regular little wasp."

"So I am. Human wasp, with a furious sting."

"No, you're not. Under all that sham display, you are the best and truest-hearted little fellow in the world."

"Gammon!" said the hunchback, and his thin white face flushed.

"Yes, you are, Wrig; and what is more, you are my friend, and—you hurt me."

"Brace!" cried the little fellow hoarsely, as he laid his small thin hand upon his companion's arm.

"Ah, that's more like you," said Brace smiling, as he gave the hand a grip. "Now then, no humbug; we shan't get many calm mornings like this, and I want to fish."

"Never mind the fishing," said Wrigley earnestly." I was chaffing you too hard; but I want you to see, old fellow, that you are going wrong, and worrying yourself about a girl who isn't good enough for you."

"Steady there!" cried Brace. "Ah, there's a touch. No: he's off. Hold your tongue about the lady."

"But I can't, old lad. Frank Roby's making his way there. He'll win in a canter, and you will be miserable. Give it up, old chap. There's as good fish in the sea."

"And here's one of them," cried Brace, beginning to haul in rapidly, and dragging a large black bream in over the side. "Look here, Wrig, you mean well, but I'm not the sort of fellow to change."

"No," said Wrigley, sadly. "You are hooked like that scaly beggar there."

"And now he's unhooked," said Brace.

"Yes, and pitched over to struggle in misery, just as you will be."

"Wrong," said Brace sharply, as he held the great fish in his hand. "He's only just pricked in the mouth, and there he goes free as ever."

As he spoke he threw his prize overboard; there was a splash in the mist covered, heaving sea, and the fish was gone.

"Yes," said Wrigley, with a cynical smile; "but you are not hooked in the mouth, my lad. It's right in the heart, and will never come out again."

"Good thing, too," said Brace, as he fished on. "Now light your pipe, and be sensible. Where was Roby going?"

"Falmouth and back for a sail. Won't do it, though, for there will be no wind. Well, I've had my say. You're old enough and big enough to take care of yourself, so gang your own gait, as Sawney says."

"Yes, I'm going to," said the fisherman, quietly. "I love little Dorothea too well to press my attentions upon her if she loves a better man."

"But he isn't," said Wrigley, sharply. "You're a bad one, but he's worse."

"A woman's the best judge of that, old man," said Brace, hauling in a large, wide-mouthed, gasping gurnard. "She has to choose, and we shall see."

"Yes, we shall see," said his friend; and the morning glided on with the sun piercing the mist, which was partially dissipated shoreward, giving the pair as they rode gently up and down in the boat a view of the pretty village with house after house upon the steep cliff clothed with ivy, which glistened in the morning sunshine.

"Now, if someone we know in that pretty house was wise she'd be watching us through a glass," said Wrigley, after a time.

"I hope she is not," said Brace, merrily, "for I'm getting very slimy and scaly and wet. Ain't you going to have a turn?"

"No; I'm enjoying my pipe. How long shall you fish?"

"Till dinner time."

So Brace fished and his friend watched him, or gazed at the great Mewstone with its grey gulls sailing about and uttering querulous cries, and the black-green shags and cormorants which kept coming from afar to perch upon the shelves of rock.

But about mid-day the mist closed in again so thickly that the towering rock was invisible even to the occupants of the boat.

It was about an hour later that as they sat there shut in, and with the fish in the bottom forming a glistening heap, Wrigley said:

"What are you going to do with all the spoil?"

"Select a few of the best, and give the others to the poor old folks on the cliff."

"And take the best up to Sea View, an offering to the widow and the fair?"

"Yes," said Brace, quietly, "and —— Hoi! Ahoy there! Port! port! You'll be on the Mewstone!"

He started up in the boat, and shouted this through his hands.

"And now she's going to run us down," said Wrigley below his breath.

He had reason for what he said, for there was a rushing, hissing noise, and a vessel that had appeared ghostlike out of the mist, glided by them swiftly, so closely that the boat was almost touched, and then disappeared in the mist toward the shore.

"What an escape," said Wrigley.

"Why, it was Frank Roby's yacht," cried Brace, "and nearly on the rocks."

"And now making fast for the harbour, where he'll land, and go up to Sea View," said Wrigley, with a return of his cynical mood. "Hadn't you better heave up the anchor and follow him with your offering of fish?"

"No," said Brace sternly; and he went on fishing as if nothing had happened, and the rivals had not both been within an inch of death.

II.—At Sea View.



'TWAS evening when Brace Lockwood having refreshed himself and discarded his fishing garb, went up the cliff path laden with his basket to where Mrs. Maine's cottage nestled in a nook which she had chosen when staying at Trevene, broken in health and sorrowing for her husband, Colonel Maine, who had died in India during a brush with the hill tribes.

Brace had told himself he was not going to be put out by his companion's words, and that he did not believe Frank Roby, the wealthy young yachtman had gone on there; but his heart beat heavily as he saw the lit up cottage windows, and heard the sound of music. Dorothea's sweet, pure contralto ringing through every fibre of his frame, as he stood and listened in the dull wintry night to Molloy's song "Darby and Joan."

"Will she ever say words to me like that in the future" thought Brace, and his eyes felt misty and strange, as ideas crowded to him of how they two might go hand in hand along the vale of life; and when the mist cleared away he turned sharply round and began to walk home, for he had seen a man's shadow on the blind, and heard the clapping of hands, and a well-known voice saying in tones muffled by the window blinds:—

"Bravo! bravo!"

Brace walked down toward the cliff meaning to pitch the fish out to sea, basket and all, but before he was half way down the steep path he laughed, smoothed his countenance, and turned back.

"Well, why not?" he said. "Anyone would cry 'bravo,' to such singing."

He walked straight to the cottage gate, was admitted, handed his basket to the pretty servant maid, and was shown into the little drawing-room, to feel misty again about the vision, as he shook hands with Mrs. Maine, and then with Dorothea who rose from the music stool smiling, girlish, and happy to greet him; but Brace felt that it was just as she had greeted Frank Roby who had risen in turn and greeted the new comer.

There was a smile on Frank Roby's lips as he shook hands, but it was not a pleasant smile. On the other hand, Brace was very stern of face and serious, and as eyes gazed into eyes, the young men gripped each other's hand hard, but it was not a friendly grasp.

"Were you not back from your sail very soon, Mr. Roby?" said Mrs. Maine, to break a rather awkward pause, for the young men had seated themselves and seemed to find an attraction in each other's faces.

"Back soon? Yes. No wind outside at all, and no end of mists. Patches of mists. By jove I had a narrow escape in one of them. Sharp puff of wind just out there beyond the Mewstone carried the yacht and the mist together. Lost my bearings, and we were going full crash on to the rocks, only some one hailed us just in time to port the helm."

"Would it have hurt the yacht?" said Dorothea, quietly.

"Oh, no. Yachts have no feeling, Miss Maine," said the young man sharply, "but it would have sent us all to the bottom."

Brace sat looking at the speaker thinking what a smart, good looking fellow he was, and how full of quick repartee and suggestion. It was quite an envious feeling, solely from the fact that this conversation seemed to make him more at home with the ladies who listened to him with pleasure, while he was quiet and thoughtful in Dorothea's presence, and had hardly a word to say. So dreamy was he as he watched the young yachtsman that he quite started when Dorothea turned and addressed him.

"How is your painting getting on Mr. Lockwood?" she said, "Surely you have not been at work upon it to-day?"

He started with his face lighting up, and the feeling strong upon him that he was glad he had been able to save the life of the man she loved.

"Oh, no," he said; "it was impossible. Everything was blotted out by the mist. "I shall get no more fine days this side of Christmas."

"And have you been yachting too?" asked Mrs. Maine.

"I? No. That is I have been on the water fishing."

"And caught any?"

"Oh, yes, Jeanes and I had grand sport."

"And what a shame Mr. Lockwood!" cried Dorothea merrily, "Mamma so fond of fish and you did not so much as bring up a scale."

"How scaly!" said Roby with a boisterous laugh.

"If you please 'm," said a voice in a half whisper to Mrs. Maine, "What am I to do with the basket of fish Mr. Lockwood brought up?"

"Oh, Mr. Lockwood!" cried Dorothea, crossing to him and holding out her hand, "I am so sorry: I do feel so ashamed."

"There is no need," he said, pressing the little white fingers so warmly then they were hastily retired, and Dorothea ran out to see the fish and came back to report that they were lovely, and, she ingenuously added, "so fresh."

"Where did you catch them?" asked Mrs. Maine.

"Oh, out yonder by the Mewstone," replied Brace, without pausing to think of what had gone before.

"Eh?" said Roby sharply, "was it you out there when I came in?"

"Yes. I did not want you to run us down," said Brace laughingly

"And was it you shouted?" cried Dorothea.

"Oh!" said Roby with a curious intonation in his voice. But he said no more, only sat thinking that perhaps things might have been a little pleasanter for him if he had run the fishing boat down.

Mrs. Maine worked very hard that night, and Dorothea sang two songs, but a wintry chill had crept into the place, and after a short discussion on the near approach of Christmas and the possibility of storms, the young men rose to go, leaving together, at which movement Mrs. Maine looked rather uneasy, thinking as she did of the dangerous cliff. She was enough woman of the world to divine that the visitors were not good friends, and as she glanced up from time to time, it was at her child whom she knew to be the cause of the enmity between them.

"I wish," she thought, "either that they would give her up or that it was definitely settled with one of them." And then as she glanced again at her daughter, she wondered which she cared for, and tried to arrive at the matter indirectly.

"Dory."

"Yes, Mamma."

"What were you thinking about?"

"How soon it is going to be Christmas Day again."

There was silence, and Mrs. Maine half thought that her child was fencing with her.

"How terrible these mists are," she said after a pause.

"Yes, Mamma, dreadful; they make everything so damp."

"But I mean for those who go to sea, my dear. What a risk Mr. Roby appears to have run to-day."

"Yes, it seems to have been a very narrow escape. I suppose if it had been a ship instead of a yacht, it would have sunk."

"Thank goodness," thought the mother, "She does not care for Frank Roby." And truly it seemed so, for Dory's face was as placid and happy looking as could be.

"And Mr. Lockwood too: why the yacht nearly ran his boat down."

"Yes, Mamma, so I heard them say."

"But Mr. Lockwood's courage saved Frank Roby's life."

"And for warning him he nearly sailed over Mr. Lockwood's boat, that was not very grateful of him."

"Oh, that was all accident of course," said Mrs. Maine, watching her child curiously, but there was not a ripple on the placid surface of her countenance.

"She does not care for either of them—quite untouched," thought the mother; and a curious feeling of resentment came over her. Either of the young men would have been eligible from a worldly point of view, and husbands were scarce articles in a far away place like Trevene.

But there was the fact plain before her: Dorothea was quite untouched. She liked the society of the young men, but spite the impression she had made upon them, they were to her only the friends who afforded her and her mother society. That was all.

"But I must be sure," thought Mrs. Maine, "Dory will be frank and straightforward with me;" and after opening her lips to speak half a dozen times and checking her words, she said:—

"Do you like Mr. Roby, Dory?"

"Yes, Mamma, I think so," said the girl, calmly.

"And Mr. Lockwood?"

"Oh yes, Mamma, I think so. It was very kind of him to bring the fish."

"Very," said Mrs. Maine; and after a pause, "Dory, my dear suppose Mr. Roby should ask you to be his wife?"

"Oh, but Mamma he is not likely to ask me such a thing, is he?"

Mrs. Maine answered this question with another.

"Well, then, suppose Mr. Lockwood were to ask you, what then?"

"I don't know, dear," said the girl, turning dreamily away." But he is not likely to ask me such a thing."

"Indeed he is very likely to ask you. Dory, do you love Mr. Roby."

"Oh no, Mamma, of course not," said the girl with vivacity.

"Nor yet Mr. Lockwood?"

"I don't think so, Mamma," said the girl thoughtfully, and she asked herself the question.

And herself replied by saying that it did not know.

Mrs. Maine made an impatient gesture, and her daughter looked at her wonderingly.

"What is the matter, Mamma?" she said.

"Why this: people are talking about you a great deal in connection with these gentlemen, and I cannot have your father's child looked upon as a coquette. I must ask Mr. Roby and Mr. Lockwood to discontinue their visits here."

The result of this remark was that a storm commenced in Dory's breast, and that which had been perfectly unruffled and calm began to heave in a way which was quite new.

III.—A Short Sail.

CHRISTMAS EVE came with the "green" weather so common in the west. There was neither frost nor snow, but the soft, warm wind had blown hard off the Atlantic for some days, and then dropped off into a perfect specimen of autumnal weather, with glowing sunshine, blue sky, and the sea heaving gently here, rippled there by the gentle gale.

Brace Lockwood had walked down to the little granite half-moon pier with his friend, Wrigley Jeanes, to chat with and distribute tobacco among the fishermen, as they "spoke" them respecting the possibilities of a few hours' line fishing.

"Ay, ay!" said one of the brown-faced fellows in the sing song tone adopted by the common fishers, "Ay, ay, my son, you'll get a few to-day. It will not blow again before night."

Brace walked to the end of the pier with Wrigley, and had a look round at the coast strewn with golden brown sea-weed, then at the Mewstone with its summit whitened by the sea birds which sailed lazily round, looking like flakes of snow, as they uttered their faintly-heard wheezy cries.

"May as well get the boat, then," said Brace, looking toward where she lay, drawn high up on the stones at the harbour head.

"Yes, and we shan't have Roby's yacht trying to run us down," said Wrigley, drawing attention to where the wide-beamed cutter-rigged vessel lay with its gun-metal fittings glittering in the sun.

Brace did not answer, and his friend saw the reason directly after, for the young man's eyes were fixed upon the path high up the cliff, along which the figure of Dorothea Maine could be seen descending in company with Frank Roby, who was evidently talking to her earnestly.

A low, heavy breath, which some people would have called a sigh, escaped from Brace's lips, and his brow became marked with lines.

Wrigley looked at him curiously, and a sneering laugh came on his lips. But it died away as he saw the agony marked on his companion's face.

"Faint heart never won fair lady, Brace, old man," he said. "Never say die. Perhaps it isn't a certainty after all."

Brace turned sharply upon him as a man turns to one who talks of sunshine when life seems blank. But he turned away again, lit a cigar, stood gazing out to sea, till there were steps heard on the pier behind him, and directly after one of the fishermen said aloud—

"Going for a sail, Master Roby?"

"Yes. Going to be fine?"

"For a bit, sir, for a bit. I wouldn't go far."

"Not going far," said Roby, hailing his yacht; and a man dropped down into the dingy, and rowed to the rough steps.

"Morning," said Roby, with a careless nod to the two friends, and there was a triumphant look in his eyes as he, too, took out and lit a cigar.

Brace acknowledged the greeting, and in spite of his strong will his gaze wandered toward the cliff path, in search of a trim figure and a natty grey gull feather cap.

As he turned back there was such a mocking look in Roby's eyes, which Brace felt sure must have read his thoughts, that the blood rose to his cheeks.

"Come and have a sail for a few hours?" said Roby.

"Thanks, no," replied Brace; "we are going to fish."

"Out by the Mewstone," said Wrigley; "so don't try and run us down as you come back."

"All right," was the reply, and Roby went down to his dingy.

"Rather you would run your cutter on the rocks and drown yourself," continued Wrigley, in a low voice. "I say, Brace, old man, cheer up."

"Are you ready for the boat?" said Brace, gravely.

"No. I say. Look!"

He made a sign towards the shore, and Brace turned sharply round to see that the figure he had sought before was now passing the head of the harbour.

"It may not be all right there," whispered Wrigley. "Go and try."

"Too late. He has won her."

"That's only guess-work. Go and try."

Brace gave his friend a sharp look, and then watched Dorothea as she entered a neighbour's house. Half-an-hour after, as the cutter was gliding rapidly away from the land, she reappeared and stood full in Brace's view, shading her eyes and evidently watching Roby's craft.

"You see," said Brace, mournfully.

"Yes, and the yacht's worth looking at. The fishermen are watching her too. Oh, if I were a woman's man, do you think I'd give up like a cur. Hang it, Brace, I'd go and know my fate from the lady's lips myself."

Brace gave him an angry look, and then strode along the pier, and, as Wrigley watched, he saw him go up to Dorothea, and then walk with her right up to the cottage.

"That's just what I like to see, sir," said a rough voice at Wrigley's elbow.

"What?"

"Young folks a making of it up, sir. Don't see why young folks shouldn't court at Christmas, as well as other times. Must say as I 'prove of Master Lockwood's choice. I've put the bait in the boat. Shilling, sir? Too much; but thank ye all the same."

A quarter of an hour later Brace rejoined his friend.

"Well?"

"I was right," said Brace. "He has won her."

"Did she confess it?"

"No; but she gave me no hope."

"Then you are all right yet. You'll win, old fellow, and I'm going to be humpy uncle to all your youngsters. Now then: fish."

"No," said Brace, sadly. "I've no heart for anything to-day."

"Merry Christmas to you, gen'lemen," said three or four voices as they passed a group of fishermen by the boats.

"Merry Christmas!" said Brace to himself; "when I feel as if I wish I had never been born."

IV.—BACK TO HARBOUR.

"Yes, sir; and it can blow, too," shouted one of the fishermen "Come on sudden-like six o'clock last night, as you well know. Christmas morn, too. What a storm. I say, Lord help all poor men at sea!"

"Amen!" said Brace, as he gazed out at the wild waves which came foaming in; and he turned up the collar of his macintosh. "All your boats safe in the harbour? Why, where's Mr. Roby's yacht?"

"God Almighty only knows, sir. He didn't get back last night. He must ha' run for Falmouth or Penzance, I suppose. Why hey, then, look at that; there she is yonder."

He pointed out through the drifting mass of spray to where a little vessel could be seen battling under closely reefed sails, away out beyond the Mewstone, and the object at which he pointed was evidently just seen by others standing, like themselves, on the cliff watching the sea.

The news spread, and in a few minutes every inhabitant of the village was out in the storm, watching the perilous position of Frank Roby's yacht.

"If he died," something seemed to whisper in Brace's ear, "I might—shame on me!" he said, half aloud; and then softly: "Poor girl, poor girl! It will break her heart."

"Is he in danger, Mr. Lockwood?" said a panting voice close by him, and Brace turned to see that Mrs. Maine and her daughter were standing by him, with the hoods of their cloaks tightly drawn over their heads, and Dorothea's face blanched, her hair wet with the spray, which lashed them till the flesh tingled, while her eyes seemed straining and dilated, as they were fixed on the labouring yacht.

The response to Mrs. Maine's question came from one of the rough fishermen, who said bluntly, just as there was a lull in the shrieking wind:—

"Danger! Ma'am; the current's taking her right on the Mewstone. It'll want a better sailor than Master Roby to weather the rocks a day like this. He must have been mad to try it."

"Oh!"

A low moan, which thrilled through Brace; and as he turned to her, Dorothea laid her white hand upon his arm.

"Mr. Lockwood, can nothing be done?"

"Please God!" he said, huskily, "the yacht may make the harbour;" and they all stood watching, heedless of the wind and rain, as, through the driving mist, the yacht could be seen nearing the towering rock on which the sea beat with terrific force, while the jagged points, which dotted the sea between them and the Mewstone were white with foam, save on the side nearest the shore.

They were moments of terrible suspense, and one of the fishermen said, in a gruff voice, it was the worst Christmas morning he ever knew. Then all was was silent among the little crowd, as they listened to the shrieking of the wind and the thunder of the breakers which foamed over the stout harbour wall, and sent the spray to where they stood.

Dorothea was the first to break that silence, as she clung to her mother, and looked up reproachfully at Brace.

"And they are doing nothing to help," she cried wildly.

"I've been among the men," said Wrigley, who had heard her words, "and they say nothing can be done. We must wait and see if the yacht clears the rocks."

"And then she'll come ashore," said Brace, speaking his thoughts aloud. "Yes; look."

For a group of men in oilskins, with coils of rope over their shoulders, were making their way along beneath them to the edge of the waves.

"Another five minutes 'll do it, lads," said a voice; and Dorothea shivered.



From a photograph by W. F. Kimberley, Kenilworth.

A FROSTY MORNING.

It was less than five minutes. The spray was swept aside by a gust of wind, and the watchers could see the deck of the yacht plainly, and that three men were clinging together by the tiller. Then the mist came over it again, partly hiding it from sight, just as a huge wave raised the little vessel on high, and then literally flung it as if it had been a cork against the towering rock.

A wild shriek rose from the women present, and the men ran down toward the water's edge, in the hope of saving anyone who might be washed ashore.

But, to the astonishment of all, the yacht was not dashed to pieces; the mast had gone, but the hull was drifting slowly past the towering Mewstone, with the men still clinging to the stern; and as all gazed wildly towards her, expecting to see her sink, she was borne on and on, now lost to sight, now rising on high, till she went beam on among the breakers, and was finally cast upon the rocks a couple of hundred yards from the shore.

Brace Lockwood was the last man left by Mrs. Maine and her child. Inclination drew him towards the group on the shore, but a mesmeric attraction kept him spell-bound where he was; and with the women he stood watching the three men, as they clung to the wreck waiting till the inevitable must come, for it seemed to be only a matter of minutes before the frail craft would be beaten to fragments.

Mrs. Maine shuddered, and tried to draw her child away, but Dorothea snatched her arm from her grasp and turned to Brace, gazing wildly in his eyes as she pointed with one hand to where they could now distinctly make out Frank Roby's form as from time to time he feebly waved his arm to those on shore.

Brace caught Dorothea's hand in both of his, and gripped it hard as he bent towards her.

"Yes," he said hoarsely, with his lips close to her ear, "I'll go and save him for you if I can. God bless you, Dory! I loved you very dearly. Think of me sometimes—when you are his happy wife."

He kissed her quickly on the cheek, and then before she could utter a word he had sprung down the cliff, throwing off macintosh and pea-jacket as he went, till, as he reached the group of men standing where the foam ran in, the two women could see Brace Lockwood's bare white chest and arms, as he hastily took off his boots and rapidly turned up his trousers above his knees.

"Dory!" panted Mrs. Maine, "you've sent him to his death."

"Yes," said the girl, in a low, solemn voice. "Mother, I've sent him to his death."

She stood there white as marble, grasping her mother's hand, as just below them they saw a good deal of bustle and confusion, and that a life-belt was being secured round Brace Lockwood's waist, and a line thrown round one shoulder. Then through the misty spray the white figure appeared alone in front of the group of eager men in the white foam; they saw him run a few yards, leap out from rock to rock, then throw up his arms and disappear.

They saw no more, only that the yacht's hull still held together two hundred yards away, hidden constantly by the spray, and that the men ashore were paying out the line Brace was trying to take to the wreck.

A horrible interval of time elapsed before there was fresh excitement among the men, who seemed to be attaching a thicker line to that which had been taken out.

Suddenly Dory uttered a wild cry, for, seen dimly through the spray, a white figure appeared for a moment on the straining deck, but only to disappear again.

Then, as if through the confusion of some fevered dream, the two women saw that the fishermen were hauling back the rope, and in a few minutes a figure was dragged through the surf, and Dory closed her eyes, but opened them directly, to see that it was not Brace who was being carried up the beach to the little inn, but Frank Roby.

Again the rope was dragged out from the beach and came back again twice, each time with a helpless, half-drowned figure, which was taken from the surf and borne up to the inn; but neither of them was Brace Lockwood, whom a few minutes before they had seen upon the deck of the yacht.

Frank Roby and his little crew of two were ashore, but the man who had offered his life for theirs, when not a soul in the place would have dared to swim out to the wreck, was still there, and though the fishermen tried to signal with the line there was no response.

Yes; there was a jerk; and Wrigley Jeanes, who had caught hold of the line, uttered a joyful cry, which changed to one of despair, for there was no resistance—the line came back easily, and almost in the same minute Dorothea Maine and her mother realized that the wreck



From a photograph by W. F. Kimberley, Kenilworth.

KENILWORTH IN WINTER.

was no longer swaying on the rocks, and the fishermen could see the yacht's timbers being tossed about by the waves.

Ten minutes—twenty minutes of despair followed, during which men kept wading in amongst the foam, to snatch at anything dark which came ashore from the shattered wreck. But there was no gleam of a white body, and one by one the men shook their heads and gazed commiseratingly at Wrigley, who was twice over brought back half-drowned after running in to snatch at something which he thought might be the body of his friend.

"Gone, poor lad!" said the fisherman who had spoken to Wrigley on the pier. "Gone. And her up yonder! Poor lassie, it'll break her heart."

Just then there was a shout, for amidst the foaming water a head was seen, a hand, and a man rushed into the water after a retreating wave, bearing a line. A minute later and he had his arms round Brace Lockwood, who had been beaten nearly to death, but was still feebly battling with the waves as they were dragged ashore.

Dorothea saw all, and then as she realized that the brave fellow still lived she fainted dead away.

It was about two hours after, on that memorable Christmas Day, when there was talk of rejoicings after all—for what was a yacht, the village people said, when the lives of all had been saved—that Dorothea Maine stood with her mother in their little drawing-room dressed for going out.

"But the weather is still so bad, my dear," said Mrs. Maine.

"The weather!" exclaimed Dorothea, contemptuously.

"Well, then, my dear," said Mrs. Maine, "the people. Every one will know that we have gone to Mr. Lockwood's, and they will make remarks."

"Mamma! Mother!" exclaimed Dorothea.

"My darling!" cried Mrs. Maine, embracing her child, "we must study appearances a little. It is not as if you and Mr. Lockwood were engaged."

"Take me there," said Dorothea, firmly. "I sent him out to that wreck in peril of his life. I must go and thank him for what he has done."

"Very well, dear," said Mrs. Maine, meekly. "You are a woman grown now. Come, then. Ah," she added, as she opened the door, "what a Christmas Day!"

* * * *

Brace was lying on the sofa, with his head bandaged and one arm in splints, for the sea had savagely resented his daring in plucking the storm's victims from their death. Wrigley was seated by him, trying to brighten him up, for the poor fellow was suffering acutely in body, terribly in mind.

"Never mind, old man," Wrigley was saying, "you behaved like a hero. Let her marry him, and some day"——

The door was opened, and the servant whispered:—

"Mrs. and Miss Maine, sir, to see how you are."

A hand was laid on the servant's arm by Mrs. Maine, who drew her back, entered with her daughter, and closed the door herself; and as Brace sprang up sitting, and gazed wildly at the two dishevelled figures, wet and wind-blown, Dory panted forth:—

"I've come to—to thank you—Mr. Lockwood—for your brave—brave"——

"Say no more, Miss Maine," began Brace; but he was stopped, for, uttering a wild cry, Dorothea had thrown herself on her knees beside him and clasped his hand.

"Don't think that," she cried; "it is not true."

"What?"

"I did not know what I was saying yesterday—on the cliff, but—but I do know now."

Poor Brace had only one arm—the other was broken; but Dory had two, so it did not matter, and he forgot all his pain as she clung to him, sobbing on his breast.



What time Mrs. Maine, who was weeping softly, suffered herself to be led to the window, to gaze at the rift in the clouds, where the sun was shining forth, for the storm was lulling, and it was a happy Christmas after all.

And Frank Roby?

Oh! he was of no consequence, and his yacht was insured.

WINTER ASPECT OF KENILWORTH CASTLE.

BEAUTIFUL as are many parts of this England of ours, there are but few that surpass the district of which Warwick is the centre, and to those of us who have long appreciated its varied charms it is immensely gratifying to know that its rural aspects now receive fuller recognition than at any former period. In boldness the scenery of Warwickshire will not, it must be confessed, compare with much of that found in Derbyshire and Yorkshire, and may fail to satisfy those in search of the romantic. But its rolling hills, hanging woods, slow-flowing rivers, and tracts of highly cultivated meadow and corn land form a landscape essentially English and of exquisite beauty. Rich and diversified as is the landscape, the attractions visible to the eye sink into isignificance in comparison with the historical associations of the more important towns, and a considerable proportion of the magnificent seats which form such a decidedly characteristic feature of the county. We have, first, Warwick, with the lofty turrets of the grand old castle rising from its midst, and redolent with the history of those earls who have distinguished themselves at successive periods in the history of the country. Not far distant is Coventry, so long famous for its pageants and mystery plays; Stratford-on-Avon, which ever must be an object of intense interent to the cultured classes of the English speaking people in all parts of the world as the birthplace of the greatest of English poets; and Kenilworth Castle, with a history remarkable alike for its importance and the great length of the period over which it extends.

There is no cause for complaint as to the number of visitors to the Warwick district in the course of the year, but the beaten track is too closely followed, with the result that many of the most pleasing of the rural features fail in obtaining proper recognition. It is no doubt a convenience to busy people to make the tour within the day, but in doing so it is impossible for them to give more than a cursory glance at the several objects of interest, and it is just possible they may receive a false impression of the importance of the places visited. Not so long since a friend was telling us that he had spent a fortnight in Shakespeare's country, and expressed his regret that his time was so limited. "A fortnight not enough?" said one of his hearers, "I saw all that was to be seen in a day." Several hours might be spent amid the ruins of Kenilworth Castle, which, as so well shown in the accompanying illustration, present an appearance not less picturesque in the winter when the trees are covered with hoar frost than in the summer when clothed with their foliage. It would be interesting and instructive to say something about the many good gardens in the neighbourhood, but at this festive season we may be well excused for turning our attention from them to the pile of ruins which presents such a stately appearance under the winter's sky.

Kenilworth Castle has a long and intensely interesting history. Very early in the history of this country a castle was erected near to where the ruins now stand, and this was destroyed during the war between Canute, the Dane, and Edmund Ironside, early in the eleventh century. In the reign of Henry I. the manor passed into the hands of Geoffrey de Clinton, who built the first part of the castle and founded a monastery. From the death of Geoffrey the castle has had an eventful history. It was for some time garrisoned by Henry II. during the rebellion of his son, and by Henry III. it was converted into a prison. During the Wars of the Roses the castle was alternately occupied by the partisans of the rival houses of York and Lancaster, and was sometime occupied by Henry VI., who in 1436 spent his Christmas at Kenilworth. Eventually the castle was bestowed by Queen Elizabeth upon Dudley, Earl of Leicester, who spent large sums of money on the improvement of the castle and the grounds by which it was surrounded. The magnificent entertainment given by the Earl to Queen Elizabeth in 1575 forms the most memorable event in the history of the castle.

On the death of the Earl of Leicester, the castle and estates were seized by a decree of the Court of the Star Chamber, and given to a son of James, and subsequently they were presented to the Earl of Monmouth. During the Parliamentary Wars the castle was seized by Cromwell, and by him given to some of his officers, who soon reduced it to what it now is, a pile of ruins. They, we are told, "drained the lakes which once flowed over so many hundred acres, ravaged the woods, beat down the walls, dismantled the towers, choked up the fair walks and rooted out the pleasant gardens, destroyed the park, and divided and appropriated the lands."

The exquisite beauty of trees when the branches are covered with hoar frost, is admirably portrayed in the illustration of Kenilworth, and it is brought out in a still more striking manner in the study of hoar frost in the wood. Here the frozen dew on the branches has formed a glistening white tracery, which presents a very pleasing contrast to the dark trunks of the trees, and produces an extremely beautiful effect. These two studies are especially interesting as showing how attractive is outdoor vegetation during a hoar frost, and what admirable work the photographer may then find for his camera.

G.

FEEDING WILD BIRDS IN WINTER.

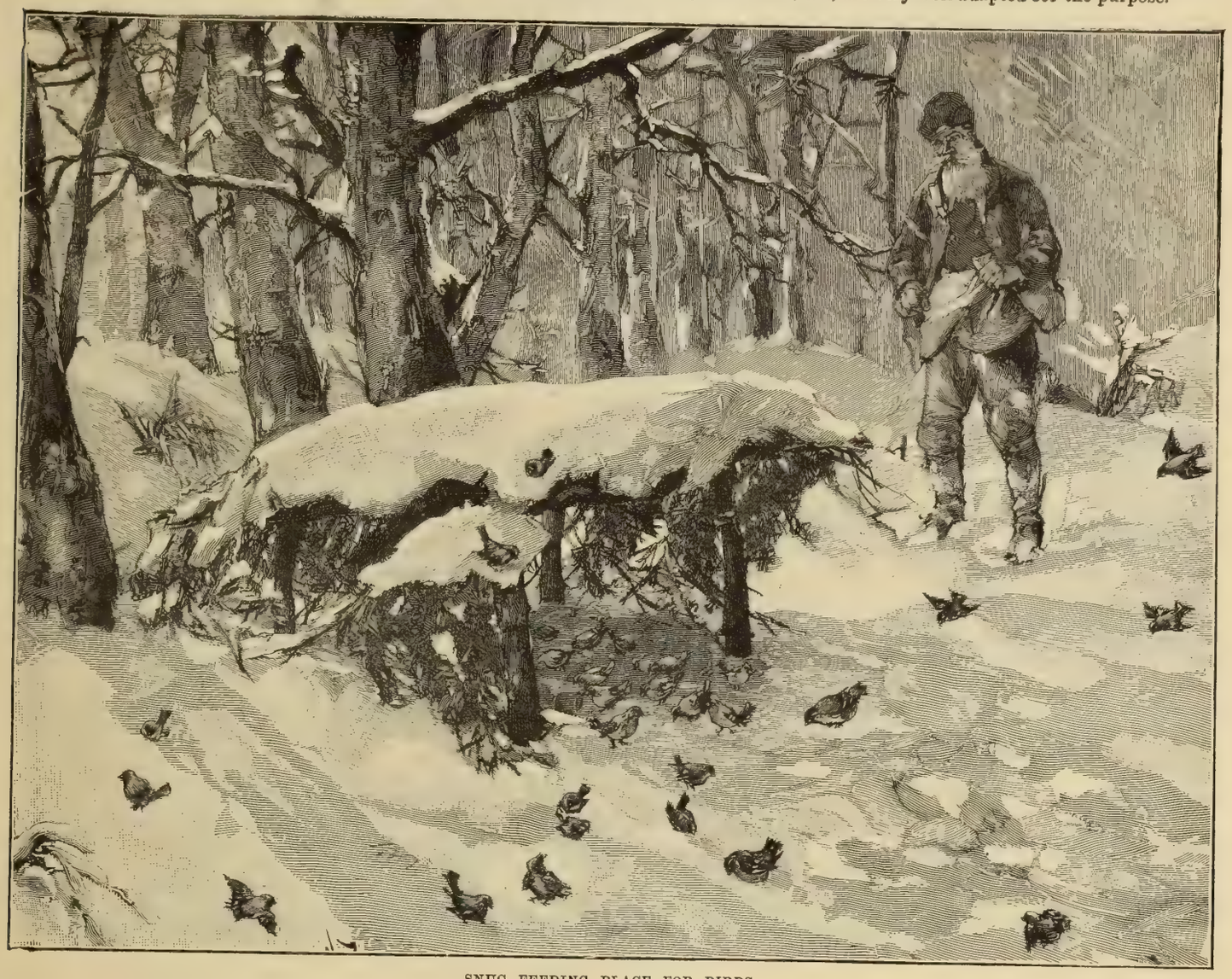
Every year at the beginning of winter, when the first frosty winds sweep over the short stubbles and the first snow flakes fall from the sky, a time of martyrdom full of privations begins for the small, merry, feathered world, which gladden us with their chirping and trilling during the warmer months. Trees, shrubs, and fields are desolate, and snow covers the landscape far and wide; not a grain of food is to be found, and the air is keen and frosty. No wonder that during these inclement months the dead bodies of little birds are so frequently found by the road-side. The call, "Remember the birds!" is still, unfortunately, too little taken to heart, and it moreover often happens that the generous hand is too unskilled to attract the poor hungry little birds.

The lover of birds may often vainly cater for his little guests in the neighbourhood of houses, either because there are too many cats and dogs lurking about, or because the birds are scared away by smells and noise. Locality is an important feature to be considered. For some species of birds the feeding-places must be so selected that they are easily accessible from several sides, such as avenues, hedges, balks (or spaces between two fields), &c., and they should not be liable to disturbance by anything likely to frighten the birds. All feeding-places, with the exception of those arranged at some height above the ground and deriving a certain amount of safety from this circumstance, must be protected by brushwood as shown in our engraving. They should be hedged in by briers and shrubs stuck into the ground, covered over with branches of trees, so as to produce a small thicket to afford protection against birds of prey in the event of these attacking them while feeding. At the same time such a cover of brushwood prevents pigeons, jays, and crows from getting at the food, which is too costly for them to feed on, being solely intended for smaller birds. For such larger birds special feeding-places may be arranged. Among the special kinds of feeding-places are:—

1.—Above Ground.—A board with projecting laths nailed thereon is fixed horizontally, rather above a man's reach, between the branches of a tree, or the board may be fastened at the same height to a lath in creeper-clad trellis-work, or else to a first or second floor window-sill opposite to a high tree. If there be no thick bushy cover into which the little winter guests may take refuge from enemies, in close proximity to the feeding-board, the place may be easily hedged in with briers arranged for that purpose. Every variety of titmouse, woodpecker, finch, blackbird, &c., will visit such high places, especially if established on the outskirts of a wood.

2.—In the Fields.—These are prepared in the open field; near a wood, on sunny plots; small thin stakes are so arranged and covered over with thistles, plants, straw, peastalks, &c., tied round them, as to give them a certain resemblance to loose sheaves; these will serve to attract the birds. The most suitable food is the refuse of colza and rape seed, garden seeds, hempseed, &c.

The establishment of such feeding places in the fields is seldom thought of, and considering its great importance, this fact is much to be regretted. The suburbs of cities and larger towns are scarcely suitable, but the outskirts of small towns and villages, and the land surrounding country residences, &c., are very well adapted for the purpose.



SNUG FEEDING PLACE FOR BIRDS.

3.—By the Roadside.—The most suitable spots are: open fields a few paces away from a high road skirted by fruit trees or poplars; the vicinity of hamlets or farm yards, village greens, churchyards, railway embankments in the neighbourhood of the station, or the banks of a country road. A place may be covered in partly with brush-wood or thick-set bushes, strewn over with straw to render it more attractive to the birds. The food supply should consist of hay seeds, the refuse of oats, and any inferior grain or seeds.

4.—Feeding Places in Gardens.—These may be arranged in favourably situated gardens, well stocked with trees and shrubs, or in large public or private parks, or on the outskirts of a wood, under a thick bush, or under the low overhanging branches of a large tree, or under the shelter of the projecting branches of a fir or other conifer; the snow should be cleared and the spot covered with dry leaves, moss, &c., and if necessary it may be rendered still more secluded by branches of thorns or briars. In the absence of natural shelter, long fir branches may also be stuck obliquely into the ground, and well secured. The most suitable food consists of hawthorn berries, bilberries, hips, waste pieces of apple, &c.



THE FUNERAL PROCESSION.

A FUNERAL ORATION ON THE ROSE.

(From the Spanish.)

I.

A ROSE was dying.

Her stem was slowly bending down, and little by little the colour was fading from her leaves.

In vain did the butterflies and the bees endeavour to revive her with the sweet warmth of their caresses; in vain did the white lilies stoop to let fall on the poor little flower a few drops of the dew they had fondly preserved, and which, as they fell through the sunbeams, shone like mysterious pearls.

Vainly, too, did the wind try to support the drooping petals. The rose was dying.

Her radiant colours were gradually fading away, and the petals were expanding to make way for the soul of the flower now about to breathe her last breath of fragrance.

The marguerites, bowing down their virginal crowns, gently whispered their orisons; the violets were weeping under the shelter of the grass, yet dared not abandon their last hope that the rose was too fair to die while the sun was still shining and the leaves still bursting forth, while the winter was yet so far away, and the limpid streams still murmuring their sweet songs.

The birds were silent in their nests on the tree branches, a prey to mortal anguish, all gazing anxiously on the rose whose pallor was now fast increasing. The linnets were restless, the nightingales hung down their heads, and the chirp of the grasshopper was hushed. This was the first rose of the year, thus doomed to die, and they all whispered one to another that they in their turn would soon have to sleep the sleep of eternity.

The thick clouds in the heavens remained motionless, and knew not why the wind was arresting their ever onward march towards the unknown bourn.

Suddenly amid the universal calm a smothered sigh was heard, and a mysterious perfume spread through the air, embracing all in its exquisite aroma. It was the soul of the rose passing away!

The flower had fallen from its stem, scattering its withered petals on the ground, and was lying on the sward at the foot of the rose tree, where it had lived and bloomed; the other flowers with one accord bent down their heads, as though to bid her a last adieu, and the butterflies folded their wings. The rose, the first rose of the season, was dead, and responsive to the sad tidings as they were whispered round the birds hied away to their branches.

II.

And when night came on the moonbeams as they fell in silver rays revealed the solemn cortège of birds and flowers carrying the rose to her last resting-place.

The lilies led the way, their tall heads gleaming like banners, and after these came a grave-looking green satin-clad beetle carrying his wand of office.

The carnations in their red velvet garbs, then the modest cowslips sadly bending their little necks encircled in pink and blue, followed by two little grasshoppers entoning a sweet low chant and beating time with their cymbals. Then came the marguerites and the primulas forming a long snow-white line sweetly contrasting with the mournful garb of the violets, who marched slowly behind. Next came the dead rose borne on a wide green leaf carried by two crickets, yet she looked rather sleeping than dead. Four golden ranunculi proudly held the four streamers that hung from the bier.

The other flowers followed on behind, passing between a double file of locusts armed with long blades of grass, the disconsolate butterflies, the titmice, and the linnets, then the nightingales chanting a funeral march, and all the birds from the neighbouring glens. The procession closed with white hyacinth forming the end to the funeral cortège, and as it passed slowly by the almond leaves, gently swayed by the wind, let fall their tears of dew.

III.

At the foot of the tree on which the rose had bloomed, the ants had hollowed out a little hole in the damp soil wherein the rose might peacefully sleep. The moon shed the fulness of her radiance on the scene; not a nook or crevice was left in darkness, and as the bright beams fell on the flower lying lifeless on the green leaf, she seemed at times, as the weird zephyrs from afar fanned her faded beauty, as though she were about to come back again to life's gladness.

The crickets who bore her along laid her softly down in the grave, while the grasshoppers slowly repeated their dirge, and violets, carnations, primulas, and marguerites echoed their words. The beetle then handed to each a blade of grass dipped in the brook hard by, and each sprinkled the rose, and afterwards laid a few grains of earth in the grave. Soon it was filled, and the lilies and the white hyacinths bent down for the last time; all was now over! The grass would grow again on the spot where the flower was resting, and perhaps when the sun shone again in the broad blue heavens, it would be hard to find the place where they had laid her; perhaps by then, all, even the sobbing butterflies, would have ceased to remember her.

IV.

The mourners were about to depart, when one of the nightingales made a sign that he wished to address them. The beetle raised his wand, and all at once drew near and listened in profound silence. Even the little rivulet ceased her murmurings. The nightingale, perched on a holly branch, began with a clear trill that seemed like some strange sonata piercing the clouds, then he flapped his little wings, raised his head, and sang:

Why weep ye sisters dear, ye flowers the partners of our life? Oh, ye linnets, why pause ye in your song? Ye crickets, why not entone again your merry chirp? Dry your tears, spread out your wings, 'tis not the time for weeping; your last lamentation must die away with the night, your last sob must be hushed ere daybreak, for the dawn is nigh!

We are born in the springtide, nursed in the sunbeam, and all nature awakes as we come into life. Like her, we are eternal. We are perfume, gladness, and song. We are the great springtide that never dies. When the winter comes, and the snow throws its great shrowd over the earth, the flowers and the birds depart, but they go only to return anon; they do not die, they only slumber. The first

ray of the sun spreads the wing and reanimates the flower; the rivulets run again, the leaves burst forth, the briers put on their verdure again, and songs are heard anew.

Weep ye not I therefore say. The rose is not dead, for others will bud from the branch; she merely sleepeth, and soon will wake. Rather send forth your cries of joy and live to hail and bless the unending renaissance which renders us immortal.

We perish not, but are, and live. God made us for the world, and we live with it and for it. It matters not, oh roses, if ye fade on your stems; fear not, oh ye violets, to breathe your last sigh of fragrance; when you fall it is but to be born again more beautiful than before.

Cease then, ye crickets, to entone your sad and measured lamentations. Lift your voices up to God, to the sun, to the flowers and their perfume; sing to the rose now departed, sing to the flowers which follow.

See, the night is nearly over, the dawn is breaking in the sky yonder, day is born again, and the sun is making ready to send us his radiance. The buds are already opening; it is life beginning anew, it is the rose come back to our midst. Death is but a semblance. Life-like God is eternal.

V.

And as though the darkness were suddenly rent, the sun shone in the firmament, flooding it with rays of gold.

The flowers rose on their stems, the limpid streams of crystal were heard again, the songs of the birds filled the air, and on the branch from which the rose had fallen lifeless, a fresh flower burst the green fetters that imprisoned her, and budded into life.

"YF CRYSTMAS DAY ON THURSDAY BE."

As Christmas Day falls on a Thursday this year, the following extract from an early poem in the Harleian MSS., in which the characteristics of the seasons are predicted according to the day of the week on which the festival falls, will probably be read with some degree of interest:—

Yf Crystmas Day on Thursday be
A wyndy wynter yee shall see;
Of wyndes and weders all weked,
And harde tempestes strong and thycke.
The somer shall be goode and drye,
Cornys and bestes shall multiplye,
That yere ys good londes to tylthe,
And kynges and prynces shall dye by skylle;
What chylde that day borne bee
Hee shalle have happe ryghte well to the
Of deeds hee shalbe goode and stabylle
Of spehe and tonge wyse and reasonabylle.
Who so that day ony thefte aboute
He shalbe shente wyth-owtyn dowte;
And yf sekeness on the that day betyde,
Hyt shall sone fro the glyde.



THE DEAD ROSE BORNE ON A WIDE GREEN LEAF.



THE STORY OF BILL GILES;

Or, The Fire at Milton's Farm.

Bill Giles was the terror of our village. He did not require any postal address, and, as a fact, could generally be found at the only public-house in the place. Bill's father was a blacksmith, and he and his pretty daughter, with a voice like a blackbird, sang in the village choir every Sunday, and were "really respectable," as the village gossips had it, but poor Bill was a black sheep for whom nobody had a good word. I said nobody had a good word for him, but I am really wrong. The fact is, there was one bonny lass in the place who always said that Bill Giles had more heart and soul in him than the parson, and, as a necessary consequence, all the other girls in the place laughed, and said she was "over head and ears in love" with Bill Giles. Mary Jones, who was a well-to-do farmer's daughter, only tossed her head a trifle higher, and praised the "black sheep" more than ever.

But I must tell you a little more of the personality of Bill. He stood six feet in his stockings, and had shoulders like an ox; and, although everybody knew that no hare, nor pheasant, nor even the trout in the river were safe from his paws, yet it is a singular fact that the gentry in the neighbourhood had a liking for him. The fact is, Bill never organized big poaching parties, but simply, like the heathen he was, took the game or the fish he wanted with his own hands. He was the "free lance" of the village, and always glad to be friendly with everybody, or not just as they themselves desired. He always used to say he never wanted to fight anybody, but that if any fellow wanted to fight he liked to gratify him, and it seemed to me at the time remarkable that no one wanted to fight with Bill a second time. Bill never took kindly to the forge of his father, but he was in great repute as a horse and cattle doctor in the district, and so managed to pick up as many half-crowns as he required. Mary Jones often used to say to her father it was a thousand pities that Bill Giles did not go to a veterinary college, since he knew more about the ailments of cattle and horses than did the qualified men. The old man only smiled and shook his head, and sat down to his dinner. "Don't ye mind him, Polly," said the old man. "Don't ye mind him, he's too wild to be trusted, my girl." Poor Polly did not eat much dinner that day, but in her heart she was as firm as ever, although her eyes became so red that even a stranger might have thought she had been crying.

II.

Bill Giles' father, the blacksmith, had one of the prettiest thatched cottages in the village, and was a great gardener in his leisure hours. His hollyhocks and roses, his tulips and auriculas, and his strawberries and celery were the best in the parish, and very often even better than the parson's or the squire's, and people often wondered how such magnificent results were gained, and they tried to find out the secret. Old John Giles never had a secret in the world beyond deep digging and good manure, but the villagers thought he had, and they questioned the boy who blew the bellows at the forge. "Well! I dew know he's mighty particular about the manure and the shavings," said the boy, and so the good

results were set down to the smithy refuse, and perhaps not without good reason.

The parson was also a good gardener, and there was considerable rivalry between them and constant visits between the two men. One year the parson had the best strawberries, but he could not approach the superiority of the blacksmith's celery, and the next year there would be some slight fluctuations between their respective tulips and auriculas. The blacksmith's daughter—she with a voice like a bird—attended to the flowers, and many a traveller stopped his horse at their cottage and asked for a drink of water in the summer-time, or for a light in the winter-time, so that it could not always have been to look at the flowers!

"I wish you could get your son to settle down and come to church every Sunday," said the parson during one of his gardening visits to the blacksmith. "I have never seen him there since your daughter and Mary Jones were confirmed," he continued, and he's such a fine fellow 'tis a pity he is not more with us. "Ah, that it is," said his father with something like a sigh, but just then a particularly fine tulip bloom presented itself, and the two old men forgot everything except the world of flowers, tulips especially.

III.

Mary Jones was, as we have said, the handsomest girl in the village, as well formed as the Venus de Milo, and as fresh and as beautifully coloured as a rose. She and the blacksmith's daughter were fond friends, perhaps drawn more closely together since both had lost their mothers about the same time.

It was in the beginning of November when Mary one day burst in upon her friend with a letter, which seemed to interest her very much. "Isn't it delightful?" said she to pretty Miss Giles. "I am to go for a week to my uncle's farm (mentioning the place, ten miles or so away), and we are to have some dances, and fireworks, and bonfires on Guy Faux's day, and such lots of fun, and you, dear Jess, are to come too."

But Jessie, the pretty little songstress, could not go for some reason, and so Mary had to go alone on her visit, consoled by the promise that Christmas Day should be spent together.

IV.

Yorkshire is one of the most delightful of all the English shires with its woods and moors, and lovely "ghylls," or valleys, its sparkling trout-streams, and its pleasant and hospitable people. Here and there are great stone farmhouses with their outbuildings, which in extent suggest a small village, and to one of these farms Mary Jones had gone to spend her holiday. There had been great preparations for this 5th of November party, and country friends had ridden or driven in from all sides. Young unmarried farmers flocked in, glad to get a peep at Mary and her cousins, who also had pretty faces, and there was dancing and feasting of the usual homely and enjoyable, albeit rustic style. "Mary Jones never looked so handsome," her cousins said, and at least one rich young farmer thought so too, and told her so while pretending to praise her dancing. Then they all went to the windows to see the bonfires and the fireworks in the yard, and then came supper and more dancing, and then many good-byes at the door, and then the girls went off to their rooms for their usual gossiping chatter, and finally to bed, delighted with their merry-making, and tired as hunted does.

A silence settled on that old farm house, broken only by watch dogs baying or the solemn hooting of the owls near the barn. How warm and sultry it seemed for a November night, and how light it suddenly grew. Suddenly there was a battering at the door, and an alarm of "Fire, fire, fire!" rang out through the night; and before the inmates could awaken almost the sheds and lower portion of the house itself were in flames. Then came hurrying to and fro, and shouting, and the crashing of falling timbers, and cries from the upper windows. Some one brought a ladder to the back of the house, and most of the girls were lifted down safely, but Mary Jones, who was in the front, still remained unsaved. Some of the men ran round with the ladder and placed it against the window, and one young fellow bounded up with an axe, with which the window was quickly smashed so that he could enter. A moment or two afterwards the same figure came sliding down the ladder with poor Mary in his arms, unconscious, it is true, but unharmed. There was a great shout, and poor Mary was borne to the stables, where the other women had taken refuge, and where she soon revived. No one was lost, but the burning of Milton's farm has never been forgotten, and is still spoken of as the 5th of November comes round year by year.

V.

After the fire at Milton's farm people were very much surprised because Bill Giles left off going, for the sake of company and gossip as usual, to the village public-house, and instead, resumed his work at the forge. But what was more remarkable still, was to see him standing like a young giant beside his sister every Sunday in the old village church. "Ah," said the old clergyman to his father, "the wildest colt, the best horse," while the old clerk scratched his head and said he "didn't know what the world was a-coming to, things were so upside down and different-like." But ordinary bucolic people began to notice that the cattle and horses on Jones's farm required a good deal more doctoring than usual, and when it became known that Farmer Jones and the clergyman had called on the old blacksmith and offered to pay his son's fees if he would study for a veterinary surgeon's certificate the whole village could scarcely contain itself, so exciting was the news.

* * * * *

And so Bill Giles became a veterinary surgeon, and, what is more, he married Mary Jones, and he lives in the prettiest house in the village, and in one of the sunniest of gardens behind the house you may see their children happily at play. On the 5th of November every year they give a party, but I don't think it has ever yet been proved who it was that so bravely snatched bonny Mary Jones from the fire at Milton's farm.

F. W. BURBIDGE.



A NOTE ON THE MISTLETOE.

IT is a remarkable fact that although no general attempt is made to cultivate the mistletoe there is never any scarcity of this parasite. At all events, I have not known it scarce in the West of England. Every year many waggon loads of it are sent to London and to the more important towns in the North of England. Yet in subsequent years it is as plentiful as ever. This shows that Nature in some way provides the means of keeping up the stock. Having during the past few weeks taken a rather wide circuit in a district in which the mistletoe abounds on various kinds of trees I have been very much interested in the persistent way in which the supply is maintained. At the same time, it has been difficult to trace correctly the way in which this is accomplished. We know that it is a common belief that the birds carry the seeds from one spot to another. This is true enough, but it hardly explains the extraordinary positions in which the mistletoe is sometimes found growing. More often than not it is found fixed on the under side of the branch, and sometimes on quite the upper side. I can understand the seeds effecting a permanent lodgment on the under side of a branch, but how it establishes itself—as I have lately seen it—near the extremities of branches not larger than my little finger is rather puzzling. Moreover, on these shoots it appears to be as secure as on the larger branches. There is no doubt as to the propagation being effected by means of seeds, but how the seeds are distributed cannot be readily explained.

Taking into consideration the numerous examples I have lately seen on different kinds of trees, I find the most vigorous bunches are found on apple trees; the next strongest on the poplar and thorn. In all cases, however, the condition of the trees influences the growth of the mistletoe to a material extent. On aged trees, growing in an exhausted soil, the growth of the parasite is weak, and the colour of the leaves of a yellowish hue, while on fairly young and healthy trees the mistletoe presents a vigorous appearance. It is said to grow on pear or willow trees, but I have not found it on either. On the thorn it is quite common, but often very poor. The wide range of different sorts of trees on which it is found clearly shows that there is not much affinity between the parasite and its host. I should like to mention here that I have lately found one solitary example of the mistletoe in the most flourishing condition growing upon a tree of the black poplar, while a few miles further is a splendid bunch of mistletoe growing luxuriantly high up on a wych elm.

J. C. C.

CHRYSANTHEMUM ECHOES.

In the *Revue de l'Horticulture Belge et Etrangère* for the current month there is a chromolithograph of a new chrysanthemum belonging to the Japanese section, called Madame P. Jung, but there appears to be some discrepancy between the flower figured under that name in the *Revue* and that described in Delaux's catalogue announcing its distribution. The raiser, in his account of Madame P. Jung, classifies it as a single-flowered chrysanthemum—colour, rose and white. The portrait of the flower given is certainly not a single, but a genuine Jap. It would seem probable that it is meant for M. P. Jung, a new flower also distributed by the same raiser twelve months before. Such slight distinctions in varietal names have more than once caused confusion.

During the past few years M. Pynaert Van Geert's excellent monthly, the familiar green cover of which is always welcome, has reproduced in the chrysanthemum season a fair proportion of the new chrysanthemums that have found favour in the eyes of Belgian cultivators. Without causing a diligent search to be made, I can recollect the following: Rubra Striata, Traviata, Gloire Rayonnante, Stanstead Surprise, and Rose Laing. All of these are interesting, but the most gorgeous things of the kind to be found are some which appeared in the *Illustration Horticole* about three years ago. It is useful to mention this fact, for during the past few months several inquiries have been made to me by friends as to where such plates can be procured.

Among the French papers there seems to have been nothing of importance. The *Revue Horticole* has given M. Bourguignon, Maurice, Madame La Comtesse Foucher de Careil, Baron d'Avene, and Jules Barigny. The reader will observe that the examples selected by the foreign artist are not perhaps those most likely to be of assistance or of great interest to English fanciers. In the days of the *Floral Magazine*, and the *Florist and Pomologist*, English chrysanthemum growers were often treated to coloured plates of the favourite new flowers. Many of them were incurves, but they were sorry daubs, and a great stretch of the imagination is necessary in some instances to see the likeness between the picture and the flower it is intended to represent.

The compiler of the "Echoes" has spent a vast amount of time, and not a little money, in putting together a collection of coloured figures of his favourite flower. There is no doubt that when the time arrives his executors will experience considerable difficulty in disposing of the collection for the sum it has cost; but one sad fact has become apparent in connection with the work. Nearly all the dealers in second-hand prints, where he used to visit to pick up his treasures, and not infrequently waste their time, have either died, or shut up shop and gone away. It is said that second-hand printsellers, as a race, are becoming extinct.

I shall never forget picking up my plate of the old purple chrysanthemum from the volume of the *Botanical Magazine* for 1796. I had spent over two hours in the shop turning over piles upon piles of pictures of birds, beasts, fishes, fruit, flowers, illuminated texts, and the like. The dealer must have thought me an awful bore, and he looked rather strange on hearing I only wanted one plate. Upon inquiry he said the price was eighteen pence a-dozen, but as I did not want a dozen, there being only that one chrysanthemum among his stock, he took three halfpence for it, and I left him joyfully, for had he demanded ten shillings I verily believe he would have got it. All the way home my treasure was hugged with affectionate delight, and many were the fond furtive glances bestowed upon it, but the job was not done with, for on crossing the threshold Mrs. P., like a certain good lady in Ingoldsby, "was rather cross, she made a little noise, and proceeded to inquire why dinner had been kept waiting so long, and was consequently spoiled." Having confided the reason, and explained that I would sooner have the picture than half a-dozen dinners, she very curtly observed, "Oh, bother your chrysanthemums; that's just what I expected." It is an extraordinary thing that women never will look at such things in a proper light. You can always get a dinner, but you cannot always get a literary or artistic feast. Another time when in Paris, I spent a long cold winter's morning hunting through the portfolios of the print dealers on the Quai d'Orsay. The only reward met with there were two additions to my stock, my teeth chattering for the rest of the day, my fingers numb, and my olfactory organ—which is generally considered a rather prominent one—perfectly blue. Inquiring friends beware of this particular development of chrysanthemum fever and ask no more questions.

Referring to the paragraph on page 773 about chrysanthemums sporting from yellow to white, Mr. Shuttleworth, of Riverside Gardens, Morpeth, writes as follows: "The enclosed is from George Glenny. Plant with about seventy blooms on; two branches of the colour sent." Accompanying his thoughtful communication are some white blooms, which are, in fact, merely reversions. This is not a case of a sport in the sense intended, because Mr. Geo. Glenny was itself a sport from a white chrysanthemum, Mrs. Geo. Rundle. The question really is whether a chrysanthemum of a purely yellow origin—a seedling flower, in fact—has ever sported to white. The best yellows in the incurves, at any rate, are only sports; for instance, Mr. Bunn, Golden Empress, Golden George Glenny, Golden Queen of England, Lord Alcester, Miss M. A. Haggas, Mrs. Norman Davis, Yellow Globe, &c., and are known to be such beyond question; but there are Barbara, Jardin des Plantes, Gloria Mundi, Guernsey Nugget, and perhaps others if the search were continued equally well known to have originated from seed. It is this class of flower that the inquiry concerns. Do they ever sport to white, and is it not true that with such yellow flowers as those the tendency when they sport is to run towards bronze.

Mr. Shuttleworth's letter only seems to bear out some previous observations of mine with regard to the perennially interesting question of sports. When chrysanthemums are grown quite fully they show a decided inclination towards mutability, and I noticed this particularly in one of my visits this season. Messrs. Reid and Borneman, of Sydenham, had two houses of chrysanthemums grown for market purposes, and among their plants one variety—John Salter—was very noticeable in this respect. The moral seems to be that if you want the chrysanthemum to sport, grow your plants with as many blooms as possible. Sixty or seventy years ago the trouble was, not to get sports, but to prevent the plants sporting. It is unnecessary, of course, to add that big blooms then were unknown. I cannot at present refer to Mr. Davis's paper on this subject which he read at the N.C.S. Conference last year, but no doubt it throws some light upon this subject, which, it is well known, he has for many years closely studied.

The following appeared in an evening paper last week: "Sir Arthur Sullivan in the conductor's seat, the presentation of bouquets of chrysanthemums to every lady in the house, and a brilliant audience signalised last night the first anniversary of the production of the 'Gondoliers' at the Savoy." This is not the first time the chrysanthemum has figured prominently at a theatre.

Floral extravagancies are many and diverse, but for the latest commend me to the American ladies' idea of wearing chrysanthemums in a new style. The *Daily News* is responsible for the bit below:—"The latest idea of the New York belle is to wear a boa made of real chrysanthemums. The long stalks are bound together after the fashion known to children in making daisy-chains. The flowers last fresh the whole afternoon or evening. The boa is about eight feet long, and the colour of the chrysanthemums is assorted to the costume. The price is high, but that is of no consequence to the ladies of New York."

C. Harman Payne.

FLORAL ORNAMENTATION OF THE HOUSE.

By James Hudson, Gunnersbury House Gardens, Acton, W.

The floral ornamentation of the house on festive occasions has now become quite indispensable; even in the ordinary course of things, large quantities of cut flowers and decorative plants are generally used, but when any special event calls for additional supplies, the resources of the garden and the abilities of the gardener in many instances are taxed to the utmost. This is more particularly the case when the means for preparing the requisite amount of material in a proper manner is not available. When there is a repetition of such demands, the stock must ultimately suffer to a serious extent, and give to the gardener a poor outlook for the future. With a fair supply of plants to meet the demands, and a thorough knowledge of their preparation, there should not be any great difficulty in supplying sufficient decorative material for the purpose. In the case of cut flowers more particularly, there is often a great waste through an insufficient supply of suitable foliage. Given a good quantity of the commoner kinds of foliage wherewith to form a good background, or as a base or undergrowth upon which to arrange the flowers, it is surprising what a beautiful effect may be produced by a comparatively limited quantity. In floral arrangements the primary point to observe is that of making every flower tell; the effect, when this principle is carried out, is greatly enhanced, and that in an economical manner.

What object there can be in crowding flowers together in the various arrangements I cannot conceive. It should be known that a mass of colour does not give a pleasing and tasteful effect. So far from this being the case, it soon becomes wearisome to the eye and palling upon the taste. When any flowers are so crowded together as to lose their proper form with no trace of their own foliage where it is suitable and available, their true beauty is lost. Some, when arranging flowers, will fill in with a good quantity of rather large examples as a base, covering up all the space in fact; then others are thrust in between these to give what they would call a "light appearance," afterwards adding some fern to tone down the colours. In other words, additional flowers and foliage are employed to remedy the mistake made in the first instance of using too many. This is, however, the way in which many so-called decorators do their work, whose arrangements may at first glance be taking to the eye, but which, when looked into closely, are devoid both of taste and natural beauty. If such arrangements are studied by close observers the waste of flowers is obvious, and it is this point which I wish to impress upon the minds of those who are addicted to the common evil of overcrowding. Another great mistake is that of using too many colours in one design; two distinct colours are ample, and these should be so chosen as to be in harmony with each other. Two or more shades of the same colour present a pleasing appearance, particularly if these be furnished by flowers of the same genus. Yet, again, a mistake is made in another direction; it is that of using flowers together of distinctly different character, some double perhaps, some single, or some of stellate shape, with others of a quite different style. Flowers of close affinity, such as the lilies when suitably chosen, make capital material for associating together, so also do the stellate or star shaped flowers when used by themselves. There is now a taste for arranging vases with one kind of flower only; these look well when not over done, and their own foliage, when possible, should be employed. Two or more colours of flowers of



CHRYSANTHEMUMS IN THE CONSERVATORY, ROYA



W. H. & L. COLLINGRIDGE, CITY PRESS, LONDON, E.C.

HORTICULTURAL SOCIETY'S GARDENS, CHISWICK.

the same genus when they do not clash with each other present an excellent appearance.

As instances, at this season of the year, there are bouvardias, of which the scarlet and white or pink and white can be used; camellias also with their own handsome foliage, appear to greater advantage by themselves than with totally distinct flowers. The winter flowering epacris may also be given as another instance. Spikes of these arrange well together. Primulas alone, with their own foliage, and carnations having some of the "grass" as an addition, are other cases in point. No flower can be associated with the chrysanthemums to add to their beauty, and the calanthes and cypripediums look best when arranged by themselves. Roman hyacinths and the Paper White and Roman narcissi will go well together, making free use of the foliage of the narcissi. The showy bracts of poinsettias require nothing besides a background of enduring foliage. The winter flowering zonal pelargoniums are much best if kept by themselves, but be extremely careful not to allow the various but beautiful shades of colour to clash; an extra supply of a good white variety would supply the needful contrast in this instance. Winter flowering begonias with their beautiful foliage require no other addition. Flowers of Eucharis amazonica and Duc Van Thol tulip form a good arrangement, or Roman hyacinths could be used instead of the eucharis. Cut blooms of forced Indian or other azaleas are much best kept by themselves. Other instances occur to my mind, and might be cited, but I think sufficient have been already given.

As to modes and styles of arrangement, there is room for much improvement. Many vases are handsome to look at, but quite unsuitable for displaying flowers. There is no utility in vases which are highly decorated themselves, those of glass being often seen with rich ornamentation in the form of engraving, whilst those of china are frequently seen in gay colours. Plain glass and that of a cloudy grey colour is the best; shades of red, &c., are only suited for special colours, and cannot be recommended for general use. The best vases for dinner-table decorations are those with a broad base resting upon the cloth, out of which springs a single glass trumpet; not a complex one with side branches, which must of necessity hide the host and hostess from each other when the arrangement is completed. These latter look well enough perhaps when empty, but are unsatisfactory when arranged. They are better suited for the central ornament on a drawing-room table. Tall vases of trumpet shape (the height being suited to the case) are extremely useful for sideboard decoration or for adorning entrance-halls. Such vases, of course, require material of proportionate boldness to produce a good effect. For these, the fronds of some of the larger-growing ferns are well-adapted at this time of the year: such, for instance, as those of Goniophlebium subauriculatum (which stands well), Nephrolepis davallioides, N. exaltata, Asplenium flaccidum, Davallia polyantha, D. Mooreana, Pteris tremula, P. longifolia, and long fronds of Lygodium scandens and L. palmata, palm leaves where plentiful, and the long shoots of Asparagus tenuissimus. Bold flowers are, of course, better for these than small ones. Poinsettias with well-developed whorls; Richardia æthiopica, Calanthe Veitchi in long spikes; salvias Habrothamnus elegans, and camellias with a good length of stem.

Smaller vases up to twelve inches in height are not used nearly so much as they might be upon the dinner-table, for they are the best for displaying any specially choice flowers, and can be conveniently arranged in position upon the table so as not to interfere with other things. When these are being filled with flowers, arrange them so as to balance each other, and rather increase their numbers than crowd too many flowers into any given number. These little vases, when of glass, look exceedingly well if stood upon small fern fronds or other delicate foliage, such, for instance, as the leaves of Aralia Veitchii and A. gracillima. When contemplating cutting down these and other aralias I have frequently used them with decided advantage; they will last for quite ten days in good condition. Larger foliage, such as palm leaves, of which Thrinax elegans is a good example, and Asparagus plumosus may be used as mats to larger stands; by this means the greater portion of the table cloth may be covered, this mode of covering it being far preferable to using strips of other colours, such as reds, greens, and yellows, all of which detract from the flowers and foliage placed upon them.

When an extremely dwarf arrangement is preferred, or when small flowers with short stems are required to be used, a tuft of Selaginella denticulata should be employed. These tufts should be grown specially for 60-sized pots, and have all, except about one inch of the soil, cut off, and then be placed in tea saucers; thus they will rest upon the cloth like pieces of green moss. When a central stand is used upon a dinner table, a pair of plants in addition are often a saving of flowers, and produce a good effect. The vases generally used for such are far too large in the majority of cases; those that will take a flower-pot of four inches diameter are quite large enough. Plants in larger pots should be taken out of them just for the occasion. Failing the vases, these plants with small balls can easily be covered with foliage, after being stood in plates; if fresh green moss can be had it should be packed around them. Failing that, some selaginella would do. Upon this green carpeting some ornamental foliage would look well, especially if the plant itself be a green-leaved one. With vases specially for cut flowers, these would not need to be added around the plants, the ornamental leaves being of themselves a distinctive feature. Provided, however, that cut flowers are scarce, and it is desired to make the very most of what there may be, there is no better plan to follow than to dispense with the vases entirely, and confine the decorations to the plants. In such a case the flowers could be arranged around the base of the plants, taking care that the plant, the foliage, and the flowers harmonize with each other. In this kind of decoration Cocos Weddelliana, Chamædorea graminifolia, C. glaucifolia, Euterpe edulis, Geonoma gracilis, G. Leemanii, Areca lutescens, and Dæmonorops fissus are all suitable, and thus retain a healthy appearance in small pots. Such plants as Pandanus Veitchii, with well-developed, narrow foliage, and the crotons, when well coloured, especially the narrow-leaved forms with graceful arching leaves, can be used in the same way, but in such cases more care is needed in the selection of other colour material. Dracænas, aralias, and kentias are not so well adapted for use in this way, but valuable when not over large as individual plants When cut foliage and flowers are freely used for any special occasion, and are likely to be wanted again a few days hence, they should be placed in water and kept in a cool, dark place, such as a cellar for instance, until again required.

Arrangements of berries with foliage constitute very appropriate designs for the festive season. In commencing to arrange such in vases for the table, proceed, as in the case of flowers, by forming a groundwork of leaves, such as Mahonia aquifolia, Azara microphylla, the golden and silver hollies, Lonicera aurea reticulata (as a trailer), a few of the catkin-like inflorescences of Garrya elliptica, and sprays of the slender-growing, small-leaved ivies. Of berries to associate with such foliage, there are those of the holly (both red and yellow kinds), the snowberry, the Gladwin (Iris fœtidissima), the berries of the single Japanese rose, which are beautiful objects, Cratægus pyracantha, and shoots of Solanum capsicastrum with their berries upon them. This selection gives a good choice. Those, however, who live in the pure country air would be able to add to it.

Whilst upon the subject of evergreens and berries, some remarks upon these from a decorative point of view may be of service. First, as regards the cutting of evergreens. This should never be done in a haphazard sort of way; some pieces may be tempting to the eye, but if cut might tend to spoil the shrub. As a rule the best plan to adopt is a thinning process, by which the shoots taken are not missed; in fact, in some cases it is a means of doing good to the plants. The cutting operation should not be deferred to the last moment. It is better to get them cut a few days beforehand; wet weather or a fall of snow or a frost might occur, and render the work most unpleasant. At such a time it would be almost impossible to do it properly. The evergreens, if cut when dry, are much better for handling in arranging the decorations. Should they perchance be found to be dirty from accumulations of black deposit, as they generally are in the neighbourhood of large towns and cities, they should be passed through some water to remove the deposit. This should be done in time for them to be dry and fit for use when wanted. In the arrangement of evergreens in a cut state there is, in my opinion, much room for improvement. Too often we see those formal arrangements, as if excessive primness and methodical regularity were the chief points to aim at. I am no believer in set designs made with single leaves; they have no semblance of natural beauty at all; better buy the artificial, and always have it ready. In using the ivy, which is perhaps the best of all evergreens for decoration, always endeavour to use it in as natural a manner as possible. Long trailing shoots of ivy lose their beauty if not used thus. Of the large-leaved ivies two of the best are the Irish and "dentata;" of the small-leaved kinds "digitata" is one of the best; there are also the silver and golden variegated forms. Shoots of hollies look well when grouped together; the berries thus produce a better effect. Any variegated kind of leafage should not be hidden by green foliage; rather use the latter first. Overcrowding with evergreens, as with flowers, spoils the effect, and each kind loses its distinctive features. By aiming at a free and easy style of arrangement less time is needed wherein to do the work, and the effect is also better. Plumes of the Pampas grass and other dried grasses, with the larger everlasting flowers, can be turned to good account with evergreens, especially when the latter are chiefly green.

Plants in pots are important for the house decoration on festive occasions. At such times an effort should be made to have as good a display as possible, more particularly so in the winter season, when probably the plant houses cannot be viewed and the plants admired in their growing quarters by reason of the inclemency of the weather or from other causes. It does not follow that any undue risk should be run with those which are known to be somewhat tender, but there will generally be enough of other things which can be employed. More particularly at this season of the year than at any other should everything be made to look as gay as possible, bright colours being more freely used. Dracænas of the high coloured kinds, D. terminalis still being one of the best; well-berried plants of Solanum; the poinsettias, with their showy bracts; brightly-coloured plants of crotons are all suitable. Chinese primulas and Roman hyacinths are of course of great service. Where tall plants can be introduced, by all means employ them; dwarfer ones can be grouped around them. At this time of the year, in cold weather, Dracæna Australis is useful to employ; Grevillea robusta, when rather tall, can be used effectively. The kentias and others of the hardier palms are always of great service. The aspidistras should be used freely for the more unfavourable positions, as they will put up with a good amount of rough usage. Well grown plants of Isolepis gracilis, and of Selaginella denticulata, with some also of Panicum variegatum, are extremely useful for borderings and edgings, or to stand upon the top of large pots to hide the soil.

In every case as far as possible avoid the use of sticks to support any of the plants; when used, see that they are as slender as possible to suit the case. In forming groups upon carpets or marble slabs or upon anything likely to be injured, it is a good plan to be provided with a liberal supply of thick brown paper; this will act as an absorbent, and prevent any moisture from the plants doing harm or leaving stains. Plants that are grouped in entrance halls which are not protected by inner doors will be all the safer if protected by curtains. These could generally be so arranged as to ward off the chill night air, and thus prevent those which are tender being injured.

Day of Month.	Day of Week.	Anniversaries, Festivals, Occurrences, Historical Notes, &c.	Sun. Rises.	Sun. Souths after Noon.	Sun. Sets.	Moon. Rises After.	Moon. Sets Morn.	High Water at London Bridge. Noon.	High Water at London Bridge. After.	High Water at Liverpool Dock. Morn.	High Water at Liverpool Dock. After.	M. tmp. avrg. of 40 yrs. Chiswk.	Orchids in Flower.	Day of Yr.
1890			H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	DEG.		1890
28	S	1st Sun. After Christ.	8 9	1 49	3 55	6 1	10 0	3 7	3 27	0 13	0 32	37·6	Cypripedium Niobe ..... Gar. hyb.	362
29	M	W. E. Gladstone born, 1809.	8 9	2 19	3 56	7 8	10 30	3 45	4 3	0 52	1 10	37·5	Cypripedium insigne Maulei ..... Sylhet.	363
30	Tu	R. Boyle died, 1691.	8 9	2 48	3 57	8 16	10 53	4 20	4 38	1 28	1 45	37·3	Cypripedium Harrisianum ..... Gar. hyb.	364
31	W	*St. Silvester.* Michaelmas Law Sittings end.	8 9	3 16	3 58	9 25	11 13	4 55	5 13	2 3	2 20	37·1	Cymbidium giganteum..... Nepal.	365
1891		January.												1891
1	Th	*Circumcision.*	8 8	3 45	4 0	10 32	11 30	5 33	5 52	2 38	2 58	—	Cymbidium Mastersi..... India.	1
2	F	Calcutta captured, 1757.	8 8	4 13	4 1	11 39	11 44	6 12	6 32	3 17	3 37	—	Dendrobium moniliforme ..... India.	2
3	S	Training Ship Warspite burnt, 1876.	8 8	4 41	4 2	Morn.	11 58	6 55	7 17	3 57	4 20	—	Zygopetalum Mackayi ..... Brazil.	3

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY. EIGHTH ANNUAL SHOW at HULL, WEDNESDAY and THURSDAY, NOVEMBER 18th and 19th, 1891.

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THE GARDEN ORACLE FOR 1891

Will be ready early next week. It will contain a complete review of horticulture and floriculture in the past year, and a guide for cultivators, exhibitors, and purchasers of plants, flowers, fruits, &c., in the year that is before us. This is the oldest horticultural almanac extant, and as it contains the latest information on new varieties, forthcoming exhibitions, and undertakings of various kinds in prospect, it cannot be published so soon as the general run of almanacs, that are chiefly made up by hasty compiling. The Oracle will be rich in reports, announcements, and selections, all condensed into the smallest possible space, and arranged for handy reference. The Oracle is a business almanac and diary, in addition to its special floricultural features. Published, price One Shilling, at the GARDENERS' MAGAZINE Office, 4, Ave Maria Lane, London, E.C.

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The Gardeners' Magazine.

SATURDAY, DECEMBER 27, 1890.

THE YEAR that is now rapidly drawing to a close, has in its relation to horticulture been in some degree eventful, and in taking a retrospective view of the past twelve months, it must be said that while the gains have been numerous, the losses have been heavy, and that the year will be remembered for the great breaks that have been made in the front rank of horticulturists. We have not had during the year to announce any great discovery bearing more or less directly upon either the scientific or practical aspect of the garden, nor have we had to report upon any introductions of a specially striking character. Nevertheless, there has been abundant evidence on all sides of substantial progress and much activity among all classes of horticulturists. Novelties have been plentiful in the several departments, and a considerable proportion are so full of promise as to justify the expectation that they will eventually occupy a prominent position. But their introduction has been due more to the industry and skill of cultivators at home than to the energy of collectors abroad, and there is good cause for satisfaction in knowing that the work of improvement is being carried steadily on by a large and willing band of workers.

In proceeding to speak of details, it must be said that orchids have figured conspicuously among the new plants requiring the shelter of glass and the assistance of artificial heat for their successful cultivation, and that they included several which may well be described as triumphs of the hybridist's art. On the other hand, hard-wooded greenhouse and stove plants have had but few additions made to them, and there has been a decided interruption in the flow of new crotons, dracænas, and other stove plants, grown for the beauty of their foliage. The break in the supply of ornamental-leaved plants has undoubtedly been due more to a feeling of sufficiency on the part of cultivators than to a want of enterprise among raisers and introducers; for so large is the number of good things, that to grow more than a small proportion of them is practically impossible. Hardy plants have received, as they should do, a large share of attention, a fact which gives us much satisfaction, for we were the first to show how immensely the interest and beauty of the flower garden might be increased by the liberal planting of the finest of the hardy herbaceous and bulbous plants. In fully recognising the usefulness of all the more important groups of ornamental plants, we have consistently advocated the more extended culture of those which can be grown wholly without the shelter of glass, and we are glad to see how greatly the flower garden has been improved by their taking the place of the various classes of tender bedders that at one time found so much favour. The more important classes of hardy plants have had material additions made to them during the season, and in some instances the varietal forms have been so numerous as to suggest that a more rigorous selection would have been an advantage both to the raisers and cultivators. The excessive multiplication of varieties is not in any case desirable, as when the number becomes large, and the differences in character or colour very slight, the distribution of novelties proceeds at a much slower rate than when the points of difference are so well marked as to be at once recognized. The great liberality of the various certificating bodies in dealing with novelties is in some degree responsible for the undue multiplication of varieties in some of the groups. These bodies are, no doubt, anxious to encourage raisers to proceed with the work in which they are engaged; but it should ever be borne in mind that due consideration should be shown to the great body of cultivators. It should be distinctly understood that by certificating second-rate things the awards lose much of their value, and also fail to indicate to cultivators novelties of sterling merit. There is plenty of room for improvement in this matter in the case of all the societies; for if there is any difference, it is one of degree rather than of principle. A little more discrimination has been shown during the year in the award of certificates to plants that have been long in cultivation, and it is to be hoped that the practice will ultimately be abolished. New fruits have been comparatively few, and melons have formed the largest proportion of them.

Horticultural exhibitions continue to increase, and of the large number held in the course of the year it must be said that, although very unequal, they have, on the whole, given unmistakable proofs of healthy progress. The general exhibitions have been instructive in showing how the interest in these gatherings has been shifted from the metropolis to the provinces. While the exhibitions in London have in most cases become mere shadows of similar gatherings held from ten to twenty years since, those in the great provincial centres have undergone such an enormously marvellous development as to fill with surprise those who have hitherto confined their observations chiefly to what is being done within the metropolitan boundary. This is a matter that requires the most careful consideration. If horticultural exhibitions are a means of providing healthy entertainment for the general public, and at the same time afford object lessons of great value to those engaged in horticultural pursuits, and upon these points there can be no difference of opinion, their decline in the metropolis is far from satisfactory. The Royal Horticultural Society has had to abandon competitive exhibitions, a fact much to be regretted, more especially by those who take a lively interest in its welfare. The Temple show was so extensive and attractive as to do honour to the

society, but in the absence of competition it was somewhat lacking in interest, and, moreover, not sufficiently representative. The society has done good work in other directions, and the conferences at Chiswick will be remembered with pleasure by those who had an opportunity of taking part in them. Not less useful in their way have been the lectures at the Drill Hall meetings, and the several committees have rendred substantial service in the cause of horticulture. The principal causes of the decline in the metropolitan exhibitions of a general character are, perhaps, a lean schedule and a failure to make any material change in the arrangements. The amount of prize money offered is a matter that immediately concerns the promoters of the shows. But in recognizing the importance of maintaining a balance between income and expenditure, we should fail in our duty were we not to point out the futility of expecting a brisk competition in classes in which the highest prize offered is hardly sufficient to recoup the cost of conveying the collections to and from the show. The lessons of the year teach us that before there can be any great revival the prizes must in many cases be materially augmented, and that a considerable change must be effected in the character of the displays.

The general exhibitions held in the more important centres in the provinces have presented a striking contrast to those within the metropolis. As our reports will have shown, they have been large in extent, varied in character, and of high quality. Especially deserving of mention are the great Whitsun show at Old Trafford, with its magnificent display of orchids; York Floral Fête, so highly distinguished for its beautiful groups and remarkable specimen pelargoniums; and the exhibition at Shrewsbury, at which stove and greenhouse plants and fruit form such important features. The flower show held in the town last named is interesting as showing that the cultivation of specimen hard-wooded plants has not become a thing of the past, as some would have us believe, for although the exhibition is held at the end of August they are contributed in large numbers and in a condition that has not been surpassed.

The special exhibitions have been exceptionally good both in London and the provinces, and the several societies have cause for indulging in a little self-gratulation. The National Rose Society achieved a series of successes; the exhibition of tea roses at Westminster, the great gathering at the Crystal Palace, and the provincial show at Birmingham were all remarkable for the spirit with which the prizes were contested and the high quality of the greater proportion of the blooms. The exhibition of teas was an innovation, and it is satisfactory to know that the experiment is to be repeated in the coming year. It is to be hoped that the Society will before many years have elapsed see its way to still further enlarge its operations by the holding of spring and autumn exhibitions in addition to the summer shows. Roses present such a delightful freshness when developed under glass that it is of the utmost importance that their cultivation in pots and otherwise for flowering in advance of those in the open ground should be encouraged to the fullest possible extent. Not less desirable is it to give special encouragement to the varieties most suitable for flowering in the autumn, and the success that might be achieved by holding rose shows at that season was made sufficiently manifest at the exhibitions held by the National Chrysanthemum Society and at Brighton in the second week in September. The National Chrysanthemum Society has also done good work in the course of the year. The mid-winter show was of the most satisfactory character, and the September exhibition surpassed the best of the corresponding exhibitions in previous years. The Centenary Festival was, on the whole, satisfactory, although some of its features were rather weak. The societies devoted to auriculas, carnations, and dahlias have all held excellent exhibitions, and the pink show held in conjunction with the rose exhibition at the Royal Aquarium was so far successful that the cultivators of pinks in the Midland counties have decided to hold an exhibition of these flowers at Wolverhampton in July next.

One of the more important events of the year was the great exhibition of fruit held under the auspices of the Fruiterers' Company, in the Guildhall, at the beginning of October. This exhibition, if failing to some extent to influence the cultivation of hardy fruits by cottagers and small farmers, was a great success. The details were remarkable for their completeness, and the display of apples and pears was of immense extent and highly interesting, as showing the perfection to which these two important classes of fruits may be grown in the United Kingdom. The British Fruit Growers' Association, to which in a large measure belongs the credit of creating the interest that is now being taken in hardy fruit culture. has also shown much activity, chief amongst its operations being the inquiry, carried out by the vice-chairman and secretary, into the condition and possibilities of fruit culture in Ireland, of which a report was presented at the Conference at the Crystal Palace in September.

The year has been remarkable, not only for the activity that has prevailed among all sections of horticulturists, but also for the great losses that have been sustained. Before the end of January that great gardener, Mr. W. Wildsmith, had passed away; in June, we had to report the death of Mr. B. S. Williams, who had long been a prominent figure at gatherings of horticulturists; and of Mr. G. Deal, who had done much good work in connection with the Gardeners' Orphan Fund. Then followed the death, in August, of Mr. J. James, whose name is so closely associated with the herbaceous calceolaria; and in the following month Mr. W. Holmes, the able and highly-esteemed secretary of the National Chrysanthemum Society, passed from our midst. Early in November occurred the death of Mr. J. McIntosh, a generous supporter of all movements that had for their object the promotion of horticulture, or the benefit of those engaged in the industry; and on November 22, it was our painful duty to announce that Mr. Shirley Hibberd, who for nearly thirty years had been editor of this journal, had passed away. This by no means exhausts the death-roll, as a reference to our obituary notices will show, but more than sufficient names have been mentioned to indicate how heavy are the losses that have been sustained.

In referring to the death of Mr. Hibberd, it is necessary to state that there will be no change in the general character of the GARDENERS' MAGAZINE. It will continue to maintain its independence, and not be associated with any party or interest, but will have for its object the promotion of horticulture, and the interest of those engaged in it. The post of Editor, left vacant by the death of Mr. Hibberd, has been filled by the appointment of Mr. George Gordon, who during the past twenty years has taken a large and important part in the management of the paper. He will be supported by the able staff of contributors who have for so long a time been associated with the journal, and arrangements have been made with other well-known writers to supply interesting and valuable information covering a wide range of subject. The present Editor will not only strive to maintain its position, but, with the assistance he has secured, he believes that the journal will be strengthened in every direction to meet the popular taste as well as the enthusiast in horticulture.

NOTTINGHAM CHRYSANTHEMUM SOCIETY'S exhibition will be held November 13 and 14.

TUNBRIDGE WELLS CHRYSANTHEMUM SHOW will be held November 11 and 12, 1891.

HULL CHRYSANTHEMUM SHOW will be held November 18th and 19th, 1891.

NATIONAL PINK SOCIETY (MIDLAND SECTION) will hold its first annual exhibition at Wolverhampton on July 14, 15, and 16, in conjunction with the floral fête arranged for those dates.

NATIONAL CHRYSANTHEMUM SOCIETY'S exhibition in November, 1891, will extend over three days, the dates being November 10, 11, and 12.

SCOTTISH AURICULA SOCIETY continues in a flourishing condition. The annual report and financial statement show that an excellent exhibition was held and that there is a credit balance of £14 6s. 10d., as compared with the balance of £9 3s. in 1889.

MESSRS. FOSTER AND PEARSON, the well-known horticultural builders, of Beeston, Notts, have issued an almanack for 1891, which will be found extremely useful for hanging in the seed-room and garden office.

MANCHESTER ROYAL BOTANICAL SOCIETY'S exhibitions in 1891 will be held on the following dates: Spring exhibitions, March 17 and April 28, in the Town Hall; Whitsun exhibition at Old Trafford, May 15 and following days; rose show at Old Trafford, July 18; and exhibition of hardy fruits, October 13 to 16.

DERBY CHRYSANTHEMUM ASSOCIATION held its annual dinner at the Victoria Restaurant a few evenings since, when there was a large gathering of members. Mr. W. E. Bates occupied the chair, and in the course of the after-dinner proceedings, the recent exhibition was spoken of as one of the most beautiful that had been held in the Midland counties, and Mr. Bell, the hon. secretary. was complimented on the excellent manner in which his duties had been performed.

THE PHILADELPHIA PARK COMMISSIONERS, following the practice which has obtained in the London parks for some years past, distributed the plants that had been employed in the embellishment of the public parks under their charge among the poorer classes within the boundaries of the City. The distribution, we are informed by a correspondent, created so much interest, that upwards of two thousand persons applied for plants.

WILLIAM HOLMES MEMORIAL.—A floral fête and bazaar was held at the Royal Aquarium, Westminster, on the 17th inst., in aid of the "William Holmes Memorial Fund." The bazaar, although not extensive, was remarkably good, and included contributions from a large number of private gardens and nurseries. The principal contributors were Lord Rothschild, Sir Edwin Saunders, Messrs. J. Laing and Sons, Messrs. H. Cannell and Sons, Mr. J. R. Chard, Mr. Newman, Mr. W. Brown, Mr. J. Beach, and Mr. Trinder. The bazaar was opened by Sir Guyer Hunter, Bart., who was supported by Captain Molesworth, Mr. Castle (secretary), and other gentlemen interested in the fund.

BURNT CLAY is considered by Rev. C. Wolley Dod to be the best soil for alpine plants. He contributed samples to a recent meeting of the Scientific Committee of R. H. S., and stated that when the clay was burnt in a manner similar to the samples shown it prevented the growth Hepaticæ, and was soft and friable, and far superior to broken brick. The cost of burning was about a shilling a ton. Professor Church undertook to determine the chemical composition of the earth used.

EFFECTS OF FROST ON THE AUCUBA were illustrated in a remarkable manner by some branches exhibited at the recent meeting of the Scientific Committee of R. H. S. The specimens were taken from a shrubbery in the gardens of Waddon House, Croydon, the residence of P. Crowley, Esq., and the leaves had been blackened and killed by exposure to a temperature of 2° Fahr. on the night of November 28. This exceptional temperature was independently confirmed. The Aucuba is one of the hardiest of evergreens, and the variegated leaves appear to suffer most from frost.

SIR JAMES WHITEHEAD is reported to have said, at the prize distribution at the Agricultural College, Aspatria, the other day, that "no doubt foreigners had at present the advantage of better horticultural education" than is to be obtained in this country. If this be so, it might well be asked how it is that in no European country are plants, fruits, and vegetables grown so successfully as in the United Kingdom. The relative merits of systems of education can only be satisfactorily determined by the results, and these are decidedly in favour of that which obtains in England at the present time.

CYCLAMENS AND PRIMULAS were employed with much success in the floral decorations of Messrs. Sutton and Sons' establishment, on the occasion of the visit of the Prince of Wales, and other members of the Royal Family. The principal entrance was embellished with much taste, and the fringe of red and white cyclamens to the groups of palms and other ornamental-leaved plants was singularly effective. The corridors were decorated with fine foliage plants, crimson tulips, solanums glistening with their brilliant red berries, cyclamens, and primulas. The large seed store, in which the Masonic banquet was held, had the windows filled with flowers, and immediately in front of the seat of the Grand Master was a beautiful bed of cyclamens and primulas; and in the decoration of the tables these flowers were employed to great advantage.

HORTICULTURAL COLLEGE, SWANLEY.—The diplomas and prizes were distributed to the students at this college on the 20th inst., by Sir W. Hart Dyke. In the course of his address the Right Hon. Baronet said it was a happy thought which planted the college in the very heart of the garden of England itself. In so far as the great question of technical instruction was concerned, they were able to congratulate themselves on the vast strides made in that direction during the last two years. There was now an extraordinary unanimity, not only in industrial but in agricultural circles, that the reproach under which England had laboured for so many years should no longer rest upon them. There had been fifteen or sixteen most disastrous years for the agricultural interest, and that had caused them to look more closely into the study of sciences. In that particular district where fruit culture existed, which was not limited in acreage, but extended for miles, it was most important for science to be so applied as to probe to the bottom the difficulties in connection with fruit culture in our variable climate.

THE SHIRLEY HIBBERD MEMORIAL.—At a meeting of the committee appointed by the Royal Horticultural Society to consider the best means of perpetuating the memory of the late Shirley Hibberd, and held on the 19th inst., in the Lindley Library, it was unanimously decided to secure a portrait of the eminent horticulturist, to be placed in the hands of the trustees of the Lindley Library, on behalf of the Royal Horticultural Society. It was further decided that the surplus remaining after the expenses connected with the preparation of the portrait have been defrayed, shall be invested in the names of trustees, to be hereafter appointed, for the benefit of Mr. Hibberd's orphan daughter. The committee appointed to carry out the scheme is composed of the following gentlemen:—Rev. W. Wilks, Secretary to the Royal Horticultural Society; George Paul, and James Douglas, representing the Council of the Society; and Messrs. W. H. Collingridge, W. Marshall, R. Dean, and Dr. Masters representing the Fellows. Many subscriptions have already been promised, and others are solicited, which may be paid to any member of the committee, or to Dr. Masters, Chairman of the Committee, at the Royal Horticultural Society, 117, Victoria Street, Westminster.

THE GARDENERS' ORPHAN FUND.—The usual monthly meeting of the committee took place at the Horticultural Club on the 18th inst., Mr. William Roupell in the chair. The minutes having been read, the Hon. Sec. made a report as to the proceedings of the recent special meeting of subscribers; the balance at the bank was stated to be £584 10s. 11d. The following special receipts were announced:—Bournemouth and District Gardeners' Mutual Improvement Association, proceeds of concert £15 10s. 6d. Collecting boxes as follows:—Mr. J. Smith, Mentmore Chrysanthemum Show, 10s., Mr. J. C. Mundell, Moor Park Gardens, £1 12s., Mr. Miller, Margate, 9s. 1d., Mr. Chapman, Yeominster, 16s., Mr. Scott, Bradford, £1 12s., Messrs. H. Cannell and Son, Swanley, £1 10s., Mr. Johnstone, Tamworth, £1 10s., Mr. C. Sutton, Sevenoaks, 10s. 6d. The guardians of the children recently placed upon the fund were appointed, in all cases the mother. A cheque was drawn for the January quarter allowances to the children now enjoying the benefit of the Fund—thirty-seven in all—amounting to £120 5s., and also cheques in payment of certain accounts. A letter from Mr. Mitchell was read, acknowledging the resolution of regret at the death of Mr. Shirley Hibberd, passed at the last meeting of the Committee.

CHRYSANTHEMUM ECHOES.

MR. ANATOLE CORDONNIER, of Roubaix, who, last year so cordially entertained some of the delegates of N.C.S. to the Ghent Centenary Show, besides being an enthusiast in chrysanthemum matters, is also much interested in fruit culture under glass. He has a large place at Baillene, and the *Revue Horticole* recently announced that the French Minister of Agriculture paid a visit to Mr. Cordonnier's new establishment there. The minister must have had an interesting visit for Mr. Thomson, of Clovenfords, in a paper read before the Galasheils Horticultural Society less than two months ago related some important facts in connection with the undertaking.

IT has always been a singular phase of chrysanthemum seedling raising that the French florists paid but little regard to the incurved section. This year, however, there have been more French incurves seen than in all the previous years put together. Probably next season we shall find that Madame Mante, a deep apricot yellow with broad petals; M. R. Bahuant, carmine-rose and broad petals; Camille Flammarion, dark violet; Madame Darrier, nankeen yellow with a purplish shade, and a few others from the same source will be useful additions to the old much-admired section of "cricket-ball" chrysanthemums.

OF all the continental Japanese, and their number as usual is legion, Cesare Costa suits the taste of the compiler of this column the best. It is a fine flower of good size and substance, and although the raiser describes it as of the colour of poppy-red, he is perhaps not so far off as some.

IN the future the competition appears to be likely to be very keen between the seedling raisers of America, France, Japan, and this country. Success will crown the efforts of him alone who can by intelligent crossing succeed in obtaining those varieties mostly in accordance with public taste. The American is certainly favourably placed because he is in close relationship with the raisers of Japan, a country where distinctness of variety in chrysanthemums is unsurpassed. The French, however, will not easily lose their hold of the market, for two years ago most of them laid in a stock of the new Japanese and American sorts. Already this season French correspondents have applied to me for the names of all the best American new chrysanthemums. Then we have our own raisers, who are certainly heavily handicapped in the race because they are obliged to rely on foreign seed; but the way in which the English florists have dealt with seedling difficulties of late years proves beyond a doubt that they are quite capable of cutting a respectable figure in competition with their more highly favoured opponents.

A CORRESPONDENT in a contemporary inquires what are the largest blooms ever shown in this country. Size, of course is relative, as, for instance, George Glenny would be a small Lord Alcester. If, however, the inquirer means what is actually the largest bloom of any chrysanthemum ever staged, the palm would probably be awarded to Mr. Edwin Molyneux's examples of Etoile de Lyon, staged last year, either at the Chiswick Conference or Kingston, I forget which. The great Spiderkry measured sixteen inches from tip to tip, but as in most of the long petalled sorts, mere length of petal does not mean size. I have known Triomphe de la Rue des Chalets to measure sixteen inches across, but for size not only length of petal must count, but depth and solidity.

MR. H. J. JONES, who had some new seedlings of his own raising this year, has sent me an instance of a green chrysanthemum. The colour, however, is only confined to about three parts of the petals, the outer ones shading off to white. The flower sent was a small incurved bloom, and the light green hue lasted till the petals had all faded.

THE floral fête and bazaar in aid of the Holmes Memorial Fund was held last Wednesday week, at the Royal Aquarium. Opinions appear to differ as to its success, and I am told the attendance was good in the afternoon. Certainly between seven and eight the building was almost deserted, and it is to be hoped that visitors came in more freely later in the evening. The balance-sheet, however, will be the best testimony as to the success of the undertaking.

FROM information just to hand I learn we may shortly have a new work on the chrysanthemum, published in Switzerland.

PELICAN is a variety much appreciated in France as a cut flower for decoration. One grower tells me he has disposed of 2,000 blooms of that variety.

NEXT February, I am told, an eminent French raiser is going to send out a large number of early flowering varieties, 125 in all. They will form the object of a special list. It is a mere commonplace to say that we hope there will be something good in such a number.

CONSIDERING the number of eminent raisers and growers in France, it seems strange to an Englishman to find, as is the case this year, so little attention paid to the chrysanthemums by the the French horticultural press. They are absolutely devoid of anything of interest concerning that flower.

FROM a note in one of the American papers, it appears that Mrs. Alpheus Hardy is a wretched grower at Short Hills. If this be so, it is to be feared that we shall not be able to do much with it, It was

expected that when it had been grown here a season or two with cool treatment, its constitution, impaired by over-propagation, would be restored. It looks like being otherwise if the same faults are still noticeable in the stock of the introducers, who, for the past twelve months, have probably had no need to work it as heavily as before.

AN American paper gives the following as the most extensive growers in that country: Pitcher and Manda, Ernest Asmos, W. K. Harris, Robert Craig, John Thorpe, and John Taylor. How about Mr. Spaulding, Tewkes and Son, Dreer, Waterer, Peter Henderson, and a few others? C. HARMAN PAYNE.

FIG CULTURE IN POTS.

By T. WAUGH, R.H.S. Gardens, Chiswick.

IN briefly describing the pot culture of the fig it is not necessary that I should refer at any length to the history of the fruit, but there are a few facts of interest. According to Nicholson's "Dictionary of Gardening," the fig was introduced to this country from Italy in 1525 by Cardinal Pole, and the trees were planted in the gardens of Lambeth Palace. A tree of the fig was also introduced from Apello in 1648 by Dr. Pocock, and planted in the garden of the Regius Professor of Hebrew at Christ Church, Oxford. The fruit of the fig is at once delicious and wholesome, and although complaints are sometimes made as to its being rather sweet, there are but few to whom well-ripened samples are not acceptable. It may also be stated as an incentive to its more extended culture that the fig will give an ample return for the attention necessary to ensure a good crop of well-matured fruit. This being the case, it is satisfactory to know that the fig is being more generally grown in gardens where the requisite accommodation can be provided for it.

There is yet much to be learnt in the cultivation of this fruit, for its requirements are not well understood by many cultivators. In the majority of gardens the figs will be found trained to the back wall of a vinery or planted in some other unsuitable position, it being evidently thought that they will succeed where hardly any other fruit tree would exist. This is a serious mistake, for when the trees do not have a full share of light it is impossible for them to bear heavy crops of richly-flavoured fruit. When a house is wholly devoted to figs, as at Gunnersbury Park or in the gardens at Chiswick, it can be readily seen what can be accomplished by skilful management. I would further add that figs are very accommodating, and may be most successfully grown in pots, to which phase of their culture I shall chiefly confine my remarks. It is a matter of great convenience that they are amenable to pot culture, as they can then be readily moved from one structure to another, which is a great convenience in gardens where the space under glass is somewhat limited.

To raise a stock of trees, whether for pots or planting out, is a very simple matter, as the fig is the most readily multiplied of all the fruit trees that have yet been introduced to the United Kingdom. We have evidence of this in the rapidity with which shoots that rest upon the surface of the soil produce roots. Layering is the most ready means of increase, but it is by no means the best, as the trees have a tendency to become one-sided, and there is frequently some difficulty in forming handsome specimens. The best method of increase is by means of cuttings, which can be struck without any difficulty. By striking the cuttings early, and growing the plants on rapidly through the summer, it is possible to obtain a fair crop in the course of the autumn. The best time for striking the cuttings is in the latter part of January or beginning of February. Select well-ripened, straight, short-jointed shoots, and if they are provided with a terminal bud, it will be an advantage. The cuttings should be from six to nine inches long, and should be cut off immediately below a joint. Insert them singly in three-inch pots filled with a compost consisting of light loam and silver sand. Give them a liberal watering to settle the sand, and plunge them in a brisk hotbed, where they will soon strike. If they are placed in a close propagating pit, or in a frame upon a bed of fermenting materials, they will not require much water. A slight syringing on fine afternoons will be found quite sufficient. As soon as the pots are well filled with roots shift them into pots two sizes larger, using a more substantial loam than for the cutting pots. Stand the pots upon the surface of the bed and expose fully to the light, and admit a little air. They soon commence to grow rapidly, and should be syringed two or three times a day, according to the state of the weather. All side growths should be rubbed off as they appear, and when the leader has increased in length by five or six inches, pinch out the point to promote for the production of lateral growth. Endeavour to obtain three growths, which will form the foundation of a useful tree. The side shoots should be pinched when about six inches long, and from the growth subsequently produced the fruit will be obtained in autumn.

Figs to be grown well in pots require a good soil and a liberal course of management. According to my experience, good fibrous loam, well-decayed manure, wood ashes, rubble, and some artificial manure forms the most suitable compost. The rubble should be passed through a half-inch sieve for the purpose of removing any pieces of wood or large stones.

In repotting, always use clean, dry, well-drained pots of medium size. Make the compost very firm with the aid of the potting-stick, but be careful not to injure the roots. Short-jointed, fruitful wood cannot be obtained without firm potting. Do not shift more frequently than is absolutely necessary after the trees are established, as by restricting the root space better crops of fruit are obtained. If the trees are full sized and occupying large pots, in repotting cut off a few of the roots, especially the large ones. By so doing, there will be no occasion to increase the size of the pots for some years, provided they have good top-dressings and the drainage is in proper order. From the middle to the end of February, in the majority of cases, is a good time to start the trees into new growth. Commence with a moderate temperature, and increase the heat as growth advances. With the increase of growth and light more water should be supplied, both at the roots and about the house. Do not allow them to become dry and remain so for any length of time, or they will be seriously injured. The trees and also the walls should be syringed two or three times daily, and the house be shut up as early in the afternoon as it is safe to do so for economising the sun heat to the fullest extent. The shoots must be regulated according to the progress made, and if they are becoming crowded, thin them out by cutting away as many as may be considered necessary. They should be stopped at the fourth or fifth joint.

When the fruit appears increase the temperature and close the ventilators rather earlier in the afternoon. The moisture, both at the roots and overhead, must also be increased.

Figs are gross feeders, and liquid manure may be freely used until the flowering period, when the supplies should be somewhat diminished. It may be as well to mention that the inflorescence of the fig is very unlike that of most fruit. Instead of being conspicuous, the flowers are arranged within the hollow receptacle, the male flowers being arranged near the apex, and the female flowers towards the stalk. If a fruit is cut open when it is about half-grown the flowers will be readily seen. Immediately this critical period is past, and the fruit beginning to swell, liquid manure may be again freely supplied. The supplies may be even more liberal than before, and be continued until the fruit begins to ripen, when clear water should alone be used, or it will be deficient in flavour.

During the flowering period the greatest care must be taken in watering, for if the soil is then allowed to become dry or kept in a constant state of saturation the crop will be spoiled. As the fruit begins to ripen admit air more fully, reduce the atmospheric humidity, and lessen the supply of water at the roots. The fruit should not be gathered until it is quite ripe, as not until then is the luscious flavour fully developed. An exception must be made in the case of fruit that has to be packed, and sent a distance. It must then be gathered before it is quite ripe. The best method of packing figs is in boxes divided into compartments; failing these, use boxes just deep enough to hold one layer. Each fruit should be rolled in a soft, dry vine leaf, and arranged closely in the box, using wood wool, or some other suitable material as packing.

On the first crop having been gathered, top-dress all the trees that may require it, spreading a little artificial manure before applying the soil. Then resume the course of procedure advised for the first crop. When the second crop has been gathered the trees should be examined, and any repotting that is necessary have attention. They may then be stood outside if the house is required for some other purpose; but, if not, let them remain, and give all the air possible, at the same time gradually lessening the water supply to promote the ripening of the wood. The water supply should not be reduced at too rapid a rate, or the trees will suffer. It is important to keep the foliage clean and healthy until the last, and then to allow it to die off naturally.

Fig trees can be wintered in any cool, light, airy structure, where there will be no risk of the frost splitting the pots. Any pruning that is required should be done some time during the winter, but if the summer management has been properly carried out but little pruning will be necessary.

There are numerous varieties in cultivation, and in the collection in the Chiswick Gardens of the Royal Horticultural Society there are seventy-five kinds. The following form an excellent selection, and are the best for general cultivation. The names are arranged in the order of ripening: Trifer, De la Madaline, Pastibiere, Trois Recottes, Du Roi, Reculver, Boulard, Doree, De l' Archipel, Bourjassotte Grise (one of the very best), Toulousienne, White Marseilles, Green and Black Ischia, Brown Turkey, Negro Largo, Hirta du Japon, Grosse Violette de Bordeaux, Grosse Serventine, Monaco Bianco, Grosse Verte, or Nebsau (one of the best of the late kinds). Where only two or three trees are required Negro Largo, Brown Turkey, Bourjassotte Grise, and Grosse Violette de Bordeaux should be selected. To these may be added Large Black Douro, a variety recently imported from Portugal, which promises to be valuable for market, the fruits being very large and of good colour.

Figs are not much subject to the attacks of insects, except during the period when the fruit is ripening and syringing has to be discontinued. Red spider and thrips are then rather troublesome, as the dry atmosphere is favourable to their multiplication. Should these pests appear remedial measures must be resorted to, for if they obtain a footing they are difficult to eradicate. The leaves attacked by these pests should be sponged with soft water and a little of some approved insecticide. The sponging repeated once or twice will check their progress and prevent their doing serious injury. There is one kind of scale that is very injurious to trees which are much infested with it. The best remedy is a strong solution of fir-tree oil applied with a stiff brush. Sometimes the trees suffer from canker, which makes its appearance in the spring and causes whole limbs to die off. No remedy, so far as it is at present known, been found for this troublesome disease, and any information regarding it would be very acceptable to the general body of cultivators.

ROYAL BOTANIC SOCIETY'S exhibitions and meetings in 1891 will be held as follows: Spring shows, March 18 and April 22; summer exhibitions, May 13 and June 17; evening fête, July 8; anniversary meeting, August 10; and general meetings, January 11 and 24, February 7 and 21, March 7 and 21, April 11 and 25, May 9 and 23, June 13 and 27, July 11 and 25, November 14 and 28, and December 12.

TRACEY'S CYMBIDIUM.

Cymbidium Traceyanum.

The extremely beautiful cymbidium exhibited by Mr. A. H. Tracey, of the Amyard Park Road, Twickenham, at the meeting of the Royal Horticultural Society on the 9th inst., created much interest among the orchidists present. It is remarkable alike for its distinct character and great beauty, and forms a capital companion to the other strong growing kinds. In general character it comes near the vigorous growing Cymbidium giganteum, and by some of the orchidists was regarded as a varietal form of that species, but a close relationship with it is very doubtful. As a matter of fact Cymbidium Traceyanum was imported with the Burmese C. Lowianum, and the specimen exhibited by Mr. Tracey made its appearance in a batch of imported plants of Low's cymbidium purchased at an auction sale about four years since. It, indeed, bore so close a resemblance to the other plants with which it was purchased, that until it came into bloom it was considered to be a strong growing form of C. Lowianum.

The growth is vigorous, and the leaves long, ensiform, and gracefully disposed. The flowers are borne on stout spikes, that of the specimen shown being about 3 ft. 6 in. in length, and bearing sixteen flowers and buds in various stages of development. The individual flowers are large, measuring, when fully developed, about four inches across. The sepals and petals are rich lemon-yellow, with more or less broken lines of bright crimson; the labellum is broad, the lower lobe distinctly revolute, and with the side lower lobes bright sulphur-yellow marked with longitudinal blotches of crimson arranged in irregular lines. The staminode is pale yellow, marked with broken lines of crimson.



TRACEY'S CYMBIDIUM, *C. Traceyanum* (Flowers yellow with crimson markings).

Cymbidium Traceyanum is so extremely beautiful and distinct in character as to be a valuable addition to the genus, and so far as is at present known the specimen exhibited by Mr. Tracey is the only plant in cultivation. G.

THE RESTING SEASON.

By J. Kipling, Knebworth

Doubtless a great number of the younger, and, therefore, less experienced cultivators have a very imperfect knowledge of the right meaning and true import of the term "Resting Season," as it applies to plant life, and who constantly labour under a misapprehension as to the right conditions that should obtain, especially as regards the keeping the roots of plants properly supplied with moisture during the period of their supposed rest.

Your very lucid exposition of the subject in all its bearings as affecting plant life in the leader in the Gardeners' Magazine of December 6 is, therefore, very opportune, and should be welcomed and closely scanned by every young practitioner in the art of horticulture. From it he may, if he will, cull much information that will serve him as a safe and sure guide in his practice of cultivating both fruit and flowers. From a want of correct ideas on this subject very many mistakes are made by the less experienced cultivators, especially in their treatment of fruit trees and other plants, grown under glass, at certain stages of their growth.

But they are mistakes rather of omission than of commission. In the cultivation of fruits under glass, a too frequent and common mistake is made in keeping the roots of the trees in much too dry a medium, from the time the last fruit is gathered, till the time again comes round for shutting up the houses with a view to commence forcing. This mistake is made in consequence of a common belief, that it is not so necessary to keep the borders watered after the trees have made their principal growth, and perfected their crops of fruit for the season, as was previously the case. Perhaps at no stage of its growth (so far from their not requiring water at the roots during that period) is it so necessary to keep the roots of fruit trees under glass, well supplied with moisture, as from the time the last fruit is gathered, till the time it sheds its last leaf.

It is during this latter stage in their annual round of activity and semi-dormancy, that the trees are not only recovering from the strain imposed by the crops of fruit, but they are also maturing their wood, and forming and perfecting the embryo flowers. Hence the great necessity for assisting the tree in the completing of its work by applying and maintaining those necessary and natural conditions in the soil about its roots. They should have not only sufficient clear water to maintain the soil in a moist state, but also supplies of liquid manure.

Experienced cultivators are careful to keep the roots of their fruit-trees under glass in one uniform state of moisture, not only through the season of active growth of the trees, but also during their season of rest. They fully appreciate the necessity for a season of rest to fruit-trees under glass as well as for those grown out of doors, but they well know that the resting season does not mean, nor yet brings about a complete cessation of all the functions carried on within the trees. The resting season of a fruit tree may be supposed to begin immediately after it has perfected and been freed from its crops of fruit, but it can only be said to rest in the same sense as a man would be resting after being relieved of some burden he had carried. The time of its principal repose would be after the natural shedding of its leaves; hence called its dormant stage. While a tree retains any of its leaves a circulation of the sap must be taking place within its structure. As stated, the time of a plant's principal repose is after it has naturally shed its leaves, but as only part and not all of the functions within it have ceased to be active during that period, it must be of the greatest possible interest and practical benefit to the cultivator to know precisely what those functions are.

Does a circulation of the sap continue to take place through the branches and shoots of a tree after the leaves have fallen, and in what degree? If not, by what means is the requisite amount of sap maintained in all the parts of the tree to keep the shoots and buds in a fresh and healthy state? These are points in the life history of deciduous plants of which ordinary cultivators have but a hazy knowledge. A full elucidation of them might lead to practical results, and be the means of giving the key to the true and primary cause of bud dropping of fruits, especially of peaches grown under glass. As this is a subject well worthy of discussion in your pages, perhaps some of your scientific readers will kindly favour us with their views on the matter.

Diseased Grapes from Chiswick were submitted to the Scientific Committee of R. H. S. at the meeting held on the 9th inst. The grapes had been attacked with fungoid disease, and Dr. Masters pointed out that the disease has been described by Mr. Worthington Smith, and called attention to its resemblance to and possible connection with "scald," a much commoner complaint in which no fungoid growth has been discovered.

"DAMPING" IN CHRYSANTHEMUMS.

THERE is, in my opinion, a nearer approach to unanimity of opinion upon this question amongst practical growers than your correspondent Dr. Mead appears to recognize.

The solution put forward by Messrs. Molyneux, Gibson, and Clarke, although differing somewhat in form, is identical in substance, and is, I believe, founded upon the correct appreciation of the causes which induce the unpleasant result known as "damping." We may at once eliminate from the inquiry the so-called damping which attends the natural decay of the flower. Also the damping due to drip need not be considered, for it is obviously avoidable by common carefulness.

The "damping" which gives so much trouble to some growers is that so well described by Mr. Molyneux and already quoted by your correspondent. For myself, I may say that loss of blooms from damping of this character is with me, now, practically unknown, a result I consider entirely due to ordinary precautions based upon what I deem to be the true causes which lead up to the evil complained of.

The primary, or immediate cause, is undoubtedly a chill. Whether we adopt the plain and simple language employed by the authorities whom I have named, or call it "checked transpiration," it amounts simply to this, that either by a draught, or undue lowering of the temperature of the house, especially if accompanied by a damp atmosphere, or some kindred cause, a check is given to that emission of moisture from the florets of the flower to which, using the analogy of the human body, we might almost apply the term perspiration.

Exactly those conditions which would give a chill, and possibly a cold to a human being, will, for analogous reasons, similarly affect the flower of a chrysanthemum. And here we come to the question of the over-feeding, or, indeed, of high feeding not necessarily being overfeeding if judged from the standpoint of the necessity for producing blooms of the highest excellence and size.

I cannot accept the suggestion that "over-feeding has little or nothing to do with damping." On the contrary my experience has convinced me that Messrs. Molyneux, Clarke, and Gibson are absolutely correct in attributing to it the character of the chief inducing cause of damping.

As a chill may be termed the immediate cause, so high feeding—whether with natural or artificial manures, but more especially with the latter by reason of their more stimulating character—must be held to be the chief inducing cause of damping. In other words, high and stimulating culture creates a flower more susceptible of damping than one grown under more natural conditions.

A chrysanthemum grown naturally will not damp under conditions which would at once create damping in the blooms of a plant grown upon what I may call the high-pressure system. I have proved this doubly. Firstly, by placing a plant grown under each system in a greenhouse, and then creating the conditions which result in damping; and, again, by planting out of doors in July some of the surplus plants from my last potting side by side with plants grown in the open border from the outset. In both cases the results were marked. In the greenhouse the highly fed plant fell a victim to the disease, while its more hardy companion escaped. In the open ground the flowers on the plants which had been planted out damped under stress of the heavy autumn dews and early frosts which left the border flowers uninjured.

I cannot regard the so-called "dry rot" attending the non-development of the blooms of an over-fed plant as being the "opposite of damping." On the contrary, I should prefer to consider it as an extreme example of that form of damping which attends the natural decay and death of a flower. In the case referred to overfeeding had probably impaired the vitality of the roots, with the result that the plant had not sufficient strength to develop the solid buds, premature death and decay following. To my mind, this case tends rather to confirm than to oppose the generally accepted view as to the effect of over-feeding.

In addition to the damping resulting from improper treatment after housing, there is the damping due to the plants being left out until the buds have partially opened, and have been subjected to the ill results of cold autumn rains and heavy dews. The cause of the damping in this case is similar in principle to that already described. To avoid it the remedy, or rather preventive step, is obvious. House the plants as soon as the buds show colour, or afford to them effective protection out of doors, which is better still, for the housing of the plants should be deferred until the last moment consistent with safety.

In the first named class of cases the remedy is equally plain. Avoid all draughts in the house, however slight. Let there be plenty of ventilation and air when the outside atmospheric conditions are favourable, but permit no through draughts. Coarse tiffany nailed over the ventilator openings is very useful, as it tends to break up the air on entering the house, and so prevents a steady draught. Keep the *windward* ventilators closed as much as possible, and ventilate from the leeward. Some years ago I had some tall plants of Madame C. Audiguier, Belle Paule, and Mrs. J. Wright housed in a rather low-roofed vinery. One warm night the top ventilators all along the house were left open about two inches. In the night the wind changed, and a bitter blast blew through the crevice. Next day a hot sun developed the mischief wrought, and every bloom without exception in a line from one end of the house to the other just under the ventilators damped beyond redemption. And not another flower in the house suffered. Here we have an instance of the effect of draught.

Avoid unnecessary damp in the house. To this end water the plants only in the morning, and as little as possible when the weather is very cold, so that condensation on the roof, with the attendant damp atmosphere and drip, may be reduced to a minumum. Do not let the blooms be nearer to the glass than nine inches, thus avoiding the effects of quick outside variations of temperature. Occasionally the cause of a damp atmosphere may not be at once apparent. For instance, in one corner of a lean-to greenhouse I once found that the flowers showed an unaccountable disposition to damp. Investigation showed that a gutter on the other side of the wall was defective, and that at the particular corner the rain soaked into the brickwork. Not very apparent, but quite sufficient to create a local atmospheric dampness. The gutter mended, the corner lost its ill-repute. So it behoves us to seek for more remote and less obvious causes if those of a more apparent character do not present themselves.

Why a damp atmosphere increases the ill-effects of cold and draught is obvious. We know that we are affected by damp cold in a far greater degree than by cold accompanied by a dry atmosphere. So with the plant.

Again, keep the temperature of the house as equal and steady as possible, and avoid a too low night temperature due sometimes to lazy or unintelligent stoking of the fires. A small fire, even in fairly warm weather, and always when the atmosphere is charged with moisture, is useful to keep a fresh and moving air within the house. In case of serious fog close the upper ventilators altogether.

Do not *over*-feed, for all excess of feeding produces a gross and unwholesome condition, which, whether in man or plant, is productive of liability to disease; but high culture, of course, there must be if the best results are to be attained. It follows, therefore, that some liability to damping must be incurred, but if the foregoing recommendations are observed I am confident that the risk will be reduced to a minimum, and that no grower of chrysanthemums need lose one per cent. of his blooms through the disease called "damping."

The Elms, Foot's Cray, Kent. CHARLES E. SHEA.

Damping in chrysanthemums is undoubtedly the most serious evil cultivators of large blooms have to contend with. I do not remember seeing an instance of it in flowers produced upon bush plants, which of course would not be remarkable for their size, and consequently would not be so fleshy in the florets, hence the cause of their non-damping. Dr. Mead, in his communication at page 788 on this subject, quotes Mr. Briscoe-Ironside as saying that "Damping is generally confined to blooms on plants grown for size, or plants which have lost a great deal of their foliage from a too early ripening." The fact of the plants having lost much of their foliage does not, in my opinion, prove that this was caused by a too early ripening, as I never saw plants which ripened their wood early lose their leaves to a great extent. If they lost much of their foliage something else was the cause of this defect. It is impossible for chrysanthemums to lose their leaves through the wood being ripened early, because those which lose much of their foliage early do not ripen their wood properly. Without foliage in the early stages of maturation the wood does not become properly matured. Foliage is essential to the completion of the ripening process.

The loss of foliage at an early stage is caused by defects in culture, such as by over-watering, or keeping the soil too dry. The drainage may become defective, and other things may occur which are not strictly in keeping with their well-being. Plants that ripen their wood too early, but are otherwise in good condition, retain their foliage in many instances long after the blooms are developed. I should be safe in saying that all cultivators have, during the season, some buds which perish from "dry rot," as mentioned by Mr. Briscoe-Ironside. Their unsatisfactory condition is very often caused by supplying the plants with stimulants of too high a strength at the time when the buds are forming, or directly afterwards. Selecting the buds too early of some varieties will induce them to go off suddenly in the manner indicated, instead of developing their florets properly. According to my experience, damping occurs chiefly among plants that have been growing so luxuriantly that ripening of the wood is impossible. This experience is just the reverse of the theory put forward by Mr. Briscoe-Ironside.

Small growers of large blooms, but not intentionally for exhibition are not so much troubled by damping, but directly the production of exhibition blooms becomes the main object, the damp fiend steps in and causes considerable losses.

When chrysanthemums are cultivated in the usual way for the production of large exhibition blooms and are placed in a house in which a close atmosphere cannot be avoided, it will be quickly seen how much sooner the large blooms will damp as compared with the small blooms on plants that have not been disbudded to any considerable extent, especially if the sun is allowed to shine fully upon the flowers when expanding. This shows that the florets are very soft as compared with those of smaller flowers.

A case illustrating the failure of plants to develop their blooms without damping under unfavourable atmospheric conditions came under my notice this season. The plants had been fed freely, and at one time a breakdown in their growth was expected owing to an accidental overdose of a stimulant. In a house exactly like what I have referred to the plants failed to develop their blooms beyond two or three inches from the bud stage without damping. I advised their removal to another house where they would have a buoyant atmosphere, as the result of a judicious application of heat and a free circulation, but without being exposed, and no direct draught. They were accordingly removed, and also shaded and carefully watered, stimulants being given very sparingly. In a day or two a great change came over them, the blooms subsequently produced were successful in winning many prizes in close competitions. If Dr. Mead has not

heard of any satisfactory results following such treatment, I beg to draw his attention to this fact, which convinces me that the remedy I have so strongly advised is the right one.

Dr. Mead states that his plants were this year supplied with natural manures in doses of too high a strength, and he found them losing many blooms in consequence. This statement directly proves that over-feeding is the direct cause of the evil. He corroborates fully my views a little further on, where he says "Finer and more magnificent foliage I never saw on the plant that damped." By the exclusive use of clear water after damping sets in new roots are formed, as can be easily seen by turning a plant out of its pot. When the plants are supplied with clear water only for a time, numerous white roots will be seen among the brown roots round the outside of the ball. This, in my opinion, is conclusive as to discontinuing the use of stimulants at that time being the proper thing to do. When compiling the statistical returns for the Chiswick conference last year, I noted that of sixty-seven persons who mentioned the subject of damping, no less than forty-one attributed the mischief to excessive use of stimulants. Several maintained that immaturity of the wood was the primary cause, which is in direct opposition to the theory of Mr. Briscoe-Ironside.

As suggested by Dr. Mead in the closing paragraph of his article, there is no doubt as to the collection of opinions based upon actual practice being the correct method of solving any difficulty which arises in the cultivation of chrysanthemums. E. Molyneux.

As a grower of a large collection of chrysanthemums, I was naturally very much interested in the article by Dr. Mead, and refer to it for the purpose of thanking him for his suggestions. It will be remembered that in your "Christmas Number" of the Gardeners' Magazine for 1889, I advised the use of lime as a preventive of damping. Has any reader tried it in accordance with my suggestions? I have again this year used it for over four hundred plants grown on the single stem system, as I then recommended, and have not seen the slightest tendency to damp in their flowers. On the other hand, of seventy plants grown without lime, six have "damped." I am fully convinced that Mr. Molyneux is right, both in his description of damping and in his views as to its cause. Any one may put the matter to a practical test by treating one or two plants in a manner exactly opposite to what Mr. Molyneux advises should not be done. I hope other growers will help to clear up this matter by giving the results of their experience. I am sure Dr. Mead's gardener is not the only man who, after nearly twelve months of hard work and careful watchfulness, has shown a rueful countenance when making the confession "damping again, Sir."

Wanstead, Essex. W. Morgan.

RENOVATING BORDERS OF LATE VINERIES.

By C. Warden, Clarendon Park Gardens, Salisbury.

The manner of dealing with mid-season and early houses of vines during September is now pretty well understood; but it is not quite such a simple matter, neither is it quite so safe in renovating borders of late houses where a supply of grapes has to be kept up well into the new year.

Effects of Deep Rooting.

Some may say, "when this can be done, what necessity is there for pulling them about." Quite so, if the grapes produced are quite satisfactory; but if not so, the cause of the evil should be sought out and remedied. The most frequent cause of unsatisfactory crops of grapes is the roots pushing too deep down into the border. The border may have been made with the best material, and every provision made for carrying off superabundant water. Yet the vines, after a few years, may not produce perfectly-finished grapes, even under the most skilled management. Many have been in this predicament, and have frequently asked themselves and wondered why this should be, and very frequently have mistaken the cause. Vine borders are generally made piecemeal, and when that is done the vines continue in a satisfactory manner for a much longer time than when the whole of the border is made at once. The young vines are planted, and grow with great vigour. These young specimens are pinched, stopped, pruned, and receive close attention in regulating the top growth, but their roots run at will in all directions, and many of the strongest strike down to the bottom of the border, and run among the drainage, where they meet with much to assist them in making vigorous wood growth. Especially is this so when liquid manure is being used. But when these roots become stronger, and travel to a greater distance, their force becomes the more felt, and what they obtain from such positions is not of much aid in the production of high-class fruit. For the first few years after planting nothing of any account will be felt of this state of things. But, however well the surface of the border may have been attended to, the effects of deep-rooting will be seen. It is when the vines have reached this stage that the advocates of the short-term system would root them out, and replant a new set of canes. But unless one has an unlimited supply of new soil, and can afford to have one house without fruit for a season, the short term practice cannot be adopted. Where there are only a few houses, and the family has become accustomed to look for grapes at a given season, it is always a somewhat serious matter to fail, even in a small degree, to supply what is expected. In this case, it is by far the best plan to take the vines in hand as soon as it is seen that something is wrong.

Soil for Vine Borders.

Where renovating is thought of the first thing to be considered is some new soil to lay about the roots after lifting, for if it is not intended to renew the whole of the border, some portion of the soil should be new if only sufficient to cover the roots of the vines when relaying them. They strike much more readily into new loam than in the old soil of the border. The amount of soil required must be regulated by the extent of border to be dealt with and the quantity of soil at command. If the loam has not been cut no time should be lost in obtaining supplies, and we should give preference to fresh cut loam to that which has been laid together sufficiently long for all the fibre to have decayed. Great care will be necessary in treating the loam that is cut so late in the season, as it is too wet to be used. It should, therefore, be laid out thinly in some open shed where it will be convenient for chopping up and having the other things added to it. It is seldom safe to make a vine border of loam alone, although while this is fresh and contains plenty of fibre the vines will appear to have all that they desire. When this fibre has decomposed the disadvantage of using loam only will be seen. The first addition that should be made to the loam is something to keep it open, and nothing meets the case so well as old mortar rubble. Broken bricks also answer very well. These may be added in the proportion of one load of bricks or rubble to six of loam, and if a few half-inch bones can be had, say, two cwt. to each six or seven tons of soil, they will prove of lasting benefit. Wood ashes are also very valuable, owing to the amount of potash which they contain. An endeavour should always be made to secure at least one cwt. of this material to each ton of soil.

Importance of Calcareous Matter.

In the event of no mortar rubble being available for use, care should be taken that lime is added in some other form. If the soil is taken from a chalky down, considerable calcareous matter may be found in it but this is generally somewhat deficient in virgin soils. Where loam taken from a pasture is known to be deficient in lime, it should have it added in the proportion to one barrow-load of lime to twelve barrow-loads of soil, and be thoroughly mixed, and the mixture be allowed to lay in the heap several days before using. I have used chalk in the place of mortar rubble with the very best results. The loam, when moderately dry, should be chopped into small pieces, and the whole, when ready, be thoroughly well mixed.

Lifting the Vines.

The manner and time of lifting must depend somewhat upon circumstances. In any case it would not be safe to do it before the grapes are cut, and in many cases the work would be better deferred until the beginning of February; but that is not practicable with us. Where the borders of the vineries to be dealt with are partly inside and partly out the work of renovating is greatly simplified, as one may with perfect safety lift the roots of one half one year, and the other half at some future period. In commencing, open out a trench at the extreme outside of the border sufficiently wide to be able to work in it. Shovel out all soil, and cut away any roots that may come in the way, right down to the drainage, which should be removed. When this trench has been formed, proceed to fork down the soil of the border into this trench, where it must be kept shovelled out, so as to have a clear trench to work in, taking care not to injure the roots as the work proceeds, and when those exposed are much in the way, one person should hold them aside while the other removes the soil. It is not well to take too much of the border in hand at one time, as it is very necessary that the roots be exposed as little as possible to the atmosphere. In removing the soil, the drainage of the border will have been displaced, and it should be thrown out on one side by itself, so that what is wanted may be used again. The necessary amount of border having been opened out, the drainage should be arranged using the rougher portion of the materials at the bottom. Then add the smaller rubble. For a border two feet six inches in depth, six inches of drainage will be sufficient, but for one three feet an inch or two more may be used. While the drainage is being arranged the roots may be tied up in bunches, and should any part of the old soil have to be used again, it should be put at the bottom, immediately over the material with which the rubble is covered. For this purpose turf laid grass side downwards is perhaps the best. The soil as it is being worked should not be so wet that it cannot be trampled upon without being converted into a pasty state. The lower layer should be made firm as the work proceeds by moderate treading. No roots should be laid in the lower half of the border, but a portion of them may be carefully covered with soil spread out when the space has been about half filled. The second and third layer should be formed in a similar manner, taking care to place the last lot of roots within three or four inches of the surface. It will not be well to water at this season of the year, as new soil always contains considerable moisture. Where only one border is provided for the vines, and it is intended to have a crop the following year; only a part of the roots should be lifted, say about one-half, leaving those near the stems undisturbed. The manner of carrying out this would be much the same as that last described.

Excess of Moisture Injurious.

Whether the borders dealt with are inside or out, care must be taken to prevent their becoming saturated either from the drip in watering plants or the heavy rains until the vines have become established, and the roots running in the new soil, or they will not push freely into it. Shutters or glass-lights are the best coverings for outside, and with a different arrangement of plants inside the evil may be obviated.

I would strongly advise those who are unaccustomed to make up soil for a vine border to see that sufficient material is added to keep the soil open. Vines have been grown in a certain garden near here in nothing but broken bricks and rubble, with applications of manure, but no soil, and they are in every way satisfactory, and have been so for many years.

HAWTHORNDEN APPLES.

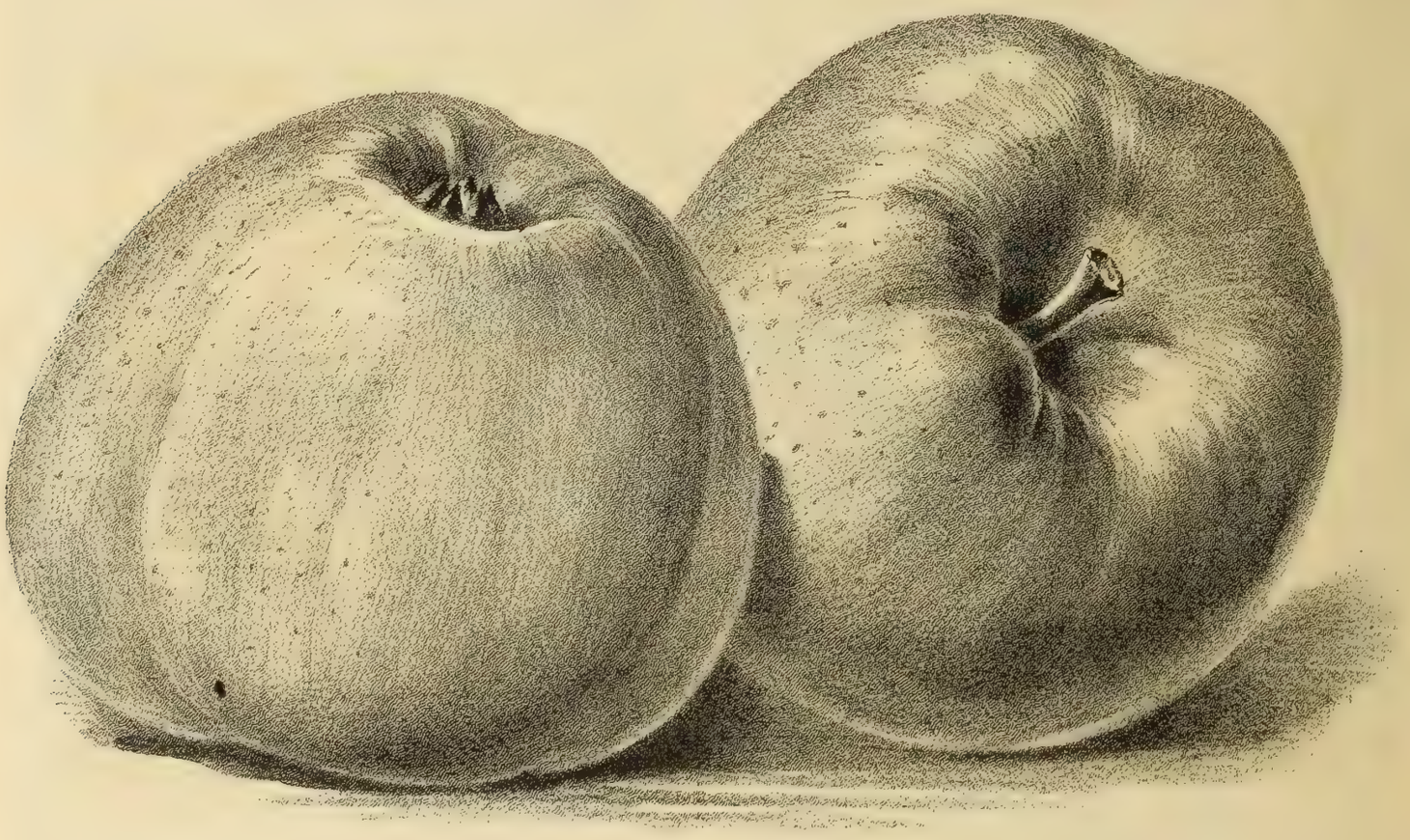
FOR some years past there has been considerable confusion among cultivators of hardy fruits as to the identity of certain of the Hawthornden apples, and as the several varieties forming the small group differ in their adaptability for the various systems of culture and in their seasons, as well as in character, it is a matter of some importance to have the matter cleared up. The confusion has arisen chiefly from the failure of cultivators to recognize the fact that there are three distinct apples belonging to the Hawthornden group, and not two only, as so generally considered to be the case. To present the matter in the clearest possible manner, it must be stated that the varieties known as the Hawthornden, New Hawthornden, and Winter Hawthornden, are so distinct from each other that those who have had some experience in handling apples should not have much difficulty in distinguishing them when represented by typical samples. The first named of the three is acknowledged to be quite distinct; but for a considerable period there has been an impression that the other two are identical, and that there is full justification for using the names New Hawthornden and Winter Hawthornden indiscriminately.

The Hawthornden, known also as Hawthorndean, Old Hawthorndean, and White Hawthorndean, is represented in its true character in the accompanying illustration, the fruits from which the drawing was made having been gathered from a tree in the best possible condition. The fruit of the Hawthornden is frequently described as of medium size, but when the trees have the advantage of skilful cultivation, as in this instance, it attains a large size. It is roundish and somewhat depressed with a rather prominent ridge on one side extending from the base to the apex. The skin is greenish-yellow, suffused with red on the side exposed to the sun; eye of medium size, closed, and with erect pointed segments; and the stalk is of medium length, stout, and inserted in a rather deep and wide cavity. The flesh is tender, juicy, rich, and briskly flavoured.

The fruit is available for use from the end of September until Christmas, and occasionally it may be had in good condition for some time in January, but excepting in late districts its season practically ends with December. It is a free and constant bearer, producing excellent crops at a comparatively early period. For this reason it is one of the most profitable culinary apples, in use during the autumn and early part of the winter, we have for the garden. The origin of the Hawthornden is unknown. We learn from the "Fruit Manual" that it takes its name from Hawthornden, a charming place near Edinburgh, well-known as the birthplace of Drummond, the poet. The earliest mention of the variety was in the catalogue of Messrs. Leslie and Anderson, of Edinburgh, and it was introduced to the Brompton Park Nursery in 1790, then famous for its fruit trees.

The variety known as the New Hawthornden or Silver Hawthornden has fruit similar in form and colour to that of the Hawthornden, but the points of difference are sufficiently well marked to admit of examples of the two varieties being readily distinguished. The fruit of the New Hawthornden is large, oblate, and slightly angular; the skin lemon-yellow with markings of russet; the eye partially closed and placed in a rather wide basin; the stalk short, stout, and deeply inserted; the flesh tender and agreeably acid. The tree is a fairly good bearer and the season extends over September and the following month, the fruit seldom remaining in good condition after the end of October. New Hawthornden was introduced by Mr. Rivers in 1847, but it has not been largely cultivated.

The Winter Hawthornden, also known as the Red Hawthornden, differs materially from the New Hawthornden with which it is so frequently confounded. The fruit is of large size, roundish ovate, and with distinct angles which form small but prominent knobs at the apex. The skin is rich yellow, bright red on the side exposed to the sun, with occasional crimson markings; eye small and partially open, but the segments are slightly deflexed instead of being connivent, as in the case of the New Hawthornden; stalk moderately stout and deeply inserted, and the flesh is firm, rich, and juicy. The tree is vigorous in growth and free and constant in bearing. It makes a capital standard, and is therefore admirably adapted for orchard planting as well as for garden culture. The season extends from about the middle of October to the middle or end of January.



CULINARY APPLE, *Hawthornden*.

A YELLOW CHRYSANTHEMUM SPORTING TO A WHITE.

IT may interest the writer of "Chrysanthemum Echoes," in your pages, to know that the variety Golden Madame Domage, an early summer pompon, which we grow and employ largely for bedding out, has frequently sported with us to a white. Whether it is an original sport from yellow to white, or only a "revert," I cannot say. But as it bears the name, Golden Madame Domage, it may probably be a French-raised seedling; and, in this case, its sporting to a white may be of interest as helping to clear up a doubtful point.

Knebworth. J. KIPLING.

KEW BULLETIN for the current month contains reports on the cultural industries of Gambia, and the production of prunes in the South of France, and the cultivation of perfumery plants in the British colonies.

GUNNERAS.

For beautifying water scenes and for the formation of bold masses on the lawn and in the less highly-dressed parts of the pleasure-grounds, the large growing gunneras are unsurpassed. Robust in growth and stately in appearance, they are perfectly hardy, and when established they require but little attention. There are no hardy plants at present in cultivation in English gardens to surpass them in the size of their leaves or in nobility of aspect, and they have an immense advantage over the giant heracleums and ferulas in the length of time the foliage retains its freshness and beauty. When grown under favourable conditions, the gunneras present an attractive appearance from the time they commence to make new growth in the spring until the autumn, and the conditions under which they can be the most successfully cultivated are by no means difficult to comply with.

The two most stately species now in cultivation are Gunnera manicata and G. scabra, and of these the first-named attains the largest dimensions. This magnificent species is a native of the South of Brazil, and is usually found growing in moist and comparatively shaded positions. It luxuriates in a position alongside a pond or stream, where the roots can have an abundance of moisture even if unable to lave in the water. Planted almost close to the margin of the pond, lake, or stream, it will grow with great vigour, and produce leaves of enormous dimensions. Specimens occupying positions so eminently favourable will attain to a height of between eight and nine feet, and produce leaves from six to seven and a-half feet in diameter, as in the case of the remarkably fine example in the Cambridge Botanic Gardens. When well-established this species flowers rather freely, and the bold, brush-like flower-spikes rise to a height ranging from three to four feet, and although not particularly beautiful, they add materially to the general effect.

The older and better known G. scabra, represented in the accompanying illustration, is less in stature than G. manicata, but it is equally effective. This species revels in the moist shady ravines of the South American Andes, and its large masses of foliage were described by Darwin as presenting "a noble appearance." It is evident that this species attains to larger dimensions in its native habitat than with us, for a specimen found by Darwin growing on the cliffs at Chiloe had leaves which measured eight feet across. Under cultivation in the United Kingdom the plant attains to a height ranging from four to six feet, and the average diameter of fully developed leaves is five feet, measured, of course, across the broadest part. It will thrive in much drier positions than G. manicata, and is therefore better adapted for the formation of bold groups in the pleasure grounds some distance from water. Notwithstanding its adaptability to comparatively dry positions, it attains its fullest development when it has the advantage of plenty of moisture at the roots. At Fota, near Cork, Mr. Osborn has employed it with singularly good effect as a fringe to an island devoted chiefly to the collection of bamboos, for which the gardens have for many years been specially distinguished. Here a most vigorous growth is made, and the large masses of foliage present a striking and at the same time very pleasing contrast to the light and feathery growth of the bamboos.

These two gunneras are hardy in this country, but as a precaution against injury to the crowns during weather of exceptional severity it is a good practice to heap some loose material over them early in the winter, and allow it to remain until the spring. For the protection of those occupying prominent positions in the pleasure grounds cocoa-nut-fibre refuse will be preferable, but for the others litter from the stable should be used. A moderately rich soil is essential to success, and the practice of applying a liberal mulching of partly decayed manure in the course of the winter or early in the spring can be strongly recommended.

The best method of propagation is by off-sets, which, if taken off carefully and planted in well-prepared soil, quickly become established, and soon attain to goodly proportions. They can be readily raised from seed, but the seedlings make such slow progress during the earlier stages that a considerable amount of patience has to be exercised. In raising a stock from seed the sowing should be made within a short time of the ripening of the seed, and it will be an advantage to sow in shallow boxes and place in a cold frame. They ought to remain in the boxes until the spring, when they should be transferred to a bed in the reserve ground or kitchen garden.

W. B.



GUNNERA SCABRA.

DIGGING AND RIDGING UP VACANT GROUND.

The above operations are very familiar to those engaged in garden work, for the practice of turning up the soil with a spade or similar implement has been adopted from a very early period in the world's history until the present time in all gardens and allotment holdings: the plough being used for the same purpose in fields. Although this method of cultivating dates from such a remote period it is frequently performed in such a very clumsy and unworkmanlike manner as to suggest to my mind the necessity for a brief note on the subject. It is to be hoped that its perusal by amateurs and those whom they employ to do the manual labour in their gardens may lead to the carrying out of such simple yet important work in a proper workmanlike manner.

In digging a piece of vacant ground the first thing, after it has been dressed with a few inches thick of the best manure obtainable, is to make an opening one spit deep at the lowest end, and wheel the soil to the other end at which the digging is to be completed. On the other hand, if the strip of ground should be of extra width, an opening half the breadth should be made; tipping the excavated soil down on the

other half close by for filling the last trench at the same end. But it is better, when the piece of ground is not inconveniently wide, to dig it the whole width at the same time, as the surface can then be kept pretty level.

The cultivator should keep well over his spade. He should hold the crutch of the handle in the left hand, and gripping the handle half way down with the right, then by the combined aid of the right foot and arms drive the spade down into the soil to its full length, then turn the spit of soil top side down into the previously made trench, breaking the soil fine with the spade, and working the manure down to the bottom as the digging proceeds. Where the soil is shallow and that portion of it resting upon the subsoil is poor, the bottom spit should not be brought to the surface but simply loosened, the manure intermixed with it, and then covered with the surface soil as before. The depth of such ground should be increased by frequent additions of any kind of fairly good soil—roadside parings and such like—that can be obtained.

Ridging up the soil is frequently had recourse to by those having a heavy and ungenial staple to deal with. In digging the ground in the autumn after the removal of the summer crops, it is simply manured and the soil thrown into ridges as the work is being done, and left to be acted upon by the weather until a few days of the time for cropping it in spring. Advantage should be taken of dry weather for levelling and cropping it.

Longford Castle, Salisbury. H. W. WARD.

ORCHID NOTES.—THE ORCHID ALBUM.

ODONTOGLOSSUM URO-SKINNERI.—This distinct and rather handsome species forms plate 417 of the *Orchid Album*, and it is only fair to remark here that not only is the high character of this excellent publication kept up, but it is safe to assert that no better finished, coloured plates of orchids have appeared in any previous numbers of the publication. O. Uro-Skinneri is well known to orchid growers, although it is not seen so often in collections as it ought to be, or as it used to be some fifteen or twenty years ago. I used to visit the collection of orchids of the late G. F. Wilkins, Esq., when the plants were under the care of Mr. John Ward; and in August this fine species was always conspicuous by its tall, robust spikes, about a yard in length, well furnished with its distinctive flowers; the sepals and petals heavily barred with brown; the labellum richly mottled with rosy purple. It was grown in the cool house, and treated exactly like Odontoglossum crispum. It was discovered by the late W. Skinner, who sent it to Messrs. Veitch, of Chelsea, in 1854; but the firm state that, "owing to the defective treatment of cool orchids at that time, none of them could be induced to flower until 1859." Mr. Skinner wrote to the effect that he "found it on rocks at a considerable elevation, near the village of Santa Catarina, twenty-eight leagues from Guatemala." It is very nearly allied to O. Bictonense, also a discovery of W. Skinner's, in Guatemala; but they are certainly specifically distinct, and O. Uro-Skinneri is the most beautiful. The cultural conditions under which they are found are also different, for, instead of O. Bictonense growing on rocks, it is always terrestrial, and found half buried on mossy banks.

CYPRIPEDIUM MARSHALLIANUM, a rare and distinct hybrid, is also figured. It had C. concolor for one of its parents, and like that species is slow of growth and increase, and unless the same cross is obtained again, it is likely to pass out of cultivation. It is one of Messrs. Veitch's seedlings raised about twenty years ago from C. venustum pardinum crossed with the pollen of C. concolor. Now there are so many more beautiful hybrids in existence, this will probably disappear from cultivation.

C. ŒNANTHUM SUPERBUM, beautifully figured at plate 420, is a case in point; it is not only a beautiful garden hybrid itself, but being the progeny of C. Harrisianum crossed with C. insigne Maulei, it is free in growth, and will not soon pass out of existence, even if the same cross could not easily be reproduced. Messrs. Veitch state in their excellent "Manual of Orchidaceous Plants," that C. œnanthum was the first hybrid cypripedium to flower, of which one of the parents was itself a hybrid. They also state that there is greater variation in colour and in form amongst the progeny when a hybrid has been used as one of the parents. The original form of C. œnanthum superbum was, if I recollect, rather different from the *Orchid Album* plate, especially in the upper or dorsal sepal, which had more white on the apical portion; and the blackish purple spots were larger. Messrs. Veitch's own description of this fine variety may be worth quoting. "Flowers larger, brighter, and more varied in colour [than the type]; upper sepal deep claret-red, with broad lines of blackish-purple spots along the veins, which, where they enter the broad white margin, are mauve-purple; petals shaded with yellow brown." The plant is easily grown and can be freely propagated.

DENDROBIUM CHRYSOTIS. — This fine golden-flowered species is well figured, and is stated to be "a grand and free-flowering species." Grand is a strong word, and some less lofty description might have been used. That, however, may be a matter of opinion, but "free-flowering" I have certainly not found it to be, and I have tried to grow it well, as it produces its flowers in September. I have only been able to flower it twice, and I read in the "Orchid Manual," under Dendrobiums, page 49, that Mr. Day, who introduced it through his nephew, Captain Williamson, from the Assam Hills, was unsuccessful in flowering any of the plants retained for his own collection at Tottenham; a difficulty frequently experienced by other cultivators. The plant is stated to have stems six or eight feet long. I have had stems three or four feet and well ripened, the plants grown in baskets near the glass. Those who can flower it freely are to be congratulated, for I do not know any dendrobium that produces such beautiful rich golden flowers in September.

LOSS OF PEACH BUDS.

By W. IGGULDEN, Marston House, Frome.

IN the able article on "The Resting Season" (page 771) reference is made to the frequency with which peach and nectarine trees under glass shed their buds prematurely, the writer giving it as his opinion that dryness at the roots during the resting period is not infrequently the cause of this unfortunate occurrence. Undoubtedly very much harm has been done by allowing the borders to become excessively dry, and to this may rightly be attributed many partial or complete failures of the trees to produce a crop during the following season. But dryness at the roots during the winter is not the only cause of bud-shedding, as I have had ample opportunities of demonstrating to my own and other growers' satisfaction.

In some instances excessive vigour has much to do with this premature bud-dropping, more falling from vigorous trees and strong branches than from the small and comparatively weakly shoots. Then, again, some varieties are more liable to bud-shedding than others, and none more so than nectarine Lord Napier. Mr. Hudson, who grows peaches and nectarines well at Gunnersbury House, once assured me he obtained but few fruit of this popular variety from strong or moderately strong shoots, the bulk of the crop being produced by what by comparison might be termed spray. This variety has never proved quite so bad as this with us in a purer atmosphere, but yet the variety seldom fails to shed buds from strong branches. In a newly-built peach house in this neighbourhood the trees, some of them of large size when introduced to the structure, grew with great vigour almost from the outset, and in spite of root-pruning, careful attention in the way of watering the border, and an extra amount of fire-heat, to compensate for insufficiency of sunshine owing to the aspect being due west, shed the greater portion of their buds for two years in succession. I was consulted frequently as to the probable cause of this, and well knowing how carefully the trees had been attended to, my advice of letting the trees right themselves was taken, the only stipulation being the avoiding of manuring the borders in any way. The result was most gratifying to all concerned, myself included as a matter of course. Last season the trees with one exception ripened a grand crop of fruit good enough in point of weight, quality, and finish generally for anything, while nothing could be more satisfactory than the present state of the trees. The one exception is a young tree planted in the place of an older one that was not true to name and not valued. This young tree shed most of its buds last spring, and I am not at all pleased with the appearance of the buds at the present time. Much the same thing happened with a young tree of A'Bec planted here in the earliest house. Last summer for the first time it yielded a full crop of fruit. All the while it was growing strongly, and it quickly covered a trellis space fourteen feet by eight feet; it annually shed the best portion of its buds, root pruning not effectually checking either excessive rigour or bud shedding, but letting it have its own way did. In other words the habit was outgrown.

The foregoing are therefore two distinct causes of bud shedding, and there is yet a third to be added, this being an imperfect resting period. Of the necessity for this rest little need be said, especially after the article already alluded to; but there are numerous cultivators who, while fully recognising the necessity for it, yet fail to accord the trees the much needed perfect rest. For a time, or till the leaves have largely fallen, the houses are set as wide open as possible. Then comes the time for housing a large number of pot plants, foremost among these perhaps being the stock of chrysanthemums. From that time forward the pot plants stored in the peach houses are most studied, especially if they happen to be chrysanthemums. Very much less air is given, great pains are taken to exclude damp, and frost admitted would mean ruination—not to the trees, as that would really do them good as being part of the resting *regime*—but to the tender pot plants. Days may elapse before the house is opened, and then perhaps only for a few hours. The effects of the turning on of fire heat—an increased temperature and sap moving atmosphere—may be much the same in either case, namely, an early and dangerous excitement of the buds. Then arrives a time when it is thought expedient to again widely open the houses, and even frost may be admitted after the chrysanthemums are past their best. This alternate exciting and checking the trees is in any case almost certain to have a disastrous effect upon the buds, especially if there is a long delay in starting the trees into active growth. This, again, is no imaginary evil, as I have repeatedly proved. If I am wrong in my conclusions, how comes it, may I ask those who differ from me, that bud shedding more often happens in heated houses than in those unheated. In our unheated house, which happens to be much the largest of the three, bud shedding has never to my knowledge given any trouble, and this I am firmly convinced is principally due to the perfect rest which the trees receive.

In relation to this subject, and as having a strong bearing on it in fact, I may mention what has happened in another peach house in this neighbourhood, with the management of which I have had much to do. After the first two seasons the trees suddenly developed the bad habit of shedding buds freely, much disquietude being caused thereby. At first dryness of the border during the winter was supposed to be the cause, though I never saw it too dry, and the gardener in charge stoutly maintained it never had been dry. During the next winter the border was closely attended to, but, as on previous occasions, chrysanthemums, to produce specimen blooms, were largely stored in the house, fire-heat being freely turned on, and the ventilators closed whenever the weather was either very cold or damp. Once more buds dropped badly, and a light crop resulted. In the autumn of 1889 I insisted upon the chrysanthemums going to the vinery, and hardier subjects being

placed in the peach house. As a consequence, the trees had a more perfect rest than before, with the most gratifying result that blooms were most abundant and strong, no difficulty being experienced in effecting a good set of fruit. When, therefore, any of the readers of the Gardeners' Magazine have occasion to seek advice of the editor as to the cause of premature bud falling, they ought to mention whether the house in which they are grown is heated or not, also mentioning whether it was often closed during the autumn and winter months.

That a perfect rest is desirable in order to prevent bud shedding I hold to be indisputable, but even if it were not so, it is yet of the greatest assistance to the trees. Trees in a dormant state under glass never yet were injured by frost, and the perfect rest brought about by well exposing them to all weathers is almost certain to be followed by a strong, healthy growth, the flowers also unfolding strongly and satisfactorily.

PRUNING ORNAMENTAL TREES AND SHRUBS.

When shall I prune my trees and shrubs? is a question often put by inquiring amateur gardeners and others. A general, and on the whole, proper answer is, the proper time to prune trees and shrubs is between the cessation of their growth in autumn, and the movement of their sap in spring. The amputation during summer of the woody parts of the tree is injurious to them in many ways, and in many species produce a copious discharge of sap, termed "bleeding," which considerably weakens them. But the process of trimming hedges, or where there is a fancy for such things, clipping evergreens into fantastic shapes is performed in summer, as this serves to promote a second growth from the parts that are left untouched, which makes the foliage and spray denser.

A good authority on arboriculture remarks, "If you want bushes, not trees, do not prune." One can go a step further and say, if you want trees, not bushes, let them be trained to a single stem. This remark applies, however, more to deciduous trees than to conifers, most of the latter only push out lateral branches from the lowest part of the stem, and are thus feathered to the ground without throwing up more than one main trunk. But deciduous trees, especially when they have sufficient room, frequently throw up two or three stems, which rival each other, or strong shoots from the lower part of the stems, which become large branches in time. If the rival stems are not all excised but one, and if the branches springing from the stem are not lopped off, no tree will then be formed, but only a large bush.

The foregoing remarks apply more properly to ornamental trees, and are directed purely to furthering ornamental ends. The pruning of fruit trees is based on quite different principles, and is directed towards securing the largest quantity and best quality of fruit, quite irrespective of elegance of appearance in the tree.

The main objects to be secured by pruning are: (1) To develop a handsome and healthy main trunk, which is only to diverge into branches at a given height from the ground. When trees are grown in close proximity to each other, as in woods, Nature performs the office of denuding the stems of their lower branches. When in such close contact, want of air and deficiency of light, combined with the mechanical effect of friction and the natural tendency of the sap upwards, cause the destruction of all but the upper limbs of the trees. But whilst in a spacious forest a multitude of tall, branchless trunks, canopied over by foliage high over our heads, possess a beauty and majesty quite their own, such a feature in isolated specimens or in small clumps would lose its charm. Hence, in artificially divesting trees of branches at six, eight, or ten feet from the ground, the operator should have regard to the lateral space the subjects are required to occupy, and the aspect it is desired they should present to view. The second object in pruning is to secure a symmetrical shape by lopping off straggling boughs or branches, clearing part of the shoots that grow inside the heads where they are too numerous, cutting away all dead wood, unhealthy growths, &c.

In pruning a tree, all the branches that are to come away should be severed next the trunk, and the bark will soon "callus" over and cover the scar. In forest pruning, it is held that a branch should be amputated at a foot or more from the trunk, or else the excision will cause knots in the timber, However that may be as applied to forestry, it cannot apply to the pruning of ornamental trees, for nothing can be uglier than these "snags," as such projecting old stumps are called. In training young trees to a clean stem, it should be done by degrees year after year, till the stem is denuded as high as is wished. Some at once cut away all the lateral branches of a young tree, except a few at the extreme top of the sapling. Others do still worse. With a view of forcing an upward growth, they cut the side branches to within a few inches of the stem, leaving the ugly snags on to push a few weak twigs the next year. The result of this treatment is that the desired upward growth is obtained with a vengeance. The stem hardly grows in thickness, the sap rises to the few uncut boughs at the top, and there is secured a tall thin weakly object that will scarcely be likely to form a tree at all. It becomes what is technically called "whippy," because it resembles a coachman's long whip, and the only remedy, if once the young tree has been pruned into that shape, is to take it up and plant another in its stead, and care should be taken it is not served in the same manner. It is the growth of the side branches which promotes expansion in the diameter of the main stem, and the lower ones must only be removed by degrees, when those higher up appear sufficiently numerous for the young tree to bear the loss of the lower ones with impunity.

If a young bough shows a propensity to grow out of place, or to an undue length, so as to require repression, this may be effected whilst in a young stage of growth, by simply pinching off its extremity, thus arresting its further extension.

R. Dean.

STANDARD TEA SCENTED ROSES.

By J. C. Clarke.

There is not a large number of tea-scented roses available for growing in the form of standards, unless the climate is very favourable, and the position a sheltered one. This statement is borne out by the unhappy appearance of the trees that have been planted in localities and situations that are otherwise than favourable. Tea-scented roses have become such favourites within the past few years that I am afraid some will be tempted to grow many of the new and beautiful new varieties in standard form. A word of caution, therefore, appears necessary to prevent disappointment.

Beautiful as they are and fairly vigorous in growth as many of the teas are as well, they are not suitable for growing as standards, except in the most sheltered situations, and in a climate similar to that of the South and West of England. This is, I am aware, a matter for regret, but we must face the facts as we find them. There are very few admirers of roses who would not like to possess flourishing standards of such varieties as Luciola, Princess of Wales, Madame Hoste, Ma Capucine, and several others that are comparatively new, but they are too tender to be so grown. I should not like to risk them even in the West of England, except in very sheltered situations.

There are, however, a moderate number of other varieties that are sufficiently hardy to be grown as standards if given a fairly sheltered situation. The following twelve sorts may be planted over a wide range of country on this side of the Tweed. They are as follows: Bouquet d'Or, Gloire de Dijon, Belle Lyonnaise, Madame Berard, Alba Rosea, Homere, Anna Olivier, Madame Lambard, Madame Falcot, Perle des Jardins, Etoile de Lyon, Safrano, Marie Van Houtte, Souvenir d'un Ami, Madame Margottin, and Madame Eugene Verdier. This list, I should imagine, will be long enough to meet the requirements of a considerable number of readers. However great the desire may be to have a large number of sorts, it is much the best to first give those known to be the hardiest a fair trial. I may mention here, that my list has been compiled from observations extending over a considerable time. I have not included a single variety that I have found to be a weakly grower under ordinary favourable conditions.

I have referred to the necessity of choosing a sheltered situation for standard teas, and I will now say a few words respecting the soil for them. Those who make the attempt for the first time in growing them in this form are more inclined to study the character of the trees they have to deal with than the roots that support them. My experience is that in this matter we can afford to leave altogether the consideration of the tender character of the teas, and devote the whole attention to providing them with a suitable soil. As the teas must be supported by the roots of the brier stock, the soil ought to be prepared according to the requirements of the latter. The brier, or dog rose, is known by experienced growers to thrive well on a strong staple or substantial soil, and this should be provided for them, No one would think of planting tea roses on their own roots on a strong clay, but give the brier a foot of good soil over a clay subsoil that is well drained and it is perfectly at home. We have here all the information that is necessary with reference to the soil. That, however, is only one part of the cultural details that must have attention, and I will now proceed to speak of the others.

Much depends upon the system of pruning adopted whether tea roses will thrive for many years or not. To say that I have not seen a healthy example of a standard tea that had been annually hard pruned would not, perhaps, be correct. I, however, know that the oldest and most luxuriant examples that I can call to mind are those with large and, for the most part, unpruned heads. I have in my mind as I write a particular plant of that very charming, but slow-growing, variety, Devoniensis. This covers an umbrella-shaped wire frame four feet six inches in diameter. I know this tree to be nearly twenty years old, yet it is as vigorous as at any period since it was planted. It blooms during the greater part of the summer in a way that would surprise the advocates of hard pruning. I am in a position to offer to take anyone to see this specimen who may wish to do so. I should have great pleasure in taking them to the garden, as there are one or two other varieties that have been grown in the same way, and are equally as satisfactory. I have not referred to this example for the purpose of showing that it is necessary to provide wire frames on which to train the growth, but to make it clear the way in which the branches must be dealt with to ensure long-lived plants. They must, in fact, be allowed to extend as much for the purpose of keeping up a proper balance between the roots and the top, as to provide a corresponding extent of flowering surface. At the same time, it must not be understood that pruning can be altogether dispensed with. What I want to show is that a persistent cutting back every year of all the growth is certain to result in weakening the trees. The longest and strongest shoots should be left at least eighteen inches in length, while those that are weak may be cut back to within six inches of the old wood.

The Effects of Fog on Plant Life was reported upon at the meeting of the Royal Botanic Society on the 13th inst. Mr. W. Sowerby said the destructive action of fog on plants was most felt by those tropical plants in the society's houses of which the natural habitat was one exposed to sunshine. Plants growing in forests or under tree shade did not so directly feel the want of light; but then, again, a London or town fog not only shaded the plants, but contained smoke, sulphur, and other deleterious agents, which were perhaps as deadly to vegetable vitality as absence of light. Soft, tender-leaved plants and aquatics, such as the *Victoria regia*, suffered more from fog than any class of plants he knew.

House, Garden, and Villa Farm.

PLANTS IN FLOWER.

ORCHIDS in bloom comprise, Cattleya Trianæ, Cypripedium insigne, C. insigne Maulei, Lælia albida, L. anceps, L. anceps Barkeriana, L. peduncularis, L. prestans, Limatodes rosea, L. rosea alba, Lycaste Skinneri, L. Skinneri alba, L. Skinneri rosea, L. Skinneri superba, Odontoglossum Alexandræ, Oncidium bicallosum, O. incurvum, O. oblongatum, Zygopetalum brachypetalum, Z. crinitum cæruleum.

THE HOUSE.

PLANTS employed in house decoration suffer so much from the effects of dry air and heat, and the deposit of carbon upon them where gas is burnt, that those of any value should be systematically removed at every opportunity, and be brought in again as may be needful to render further service. When people are fatigued with festivity, they are apt to leave this and that till the morning; but if the best of the plants can have attention, even to the exclusion of other things of some importance, it well be well, because they may be kept a long time in fair condition with a little care; whereas neglect favours speedy death, and the dead do not come to life again very often. It is not needful to take plants out into the open air, or to return them to the plant houses. To be sure, if they can be all properly housed at the close of the festivity it will be better; but for mere keeping removal to any cool room or hall, or sheltered shed, will generally suffice. The main point is to get them out of the hot dry air, and to do this without incurring a chill either to the plants or those who remove them. Early next day they should be looked over, and all that need water should have it, so at to allow time for the surplus moisture to drain away, leaving the pots all clean and dry for the next dressing-up. All plants doing duty in heated rooms should be very carefully looked after as regards watering, for the soil in the pots soon becomes dry, and the effects of a dry air are aggravated by the exhaustion of the roots. As a rule, flowers that are nicely set up should not be in the least disturbed: they last the longer the less they are handled or shaken.

STOVE IN ORCHID HOUSE.

STOVE.—In most gardens it will now be possible to furnish the conservatory with euphorbias. poinsettias, gesneras, begonias, luculias, &c., &c., from the stove. But there must be a succession, and one of the first things to consider now is how to make the stove available, not only for the preservation of its ordinary inmates, but to forward furnishing plants for other structures. Plumbago capensis, cytisuses, azaleas and camellias should therefore be introduced at the coolest end of the stove, if there is room for them; a few roses may be forced with them, and many ornamental-foliaged subjects will be found useful if in a clean and healthy state. Mixed stove selections must now be kept rather cool, as growth is not desirable. Maintain a healthy atmosphere by giving air on fine days. All plants approaching a state of repose should have little or no water. Plants in active growth must be watered with caution; let them have enough, but see that they do not stand in pans with stagnant water about their roots, or in wet places in the midst of mildew. Temperature of stove, 50 deg. by night, 60 deg. by day, with a rise of 10 deg. during sunshine.

ORCHID HOUSE.—In collections where there are now only a few orchids in a growing state the forcing pit may be turned to account to receive them, so as to allow of the cooling down of the orchid house, and securing thereby a complete state of repose for the plants, which is scarcely possible if there happen to be a few fine specimens pushing into bloom, or in an active state of growth. It is at this time of year we see the full value of divisions which can be respectively devoted to orchids from different climates, and requiring now different temperatures. Orchids at rest to be kept comparatively cool and dry; 50 deg. by night, and 60 deg. by day will be sufficient. Variegated orchids must have very little water now, and if in a warm house will do better without than with bell-glasses; they are, indeed, generally kept too close. Rot and spot are diseases peculiar to this season, and are the results of too much moisture in the house or of the drip from the glass.

FORCING AND FRUIT HOUSES.

FORCING.—Keep asparagus going for succession. Rhubarb, seakale, and French beans will soon be in request. Lay a few picked tubers of early potatos on a warm flue to sprout for planting on a mild hot bed, and get a bed or two ready

VINES breaking to have a gradual rise of temperature, beginning at an average of 55 deg., with a rise of 10 deg. during sunshine. As the vines acquire a vigorous growth raise the heat so as to average 65 deg. by day and 60 deg. by night when they come into bloom. Too sudden a rise will make long joints and weakly growth, independent of the injury to the crop. A warm dry border will do as much as the best management of the temperature of the house.

FLOWER GARDEN AND PLEASURE GROUNDS.

COMPOST should be prepared in quantity, as there is now a chance of getting it well frozen and several times turned before the winter is over. The benefit of attending to this at once will be immense in the culture of specimen plants, and, in fact, with whatever requires a good compost, well pulverized, and free from vermin. It must be remembered that composts frequently turned at this time not only get frozen, which kills the vermin, but the robins and thrushes explore it every time it is thrown up afresh, and they perhaps clean it more effectively than frost.

PANSIES, PINKS, and other choice things in open beds should have a little light litter sprinkled over them in frosty weather, or be protected with canvas on hoops. Tulips protect in the same way. Look over plants in frames, and take off dead leaves, and keep the plants moderately dry.

ROSES should now be heavily mulched with half rotten dung. If the dung is quite green and rank it will do as well, but thoroughly rotten dung is almost useless as a mulch for roses—in fact, a waste of valuable material. Roses may be planted during open weather; the ground to be in good heart, deeply trenched, and well manured. On loamy land broken up from grass roses do better than in ordinary soil, and those who grow for show should either use turf liberally or break up meadow ground for their best plants.

FRUIT GARDEN AND ORCHARD.

APPLE AND PEAR TREES infested with moss or vermin may be much benefited by being painted all over with a mixture of Gishurst compound or other good insecticide; or a mixture of lime, soot, cow-dung, and clay. If the painting is entrusted to an inexperienced hand, take care that he applies the brush by an upward movement; if allowed to brush downwards many spurs will probably be destroyed.

BUSH FRUITS properly taken up and carefully planted ought not to miss the move in the slightest degree, but you are sure to lose a whole season if they lie about waiting to be planted.

UNNAIL from the walls the younger shoots of tender wall trees to prevent premature flowering. Let nothing lie in by the heels an hour longer than can be helped.

KITCHEN GARDEN AND FRAME GROUND.

PEAS AND BEANS may be sown in boxes or on a bed in a frame, in case the open-ground sowings perish, when these will be useful to transplant. The best plan is to sow the seeds on turf-sods laid grass side downwards; the turf should be cut about four inches wide and the seeds sown along the centre, and the whole regularly laid out to form a bed in a cool frame. The process of transplanting consists in removing the sods with the plants into the prepared trenches. As the plants are apt to push through the turf it is best to lay the sods on a hard surface, so that when lifted there will be no damage to the roots.

VILLA FARM.

THE care of the milch cows and other stock in the yard will now form an essential part of the work of the home farm at the present time, and it should receive the attention its importance demands. The whole of the animals in covered yards, more especially the beasts preparing for the butcher and the cows in milk, must be kept as warm and comfortable as is consistent with their health and the most rigid economy, and, as one of the most essential matters, take the proper steps to ensure the sleeping quarters being perfectly dry and free from cold cutting draughts. If the roof is out of order, or the sides in such a dilapidated state that the animals are exposed to cold draughts, which, by the way, are most injurious to the hardiest of stock, let repairs be effected as quickly and effectually as possible.

FRENCH PRUNES.

THE production of prunes in the south of France is dealt with at considerable length in the current issue of the *Kew Bulletin*, it being thought that although there may "be better prospects of success in the production of prunes on French plums in this country there seems no reason why it should not be attempted in colonies of which the climate is not dissimilar to that of southern France." Their mode of preparation was carefully studied on the spot by Mr. M. W. Colchester-Wemyss, of Westbury Court, Westbury-on-Severn, for the purpose of ascertaining whether there was any possibility of starting a similar industry in England. The results of his inquiries and observations are embodied in the following interesting report in "Fruit-curing in the South of France:"—

About 60 miles above Bordeaux there falls into the Garonne a fine river which, taking its rise among the mountains of Cevennes, follows a course of some 150 miles until its junction with the Garonne. This river is called the Lot, and the two rivers together confer the name on the Department known as Lot and Garonne. For several miles along the lower reaches of the Lot, and in the country immediately adjacent to the spot where it enters the Garonne, is produced the fruit known, when it has been specially prepared, as "French plums." For over a hundred years the industry has been fixed in this locality, and still with the sole exception of a valley in Servia there is no other place where the same trees are cultivated. The tree is called *Prunier d'ente*; "enter" is an old French word meaning to graft, and it is simply so called because this particular species was formerly the only plum in this district that ever was grafted. Now there are, practically, no plums other than the *Prunes d'ente* grown in the neighbourhood. Higher up the Garonne, round the old town of Agen and in other parts of Southern France, another plum, the *Prunier commun* is largely grown, and its fruit treated similarly to that of the *Prunier d'ente*, but the produce is very inferior and only suitable for stewing; but I believe that nowhere, except the Servian valley, is the true *Prune d'ente* at present grown; and though many experiments have been made with other varieties no others have yet been discovered that will yield the established qualities of the "French plums." It is rather capricious in its growth, for its area of cultivation does not extend very far from the river bank. It appears to delight in a rich alluvial soil of a rather sandy nature, but which contains a sufficiency of clay to make it very retentive of moisture. The centre of the "French plum" district may be said to be at Clairac, a quaint little old-fashioned town built on a steep hill side overlooking the Lot, almost more Spanish looking than French, its houses shaded from the fierce southern sun, with wide outspreading eaves and flower-clad balconies. Here, during a recent stay, I was most hospitably entertained by M. Gajac, one of the most leading merchants connected with the plum trade, with whom I had accidentally become acquainted.

In this and the neighbouring communes the Metayer system is in full operation, and it appears to work well and harmoniously. The owner of the land engages the Metayer, and supplies all the implements and stock required for the holding; he also keeps the buildings in repair, including the house used by the Metayer. The latter finds the whole of the labour except such extra labour as is needed during harvest time. The Metayer during the year has entire control of the farm, and buys and sells, subject, if required, to the consent of the owner. He renders account of all produce from the holding consumed by himself and family, and at the end of the year the balance of profit is divided equally between the owner and the Metayer. During the last few years the Metayers have fared badly, for the phylloxera has devastated the vineyards, and sad it is to see acres and acres of land excellent for the growth of grapes, but fit for little else, now deprived of those crops which formerly so well repaid the cost of cultivation. The holdings vary in extent from 10 acres to sometimes 50 and 60, and on every holding in the lowlands are to be seen rows of the *Prunier d'ente*. The rows are separated from each other by long rows of cultivated land where the mild fawn-coloured oxen lazily drag the most old-fashioned and primitive implements over the easily broken soil. The plums are long shaped, the end to which the stalk is attached being very much the more pointed; colour red, deepening into a rich violet as the plum ripens; the skin is extremely tough, without being very thick or hard; the flesh very firm containing a large amount of saccharine; the specific

gravity much less than that of several varieties of English plums with which I made comparison.

The tree is a very slow grower, requiring ten years to bring it into full bearing, though I saw some trees of six years old, very favourably situated, with a fair crop of fruit on them. The fruit also matures very slowly and is not ripe till all other fruits in the district, apricots, greengages, peaches, have ripened. The plums are picked when just ripe, before the flesh has begun to soften, they are placed on *claies* or trays, one layer of plums on each *claie*. The *claies* are made either of strips of wood or of wicker work, and are either triangular or round. They are a little deeper than the thickness of a plum, so that when not in the ovens they can be safely placed upon each other. The *claies* when filled are arranged upon the bottom of the *fours* or inside the *étuves* and the operation commences. Each homestead has a building in which are placed the *fours* and also the *étuve*, if the Metayer possesses one. The *fours* are simply like very large ordinary bread ovens, they are usually built in pairs, each one about 10 feet long and 4 feet wide; they are heated by burning wood inside them; the ashes are cleared out and the *claies* placed inside.

The *étuves* are closets of variable dimensions with different appliances for holding the *claies*, they have a small furnace with pipes underneath the floor for heating. There seems to be a preference for the *fours*, though the *étuves* are simpler and more convenient in every way.

When the fresh fruit is put in the temperature should be about 100 deg. Fahr. When the plums have been inside for about a couple of hours, they assume a peculiar puffy appearance; the *claies* are then withdrawn, the fruit turned by holding an empty *claie* upside down close over a full one, and then turning them both over. After cooling the *claies* are again put into the *four*, this time at a temperature of about 135 deg.; again withdrawn, turned, cooled and put in at a temperature of about 170 deg.; and this operation is continued until the plums have been dried. Some dry more rapidly than others, and they are picked out as they are ready. The more slowly the operation is performed and the oftener the plums are put into the *four* the better will be the result.

When they are ready the plums are sorted out into various grades, according to the number (30, 35, 40, 45, 50, 55 or more up to about 130) that it will take to make up the French pound, for curiously enough the old French measure is adhered to. They are put into sacks and carried to the markets. Here the merchants come and buy, paying prices varying according to the number of plums required to weigh a pound; 30 to the pound would be worth about 120 francs the 100 pounds; 40 to the pound about 100 francs, and so on down to the very lowest grades, which are not worth more than 15 francs. The merchants convey the fruit to large, cool, airy warehouses, where it is thrown into bins, and women at long tables are employed sorting over again much more carefully than before. The various grades are then packed separately into casks and are sent to Bordeaux, where the finer qualities are packed carefully in bottles or boxes, the inferior are simply exported in bulk.

Round Agen and in the other districts another tree is cultivated, the *Prunier commun*. This is a round violet plum grown on its own stock. The fruit is prepared in a similar manner to the *Prune d'ente*, but it is very inferior and is only fit for stewing. Enormous quantities are consumed by the peasants in the north and east of France.

I think the deductions I have drawn from the observations and inquiries I have made may be briefly stated as follows:—

1. That we have no plum at present cultivated in the Severn district that at all resembles *Prune d'ente*.

2. That though I think we have plenty of suitable soil I think it most probable that we should never successfully cultivate the *Prune d'entes* on account of the lateness of our spring and the comparatively small amount of really hot sun that we usually enjoy.

3. That some of our plums can be made to yield lower grades of *prunes* and *pruneaux*, but with such produce *only*, a factory could hardly be maintained. The loss of weight in the process of drying even with the best *Prune d'ente* amounts to two-thirds of the original weight; with our plums it would probably be about three-quarters. In other words a pot of our plums would probably yield about 25 pounds of dried fruit.

If a factory were established, I should propose to adopt a class of kiln which I have in use for burning terra cotta at my brickworks. I should have a set of four of these kilns, each kept constantly at a regular temperature, but the heat in each one varying from that in the others. Such a set, in a suitable chamber and with the requisite heating arrangements, would probably cost about £200; not so much if placed in an existing building; and the daily output would amount to the produce of from 30 pots of fresh fruit, all of which would pass through all four kilns. There could not be more than about six weeks of work, and the gross output would, therefore, be about 250 pots of *dried* fruit during that time.

It will be seen that during the greater part of the year the factory would be idle unless development in other directions were adopted. I could indicate one such direction as to which I have obtained a considerable amount of information, and which appears to offer very great probabilities of success, and that is the manufacture of brandy from plums.

TRADE CATALOGUES.

E. WEBB AND SONS, WORDSLEY, STOURBRIDGE.—*Spring Catalogue.*

SUTTON AND SONS, READING.—*Amateur's Guide in Horticulture.*

W. E. BOYCE, ARCHWAY ROAD, HIGHGATE, N.—*Descriptive Catalogue of Chrysanthemums.*

ROBERT OWEN, CASTLE HILL, MAIDENHEAD.—*Descriptive Catalogue of Chrysanthemums.*

JAMES VEITCH AND SONS, ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA.—*Catalogue of Seeds.*

KÆMPFER'S IRIS AT HOME.—In a paper read before the Massachusetts Horticultural Society, at one of the monthly meetings, by William P. Brooks, Professor of Agriculture in the Massachusetts Agricultural College, he referred to Iris Kæmpferi as follows: "Now for several years, every season has witnessed in Saporo a display of those marvellous flowers by a local horticulturist, which, in Boston, would be the wonder of the town. He numbers his varieties by the hundreds, and has perhaps an acre of sunken beds separated only by the narrowest of raised paths. Most of the plants stand five or six feet in height, and bear enormous flowers, a foot and more across, and seemingly in every hue and in every possible mixture of all hues. Truly, as I have sat and gazed upon the wondrous display, I have felt ready to exclaim 'This is the Queen of Flowers.'"

IMPROVEMENT OF AUTUMN EXHIBITIONS.

By J. HUDSON, Gunnersbury House Gardens, Acton.

SPECIMEN plants constitute an important feature when well grown. From my observations I consider there has been a marked improvement during the past few years. Very fine specimens were shown many years ago. I very well remember those exhibited by Mr. George, now of Putney, when at Stamford Hill, at the splendid exhibition of the United Horticultural Society in the Guildhall of London in 1866. They were grand examples of cultivation, and were not in my opinion equalled for many years afterwards. There is a tendency of late years to train them too much like a pancake. In a manner this style of training may give display of colour, but the specimens do not look so well as those of which the width and height are more nearly equal, the width slightly predominating. A set of six, say, trained in a flat manner look very well when close under the eye, but the same number in better balanced proportions have a decided advantage from other points. More room is taken up by the flat plants, and in the majority of cases the training is more difficult.

For plants grown in a more natural manner several of the Japanese varieties are invaluable. I was struck with the free style adopted by the growers of the premier collections of Japanese at the late York show. The plants were neither severely trained nor excessively thinned. Mdlle. Lacroix, Val d'Andorre, Wm. Robinson, Madame de Sevin, and Roseum superbum might be grown more than they are as specimens. Amongst growers of the incurved varieties as specimens there is a tendency to keep too much to the Rundle family. Why not grow such as Jardin des Plantes, Prince Alfred, Lord Wolseley, and Pink Perfection, all of which I also saw very good at York and Hull? Pompons are often trained too flat after the manner of the huge pelargoniums seen at exhibitions a few years back. It was a treat to see some beautifully-grown plants at the late Reading Show of this section. The standard form has been improved upon of late, and by far the best examples of this style of training were those shown at the Brighton show. The premier collections there carried a prodigious amount of bloom, the shape of the heads representing half a sphere, a great improvement upon the flatter style. Inducements should be given to smaller plants, say in 32 or 24 sized plants, what might be termed decorative plants. These, when shown as at Brighton and Reading, make a good display without occupying very much room.

The arrangement of the specimens at Brixton is worthy of being adopted more extensively; each set of plants was divided either by a collection of foliage plants or ferns, giving a capital effect. In order to secure more uniformity, at least in height, there should be a limit put upon the plants both in the direction of dwarf as well as in extra tall ones. The effect would then be all the better when the plants are brought together. At Reading the specimens were nearly all staged in one large group upon a raised platform, and thus arranged they made a splendid display. At Brighton, most of the specimens are placed in lines behind some of the cut blooms; these, too, look well. Either plan is better than arranging all the plants *en masse* upon the level, one lot perhaps tall, another dwarf, and so on, the general effect being spoiled.

In the cut bloom classes I consider an improvement might very easily be made in the method of arrangement. The usual way is to arrange each row to one uniform height; this need not be a hard-and-fast line. Why not raise the central flowers a few inches higher? As an example, take a collection of twenty-four Japanese, three rows, eight in a row, the two central flowers in the back might with decided advantage be raised two inches above those on each side of them, these, again, being two inches higher than the two outside ones. The middle row might have rather less variation, and the front one less still. I think the blooms in this way would be seen to better advantage. Prizes are now frequently offered for an equal number of Japanese and incurved blooms; but why should the beautiful reflexed varieties not have a share in these big classes? No one can dispute the fact of their being deserving of more recognition. It may be said there are not sufficient varieties; then, in a large class, do not ask for so many as of the others. As with the Japanese, so with the reflexed; they can be shown more as they are grown, without that time being spent upon them which is devoted to the careful manipulation of the incurved varieties. I think, also, that very attractive boards might be made up of four varieties, three of each, to constitute a set of twelve, and six of each for a twenty-four; these should be in distinct colours—one white, one yellow, and two others. A fine feature could thus be made of, say, Avalanche, Sunflower, Edwin Molyneux, and Etoile de Lyon amongst the Japanese kinds. The single chrysanthemums should receive more recognition than they have hitherto had bestowed upon them. Their value, from a decorative point of view, cannot be disputed, and they will gain in favour yet more than they have done. One class at least in each show might be devoted to cut blooms upon at least one foot of stem, with foliage as grown, and to be staged at the exhibitor's own discretion, either in hyacinth glasses or upon boards; of the two, I prefer the former for this style. I do not see any practical utility in dividing the Japanese from the large anemone-flowered, nor does the system of dividing the incurved and the reflexed Japanese appear so far to answer.

Other accessories to a chrysanthemum show vary considerably in different localities. Dinner-table plants, however, appear in nearly every schedule; these, when arranged in lines behind cut chrysanthemums, produce a very good effect, far better than when all are grouped together. I fail to see, however, why dinner-table plants should be strictly adhered to; other plants are needed in the house in different ways. The former should always be confined to four and a-half inch (48's) pots, nothing larger is ever necessary; but palms, ferns, crotons, and dracænas in six-inch pots, as decorative plants for entrance-halls and the drawing-room, would bring rather more im-

posing plants. Classes for six of each of those I have named would show people what are best suited for those particular purposes. Winter-blooming tree carnations, cyclamens, Roman hyacinths, and mignonette are all worthy of more encouragement.

Floral arrangements in various forms appear to be gaining in popularity by the keen competition in most instances. Bouquets of chrysanthemums are popular, but the mistake still made is that of making them too heavy; beautiful effect can be had by one colour alone, choosing foliage that will harmonize well with it. In table decorations overcrowding is still the rule with some; with others it is the adoption of either too large blooms or too many colours. Sprays of chrysanthemums were beautifully done at the Hull Show, so also were baskets and other arrangements; these, with table decorations, are quite a specialité there.

Fruits in season are an excellent addition to any autumn show, more particularly apples and pears; exhibits of these not only make a good display, but they are also instructive as to what sorts thrive best in certain localities. Grapes are also a special feature, being oftentimes shown as good as in the earlier part of the autumn. Two bunches are in every case, I consider, sufficient; three of a sort is too exacting, especially for small growers. Vegetables at some shows are a fine feature. I rather like the idea of showing them in baskets, no staging is then required. Potatos often take up too much room, but that cannot very well be helped. Tomatos are worthy of encouragement, and assist to give more colour amongst the vegetables. Otherwise, too many classes for single dishes of vegetables is a mistake, in most cases the room being valuable. I think this year there has been a marked improvement in getting the arrangements completed in good time. If all plants could be arranged overnight, the labours of the executive would often be lessened.

PROFITABLE MUSHROOM CULTURE.

By J. LOWRIE.

IT may be said, without fear of contradiction, that in almost every book, essay, pamphlet, or article published on the subject of artificial mushroom culture warning is given first to avoid exposing the manure to the weather during the process of being prepared for the beds, and, secondly, to free the mass of material to a very considerable extent from long straw.

Let me not be supposed to find fault with this advice, much less to say that, if followed, heavy crops of mushrooms could not be obtained. It is well to use droppings with only a slight admixture of straw. It is also well to protect the manure whilst being "made" from the weather. But, from a commercial point of view, at least, I contend that it is better to use the manure just as it comes from the stable, without the removal of a single straw, no matter how rough and shaggy it may be. Also, that it is also altogether unnecessary to incur the expense of erecting sheds for the working and preparation of the manure, experience having taught me that the exposure of a heap of manure in course of preparation for mushroom beds to rainy and other weather has no material effect one way or other in influencing the crop of mushrooms that follows. I waive, for the present at least, the scientific aspect of the subject, and will confine my remarks principally to my own practical experience in the art of growing mushrooms for profit.

Private gardeners who can procure an unlimited supply of short manure and to whom expense is no object, are perhaps wise in using this material, it being more manageable in the ordinary mushroom house with shelves than long manure. But to the grower on an extensive scale for market, who forms his beds on the floors of his houses, and whose sole aim is profit, droppings alone are out of the question, being both difficult to procure, and by far too expensive even if procurable. Happily for the commercial grower and the consumer, it is by no means necessary to the successful artificial production of mushrooms to reduce the bulk of fermenting material by the removal of the long straw. In fact, experience has confirmed my opinion that the spawn runs much more freely in rougher and looser material than hard-trodden droppings in which no straw is found.

There can be little doubt that many amateurs, and even gardeners, are deterred from attempting the cultivation of mushrooms from the conviction born of reading books, that droppings without straw or any other material are alone suitable for the beds, and that it is absolutely necessary that the light should be wholly excluded. I shall now attempt the task of convincing them that neither condition is absolutely necessary, and in doing so I would beg to state that what I am about to advance is drawn from actual experience only. Should my facts clash with the dictum of scientists, I cannot help it; they are facts, nevertheless.

This manure, I would state, is procured in large quantities at one time, and thrown into a large heap as it arrives, taking care to remove all impurities as it is turned over and shaken out. The material is received just as it is removed from the stable, with long straw and droppings mixed, and the heap is formed in the open air without any protection except in windy weather, which greatly retards the heating of the mass. On windy days the heap is covered with mats, straw, or any other material that is at hand, and it is also trodden firmly. I have no apprehension of deterioration from rain; in fact, the long manure is benefited by it, and the mass is more quickly "made." In preparing the manure in very dry weather, I invariably water the heap during the process of turning. The mass is turned and well shaken out on an average every fourth day, and the process is continued during three weeks. At the end of that time the manure is generally short, warm, and moist, but not wet. It is then conveyed to the beds by barrow-loads, again shaken out, and the bed formed to a depth of from twelve to fifteen inches and well trodden down. If the material is in proper condition, steam will rise from it in clouds in the process of forming the beds, and if a handful be squeezed, it will not stick together, but fall to pieces on the opening of the hand. When the beds are trodden firm, they will be from nine to ten inches in thickness.

Failure in mushroom growing is, I venture to think, courted by waiting till the bed cools too much before spawning. As a general rule, it is safe to spawn the day after forming the beds. I am of opinion that quicker and better crops are produced from beds spawned whilst the heat in them is brisk than from those that are allowed to cool down considerably before the insertion of the spawn. It takes more heat and moisture than many persons suppose to destroy the vitality of the hard, dry pieces of spawn bricks, and, depend upon it, more mistakes are made in spawning when the temperature of the bed has fallen too low than when the operation is undertaken when the material is comfortably hot.

Pieces of spawn about the size of a hen's egg are usually recommended by writers on the subject of mushroom growing, and mistakes are frequently made in using pieces of too small a size. If the bricks are broken up into pieces not larger than a hen's egg, the chances are that many of the pieces will contain no spawn at all, and the mushrooms, when they appear, will be patchy and irregular. I have always found much larger pieces of much greater advantage in producing a uniform crop all over the surface of the beds. I use the spawn at the rate of about one bushel to fifty square feet. The pieces are inserted at a depth of from two to three inches with the aid of a pointed piece of iron about a foot long. After that the manure is again firmly trodden down.

Soiling the beds is done immediately the spawning is completed. Fresh loam is used if procurable, but if not obtainable no one need hesitate to use ordinary garden soil. The results are, according to my experience, equal with regard to crops. There is a slight objection to the use of garden soil, because of its producing more weeds than the other. I have even used exhausted soil from a cucumber and tomato bed with results equally as good as when maiden soil was used fresh from the field. The soil is put on to the depth of two and a-half inches which is at once trodden down firmly and again levelled and beaten smooth with the back of a spade. The beds are then covered with dry litter and left untouched till the end of the fifth week. They are then examined, and if the spawn is found to have run well, a fair watering with tepid water is given. This watering is repeated three days after, so as to bring the moisture down through the soil to the manure by the end of the sixth week from the date of spawning, and by the middle of the seventh week mushrooms usually appear. Should the temperature of the house be kept up to 60 deg. or 65 deg., I do not consider it necessary to heat any mushroom house beyond this temperature. Mushrooms will no doubt be produced in greater heat, but the rapid evaporation of moisture from the beds is not conducive to the production of large solid mushrooms and long continuance of the beds in bearing.

In the after management two things are absolutely necessary for the steady yield of mushrooms during the six weeks following the gathering of the first dish. One is the maintenance of a steady moisture in the soil with which the beds are covered; and the other is the removal of the base of the mushrooms after each gathering. The insertion of fresh soil in the holes made in the process is unimportant. Watering with a watering-can and rose is sometimes necessary, but what I always aim at is the prevention of evaporation of moisture from the surface of the beds rather than allowing the soil to become dust-dry and watering frequently. If the latter course be adopted, the mushrooms are sure to be small and ill-favoured, and the productiveness of the beds greatly curtailed. Of course it is a comparatively easy matter to keep the beds in a proper condition with regard to moisture in houses especially constructed. But the case is different when the culture is undertaken in glass houses with no protection from the rays of the sun, and especially when the houses are large and airy. I have used several things to shield the beds from draughts and the rays of the sun, such as a slight sprinkling of litter, canvas coverings, &c., but the best thing I have tried was fresh cabbage leaves of large size, which were laid all over the surface. These effectually prevent rapid evaporation of moisture, and also facilitate growth and the production of fine plump mushrooms. The process of laying down the leaves does not consume so much time as at first may appear. A good sized cabbage leaf covers over a square foot of bed, and the leaves do not require renewal during the six weeks, which I regard as the profitable term of existence of a bed. The leaves, of course, will become yellow, but that does not affect the object for which they are used. These leaves also act as traps for woodlice and slugs.

With regard to the much-disputed question of whether it is right and best to cut or pull the mushrooms from the beds, I will at once say that I entertain the most pronounced opinion that the latter course is the correct one. But, more than this, it will be found that even when the mushrooms are pulled there will remain deeper in the soil, at the bottom of each cluster, a rooty mass or stool, which, if left, will rapidly decay, causing much mischief to the surrounding mushrooms. I make it a practice of removing, with the blade of an old table knife, immediately after each gathering, all the clumps, even at the sacrifice of some undeveloped mushrooms. The holes thus formed are then filled up with fresh soil, which is pressed firmly down by the hand, and this labour is in nearly every case amply rewarded by the appearance of other clusters equal in size and quality with the first. More and better mushrooms are thus produced than by following the practice of cutting or pulling, and leaving a portion of the stems to rot in the beds.

I am inclined to think that many people are deterred from attempting mushroom culture, in the belief that such attempts would be useless unless situations are available where all light can be excluded during the hours of sunlight. This, I may be excused for thinking, is a very absurd mistake. To say that mushrooms grow most rapidly at night may be quite true. In dull weather mushrooms cultivated indoors will grow quite as well when fully exposed to daylight as when kept in the dark. I would have no objection even to the brightest sunshine all day long on the beds, were it not for the rapid evaporation, and the frequent waterings that are thereby rendered necessary. In cold, frosty weather strong fire-heat is even more objectionable than exposing the beds to the direct rays of the sun. To obviate this I have tried, with excellent results, the wrapping of the hot-water pipes with moss, and keeping it as damp as possible. Of course, in a mushroom house it is seldom necessary to heat the pipes to such a degree as to produce much steam when wetted.

I am in possession of data with regard to expenditure and profits arising from mushroom growing on the above lines, but these I must eave over till a future time.

PRUNING ROOTS AND BRANCHES.

By G. WYTHES, Syon House Gardens.

MANY young gardeners and amateurs are puzzled in determining what to do in dealing with young trees, and often prune too much at first, and in the case of trees in a newly-planted garden the result is a plentiful crop of green shoots every season with but few fruits. In the management of newly planted trees it is best to err on the side of not pruning too much the first season, than to prune severely. Such is my experience, as most fruit trees do best when allowed to grow one season and obtain a firm hold of the new soil. As the first season's growth is not as a rule very robust, when the trees are planted early in the year the pruning should be delayed till the following autumn, as by that time the trees will have made sufficient growth to indicate what amount of pruning will be necessary.

Many pears and apples will not bear hard cutting back both in summer and winter. Others produce their fruit on the extremities of the shoots, so that when all the kinds are pruned alike very little fruit can be obtained. Much good in these cases can be done by pruning the roots every two or three years, and by giving the tops more freedom. I have seen apples and pears cut back hard early in the summer, and the result has been a forest of worthless shoots that cannot possibly bear fruit. Many of the pyramid apples and pears would be more fruitful if not cut in or shortened back so much in the early part of the summer before they have made much progress. When pruned in summer they should not be cut back so closely as is often done. From six to nine inches of the new wood should be left, as it can be readily cut back to the required length at the winter pruning. By the cutting hard back in the summer the lower buds start into active growth, and usually new wood buds are formed instead of fruit buds. I saw some splendid fruit trees the other day and the young shoots of these had not been shortened at all in the summer, but the shoots were well thinned out at the winter pruning to freely expose the wood to light and air. The pruning considered necessary was done at the same time. These trees, chiefly pears, have occupied their present position about ten years, and were of good size when planted. Since their second year they have always borne a fair crop, even in adverse seasons. They were rather closely arranged, and the varieties comprised the best sorts, and were only given ordinary treatment. The produce was very fine, in fact I must state that the fruit commanded a high price and has not been beaten on the exhibition table. These trees are root pruned every second year, and the surface is well mulched at the time with good manure. The ground is light, and the trees have abundant waterings in dry weather, and these waterings are practically the only attention they have, except the thinning of the fruits in the spring and summer months. These trees show no trace of canker in any way and were very free from American blight.

I once had a garden under my charge which contained some pyramid pears that had been for years pruned severely, but had not borne any fruit, and it was intended to remove them. But as the trees were young I decided to allow them to remain and to grow freely. They were pruned in the winter only, and then not much, just sufficient wood being taken out to admit plenty of light to the branches. As the result, in two or three years they were the most productive of any trees we had, and gave fruit of large size and excellent quality. They were in good soil that had been well prepared. By the wood they produced it could be seen no manure was necessary, still they had a liberal dressing annually, consequently not until a different course of procedure had been adopted did they produce fruit. There was a similar case not far from here. The trees had been pruned severely, but by allowing a free top growth and judicious thinning they bear well and have for several years been very satisfactory. Careful observation is in all cases necessary, as many kinds grow differently in the various soils and are more or less robust, so that it is of the utmost importance to observe how each variety succeeds before taking extreme measures. It is impossible for fruit trees to set and finish their fruit when they are crowded with wood. In many cases some fruits fail to produce a satisfactory crop owing to this cause. By the constant topping to which they are subjected, the length of the life of the tree is reduced and canker developed. Therefore in the case of young trees little freedom in the growth is beneficial.

Pyramidal pear and other fruit trees are often planted alongside of walks, and are cut in close to give effect, and thus suffer. In many instances, if these trees were kept well thinned, and the shoots only partially shortened back, they would give a better return. Again, many kinds are planted that are not at all suitable for the place, the growth being too robust. The Jargonelle may be mentioned as an example; it is a very spreading tree and impossible to keep in bounds in a limited space. When pruned severely the trees often fail to bear a good crop unless frequently root pruned. Again, the different kinds should be secured on suitable stocks, and the advice of our leading fruit tree growers can, with advantage, be relied upon. In some instances double grafting will improve many varieties, and there are many kinds which succeed better in some districts than others. Their peculiarities should be taken into consideration as in some soils pears often crack, and are worthless. Early planting can be recommended, as also can a heavy mulch. If in exposed positions they must be firmly secured by stakes, which should be put to them with as little delay as possible. That good pear Easter Beurre used to crack very much with us, and it will often do this in light, gravelly soils. The trees require to be lifted every other year, and the roots to be kept near to the surface. With abundant waterings and a heavy mulch in dry seasons the cracking was, to a certain extent, prevented. The fruit of many pears crack when the trees reach a certain age, and the chief cause is, no doubt, the extension of the roots into soil too far below the surface. I am satisfied that in many gardens root-pruning is quite neglected, and that by the constant pruning of the branches much injury is caused, besides the loss of fruit. Many persons think root-pruning not necessary, and point out certain trees that have done well; but each tree must have the attention necessary according to its individual requirements. Many have a much weaker constitution than others, therefore in their case the knife must be sparingly applied. Others, again, are grafted on stocks which make less wood. All these points must be considered. Trees that make a vigorous top growth, and are pruned in the summer, will certainly benefit by root-pruning, and the necessity for this work may more readily be determined by the appearance of the trees. When strong wood is being produced, and there are but few fruit buds, the work should be taken in hand.

Although root-pruning is recommended as necessary in many instances, old trees must be very carefully dealt with. They may have been many years in their quarters, and to mutilate their roots would cause permanent injury. In these cases it is essential to proceed cautiously, and to extend the work over two or three seasons, a portion of the roots being pruned at each operation. My notes refer chiefly to pyramidal, bush, and wall trees, though in the case of large standards much can be accomplished to make them fruitful where unproductive.

Not a few large trees suffer from an impoverished condition of the soil, and send their roots down to a considerable depth in search of nourishment, which should have been supplied them by surface dressings. On the other hand, they frequently suffer, especially from drought, and when in light soils a heavy mulch is of great service in assisting them to produce fruit buds. Trees that are not pruned in the autumn should have a heavy mulching of thoroughly-decayed manure as soon as the operation is completed, and a second dressing in the spring. Some new loam, mortar rubble, burnt soil, charcoal, or any other suitable material may be added to the compost, but not manure, as this will encourage excessive luxuriance. Wood ashes are of much value in these cases as they contain a large amount of potash and soda. Indeed, in many instances, I prefer wood ashes for indoor fruit trees, as when mixed with guano they form a valuable manure, and can be employed in places where animal manures could not be well used. Trees that are subject to canker, such as apricots, cherries, and plums, are greatly benefited by being lifted in the earlier stages of their growth, as when the trees become old and diseased root pruning will be of little avail in restoring them to health. But, if commenced in time, the operation will go a long way to prevent their becoming unhealthy. Top-dressing with good manures will do much good. Liquid manure and night soil, the latter to be well washed down to the roots, are of great benefit to old trees, and will, by timely application, do much in restoring weakly trees to a vigorous state of health.

CHAUMONTEL PEAR.

OPINIONS differ materially as to the value of this pear, whether it is grown in England or Jersey. The difficulty that some people experience is, that they cannot induce it to ripen properly. I should like to state my experience with regard to this pear, as I have been more or less acquainted with it since I was a boy. My father had several large standard trees of the Chaumontel growing in a deep, warm, rather light soil in West Surrey, and I remember having to assist in gathering and storing the fruit. With the exception of the French crab apple, the Chaumontel pear was always the last fruit gathered. The store-room for the pears was a loft over a shed, in which five or six cows were kept during the winter. The pears were put in a heap, with a thick layer of clean straw under and above them. The roof was composed of flat tiles. We did not think of looking at the pears until the time had arrived for taking them to market, which was usually about the middle of February. The fruit was generally of so uniform a size as not to require any sorting; but if there were any small fruits they were left for consumption at home. The others were packed in half-bushel and bushel baskets and sent to the Borough Market, which at that time was famous for fruit. These pears did not on any occasion realize less than three-halfpence each, but the greater proportion were sold at the rate of twopence each to the dealers. I do not remember any complaint of their not ripening properly, or of being deficient in flavour; but I know that my father often regretted that he had not a greater number of the trees. I have been in various parts of the country since, but except in a few places in Devonshire, I have not seen fruit of the Chaumontel pear with such a rich colour as that pro-

duced in Surrey. When quite mature the under side of the fruit was almost golden yellow, while the sunny side was a bronzy red.

I do not think for a moment that this pear is suitable for all soils and situations, but believe it requires a good climate and a warm, dry soil Above all it must be allowed to hang quite late upon the tree, and to be stored in a warm, dry place. In the case to which I have referred the temperature of the store-room was more uniformly warm than the ordinary fruit room usually is.

I should also like to mention here that I had some conversation with a Devonshire fruit grower a few days since relative to the subject of ripening this pear. Knowing that his experience would be valuable, I asked him to state his views, which he readily did. They were to the following effect: The fruit should not be subjected to a lower temperature than 50 deg., as insufficient warmth is the cause of the fruit not ripening properly, and the flavour in consequence being indifferent. J. M.

Notes of Observation.

A SEASONABLE NOTE ON STRAWBERRIES.

WHERE a constant supply of strawberries, liberal in quantity and of good quality, is required, the first week in January is a good time for those who have a limited area of glass to commence forcing. In starting the plants thus early some patience is required, and they must be carefully managed, or the results will be unsatisfactory. Especially is it desirable that they should not be subjected to a very high temperature when first started. In places where properly constructed houses are available for forcing strawberries in pots, one or more batches will have been started, and these will require special care during the cold, dull weather usually experienced at this season of the year. As light is so important for the proper development of both the foliage and flowers, they should not be subjected to a high night temperature. The night temperature may, indeed, be allowed to fall to 45 deg. It is important that the atmosphere be not too heavily charged with humidity, for when the moisture condenses on the glass in sufficient quantities to cause much "drip," there is a risk of the plants being injured. From this period a batch of plants should be introduced to the forcing house fortnightly, the number of plants in each batch being, as a matter of course, determined by the quantity of fruit required and the space it commands. C. GILL.

Trafalgar Gardens, Wilts.

RATS AND DENDROBIUM WARDIANUM.

It may interest some of your readers to know that rats have a special liking for Dendrobium Wardianum. One of these destructive rodents found its way into one of my houses, and ate all the young shoots of two fine specimens of this species, but did not touch any of the surrounding orchids. WILLIAM REYNOLDS, *Gardener.*

Holly Bank, Hornsey Lane, N.

VIOLETS.

Violets have of recent years become such great favourites that but few gardens can be found in which some frames are not given up to their cultivation. During the autumn and winter they are so much in demand here that we grow them in large quantities in heated pits as well as in cold frames. Many cultivators place the frames on beds of fermenting material. Both heated and unheated structures are necessary where a constant supply of flowers has to be maintained throughout the winter. In cold frames violets produce much finer flowers during November, December, February, and March than in pits heated with hot water. Moreover, when planted in heated pits they are liable to the attacks of red spider to a much greater extent than are those in cold frames. On the other hand, those in the heated pit can be depended upon for supplying daily gatherings, which is a great advantage. Marie Louise, Neapolitan, The Czar, and the beautiful Swanley White are undoubtedly the best, The above are also suitable for planting in sheltered borders for supplying spring gatherings. They are well worthy of good positions, especially when frames are not available, and flowers are greatly in request. C. G.

Trafalgar Park, Wilts.

SPIRAL TWIST OF THE LEAVES OF THE NORWAY SPRUCE.

IN a communication to the Academy of Natural Sciences of Philadelphia, Mr. T. Meehan writes as follows with reference to the direction of the spiral twist in the leaves of the Norway spruce.

The true leaves of the pines are adnate, or perhaps more properly speaking, connate with the branches. Occasionally the apex is free as a mere membranous scale; or when the branch is young, or under circumstances not well understood, but evidently influenced by various phases of nutrition, instead of a mere scale, a regular green leaf, often articulated, is produced from the free apex. When the axial growth is arrested, the green leaves, having nothing to grow to, develop as ordinary leaves would do, and then we have the fascicles of Pine needles, or the verticils of leaves as in the Larch. The pine "needles" spring from a spur as do the leaves of the Larch, only that in the former the arrested woody axis is beneath the outer bark and invisible.

In the Norway spruce, *Picea excelsa*, the adherent leaves are arranged around the branches from left to right as we look at them, or as some would say, in a direction contrary to the sun. The free portion—that above the articulation—remains strictly erect, as a general thing, so far as the central or leading shoot is concerned. When the axial growth terminates, the membranous leaves having no axis to adhere to, usually form the bud scales, which are arranged as in miniature cones. We see that the cone of the Norway spruce is but an arrested and metamorphosed branch, in which what might have been connate leaves are now free and have become the bracts beneath the scales of the cone. These bud scales do not, however, always remain as scales, but develop to an articulation with a perfect green leaf, as in the regular growth along the stems just as in the Larch or regular Pine needles. Having no axis to adhere to, these true leaves in the Norway Spruce seem to grow the larger by reason of their freedom. In some cases these leaves from the bud scales are large enough to simulate those at the apex of *Sciadopitys*, and give the same parasol-like appearance to a spruce branch.

The chief point of this paper is to call attention to the direction of the spiral or twist of these free leaves. Along the central stem, as already noted, the free leaves are usually on a line parallel with that stem, but occasionally they twist to the right or to the left. The same is true of those of the buds. They nearly all twist one way or the other. As the adult leaves around the stem all coil in one direction, one might reasonably expect the free leaves to do the same. It is surprising to find that they frequently do not, as many will be found on the same plant twisting in either direction, though every leaf in the same bud has the twist in the same direction.

Attempts have been made to explain the law underlying the spiral arrangement of the leaves of plants. The indifferent directions taken by the leaves of the Norway Spruce, as detailed, would indicate that, whatever that law may be, it is rather local than in control of the whole system governing the growth of the plant.

Exhibitions and Meetings.

ABERDEEN SEED AND NURSERY TRADE ANNUAL ASSEMBLY.

THE annual assembly of the members of the Aberdeen Seed and Nursery Trade took place on Thursday evening, 18th inst., in the Royal Albert Hall, Aberdeen. Mr. Hay, of Ben. Reid and Co., occupied the chair. There was a large and representative gathering. In proposing "Success to the Seed and Nursery Trade, and Health and Happiness to Those Engaged in It," the Chairman said it was now seven years since he first had the honour of occupying the same position which he did that evening, and that occasion was the first social gathering held amongst them. If his memory served him aright, he thought he said that such meetings were the right thing, for they made them all know each other, and take an interest in each other, and so go hand in hand through life, helping each other in a pleasant and courteous way. Seven years was not a very long period, and yet it had wrought a good many changes among them. Seven years ago there were a number of bright young faces around him who were now absent, but he was happy to say most of those he referred to were pursuing the same trade in other parts, doing well, with the very best prospects before them. There was, for example, in Boston in the United States, the firm of Messrs. R. and J. Farquhar, one of the largest seed establishments in that city, and there were several other Aberdeen-bred seedsmen occupying important situations in the same city and other cities of the United States. He might mention that Mr. George Watson, who was one of the first promoters of their social gatherings, was now manager of a very extensive seed business in Philadelphia; and there were many others who had made their mark and had risen to high positions in this country. Seven years had made a change in other respects, and, he hoped, for the better. At that time the seed trade, like other businesses, was passing through a little crisis, and things looked pretty dark. But the clouds had gradually rolled away, and the sun of prosperity had begun to shine again. Subsequently Mr. Robson made a few remarks, in the course of which he said he thought their annual gatherings had done a great deal to cement that union of hearts which had always been a feature of the seed trade. Mr. Syme, who, the Chairman said, they might call the father of the trade in Edinburgh, then made a very happy speech, at the close of which the company adjourned to the large hall, which had been prepared as a ball-room.

NATURAL HISTORY SOCIETY OF ABERDEEN.

A meeting of the Aberdeen Natural History Society was held on Tuesday evening, 16th inst., in the University Buildings, when a paper was read by Dr. Roy, entitled "Notes, chiefly botanical, relating to the neighbourhood of Aboyne and Glen-Tannar." The paper, while dealing mainly with the botany of the districts mentioned, contained much interesting information regarding the old roads of that part of the country, and also dwelt upon the ancient battle remains, forts, &c., that were frequently to be met with. In connection with the botany of the Burn of the Vat, he read an account of the Battle of Culbleen, adapted from "Wynton's Chronicles," which show that in the time of David Bruce, in the 14th century, there were in that locality extensive oak forests, but now, with the exception of a few solitary specimens, this tree had entirely disappeared from the district. At the conclusion of the paper, Dr. Roy was, on the motion of Professor Trail, heartily thanked for his able and instructive address.

CARTER'S PROVIDENT SICK FUND.

The fifth annual meeting of this society, has just been held at the warehouses of Messrs. James Carter and Co., Queen's Seedsmen, High Holborn. The statement of affairs presented to the meeting showed that although the past year (owing to the epidemic of influenza during the winter) has been one of the worst the society has experienced, after meeting all engagements and making provisions for one or two exceptional cases, the society has been able to close its books with a very substantial balance in hand. Considering the smallness of the subscription and the considerable benefits paid to its members, the result must be considered gratifying. All the officers were re-elected.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

A meeting of the acting directors of this society was held in the secretary's office, Aberdeen, on Tuesday evening, the 16th inst. Mr. Alexander Robson, vice-chairman, occupied the chair. It was agreed that the spring exhibition should be held in the Music Hall Buildings, Aberdeen, on April 3 and 4 next, and the annual floral fête in the Duthie Public Park, on August 22, 23, and 24. The best thanks of the society were voted to the Aberdeen Town Council for granting the use of the Park, and for the handsome donation to the prize list, which is divided over all the classes in the schedule. A list of donations to the prize fund was submitted, and the prize schedule for 1891 was revised.

LONGFORD CASTLE, NEAR SALISBURY.

LONGFORD CASTLE offers many attractions to visitors, its grand proportions and well-wooded park being in themselves features of no ordinary interest. The whole place, however, abounds with much that cannot fail to interest a diversity of tastes. The beautiful lake and wide stretches of park-like scenery impress the visitor with a sense of the importance of the place and its suitability for the residence of a wealthy family.

The object of my visit was not, however, so much for the purpose of describing the Castle and its immediate surroundings, as to see and learn something of the lines on which fruit-growing is carried on. Having many times seen the fruit produced at this place occupying important positions at the London and other shows, I had a desire for further information. Nor was I disappointed, for Mr. Ward, the gardener, gave me a courteous reception, and spared no pains to show me all that I wished to see.

Grapes form an important feature in the fruit department of the gardens at Longford Castle. It will no doubt be some time before I shall see another private place where so many different kinds are grown so well. For that reason I felt at the time of my visit that I had better make the best use of present opportunities, and make a thorough inspection. The early crops of grapes had been sent to table at the time I was there. The mid-season crop was, however, at its best. There were a few bunches of Foster's Seedling, which were grand both in size and colour. All the bunches that had been cut from the same vine this year had been prize winners. Mrs. Pince's Muscat struck me as being much better than we often see it, many bunches weighing from 4 lbs. to 5 lbs. each. Alnwick Seedling had produced some fairly good bunches and noble berries, while the colour was much above the average, being, as a matter of fact, quite black. Lady Downes is grown with others for a late supply. Mr. Ward gave it an excellent character for its keeping qualities. Gros Colmar could hardly be kept out of such a collection, and I found it grafted on the Black Hamburgh and doing exceedingly well, the colour being very good. It is considered here that the flavour is improved by the influence of the Black Hamburgh as a stock. In the late vinery Gros Maroc is in fine condition, the bunches and berries being large and in splendid colour. From what I have seen of the treatment of this fine grape in other places and my own experience of it, I am inclined to think that many growers discontinue the use of the fire too soon to ripen it properly. It is not generally known, perhaps, that under the same treatment it will begin to colour simultaneously with the Hamburgh, but it does not finish for some weeks after. It is my opinion, that to have this grape good in flavour, it should have a brisk temperature until the middle of October. Abercairney Seedling is a black grape, not often met with; at Longford it is growing against the back wall of a three-quarter span vinery, where it is bearing freely and colours well. As it does well in such a position, the information may be useful to some readers.

The culture of peaches and nectarines is carried out here in a very successful manner. I only regret that the time at my disposal did not allow me to go more fully into the details which are carried out, in the most systematic and skilful manner. The various houses that are devoted to the production of early and mid-season crops, contain trees that bear evidence of being managed by a master-hand, but it is impossible to do more than give them a passing notice. I must, however, refer to the outdoor management of these fruits. There is nearly a mile in length of garden walls devoted to fruit trees, and it is interesting to note that peach and nectarine trees occupy no inconsiderable part of the space. That being so, there is plenty of scope for the directing mind to exercise his skill in whatever way is found most conducive to the production of first class crops. The way appears very plainly to be in periodically lifting and replanting the trees. Sometimes in the same position by adding new soil to start the trees again, but when practicable the position of the tree is changed so as to afford a change of soil. Whenever it is decided to lift a peach or nectarine tree, whatever its age, the work is done in the autumn before the leaves have fallen. Generally the lifting takes place in the first half of the month of October, and with the best results. Should any reader doubt the wisdom of doing so, I hope they will go and see for themselves. If they do this, and come away without being convinced that Mr. Ward's practice is sound, I shall be surprised.

The cultivation of orcheds is I believe rather a new feature at Longford Castle, the beginning is, however, very promising, for a new span-roof house has been specially built to accommodate them. The structure is divided into four compartments. One of the divisions differs somewhat in its arrangements. There is a large space in the middle with comfortable seats, that those who may wish to linger amongst the orchids may do so. The framework of the house is pitch pine, which is varnished, the staging is made of oak, dressed with boiled oil, the fact that no paint is used on any part of the structure is rather interesting to a stranger. To afford the necessary moisture, troughs made of oak are fixed beneath the stages, and these are filled with leaf-soil which is moistened as occasion requires.

The gardens give a very instructive lesson in the growing of two different subjects in one house. In a long lean-to structure, with a fairly high back wall and a low wall in front, figs are grown at the back, while tomatos fill up the front space. The latter are not so trained as to cover the roof, sufficient space being left to allow all the light required by the fig trees to reach them. Whatever might have been my previous opinion respecting the probable success of growing these two subjects in one house, an inspection of the crops of both clearly showed that there was no longer any reason to doubt the possibility of its being done in a thoroughly satisfactory manner.

Pines also are grown extensively, there being a considerable number of plants in various sizes grown. At the time I saw them the fruiting division was in the most promising condition. The number of fruit in various stages was quite sufficient to show that there would be no scarcity during the winter and the spring as might be expected. Flowering and fine foliage plants are grown in considerable numbers, all showing that this department is watched over with the same anxious care as are the others. Indeed, it was quite clear to me that my guide thought no part of his charge ought to be slighted, for he took as much pains in conducting me over the vegetable garden as he did through the houses.

I have not reached the end of my notes, but I have already written sufficient to fill so much space, that I must refrain from writing more. At some other time perhaps I may be able to open my note-book again, and for the advantage of your readers refer to some other interesting matters that came under my notice in a walk round the admirably managed gardens of Longford Castle.

VISITOR.

"A SIMPLE FACT ABOUT" KEATING'S COUGH LOZENGES.—Ask throughout the world, in any country that can be named, you will find them largely sold. There is absolutely no remedy that is so speedy in giving relief, so certain to cure, and yet the most delicate can take them. One Lozenge gives ease. Sold in 13½d. tins.—[ADVT.]

BLOOD AS MANURE.

I WAS very pleased to find in a recent issue a letter from a correspondent relating to the value of blood as a manure for vines. I presume it was a reply to a query you kindly inserted for me in one of your recent issues.

I have great faith in the offal from a butcher's slaughter-house as a surface covering for vine borders, but I have had no experience in the use of crude blood as a liquid manure. I should like to ask your correspondent if he finds it does the roots of his vines any harm to fork them up eighteen inches deep, as he recommends in his letter. I should not like to fork ours up to a quarter of that depth. I do not think it would do any harm in an old border with the roots not confined and able to ramble away, but with an inside border and the roots within a restricted area, it would certainly destroy a great many of them. I find from continual observation that the more the roots of most fruit trees are encouraged to the surface by top dressing the borders, with suitable manures, the better crops we obtain.

Just for curiosity to day I probed a few holes in a border in one of our vineries. With the roots wholly inside, and the variety Muscat of Alexandria, I found an abundance of healthy, fibrous roots in the surface material that we added last spring. I do not consider it wise to use a fork at all. We simply put the surfacing material on the surface. If a few correspondents would make some experiments with blood as a manure, and in a year or two give publicity to the results, they would do good service, and the reports would be very interesting. We use many tons of butcher's offal every season in the gardens here. The offal has the blood poured over it, and I find from experience that it is a very rich manure. Each year when we make a new strawberry bed, we trench a heavy dressing of it in. The plants reach it the second season, and so luxuriate in it that the difference, as compared with the same variety grown where only ordinary farmyard manure had been applied, is very apparent. The plants in the latter case are not so vigorous, nor do they bear such heavy crops. W. M.

Cheshire.

ROYAL HORTICULTURAL SOCIETY.

DATES OF CONFERENCES, EXHIBITIONS, AND MEETINGS, 1891.

Jan.	13...	Lecture on Cyclamen	Drill Hall.
Feb.	10...	Annual Meeting	Council Room.
Mar.	10...	Lecture on Snowdrops	Drill Hall.
Mar.	24...	Lecture on Hardy Bulbs and Plants	Drill Hall.
April	14...	Lecture on Lachenalias	Drill Hall.
April	14...	Exhibition of Daffodils	Drill Hall.
April	21	Lecture on Cape Bulbs; Exhibition of National Auricula Society	Drill Hall.
May	12...	Lecture on Hybrid Rhododendrons	Drill Hall.
May	27 and 28	Great Flower Show	Temple Gardens.
June	9...	Lecture on Alpine Plants	Drill Hall.
June	23...	Lecture on Tea Roses	Drill Hall.
June	23...	Exhibition of (National Rose Society) and Pæonies	Drill Hall.
July	7...	Conference on Hardy Summer Flowers	Chiswick.
July	8	Conference on Strawberries, Raspberries, Currants, &c.	Chiswick.
July	21...	Lecture on Early Peaches	Drill Hall.
Aug.	11...	Lecture on Ornamental Stove & Greenhouse Plants	Drill Hall.
Aug.	25...	Great Show of Gladioli	Drill Hall.
Sept.	8...	Lecture on Hardy Water and Bog Plants	Drill Hall.
Sept.	22...	Lecture on Insect-Eating Plants	Drill Hall.
Oct.	6...	Conference on Perennial Asters, Sunflowers, &c.	Chiswick.
Oct.	7...	Conference on Conifers	Chiswick.
Oct.	27...	Lecture on Autumn Tints	Drill Hall.
Nov.	10...	Lecture on Varieties of Soil	Drill Hall.
Dec.	8...	Lecture on Hellebores	Drill Hall.

The Floral and Fruit Committees will meet at noon on each of the above dates, excepting when the exhibition or conference extends over two days. On these occasions the committees will meet on the first of the two dates.

Correspondence.

TO PREVENT RABBITS BARKING TREES.

IN reply to the question put by "W. S.," under the heading of "Replies and Queries" (page 818) in last week's issue. I beg to say that the simplest, safest, and most effective way of preventing rabbits barking trees is to tie a few pieces of old bark around the stems of the individual trees. Thus protected no injury need be apprehended from rabbits and hares gnawing the bark of the trees. On most estates the necessary quantity of bark from fir and other felled trees may be easily obtained from the timber yard, there being generally a good supply of it in close proximity to the saw-pits. The bark should be tied round the stems of living trees for a distance of two feet from the ground with tarred string. H. W. WARD.

Longford Castle.

MIDLAND PINK SHOW.

Following on the successful exhibition of florists' laced pinks held this year at the Royal Aquarium, for the southern section, and the Botanical Gardens, Manchester, for the northern section, a happy suggestion was made that a Midland Show should be held in connection with the Wolverhampton Floral Fête (July 14, 15, and 16, 1891), and this having been taken up by a few lovers of this delightful flower, negotiations were opened with Mr. Green, the president of the Wolverhampton Horticultural Committee, with the result that he has consented to find the necessary tent space for exhibiting the pinks, and also to recommend his committee to contribute towards the prize money. CHAS. F. THURSTAN,

Penn Fields, Wolverhampton. Hon. Secretary.

Replies to Queries.

Market Culture of Plants.—H. W. : There is not, so far as we are aware, any book dealing specially with the cultivation of plants for market.

Lilium longiflorum.—Mrs. H. Ash : Bulbs of the common Trumpet lily may be procured of any nurseryman or seedsman, and plants of Cypripedium caudatum can be obtained of nurserymen who devote attention to orchids. Seed of this lady's slipper cannot be purchased. We do not recommend dealers, and are therefore unable to advise you as to where to obtain either the lily or the lady's slipper.

Bottling Grapes.—Young Gardener : As you have only a small portion of the crop of late grapes remaining, the best course will be to cut the bunches and suspend them in a dry room, with the end of the laterals in water. You will then be able to proceed with the pruning and dressing of the vines when convenient instead of waiting until all the grapes have been sent to table. Any kind of bottles may be used, and they should be filled three-parts full with clear water and be suspended by the neck. Cut the bunches with eight or nine inches of the stem if the lateral is of sufficient length to admit of its being done without cutting it too close to the main rod, and do not remove any portion of the lateral above the bunch. When the laterals are shortened by having the top taken off, as is sometimes done, the berries commence to shrivel at a much earlier stage than would otherwise be the case.

Heating Plant House.—R. M. : The cause of the difficulty you have had in maintaining the proper temperature in the plant stove is an insufficiency of heating power. For efficiently heating a structure forty feet in length, by twelve feet in width, in which it is desired to maintain a temperature ranging from 65 deg. to 70 deg. during the winter, eight rows of four-inch pipes are required, or nearly double the quantity you have. To ensure an equal distribution of heat throughout the structure, four rows should be fixed on either side. A much larger boiler will be required than that at present in use, as there is much waste of fuel when the fires have to be frequently stoked. The re-arrangement of the heating apparatus must of necessity be deferred until the summer ; and during the continuance of severe weather you might employ a rather powerful petroleum stove in addition to the present hot-water apparatus.

Watering Stove Plants.—B. S. : Great care is necessary in watering stove plants at the present time. It is important to avoid supplying them too liberally with water, but they must not be allowed to suffer from dryness at the root. It must be remembered that as a general rule plants in heated structures require more water at the roots during periods of severe frost, when the fires have to be kept burning briskly, than in dull, mild weather. The watering should be done early in the day, and care be taken to avoid pouring it over the stages and paths. Orchids that, like the cattleyas and dendrobiums, have stout pseudo-bulbs, which serve as natural reservoirs of nutriment, require but little water now, but the aerides, vandas, and other kinds of similar growth must not be allowed to become dry and remain so for a considerable period. The watering of the latter group must have the most careful attention, and the supplies be, as far as possible, adapted to the requirements of each plant.

Forcing Chicory.—H. F. : A high temperature is not required in forcing chicory. A mushroom house is the best place in which to start the roots into growth, but excellent results may be obtained by placing them in an ordinary cellar, as the temperature will be quite sufficient to maintain a steady growth. You could also force the roots in any of the glass structures in which the temperature is sufficient to stimulate the roots into activity provided you exclude the light from the young growth. The roots should be packed rather closely together in a deep box, and the box be then so covered that the light will be excluded, and placed in a corner of the house. By the latter course of procedure it will be necessary to start the roots in smaller batches and at more frequent intervals than when they are placed in either the mushroom house or a cellar. In gathering the leaves take them off close to the crown, as the portion remaining invariably decays to the injury of the younger leaves.

Holly Hedges.—W. S. : One of the best of the evergreens for hedges is unquestionably the holly, but considerable patience is necessary, as the growth is comparatively slow for some time after planting. The ground should be prepared by being broken up to a depth of eighteen inches or two feet, and if the soil is impoverished a liberal dressing of partly-decayed farm-yard or stable manure should be applied. The planting should be done in March or early in April, and well rooted plants about three feet in height be selected. The value of the holly has long been recognised for the formation of hedges, and was much appreciated by Evelyn, who in his "Sylva," published in 1664, writes with reference to the holly hedges at Sayes Court : "Is there under the heavens any more glorious and refreshing object than an impregnable hedge of about four hundred feet in length, nine feet high, and five in diameter, which I can still show at any time of the year in my ruined garden at Sayes Court (thanks to the Czar of Muscovy), glittering with its armed and varnished leaves blushing with their natural coral? It mocks the rudest assaults of the weather, beasts, and hedge-breakers."

Law.

FLOODING OF CONSERVATORY.

THE case of ANDERSON *v.* THE VESTRY OF ST. JOHN'S, HAMPSTEAD, recent tried in the Court of Queen's Bench before Mr. Justice Denman and a speci jury, was of considerable interest.

The plaintiff, Mr. J. E. Anderson, nurseryman, of Belsize Park Garden complained that during the months of March, April, and May of 1888 suffered damage through the sewage from a drain in some mews at the rear his premises, which soaked through the wall of his conservatory, doi damage to the amount claimed (£2,000). He further alleged that owing neglect on the part of the vestry's officials the drain in question becan blocked, doing the damage.

The counsel for the plaintiff were Mr. Philbrick, Q.C., and Mr. Bartle Dennis ; for the vestry Mr. Finlay, Q.C. and Mr. English Harrison.

Mr. Philbrick having opened the case for the plaintiff at some length, call

Mr. J. E. Anderson, who stated that he had no wish to bring the matt into court, but could not arrange a compromise. He complained of the sewa percolating through the wall of the conservatory in March, April, and May 1888. This he believed was caused by the neglect to flush the sewers the back of his conservatory. The fires in the boilers were frequently put o by the leakage, and the sewage matter also prevented them from shutting t doors of the stoves by caking. He complained to Mr. Smith on March 28t of the matter, and he referred him to Mr. Lowe. He did not at first kno who was responsible for the state of things, the vestry or Mr. Edwards, t lessee of the premises at the rear.

Several witnesses having been called in support of the plaintiff's case,

Mr. Harrison reviewed the evidence at some length, and contended tha there was no proof of neglect on the part of the defendants. He then calle on behalf of the vestry,

The Surveyor, Assistant Surveyor, and other officials, who gave evidence to the condition of the drains.

Mr. Justice Denman, in summing up the case, said the first question to dealt with by the jury was whether any mischief had been done by the sewer and secondly, whether such damage had been caused by negligence on the pa of the vestry's employes.

After a short consultation the jury found for the plaintiff on both count The question as to the amount of damages was reserved for arguing before a expert.

Obituary.

RECENTLY, at Kilmacurragh, Rathdrum, Mr. WILLIAM HAUGHTON, of 9, Ne Square, Lincoln's Inn, for some years treasurer of the Royal Horticultura Society.

Markets.

COVENT GARDEN.

FRUIT.

Apples.....per ½-sieve	3s. 6d.	to	7s. 0d.
Apples, American, per brl.	16s. 0d.	,,	30 s. 0d.
Cobs, Kent, per 100 lb. ...	65s. 0d.	,,	75s. 0d.
Grapes.....per lb.	1s. 0d.	,,	4s. 0d.
Lemons .....per case	12s. 0d.	,,	20s. 0d.
Pears, Dessert ... per doz.	2s. 0d.	,,	7s. 6d.
Pine-apples, St. Michael's each.....	3s. 6d.	,,	10s. 6d.

VEGETABLES.

Artichokes, Globe, per doz.	4s. 0d.	to	6s. 0d.
Beans, French .....per lb.	1s. 0d.	,,	1s. 6d.
Beet .....per doz.	2s. 0d.	,,	3s. 0d.
Brussels Sprouts....per ½ sieve.....	2s. 0d.	,,	3s. 0d.
Carrots .....per bun.	0s. 4d.	,,	0s. 6d.
Cauliflowers .....per doz.	4s. 0d.	,,	6s. 0d.
Celery.....per bun.	1s. 6d.	,,	2s. 6d.
Cucumbers .....each	0s. 8d.	,,	1s. 0d.
Endive.....per doz.	1s. 6d.	,,	2s. 0d.
Herbs .....per bunch	0s. 3d.	,,	0s. 4d.
Horse-radish.....per bun.	2s. 0d.	,,	3s. 0d.
Lettuces .....per doz.	1s. 0d.	,,	2s. 0d.
Mushrooms ...per basket	1s. 6d.	,,	2s. 0d.
Onions.....per bushel	2s. 0d.	,,	3s. 0d.
Parsley .....per bun.	0s. 4d.	,,	0s. 6d.
Parsnips ..... per score	0s. 8d.	,,	0s. 10d.
Savoys.....per doz.	1s. 6d.	,,	2s. 0d.
Seakale .....per pun.	1s. 3d.	,,	1s. 6d.
Shallots .....per bun.	0s. 4d.	,,	0s. 6d.
Small Salading...per pun.	0s. 3d.	,,	0s. 4d.
Spinach .....per bushel	3s. 0d.	,,	3s. 6d.
Tomatos.....per lb.	0s. 9d.	,,	1s. 0d.
Turnips..... per bunch	0s. 4d.	,,	0s. 6d.

CUT FLOWERS.

Azaleas ...per doz. sprays	0s. 6d.	,,	1s. 0d.
Bouvardias.....per bunch	0s. 6d.	,,	1s. 0d.
Callas .....per doz.	7s. 6d.	,,	10s. 6d.

CUT FLOWERS—*continued.*

Carnations, per doz. blms.	1s. 0d.	to	2s. 0d.
Chrysanthemums, per doz. blooms.....	1s. 6d.	,,	3s. 0d.
Chrysanthemums, per doz. bun.	3s. 0d.	,,	8s. 0d.
Cyclamens, per doz. blms.	0s. 3d.	,,	0s. 6d.
Eucharis ...per doz. blms.	3s. 0d.	,,	7s. 6d.
Heliotropes, pr doz. sprys	0s. 6d.	,,	1s. 0d.
Hyacinths, Roman, per dozen spikes	1s. 0d.	,,	1s. 6d.
Maidenhair Fern, per doz. bun.....	4s. 0d.	,,	8s. 0d.
Marguerites, per doz. bun.	3s. 0d.	,,	6s. 0d.
Mignonette, per doz. bun.	2s. 0d.	,,	4s. 0d.
Narcissus, Paper White, per doz. sprays.....	1s. 0d.	,,	1s. 6d.
Narcissus, French, per doz. bun.	3s. 6d.	,,	8s. 0d.
Pelargoniums, Zonal, per doz. trusses	0s. 6d.	,,	1s. 0d.
Poinsettias .....per doz.	4s. 0d.	,,	10s. 6d.
Primulas, Double, per bunch.....	0d. 6d.	,,	1s. 0d.
Roses, Coloured, per doz.	3s. 0d.	,,	5s. 0d.
Roses, Tea, per doz. blms.	0s. 6d.	,,	2s. 0d.
Tuberoses, per doz. blms.	0s. 6d.	,,	0s. 9d.
Violets .....per doz. bun.	1s. 6d.	,,	3s. 0d.
Violets, Parme, per bun.	3s. 6d.	,,	7s. 6d.
Violets, French, per bun.	2s. 6d.	,,	3s. 6d.

BOROUGH AND SPITALFIELDS.

POTATOS.

Regents .....per ton	75s.	to	95s.
Beauty of Hebron .....per ton	60s.	,,	85s.
Imperator .....per ton	60s.	,,	80s.
Magnum Bonum .....per ton	60s.	,,	85s.
Magnum Bonum, Scotch per ton	90s.	,,	120s.
Early Rose .....per ton	60s.	,,	65s.
Victorias .....per ton	60s.	,,	80s.

END OF VOLUME.

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